

**FOURTH REPLACEMENT CAISO TARIFF (MRTU)**

**THROUGH JUNE 17, 2008**

**LEGEND (EXCLUDING INDEX):**

***GREEN ITALIC* = AMENDMENT FILINGS PENDING FERC ORDER**

**GRAY SHADING = COMPLIANCE FILINGS PENDING FERC ORDER**

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## **ARTICLE I – GENERAL PROVISIONS**

### **1. DEFINITIONS AND INTERPRETATION.**

**1.1** The general provisions of this Article I shall apply to this CAISO Tariff.

### **1.2 Definitions.**

Capitalized terms used in this CAISO Tariff shall have the meanings set out in the Master Definitions Supplement set out in Appendix A unless otherwise stated or the context otherwise requires. If two or more capitalized terms are used together in a manner not uniquely defined in Appendix A to this CAISO Tariff, the meanings of each defined term apply.

### **1.3 Rules of Interpretation.**

**1.3.1** In this CAISO Tariff “includes” or “including” shall mean “including without limitation”.

**1.3.2** In this CAISO Tariff, unless the context otherwise requires:

- (a) the singular shall include the plural and vice versa;
- (b) references to a Section or Appendix shall mean a section or appendix of this CAISO Tariff;
- (c) references to any law shall be deemed references to such law as it may be amended, replaced or restated from time to time;
- (d) any reference to a “person” includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization or other entity, in each case, whether or not having separate legal personality;
- (e) any reference to a day, month, week or year is to a calendar day, month, week or year;
- (f) if the provisions of a Protocol and Section 1 through 4 conflict, the provisions in Sections 1 through 4 will prevail to the extent of the inconsistency;

- (g) a reference to this CAISO Tariff or to a given agreement, or instrument shall be a reference to this CAISO Tariff or to that agreement or instrument as modified, amended, supplemented or restated through the date as of which such reference is made;
- (h) if the provisions of this CAISO Tariff and those of an existing contract conflict, with respect to Outage coordination, the existing contract will prevail to the extent of the inconsistency;
- (i) time references are references to prevailing Pacific time;
- (j) the Operating Procedures or Business Practice Manuals referenced in this CAISO Tariff, as may be amended from time to time, shall be posted on the CAISO Website, except as provided in Section 22.11, and such references in this CAISO Tariff shall be to the Operating Procedures or Business Practice Manuals then posted on the CAISO Website;
- (k) if the provisions of an Operating Procedure or a Business Practice Manual and this CAISO Tariff conflict, the CAISO Tariff will prevail to the extent of the inconsistency;
- (l) any reference to a day or Trading Day, week, month or year is a reference to a calendar day, week, month or year except that a reference to a Business Day shall have the meaning set forth in Appendix A; and
- (m) the captions and headings in this CAISO Tariff are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the rates, terms, and conditions of this CAISO Tariff.

**2. ACCESS TO THE CAISO CONTROLLED GRID.**

**2.1 Open Access.**

The CAISO shall, subject to Sections 2.2 and 3, provide to all Eligible Customers open and non-discriminatory access to the CAISO Controlled Grid regardless of the locations of their connections to the CAISO Controlled Grid in accordance with the terms of this CAISO Tariff including, in particular, the procedures for bidding and scheduling and Congestion Management. Energy and Ancillary Services may be transmitted for an Eligible Customer into, out of or through the CAISO Controlled Grid only through the submission of Bids or Self-Schedules by a Scheduling Coordinator. A Scheduling Coordinator must ensure that each Eligible Customer which it represents has all appropriate licenses or authorizations from the Local Regulatory Authority, FERC or any other regulatory body.

**2.2 Eligibility of Customers for Direct Access or Wholesale Sales.**

The eligibility of an End-Use Customer to be treated as a Direct Access End-User will be determined in accordance with the eligibility and phase-in procedures (if any) adopted by the Local Regulatory Authority. Any dispute as to whether an End-Use Customer meets the eligibility criteria must be resolved by the Local Regulatory Authority prior to the CAISO treating that End-Use Customer as a Direct Access End-User. A Wholesale Customer shall not be entitled to participate in Wholesale Sales through a Scheduling Coordinator if it is not entitled to wholesale transmission service pursuant to the provisions of FPA Section 212(h).

**3. FACILITIES FINANCED BY LOCAL FURNISHING BONDS OR OTHER TAX-EXEMPT BONDS.**

This Section 3 applies only to transmission facilities which are under the Operational Control of the CAISO and are owned by a Local Furnishing Participating TO or other Tax Exempt Participating TO. Nothing in this CAISO Tariff or the TCA shall compel (and the CAISO is not authorized to request) any Local Furnishing Participating TO or other Tax Exempt Participating TO to violate: (1) restrictions applicable to facilities which are part of a system that was financed in whole or part with Local Furnishing Bonds or other Tax Exempt Debt or (2) the contractual restrictions and covenants regarding the use of any transmission facilities specified in Appendix B to the TCA.

Each Local Furnishing Participating TO and other Tax Exempt Participating TO shall cooperate with and provide all necessary assistance to the CAISO in developing a CAISO Protocol to meet the objectives of the first paragraph of this Section 3 and shall keep the CAISO fully informed of any changes necessary to that CAISO Protocol from time to time.

The CAISO shall implement the CAISO Protocol referred to in this Section 3 provided that the Local Furnishing **Participating** TOs and other Tax Exempt Participating TOs shall bear sole responsibility for the development of that CAISO Protocol including the interpretation of all relevant legislation and the tax and other financial consequences of its implementation.

**4 ROLES AND RESPONSIBILITIES.**

**4.1 [NOT USED]**

**4.2 Market Participant Responsibilities.**

**4.2.1 Comply with Dispatch Instructions and Operating Orders Issued.**

With respect to this Section 4.2, all Market Participants, including Scheduling Coordinators, Utility Distribution Companies, Participating Transmission Owners, Participating Generators, Participating Loads, **Balancing Authorities** (to the extent the agreement between the **Balancing Authority** and the CAISO so provides), and **MSS** Operators within the CAISO **Balancing Authority** Area and all System Resources shall comply fully and promptly with the Dispatch Instructions and operating orders, unless such operation would impair public health or safety. A Market Participant is not required to comply with a CAISO operating order if it is physically impossible for the Market Participant to perform in compliance with that operating order. Shedding Load for a System Emergency does not constitute impairment to public health or safety. The Market Participant shall immediately notify the CAISO of its inability to perform in compliance with the operating order.

**4.2.2 Implementation of Instructions.**

All Market Participants shall respond to CAISO instructions with no more delay than specified in the response times set out in the CAISO Tariff, Operating Procedures and Business Practice Manuals.

**4.3 Relationship Between CAISO and Participating TOs.**

**4.3.1 Nature of Relationship.**

Each Participating TO shall enter into ~~the~~ Transmission Control Agreement with the CAISO. In addition to converting Existing Rights in accordance with Section 16.1.4, and except as provided in Section 4.3.1.3, New Participating TOs will be required to turn over Operational Control of all facilities and Entitlements that: (1) satisfy the FERC's functional criteria for determining transmission facilities that should be placed under CAISO Operational Control; (2) satisfy the criteria adopted by the CAISO Governing Board identifying transmission facilities for which the CAISO should assume Operational Control; and (3) are the subject of mutual agreement between the CAISO and the Participating TOs. The CAISO shall notify Market Participants when an application has been received from a potential Participating TO and shall notify Market Participants that a New Participating TO has executed the Transmission Control Agreement and the date on which the CAISO will have Operational Control of the transmission facilities.

**4.3.1.1** In any year, a Participating TO applicant must declare its intent in writing to the CAISO to become a New Participating TO by January 1 or July 1, and provide the CAISO with an application within ~~fifteen~~ (15) days of such notice of intent. Applicable agreements will be negotiated and filed with the Federal Energy Regulatory Commission as soon as possible for the New Participating TO, such that the agreements can be effective the following July 1 or January 1.

**4.3.1.2** With respect to its submission of ~~Bids, including Self-~~Schedules to the CAISO, a New Participating TO shall become a Scheduling Coordinator or obtain the services of a Scheduling Coordinator that has been certified in accordance with Section 4.5.1, which Scheduling Coordinator shall not be the entity's Responsible Participating TO in accordance with the Responsible Participating Transmission Owner Agreement, unless mutually agreed, and shall operate in accordance with the CAISO Tariff and applicable agreements.

The New Participating TO shall assume responsibility for paying all Scheduling Coordinators' charges regardless of whether the New Participating TO elects to become a Scheduling Coordinator or obtains the services of a Scheduling Coordinator.

For the period between the effective date of this provision and ending December 31, 2010, the TAC Transition Date pursuant to Section 4.2 of Appendix F, Schedule 3, New Participating TOs that have joined the CAISO and turned over Operational Control of their facilities and Entitlements shall receive the IFM Congestion Credit in accordance with Section 11.2.1.5, which IFM Congestion Credit shall only be applicable to those facilities and Entitlements in existence on the effective date of the CAISO's initial assumption of Operational Control over the facilities and Entitlements of a New Participating TO.

**4.3.1.2.1** New Participating TOs shall complete TRTC Instructions for their Converted Rights as provided in Section 16.4.5. To the extent such Converted Rights derive from ETCs with Original Participating TOs, the New Participating TOs and the appropriate Original Participating TO shall develop the TRTC Instructions together.

**4.3.1.3** Western Path 15 shall be required to turn over to CAISO Operational Control only its rights and interests in the Path 15 Upgrade and shall not be required to turn over to CAISO Operational Control Central Valley Project transmission facilities, Pacific AC Intertie transmission facilities, California-Oregon Transmission Project facilities, or any other new transmission facilities or Entitlements not related to the Path 15 Upgrade. For purposes of the CAISO Tariff, Western Path 15 shall be treated with respect to revenue recovery as a Project Sponsor in accordance with Section 24.7.

**4.3.1.4** The capacity provided to the CAISO under the Transmission Exchange Agreement originally accepted by FERC in Docket No. ER04-688 is deemed to be CAISO Controlled Grid facilities and is subject to all terms and conditions of the CAISO Tariff.

**4.3.1.5** Each Participating TO must provide its Local Reliability Criteria to the CAISO, as required by the TCA.



A recipient of transmission service under an Existing Contract that chooses to become a Participating TO and convert its rights to CAISO transmission service, and the Participating TO which provides the transmission service under the Existing Contract, shall change the terms and conditions of the contract to provide that:

- Issued by: Charles A. King, PE, Vice President of Market Development and Program Management  
Issued on: December 21, 2007 Effective: March 31, 2008

- (d) The recipient of the transmission service received under an Existing Contract that has converted its rights to CAISO transmission service shall continue to have the obligation to pay the provider of the service for its transmission service at the rates provided in the Existing Contract, as they may change from time to time under the terms of the Existing Contract, or as mutually agreed between the contract parties, through the term of the contract, subject to the terms and conditions of the contract, including the rights of the parties to the contract to seek unilateral or other changes pursuant to Section 205 or Section 206 of the Federal Power Act and the FERC's Rules and Regulations or as otherwise provided by law.
- (e) Other aspects of such an Existing Contract may also need to be changed. If the parties to the contract are unable to negotiate such changes, they shall seek appropriate changes through the mechanisms provided within the contract, including the rights, if any, to seek unilateral or other changes pursuant to Section 205 or Section 206 of the Federal Power Act and the FERC's Rules and Regulations or as otherwise provided by law.

#### **4.4 Relationship Between CAISO and UDCs.**

##### **4.4.1 General Nature of Relationship Between CAISO and UDCs.**

The CAISO shall not be obliged to accept Bids which would require Energy to be transmitted to or from the Distribution System of a UDC directly connected to the CAISO Controlled Grid unless the relevant UDC has entered into a UDC Operating Agreement. The UDC Operating Agreement shall require UDCs to comply with the applicable provisions of this Section 4.4 and any other expressly applicable Sections of this CAISO Tariff as these may be amended from time to time.

The CAISO shall operate the CAISO Controlled Grid, and each UDC shall operate its Distribution System at all times in accordance with Good Utility Practice and in a manner that ensures safe and reliable operation. The CAISO shall, pursuant to its obligations set forth in this Section 4.4, have the right by agreement to delegate certain operational responsibilities to the relevant Participating TO or UDC pursuant to this Section 4.4. All information made available to UDCs by the CAISO shall also be made available to Scheduling Coordinators. All information pertaining to the physical state or operation, maintenance and failure of the UDC Distribution System affecting the operation of the CAISO Controlled Grid that is made available to the CAISO by the UDC shall also be made available to Scheduling Coordinators upon receipt of reasonable notice.

#### **4.4.2 UDC Responsibilities.**

Recognizing the CAISO's duty to ensure efficient use and reliable operation of the CAISO Controlled Grid consistent with the Applicable Reliability Criteria, each UDC shall:

- (a) operate and maintain its facilities, in accordance with applicable safety and reliability standards, regulatory requirements, applicable operating guidelines, applicable rates, tariffs, statutes and regulations governing their provision of service to their End-Use Customers and Good Utility Practice so as to avoid any material adverse impact on the CAISO Controlled Grid;
- (b) provide the CAISO Outage Coordination Office each year with a schedule of upcoming maintenance (including all equipment Outages) that has a reasonable potential of impacting the CAISO Controlled Grid in accordance with Section 9.3.6 and in accordance with the other scheduling procedures described in this CAISO Tariff;

- (c) coordinate with the CAISO, Participating TOs and Generators to ensure that CAISO Controlled Grid Critical Protective Systems, including relay systems, are installed and maintained in order to function on a coordinated and complementary basis with UDCs, Generators and Participating TOs protective systems.
- (d) coordinate any requests for emergency Outages on point of interconnection equipment directly with the appropriate CAISO Control Center as specified in Section 7.1.

#### **4.4.3 System Emergency Reports: UDC Obligations.**

Each UDC shall maintain all appropriate records pertaining to a System Emergency and each UDC shall cooperate with the CAISO in the preparation of an Outage review pursuant to Section 7.7.13.

#### **4.4.4 Coordination of Expansion or Modifications to UDC Facilities.**

Each UDC and the Participating TO with which it is interconnected shall coordinate in the planning and implementation of any expansion or modifications of a UDC's or Participating TO's system that will affect their transmission interconnection, the CAISO Controlled Grid or the transmission services to be required by the UDC. The Participating TO shall be responsible for coordinating with the CAISO.

#### **4.4.5 Information Sharing.**

##### **4.4.5.1 System Planning Studies.**

The CAISO, Participating TOs and UDCs shall share information such as projected Load growth and system expansions necessary to conduct necessary System Planning Studies to the extent that these may impact the operation of the CAISO Controlled Grid.

**4.4.5.2 System Surveys and Inspections.**

The CAISO and each UDC shall cooperate with each other in performing system surveys and inspections to the extent these relate to the operation of the CAISO Controlled Grid.

**4.4.5.3 Reports.**

The CAISO shall make available to the UDCs any public annual reviews or reports regarding performance standards, measurements and incentives relating to the CAISO Controlled Grid and shall also make available, upon reasonable notice, any such reports that the CAISO receives from the Participating TOs. Each UDC shall make available to the CAISO any public annual reviews or reports regarding performance standards, measurements and incentives relating to the UDC's Distribution System to the extent these relate to the operation of the CAISO Controlled Grid.

**4.4.5.4 Maintenance.**

The CAISO and UDCs shall develop an operating procedure to record requests received for Maintenance Outages by the CAISO and the completion of the requested maintenance and turnaround times. The UDCs shall maintain records that substantiate all maintenance performed on UDC facilities that are under the Operational Control of the CAISO. These records shall be made available to the CAISO upon receipt of reasonable notice.

**4.4.6 Installation of and Rights of Access to UDC Facilities.**

**4.4.6.1 Installation of Facilities.**

**4.4.6.1.1 Meeting Service Obligations.**

The CAISO and the UDC shall each have the right on reasonable notice to install or to have installed equipment (including metering equipment) or other facilities on the property of the other, to the extent that such installation is necessary for the installing party to meet its service obligations unless to do so would have a negative impact on the reliability of the service provided by the party owning the property.

**4.4.6.1.2 Governing Agreements for Installations.**

The CAISO and the UDC shall enter into agreements governing the installation of equipment or other facilities containing customary, reasonable terms and conditions.

**4.4.6.2 Access to Facilities.**

The UDCs shall grant the CAISO reasonable access to UDC facilities free of charge for purposes of inspection, repair, maintenance, or upgrading of facilities installed by the CAISO on the UDC's system, provided that the CAISO must provide reasonable advance notice of its intent to access UDC facilities and opportunity for UDC staff to be present. Such access shall not be provided unless the parties mutually agree to the date, time and purpose of each access. Agreement on the terms of the access shall not be unreasonably withheld.

**4.4.6.3 Access During Emergencies.**

Notwithstanding any provision in this Section 4.4 the CAISO may have access, without giving prior notice, to any UDC's equipment or other facilities during times of a System Emergency or where access is needed in connection with an audit function.

**4.4.7 Provision of Information for CRRs to Reflect Load Migration.**

Each UDC shall provide to the CAISO information as provided in Section 36.8.5.2 that enables the CAISO to perform transfers of CRRs that reflect Load Migration in a timely manner as required in Section 36.8.5.

**4.4.8 UDC Facilities under CAISO Control.**

The CAISO and each UDC shall enter into an agreement in relation to the operation and maintenance of the UDC's facilities that are under the CAISO's Operational Control.

**4.5 Responsibilities of a Scheduling Coordinator.**

**4.5.1 Scheduling Coordinator Certification.**

Only Scheduling Coordinators that the CAISO has certified as having met the requirements of this Section 4.5.1 may participate in the CAISO's Energy and Ancillary Services markets. Scheduling Coordinators offering Ancillary Services shall additionally meet the requirements of Section 8.

Each Scheduling Coordinator shall:

- (a) demonstrate to the CAISO's reasonable satisfaction that it is capable of performing the functions of a Scheduling Coordinator under this CAISO Tariff including (without limitation) the functions specified in Sections 4.5.3 and 4.5.4;
- (b) identify each of the Eligible Customers (including itself if it trades for its own account) which it is authorized to represent as Scheduling Coordinator and confirm that the metering requirements under Section 10 are met in relation to each Eligible Customer that it represents under this CAISO Tariff;
- (c) confirm that each of the End-Use Customers it represents is eligible for **service as a Direct Access End User**;
- (d) confirm that none of the Wholesale Customers it represents is ineligible for wholesale transmission service pursuant to the provisions of FPA Section 212(h);
- (e) demonstrate to the CAISO's reasonable satisfaction that it meets the financial criteria set out in Section 12;
- (f) enter into a Scheduling Coordinator Agreement with the CAISO; and
- (g) provide NERC tagging data.

**4.5.1.1 Procedure to become a Scheduling Coordinator.**

**4.5.1.1.1 Scheduling Coordinator Application.**

To become a Scheduling Coordinator, a Scheduling Coordinator Applicant must submit a completed application, as set forth in the applicable Business Practice Manual, to the CAISO by mail or in person. A Scheduling Coordinator Applicant may retrieve the application and necessary information from the CAISO Website.

**4.5.1.1.2 CAISO Information.**

The CAISO will provide the following information, in its most current form, on the CAISO Website. Upon a request by a Scheduling Coordinator Applicant, the CAISO will send the following information by electronic mail:

- (a) the Scheduling Coordinator Application Form, as set forth in the applicable Business Practice Manual;
- (b) the CAISO Tariff and Business Practice Manuals; and
- (c) forms for a credit application for Scheduling Coordinator Applicants applying for Unsecured Credit Limits and for provision of Financial Security to be provided pursuant to Section 12.

**4.5.1.1.3 Duplicate Information.**

If two or more Scheduling Coordinators apply simultaneously to register with the CAISO for a single meter or Meter Point for a CAISO Metered Entity or if a Scheduling Coordinator applies to register with the CAISO for a meter or Meter Point for a CAISO Metered Entity for which a Scheduling Coordinator has already registered, the CAISO will return the application with an explanation that only one Scheduling Coordinator may register with the CAISO for the meter or Meter Point in question and that a Scheduling Coordinator has already registered or that more than one Scheduling Coordinator is attempting to register for that meter or Meter Point. The CAISO will send the Scheduling Coordinator Applicant the name and address of the applicable Scheduling Coordinator or Scheduling Coordinator Applicant.



**4.5.1.1.4 Scheduling Coordinator Applicant Returns Application.**

At least 120 days before the proposed commencement of service, the Scheduling Coordinator Applicant must return a completed application form with the non-refundable application fee of \$5,000 to cover the application processing costs.

**4.5.1.1.5 Notice of Receipt.**

Within three (3) Business Days of receiving the application, the CAISO will send electronic notification to the Scheduling Coordinator Applicant that it has received the application and the non-refundable fee.

**4.5.1.1.6 CAISO Review of Application.**

Within ten (10) Business Days after receiving an application, the CAISO will provide electronic notification to the Scheduling Coordinator Applicant whether the Scheduling Coordinator Applicant has submitted all necessary information as set forth in Section 4.5.1, and the Scheduling Coordinator Application Form set forth in the applicable Business Practice Manual.

**4.5.1.1.6.1 Information Requirements.**

The Scheduling Coordinator Applicant must submit with its application:

- (a) the proposed date for commencement of service, which may not be less than 120 days after the date the application was filed, unless waived by the CAISO;
- (b) financial and credit information as set forth in Section 12; and
- (c) the prescribed non-refundable application fee of \$5,000.

**4.5.1.1.6.2 Scheduling Coordinator Applicant's Obligation for Contracts.**

A Scheduling Coordinator Applicant must certify that it is duly authorized to represent the Generators and Loads that are its Scheduling Coordinator Customers and must further certify that:

- (a) represented Generators have entered into Participating Generator Agreements or Qualifying Facility Participating Generator Agreements as provided in Appendices B.2 and B.3, respectively with the CAISO;
- (b) represented UDCs have entered into UDC Operating Agreements as provided in Appendix B.8 with the CAISO;
- (c) represented CAISO Metered Entities have entered into Meter Service Agreements for CAISO Metered Entities as provided in Appendix B.6 with the CAISO;
- (d) none of the Wholesale Customers it will represent are ineligible for wholesale transmission service pursuant to the provisions of the FPA Section 212(h); and
- (e) each End-Use Customer it will represent is eligible for service as a Direct Access End User pursuant to an established program approved by the California Public Utilities Commission or a Local Regulatory Authority.

**4.5.1.1.7 Deficient Application.**

In the event that the CAISO has determined that the application is deficient, the CAISO will send an electronic notification of the deficiency to the Scheduling Coordinator Applicant within ten (10) Business Days of receipt by the CAISO of the application explaining the deficiency and requesting additional information.

**4.5.1.1.7.1 Scheduling Coordinator Applicant's Additional Information.**

Once the CAISO requests additional information, the Scheduling Coordinator Applicant has five (5) Business Days, or such longer period as the CAISO may agree, to provide the additional material requested by the CAISO.

**4.5.1.1.7.2 No Response from Scheduling Coordinator Applicant.**

If the Scheduling Coordinator Applicant does not submit additional information within five (5) Business Days or the longer period referred to in Section 4.5.1.1.7.1, the application may be rejected by the CAISO.

**4.5.1.1.8 CAISO Approval or Rejection of an Application.**

**4.5.1.1.8.1 Approval or Rejection Notification.**

- (a) If the CAISO approves the application, it will send an electronic notification of approval. In addition, the CAISO will provide a Scheduling Coordinator Agreement, a Meter Service Agreement for Scheduling Coordinators as provided in Appendix B.7, if applicable, any other applicable agreements, and any required CAISO network connectivity security agreement for the Scheduling Coordinator Applicant's signature.
- (b) If the CAISO rejects the application, the CAISO will send an electronic notification of rejection stating one or more of the following grounds:
  - (i.) incomplete information;
  - (ii.) non-compliance with credit requirements pursuant to Section 12;
  - (iii.) non-compliance with third party contractual obligations;
  - (iv.) non-compliance with technical requirements; or
  - (v.) non-compliance with any other CAISO Tariff requirements.

Upon request, the CAISO will provide guidance as to how the Scheduling Coordinator Applicant can cure the grounds for the rejection.

**4.5.1.1.8.2 Time for Processing Application.**

The CAISO will make a decision whether to accept or reject the application within ten (10) Business Days of receipt of the application. If more information is requested, the CAISO will make a final decision within ten (10) Business Days of the receipt of all outstanding or additional information requested.

**4.5.1.1.9 Scheduling Coordinator Applicant's Response.**

**4.5.1.1.9.1 Scheduling Coordinator Applicant's Acceptance.**

If the CAISO accepts the application, the Scheduling Coordinator Applicant must return an executed Scheduling Coordinator Agreement, Meter Service Agreement for Scheduling Coordinators, if applicable, any other applicable agreements, and a completed credit application and Financial Security provided pursuant to Section 12, as applicable.

**4.5.1.1.9.2 Scheduling Coordinator Applicant's Rejection.**

**4.5.1.1.9.2.1 Resubmittal.**

If an application is rejected, the Scheduling Coordinator Applicant may resubmit its application at any time. An additional application fee will not be required for the second application submitted within six (6) months after the CAISO's issuance of a rejection notification.

**4.5.1.1.9.2.2 Appeal.**

The Scheduling Coordinator Applicant may also appeal against the rejection of an application by the CAISO. An appeal must be submitted within twenty (20) Business Days following the CAISO's issuance of a notification of rejection of its application.

**4.5.1.1.10 Post Application Procedures Prior to Final Certification.**

**4.5.1.1.10.1 Scheduling Coordinator's Administrative, Financial and Technical Requirements.**

The CAISO will not certify that a Scheduling Coordinator Applicant has become a Scheduling Coordinator until the Scheduling Coordinator Applicant has completed all of the following requirements:

- (a) provided the technical/operational information required to complete the Scheduling Coordinator Application Form as set forth in the applicable Business Practice Manual, and to comply with Section 10.3;
- (b) executed a network connectivity security agreement for access to the CAISO's software used in conducting business with the CAISO and compliance with the CAISO's system security requirements in a form approved by the CAISO, if applicable;
- (c) obtained and installed any required software for functional interface for Validation, Estimation and Editing meter values (VEE), if applicable;
- (d) undertaken required training and testing regarding the use of the CAISO's market, operating, and technical systems, as specified in the applicable Business Practice Manual;
- (e) provided its bank account information and arranged for Fed-Wire transfers;
- (f) provided an emergency plan specifying the procedures by which Scheduling Coordinator operations and contacts with the CAISO will be maintained during an emergency, containing information specified in the applicable Business Practice Manual; and
- (g) obtained and installed a computer link and any necessary software in order to communicate with the CAISO, as specified in the applicable Business Practice Manual.

Additional instructions for completing the foregoing requirements will be set forth in a Business Practice Manual posted on the CAISO Website.

**4.5.1.1.10.2 Application Closure after 12 Months.**

The CAISO will not certify a Scheduling Coordinator Applicant as a Scheduling Coordinator until the Scheduling Coordinator Applicant has completed all of the requirements for certification set forth in this Section 4.5 to the CAISO's satisfaction within twelve (12) months following the CAISO's acceptance of the application for processing. If the Scheduling Coordinator Applicant has not completed all the above referenced requirements within twelve (12) months after the CAISO's acceptance of the application, the CAISO may close the Scheduling Coordinator Applicant's application. The CAISO shall provide the Scheduling Coordinator Applicant thirty (30) days advance notice of its intent to close the application. If the CAISO closes the application, the Scheduling Coordinator Applicant must submit a new application and non-refundable application fee if it continues to request certification as a Scheduling Coordinator.

**4.5.1.1.11 Final Certification of Scheduling Coordinator Applicant.**

The Scheduling Coordinator Applicant will become a Scheduling Coordinator when:

- (a) its application has been accepted;
- (b) it has entered into a Scheduling Coordinator Agreement, a Meter Service Agreement for Scheduling Coordinators, if applicable, and any other applicable agreements with the CAISO;
- (c) it has met the credit requirements of Section 12; and
- (d) it has fulfilled all technical/operational requirements of Sections 4.5.4.1 and 4.5.1.1.10.1.

The CAISO will not certify a Scheduling Coordinator Applicant as a Scheduling Coordinator until the Scheduling Coordinator Applicant has completed all the above referenced requirements to the CAISO's satisfaction, at least ten (10) Business Days before the commencement of service.

**4.5.1.2 Scheduling Coordinator's Ongoing Obligations After Certification.**

**4.5.1.2.1 Scheduling Coordinator's Obligation to Report Changes.**

**4.5.1.2.1.1 Obligation to Report a Change in Filed Information.**

Each Scheduling Coordinator has an ongoing obligation to inform the CAISO of any changes to any of the information submitted by it to the CAISO as part of the application process, including any changes to the additional information requested by the CAISO and including but not limited to changes in its credit ratings. The applicable Business Practice Manual sets forth the procedures for changing the Scheduling Coordinator's information and timing of notifying the CAISO of such changes.

**4.5.1.2.1.2 Obligation to Report a Change in Credit Rating or Material Change in Financial Condition.**

The Scheduling Coordinator has an ongoing obligation to inform the CAISO within three (3) Business Days of any change to its credit ratings or any Material Change in Financial Condition.

**4.5.1.2.2 CAISO's Response for Failure to Inform.**

**4.5.1.2.2.1 Failure to Promptly Report a Material Change.**

If a Scheduling Coordinator fails to inform the CAISO of a material change in its information provided to the CAISO, which may affect the reliability or safety of the CAISO Controlled Grid, or the Financial Security of the CAISO, the CAISO may suspend or terminate the Scheduling Coordinator's rights under the CAISO Tariff in accordance with the terms of Sections 12 and 4.5 respectively. If the CAISO intends to terminate the Scheduling Coordinator's rights it shall file a notice of termination with FERC, if required by FERC rules, in accordance with the terms of the Scheduling Coordinator Agreement. Such termination shall be effective upon acceptance by FERC of a notice of termination, if required by FERC rules, or as otherwise permitted by FERC rules.

**4.5.1.3 Additional Scheduling Coordinator Identification Code Registration.**

A Scheduling Coordinator Applicant is granted one Scheduling Coordinator Identification Code (SCID) with its application fee. Requests may be made for additional Scheduling Coordinator Identification Codes. The fee for each additional Scheduling Coordinator Identification Code is \$500 per month, or as otherwise specified in Schedule 1 of Appendix F.

**4.5.2 Eligible Customers Represented by Scheduling Coordinators.**

Each Scheduling Coordinator shall within ten (10) days of a request by the CAISO provide the CAISO with a list of the Eligible Customers that it represents at the date of the request.

**4.5.3 Responsibilities of a Scheduling Coordinator.**

Each Scheduling Coordinator shall be responsible for:

**4.5.3.1 Obligation to Pay.**

Paying the CAISO's charges in accordance with this CAISO Tariff;

**4.5.3.2 Submit Bids and Interchange Schedules.**

**4.5.3.2.1** Submitting Bids, including Self-Schedules, for Energy in CAISO Markets that relate to the Market Participants for which it serves as Scheduling Coordinator;

**4.5.3.2.2** Submitting Interchange schedules prepared in accordance with all NERC, WECC and CAISO requirements, including providing E-Tags for all applicable transactions pursuant to WECC practices;

**4.5.3.3 Modifications in Demand and Supply.**

Coordinating and allocating modifications in Demand and exports and Generation and imports at the direction of the CAISO in accordance with this CAISO Tariff;

**4.5.3.4 Inter-SC Trades.**

Submitting any applicable Inter-SC Trades that the Market Participants intend to have settled through the CAISO Markets, pursuant to this CAISO Tariff;

**4.5.3.5 Tracking and Settling Trades.**

Tracking and settling all intermediate trades, including bilateral transactions and Inter-SC Trades, among the entities for which it serves as Scheduling Coordinator;



**4.5.3.6 Ancillary Services.**

Providing Ancillary Services in accordance with Section 8;

**4.5.3.7 Annual and Monthly Forecasts.**

Submitting to the CAISO its forecasted monthly and annual peak Demand in the CAISO **Balancing Authority Area** and/or its forecasted monthly and annual Generation capacity, as applicable; the forecasts shall be submitted to the CAISO electronically on a monthly basis by noon of the 18<sup>th</sup> working day of the month and shall cover a period of twelve (12) months on a rolling basis;

**4.5.3.8 Business Practice Manuals.**

Complying with all CAISO Business Practice Manuals and ensuring compliance by each of the Market Participants which it represents with all applicable provisions of the Business Practice Manuals;

**4.5.3.9 Interruptible Imports.** Identifying any Interruptible Imports included in its Bids or Inter-SC Trades;

**4.5.3.10 Participating Intermittent Resources.**

Submitting Bids, including Self-Schedules, for Participating Intermittent Resources consistent with the CAISO Tariff;

**4.5.3.11 Day-Ahead Market Published Schedules and Awards.**

Starting-up units and timely achieving specified operating levels in response to Dispatch Instructions, in accordance with CAISO published Schedules and awards;

**4.5.3.12 Financial Responsibility.**

Assuming financial responsibility for all Schedules, awards, HASP Intertie Schedules and Dispatch Instructions issued in the CAISO Markets, in accordance with the provisions of this CAISO Tariff; and

**4.5.3.13 Compliance with Environmental Constraints, Operating Permits and Applicable Law.**

Submitting Bids so that any service provided in accordance with such Bids does not violate environmental constraints, operating permits or applicable law. All submitted Bids must reflect resource limitations and other constraints as such are required to be reported to the CAISO Control Center.

**4.5.4 Operations of a Scheduling Coordinator.**

**4.5.4.1 Maintain Twenty-four (24) Hour Scheduling Centers.**

Each Scheduling Coordinator shall operate and maintain a twenty-four (24) hour, seven (7) days per week, scheduling center. Each Scheduling Coordinator shall designate a senior member of staff as its scheduling center manager who shall be responsible for operational communications with the CAISO and who shall have sufficient authority to commit and bind the Scheduling Coordinator.

**4.5.4.2 [NOT USED]**

**4.5.4.3 Dynamic Scheduling.**

Scheduling Coordinators may submit Bids for imports of Energy and Ancillary Services for which associated Energy is delivered from Dynamic System Resources located outside of the CAISO **Balancing Authority** Area, provided that: (a) such dynamic scheduling is technically feasible and consistent with all applicable NERC and WECC criteria and policies, (b) all operating, technical, and business requirements for dynamic scheduling functionality, as set forth in the Dynamic Scheduling Protocol in Appendix X or posted in standards on the CAISO Website, are satisfied, (c) the Scheduling Coordinator for the Dynamic System Resource executes a Dynamic Scheduling Agreement for Scheduling Coordinators as provided in Appendix B.5 with the CAISO for the operation of dynamic scheduling functionality, and (d) all affected Host **Balancing Authorities** and Intermediary **Balancing Authorities** each execute with the CAISO an Interconnected **Balancing Authority** Area Operating Agreement, a Dynamic Scheduling Host **Balancing Authority** Operating Agreement as provided in Appendix B.9, or a special operating agreement related to the operation of dynamic functionality.

**4.5.4.4 Termination of Scheduling Coordinator Agreement and Suspension of Certification.**

- (a) A Scheduling Coordinator's Scheduling Coordinator Agreement may be terminated by the CAISO on written notice to the Scheduling Coordinator:
  - (i) if the Scheduling Coordinator no longer meets the requirements for eligibility set out in Section 4.5 and fails to remedy the default within a period of five (5) Business Days after the CAISO has given written notice of the default;
  - (ii) if the Scheduling Coordinator fails to pay any sum under this CAISO Tariff and fails to remedy the default within a period of five (5) Business Days after the CAISO has given written notice of the default;
  - (iii) if the Scheduling Coordinator commits any other default under this CAISO Tariff or any of the CAISO Business Practice Manuals which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given it written notice of the default; or
  - (iv) if the Scheduling Coordinator does not **participate** in the CAISO's markets for Energy or Ancillary Services for a period of twelve (12) consecutive months and fails to comply with the provisions of Section 4.5.4.4.2 within 120 days after the CAISO has given it written notice of the CAISO's intent to terminate its Scheduling Coordinator Agreement.
- (b) A Scheduling Coordinator's Scheduling Coordinator Agreement may be terminated by the Scheduling Coordinator on sixty (60) days written notice to the CAISO, provided that such notice shall not be effective to terminate the Scheduling Coordinator Agreement until the Scheduling Coordinator has complied with all applicable requirements of Section 4.5.2.

- (c) The CAISO shall, following termination of a Scheduling Coordinator Agreement and within thirty (30) days of being satisfied that no sums remain owing by the Scheduling Coordinator under the CAISO Tariff, return or release to the Scheduling Coordinator, as appropriate, any money or credit support provided by such Scheduling Coordinator to the CAISO under Section 12.

**4.5.4.4.1** Pending the effective date of termination of service pursuant to Section 4.5.4.5.1, the CAISO will suspend the certification of a Scheduling Coordinator which has received a notice of termination under Section 4.5.4.4(a) and the Scheduling Coordinator will not be eligible to participate in the CAISO's Energy and Ancillary Services markets.

**4.5.4.4.2** A Scheduling Coordinator that has received a notice of the CAISO's intent to terminate its Scheduling Coordinator Agreement for failure to participate in the CAISO's markets for Energy and Ancillary Services for a period of twelve (12) consecutive months pursuant to Section 4.5.4.4(a)(iv) will avoid having its Scheduling Coordinator Agreement terminated and will have its certification reinstated if it completes the testing and training required for Scheduling Coordinator certification as set forth in the applicable Business Practice Manual within 120 days after the CAISO's issuance of the notice of intent to terminate.

**4.5.4.5 Notification of Termination.**

The CAISO shall, promptly after providing written notice of default to a Scheduling Coordinator as specified in Section 4.5.4.4(a), notify the Scheduling Coordinators that could be required to represent End User Eligible Customers of the Scheduling Coordinator under Section 4.5.4.6.2 if the default is not cured. The CAISO shall, as soon as reasonably practicable following the occurrence of any of the events specified in Section 4.5.4.4, notify the Scheduling Coordinator and the Scheduling Coordinators that could be required to represent End User Eligible Customers of the defaulting Scheduling Coordinator, and the UDCs, and shall as soon as reasonably practicable after the issuance of such notice of termination post such notice on the CAISO Website. Termination of the Scheduling Coordinator Agreement will automatically remove the Scheduling Coordinator's certification under Section 4.5 and Section 8.4.

**4.5.4.5.1 Filing of Notice of Termination.**

Any notice of termination given pursuant to Section 4.5.4.4 shall also be filed by the CAISO with FERC, if required by FERC rules, if the non-compliance is not remedied within the period specified in Section 4.5.4.4, and it shall be effective in accordance with FERC rules.

**4.5.4.6 Continuation of Service on Termination.**

**4.5.4.6.1 Option for Eligible Customers to choose a new Scheduling Coordinator.**

When the CAISO suspends the certification of a Scheduling Coordinator pending termination, Eligible Customers of the defaulting Scheduling Coordinator shall be entitled to select another Scheduling Coordinator to represent them. The CAISO will post notice of any suspension on the CAISO Website. Until the CAISO is notified by another Scheduling Coordinator that it represents an Eligible Customer of the defaulting Scheduling Coordinator, the Eligible Customer of the defaulting Scheduling Coordinator will receive interim service in accordance with Section 4.5.4.6.2.

**4.5.4.6.2 Interim Service.**

The CAISO shall maintain a list of Scheduling Coordinators willing to represent Eligible Customers of a defaulting Scheduling Coordinator, which list may be differentiated by UDC service area. Scheduling Coordinators who indicate to the CAISO their desire to be on such list shall be placed thereon by the CAISO in random order.

- (a) When the CAISO suspends the certification of a Scheduling Coordinator in accordance with Section 4.5.4.4.1, Eligible Customers of the defaulting Scheduling Coordinators shall be assigned to all Scheduling Coordinators on the list established pursuant to this Section 4.5.4.6.2 in a non-discriminatory manner to be established by the CAISO, and each Eligible Customer shall thereafter be represented by the Scheduling Coordinator to which it is assigned unless and until it selects another Scheduling Coordinator in accordance with Section 4.5.4.6.1, subject to this Section 4.5.4.6.2 subsection (b).

- (b) Unless the CAISO is notified by another Scheduling Coordinator that it represents an Eligible Customer of a defaulting Scheduling Coordinator within seven (7) days of the notice of termination being posted on the CAISO Website, the Scheduling Coordinator to which that Eligible Customer has been assigned in accordance with subsection (a) may establish a reasonable minimum period for service, not to exceed thirty (30) days.
- (c) In the event no Scheduling Coordinator indicates its willingness to represent Eligible Customers of a defaulting Scheduling Coordinator, the UDC **that** has the obligation to serve End-Use Customers of the Eligible Customer, if any, shall arrange to serve those End-Use Customers of such Eligible Customers that are located within the **service area** of the UDC. Such service will be provided in a manner consistent with that which the UDC provides, pursuant to the rules and tariffs of the Local Regulatory Authority, for its bundled End-Use **C**ustomers.
- (d) This Section shall not in any way require a UDC to provide or arrange for Scheduling Coordinator service for wholesale Eligible Customers.

#### **4.6 Relationship Between CAISO and Generators.**

The CAISO shall not accept Bids for any Generating Unit interconnected to the CAISO Controlled Grid, or to the Distribution System of a Participating TO or of a UDC otherwise than through a Scheduling Coordinator. The CAISO shall further not be obligated to accept Bids from Scheduling Coordinators relating to Generation from any Generating Unit interconnected to the CAISO Controlled Grid unless the relevant Generator undertakes in writing, **by entering into a Participating Generator Agreement or QF PGA with the CAISO,** to comply with all applicable provisions of this CAISO Tariff as they may be amended from time to time, including, without limitation, the applicable provisions of this Section 4.6 and Section 7.7.

**4.6.1 General Responsibilities.**

**4.6.1.1 Operate Pursuant to Relevant Provisions of CAISO Tariff.**

Participating Generators shall operate, or cause their facilities to be operated, in accordance with the relevant provisions of this CAISO Tariff, including, but not limited to, the operating requirements for normal and emergency operating conditions specified in Section 7 and the requirements for the dispatch and testing of Ancillary Services specified in Section 8.

- (i) Each Participating Generator shall immediately inform the CAISO, through its respective Scheduling Coordinator, of any change or potential change in the current status of any Generating Units that are under the Dispatch control of the CAISO. This will include, but not be limited to, any change in status of equipment that could affect the maximum output of a Generating Unit, the minimum load of a Generating Unit, the ability of a Generating Unit to operate with automatic voltage regulation, operation of the PSSs (whether in or out of service), the availability of a Generating Unit governor, or a Generating Unit's ability to provide Ancillary Services as required. Each Participating Generator shall immediately report to the CAISO, through its Scheduling Coordinator, any actual or potential concerns or problems that it may have with respect to Generating Unit direct digital control equipment, Generating Unit voltage control equipment, or any other equipment that may impact the reliable operation of the CAISO Controlled Grid.

- (ii) In the event that a Participating Generator cannot meet its Generation schedule as specified in the Day-Ahead Schedule, or comply with a Dispatch Instruction, whether due to a Generating Unit trip or the loss of a piece of equipment causing a reduction in capacity or output, the Participating Generator shall notify the CAISO, through its Scheduling Coordinator, at once. If a Participating Generator will not be able to meet a time commitment or requires the cancellation of a Generating Unit Start-Up, it shall notify the CAISO, through its Scheduling Coordinator, at once.

**4.6.1.2 Operate Pursuant to Relevant Operating Procedures.**

Participating Generators shall operate, or cause their Generating Units and associated facilities to be operated, in accordance with the relevant Operating Procedures and Business Practice Manuals established by the CAISO or, prior to the establishment of such procedures, the Operating Procedures established by the TO or UDC owning the facilities that interconnect with the Generating Unit of the Participating Generator.

**4.6.2 [NOT USED]**

**4.6.3 Participating Generators Connected to UDC Systems, Regulatory Must-Take Generation, and Qualifying Facilities.**

With regard to any Generating Unit directly connected to a UDC system, a Participating Generator shall comply with applicable UDC tariffs, interconnection requirements and generation agreements. With regard to a Participating Generator's Generating Units directly connected to a UDC system, the CAISO and the UDC will coordinate to develop procedures to avoid conflicting CAISO and UDC operational directives. With regard to Regulatory Must-Take Generation, the CAISO will honor applicable terms and conditions of existing agreements, including Existing QF Contracts, as specified in Section 4.6.3.2. Qualifying Facilities that are not Regulatory Must-Take Generation subject to an Existing QF Contract shall comply with the requirements applicable to Participating Generators, as specified in Section 4.6.3.3.



**4.6.3.1 Exemption for Generating Units Less Than One (1) MW.**

A Generator with a Generating Unit directly connected to a UDC system will be exempt from compliance with this Section 4.6 and Section 10.1.3 in relation to that Generating Unit provided that (i) the rated capacity of the Generating Unit is less than one (1) MW, and (ii) the Generator does not use the Generating Unit to participate in the CAISO Markets. This exemption in no way affects the calculation of or any obligation to pay the appropriate charges or to comply with all the other applicable Sections of this CAISO Tariff.

**4.6.3.2 Existing Agreements for Regulatory Must-Take Generation.**

Notwithstanding any other provision of this CAISO Tariff, the CAISO shall discharge its responsibilities in a manner that honors any contractual rights and obligations of the parties to existing agreements, including Existing QF Contracts, or final regulatory treatment, relating to Regulatory Must-Take Generation of which protocols or other instructions are notified in writing to the CAISO from time to time and on reasonable notice.

**4.6.3.3 Qualifying Facilities without Existing QF Contracts.**

The owner or operator of a Qualifying Facility that is not subject to an Existing QF Contract that the CAISO is required to honor pursuant to Section 4.6.3.2 shall be subject to all requirements applicable to Participating Generators pursuant to Section 4.6. The owner or operator of the Qualifying Facility may satisfy the requirements of this Section 4.6.3.3 by entering into a Qualifying Facility Participating Generator Agreement (QF PGA) with the CAISO, in which case it shall comply with the provisions of the QF PGA and Section 4.6.3.4. In order to be eligible to enter into the QF PGA, a Participating Generator must demonstrate to the CAISO that its Generating Unit has established QF status pursuant to PURPA and that (a) the Self-provided Load of the Participating Generator that is served by the QF either has contracted for and continues through the term of the QF PGA to have secured standby service from a UDC or MSS Operator under terms approved by the Local Regulatory Authority or FERC, as applicable, or (b) the Self-provided Load is curtailed concurrently with any Outage of the Generation serving that Self-provided Load in an amount sufficient to cover that Outage.

**4.6.3.4 Participating Generator with a QF PGA.**

A Participating Generator that is eligible for and has entered into a Qualifying Facility Participating Generator Agreement shall be subject to the provisions of this Section 4.6.3.4, as reflected in the terms of the QF PGA.

**4.6.3.4.1 Revenue Metering for a QF Subject to a QF PGA.**

In accordance with the terms of the QF PGA and Section 10.1.3.3, a Participating Generator that has entered into a QF PGA may net the revenue metering value for the Generation produced by each Net Scheduled QF listed in the QF PGA and the revenue metering value for the Demand of the Self-provided Load that is (i) served by the Net Scheduled QF and (ii) electrically located on the same side of the Point of Demarcation.

**4.6.3.4.2 Telemetry for a QF Subject to a QF PGA.**

A Participating Generator that has entered into a QF PGA may satisfy the provisions of Section 7.6.1(d) for the installation of telemetry by installing telemetry at the Point of Demarcation for the purpose of recording the net impact of the Net Scheduled QF upon the CAISO Controlled Grid; provided that the installed telemetry satisfies the technical, functional, and performance requirements for telemetry set forth in the CAISO Tariff and the applicable Business Practice Manual.

**4.6.3.4.3 Market and Settlement Processes for a QF Subject to a QF PGA.**

For bidding, scheduling, billing, and Settlement purposes regarding the Net Scheduled QF Self-provided Load of a Participating Generator that has entered into a QF PGA, measurements of Generation or Demand of the Net Scheduled QF shall be made at the Point of Demarcation. In all other respects, the Generation and Load of the Net Scheduled QF shall be subject to the applicable provisions of the CAISO Tariff regarding bidding, scheduling, billing, and Settlements.

**4.6.3.4.4 Operating Requirements for a QF Subject to a QF PGA.**

A Participating Generator that has entered into a QF PGA shall abide by CAISO Tariff provisions regarding the CAISO's ability to dispatch or curtail Generation from the Net Scheduled QF(s) listed in its QF PGA. The CAISO shall only dispatch or curtail a Net Scheduled QF of the Participating Generator: (a) to the extent the Participating Generator bids Energy or Ancillary Services from the Net Scheduled QF into the CAISO Markets or the Energy is otherwise available to the CAISO under Section 40, subject to the restrictions on operating orders set forth below; or (b) if the CAISO must dispatch or curtail the Net Scheduled QF in order to respond to an existing or imminent System Emergency or condition that would compromise CAISO **Balancing Authority** Area integrity or reliability as provided in Sections 7 and 7.6.1. The CAISO will not knowingly issue an operating order to a Participating Generator that has entered into a QF PGA that: (1) requires a Participating Generator to reduce its Generation below the delineated minimum operating limit, other than in a System Emergency; (2) conflicts with operating instructions provided to the CAISO by the Participating Generator; or (3) results in damage to the Participating Generator's equipment, provided that any such equipment limitation has been provided to the CAISO and incorporated in the Participating Generator's operating instructions provided to the CAISO. If the Participating Generator: (1) receives a Schedule which requires operation below the minimum operating limit, and (2) deviates from that Schedule to continue to operate at the minimum operating limit, it will not be subject to any penalties or sanctions as a result of operating at the minimum operating limit. The Participating Generator's consequences for deviating from Schedules in Real-Time will be governed by the CAISO Tariff.

The CAISO shall have the authority to coordinate and approve Generation Outage schedules for the Generating Unit(s) listed in a QF PGA, in accordance with the provisions of Section 9.

**4.6.4 Identification of Generating Units.**

Each Participating Generator shall provide data identifying each of its Generating Units and such information regarding the capacity and the operating characteristics of the Generating Unit as may be reasonably requested from time to time by the CAISO. All information provided to the CAISO regarding the operational and technical constraints in the Master File shall be accurate and actually based on physical characteristics of the resources except for the Pump Ramping Conversion Factor, which is configurable.

**4.6.5 WECC Requirements.**

**4.6.5.1 Participating Generator Performance Standard.**

Participating Generators shall, in relation to each of their Generating Units, meet all applicable WECC standards including any standards regarding governor response capabilities, use of power system stabilizers, voltage control capabilities and hourly Energy delivery. Unless otherwise agreed by the CAISO, a Generating Unit must be capable of operating at capacity registered in the CAISO Controlled Grid interconnection data, and shall follow the voltage schedules issued by the CAISO from time to time.

**4.6.5.2 Reliability Criteria.**

Participating Generators shall comply with the requirements of the WSCC Reliability Criteria Agreement, including the applicable WSCC Reliability Criteria set forth in Section IV of Annex A thereof. In the event that a Participating Generator fails to comply, it will be subject to the sanctions applicable to such failure. Such sanctions shall be assessed pursuant to the procedures contained in the WSCC Reliability Criteria Agreement. Each and all of the provisions of the WSCC Reliability Criteria Agreement are hereby incorporated by reference into this Section 4.6.5.2 as though set forth fully herein, and Participating Generators shall for all purposes be considered Participants as defined in that Agreement, and shall be subject to all of the obligations of Participants, under and in connection with the WSCC Reliability Criteria Agreement. The Participating Generators shall copy the CAISO on all reports supplied to the WECC in accordance with Section IV of Annex A of the WSCC Reliability Criteria Agreement.

**4.6.5.3 Payment of Sanctions.**

Each Participating Generator shall be responsible for payment directly to the WECC of any monetary sanction assessed against that Participating Generator by the WECC pursuant to the WSCC Reliability Criteria Agreement. Any such payment shall be made pursuant to the procedures specified in the WSCC Reliability Criteria Agreement.

**4.6.6 Forced Outages.**

Procedures equivalent to those set out in Section 9.3 shall apply to all Participating Generators in relation to Forced Outages.

**4.6.7 Recordkeeping; Information Sharing.**

**4.6.7.1 Requirements for Maintaining Records.**

Participating Generators shall provide to the CAISO such information and maintain such records as are reasonably required by the CAISO to plan the efficient use and maintain the reliability of the CAISO Controlled Grid.

**4.6.7.2 Providing Information to Generators.**

The CAISO shall provide to any Participating Generator, upon its request, copies of any operational assessments, studies or reports prepared by or for the CAISO (unless such assessments studies or reports are subject to confidentiality rights or any rule of law that prohibits disclosure) concerning the operations of such Participating Generator's Generating Units, including, but not limited to, reports on major Generation Outages, Available Transfer Capability, and Congestion.

**4.6.7.3 Preparation of Reports on Major Incidents.**

In preparing any report on a major incident the CAISO shall have due regard to the views of any Participating Generator involved or materially affected by such incident.

The CAISO and each Participating Generator shall have the obligation to inform each other, as promptly as possible, of any circumstance of which it becomes aware (including, but not limited to, abnormal temperatures, storms, floods, earthquakes, and equipment depletions and malfunctions and deviations from the Registered Data and operating characteristics) that is reasonably likely to threaten the reliability of the CAISO Controlled Grid or the integrity of the Participating Generator's facilities. The CAISO and each Participating Generator shall also inform the other as promptly as possible of any incident of which it becomes aware (including, but not limited to, equipment Outages, over-loads or alarms) which, in the case of a Participating Generator, is reasonably likely to threaten the reliability of the CAISO Controlled Grid or, in the case of the CAISO, is reasonably likely to adversely affect the Participating Generator's facilities. Such information shall be provided in a form and content which is reasonable in all the circumstances and sufficient to provide timely warning to the other party of the potential impact.

A Participating Generator shall, at the request of the CAISO and upon reasonable notice, provide access to its facilities and records (including those relating to communications, telemetry and direct control requirements) as necessary to permit the CAISO or a CAISO approved meter inspector to perform such testing as is necessary (i) to test the accuracy of any meters upon which the Participating Generator's compensation is based, or performance is measured, (ii) to test the Participating Generator's compliance with any performance standards pursuant to Section 4.6.5, or (iii) to obtain information relative to a Forced Outage, or (iv) for Participating Intermittent Resources, to ensure compliance with provisions relating to the Participating Intermittent Resource Export Fee.

**4.7 Relationship Between CAISO and Participating Loads.**

The CAISO shall only accept Bids for Supply of Energy or Ancillary Services or Submissions to Self-Provide Ancillary Services from Loads if such Loads are those of a Participating Load that has entered into a Participating Load Agreement with the CAISO and which meet standards adopted by the CAISO and published on the CAISO Website. The CAISO shall not accept submitted Bids for Supply of Energy or Ancillary Services from a Participating Load other than through a Scheduling Coordinator.

**4.8 Relationship Between CAISO and Eligible Intermittent Resources and Between the CAISO and Participating Intermittent Resources.**

The CAISO shall not accept Bids for an Eligible Intermittent Resource other than through a Scheduling Coordinator. Any Eligible Intermittent Resource that is not a Participating Intermittent Resource, or any Participating Intermittent Resource for which Bids are submitted shall be bid and settled as a Generating Unit for the associated Settlement Periods (except that the Forecast Fee shall apply in such Settlement Periods).

**4.9 Metered Subsystems.**

**4.9.1 General Nature of Relationship Between CAISO and MSS.**

**4.9.1.1** An entity that is determined by the CAISO to qualify as a Metered Subsystem and that undertakes in writing, by entering into a Metered Subsystem Agreement with the CAISO, to comply with all applicable provisions of the CAISO Tariff as specified in that MSS Agreement as they may be amended from time to time, including, without limitation, the applicable provisions of this Section 4.9, shall be considered an MSS Operator and shall have the rights and obligations set forth in this Section 4.9. The CAISO shall not be obligated to accept Bids that would require Energy to be transmitted to or from a Metered Subsystem unless the MSS Agreement of the MSS Operator of the Metered Subsystem has become effective.

#### **4.9.2 Coordination of Operations.**

Each MSS Operator shall operate its MSS at all times in accordance with Good Utility Practice and Applicable Reliability Criteria, including WECC and NERC criteria, and in a manner which ensures safe and reliable operation. All information pertaining to the physical state or operation, maintenance and failure of the MSS affecting the operation of the CAISO **Balancing Authority** Area that is made available to the CAISO by the MSS Operator shall also be made available to Scheduling Coordinators, provided that the CAISO shall provide reasonable notice to the MSS Operator. The CAISO shall not be required to make information available to the MSS Operator other than information that is made available to Scheduling Coordinators.

#### **4.9.3 Coordinating Maintenance Outages of MSS Facilities.**

Each MSS Operator shall make appropriate arrangements to coordinate Outages of Generating Units. Each MSS Operator shall make appropriate arrangements to coordinate Outages of transmission facilities forming part of its MSS that will have an effect, or are reasonably likely to have an effect, on any interconnection between the MSS and the system of a Participating TO, prior to the submission by that Participating TO of its Maintenance Outage requirements under Section 9.3. The CAISO will coordinate Outages of other Participating TOs transmission facilities that may affect the MSS.

#### **4.9.4 MSS Operator Responsibilities.**

The MSS Operator's **MSS Agreement with** the CAISO shall obligate the MSS Operator to comply with all provisions of the CAISO Tariff, as amended from time to time, applicable to the UDCs, including, without limitation, the applicable provisions of Section 4.4 and Section 7.7. In addition, recognizing the CAISO's responsibility to promote the efficient use and reliable operation of the CAISO Controlled Grid and the **CAISO Balancing Authority** Area consistent with the Applicable Reliability Criteria, each MSS Operator shall:



**4.9.4.1** operate and maintain its facilities, in accordance with applicable safety and reliability standards, regulatory requirements, applicable operating guidelines, applicable rates, tariffs, statutes and regulations governing their provision of service to their End-Use Customers and Good Utility Practice so as to avoid any material adverse impact on the CAISO Controlled Grid, it being understood that, if the MSS Operator does not so operate and maintain its facilities and the CAISO concludes, after notice is provided to the MSS Operator, that such failure impairs or threatens to impair the reliability of the CAISO Controlled Grid, the CAISO may suspend MSS status, in accordance with this Section 4.9, until the MSS Operator demonstrates the ability and willingness to so operate and maintain its facilities;

**4.9.4.2** provide the CAISO Outage Coordination Office each year with a schedule of upcoming maintenance of facilities forming part of the MSS that will affect or is reasonably likely to affect the CAISO Controlled Grid in accordance with Section 9.3.6;

**4.9.4.3** coordinate with the CAISO, Participating TOs and Generators to ensure that CAISO Controlled Grid Critical Protective Systems, including relay systems, are installed and maintained in order to function on a coordinated and complementary basis with the protective systems of the MSS, Participating TOs and Generators and notify the CAISO as soon as is reasonably possible of any condition of which it becomes aware that may compromise the CAISO Controlled Grid **Critical** Protective Systems;

**4.9.4.4** be responsible for any Reliability Must-Run Generation and Voltage Support required for reliability of the MSS, including the responsibility for any costs of such Reliability Must-Run Generation, and Voltage Support and may satisfy this requirement through Generating Units owned by the MSS **Operator** or under contract to the MSS **Operator**;

**4.9.4.5** be responsible for Black Start requirements for reliability of the MSS, however, if the MSS **Operator** can self-provide this requirement, the MSS **Operator** shall not pay its pro rata share of the Black Start requirement in accordance with Section 11; and

**4.9.4.6** be responsible for Congestion Management and transmission line Outages within or at the boundary of the MSS, and all associated costs of actions the MSS Operator has to take to resolve such Congestion internal to the MSS and not be responsible for Congestion Management elsewhere except to the extent that a Scheduling Coordinator is delivering Energy, Ancillary Services, or RUC Capacity to or from the MSS. An MSS Operator must notify and communicate with the CAISO regarding transmission line Outages to the extent such Outages impact the CAISO Controlled Grid.

**4.9.5 Scheduling by or on behalf of a MSS Operator.**

All Bids, including but not limited to Self-Schedules, submitted on behalf of an MSS Operator for the delivery of Energy and Ancillary Services to Loads connected to the MSS and for the delivery of Energy and Ancillary Services from Generating Units forming part of the MSS or System Units shall be submitted by a Scheduling Coordinator that complies with all applicable provisions of the CAISO Tariff, which Scheduling Coordinator may be the MSS Operator, provided that the MSS Operator complies with all applicable requirements for Scheduling Coordinators. A Scheduling Coordinator shall separately identify Bids that it submits on behalf of an MSS Operator.

**4.9.5.1** Without limiting the foregoing, the Scheduling Coordinator for the MSS must submit gross generation information for the System Unit, Generating Unit, and information regarding imports, exports and Gross Loads to the CAISO in the format and in accordance with the timelines applicable to other Scheduling Coordinators.

**4.9.5.2** The Scheduling Coordinator for the MSS will designate, in discrete quantities and with prices for both Ancillary Services and Energy: (1) Bids in the Day-Ahead Market and HASP (including Bids for internal Generation and internal Demand within the MSS), (2) Submissions to Self-Provide Ancillary Services or Bids for Regulation, Spinning Reserve, and Non-Spinning Reserve, capacity and associated Bid for Energy, or (3) any feasible combination thereof.

**4.9.5.3 MSS Demand Forecast.**

The Scheduling Coordinator for the MSS shall provide CAISO with Demand forecasts of the MSS. To the extent that the Scheduling Coordinator does not provide requisite Demand Forecast for the MSS it represents, the CAISO shall produce a Demand Forecast for each MSS Load Take-Out Point.

**4.9.6 System Emergencies.**

**4.9.6.1** The CAISO has authority to suspend MSS control and direct, via communications with the MSS Operator, the operation of Generating Units within the MSS, including Generating Units that may comprise a System Unit, if such control is necessary to maintain CAISO Controlled Grid reliability.

**4.9.6.2** If Load Shedding is required to manage System Emergencies, the CAISO will determine the amount and location of Load to be reduced pursuant to Section 7.7.5.1 and 7.7.5.2. Each MSS Operator shall be responsible for notifying its customers and Generators connected to its system of curtailments and service interruption.

**4.9.6.3 System Emergency Reports: MSS Obligations.**

**4.9.6.3.1** Each MSS Operator shall maintain all appropriate records pertaining to a System Emergency.

**4.9.6.3.2** Each MSS Operator shall cooperate with the CAISO in the preparation of an Outage review pursuant to Section 7.7.13.

**4.9.7 Coordination of Expansion or Modifications to MSS Facilities.**

Each MSS Operator and any Participating TO with which its system is interconnected, if applicable, shall coordinate in the planning and implementation of any expansion or modifications of a MSS's or Participating TO's system that will affect their transmission interconnection, the CAISO Controlled Grid or the transmission services to be required by the MSS Operator. The MSS Operator and any Participating TO with which the MSS is interconnected shall be responsible for coordinating with the CAISO.

**4.9.8 Ancillary Services Obligations for MSS.**

**4.9.8.1** Ancillary Services Obligations will be allocated to the Scheduling Coordinator **bidding or** scheduling Load within a MSS in accordance with the CAISO Tariff. The CAISO shall have the right to call upon the Self-Provided Ancillary Service of a Scheduling Coordinator for an MSS or procured by the CAISO from such Scheduling Coordinator in accordance with the CAISO Tariff. The Scheduling Coordinator representing the MSS Operator may provide a Submission to **Self-Provide an Ancillary Service** or **bid** (including self-provide) Ancillary Services from a System Unit or from individual Generating Units or Participating Loads in the MSS. Alternatively, the Scheduling Coordinator representing the MSS may purchase Ancillary Services from the CAISO or third parties to meet all or part of its Ancillary Services Obligations in accordance with the CAISO Tariff.

**4.9.8.2** If the MSS Operator desires to follow internal Load with a System Unit or Generating Units in the MSS, and also to provide Regulation to the CAISO, the MSS must provide adequate telemetry consistent with the CAISO Tariff and all applicable standards to allow performance in response to CAISO AGC signals to be measured at the interconnection of the MSS to the CAISO Controlled Grid.

**4.9.9 [NOT USED]**

**4.9.10 Information Sharing.**

**4.9.10.1 System Planning Studies and Forecasts.**

The CAISO, the MSS Operator and Participating TOs shall share information such as projected Load growth and system expansions necessary to conduct necessary system planning studies to the extent that these may impact the operation of the CAISO **Balancing Authority** Area. Each MSS Operator shall provide to the CAISO annually its ten-year forecasts of Demand growth, internal Generation, and expansion of or replacement for any transmission facilities that are part of the MSS that will or may significantly affect any point of interconnection between the MSS and the CAISO Controlled Grid. Such forecasts shall be provided on the date that UDCs are required to submit forecasts to the CAISO under Section 4.4.5.1. Each MSS Operator or each Scheduling Coordinator for an MSS Operator shall also submit weekly and monthly peak Demand Forecasts in accordance with the CAISO's Business Practice Manuals.

**4.9.10.2 System Surveys and Inspections.**

The CAISO and each MSS Operator shall cooperate with each other in performing system surveys and inspections to the extent these relate to the operation of the CAISO **Balancing Authority** Area.

**4.9.10.3 Reports.**

**4.9.10.3.1** The CAISO shall make available to each MSS Operator any public annual reviews or reports regarding performance standards, measurements and incentives relating to the CAISO Controlled Grid and shall also make available, upon reasonable notice, any such reports that the CAISO receives from Participating TOs. Each MSS Operator shall make available to the CAISO any public annual reviews or reports regarding performance standards, measurements and incentives relating to the MSS's Distribution System to the extent these relate to the operation of the CAISO Controlled Grid.

**4.9.10.3.2** The CAISO and the MSS Operators shall develop an operating procedure to record requests received for Maintenance Outages by the CAISO and the completion of the requested maintenance and turnaround times.

**4.9.10.3.3** Each MSS Operator shall promptly provide such information as the CAISO may reasonably request concerning the MSS Operator's operation of the MSS to enable the CAISO to meet its responsibility under the CAISO Tariff to conduct reviews and prepare reports following major Outages. Where appropriate, the CAISO will provide appropriate assurances that the confidentiality of commercially sensitive information shall be protected. The CAISO shall have no responsibility to prepare reports on Outages that affect customers on the MSS, unless the Outage also affects customers connected to the system of another entity within the CAISO **Balancing Authority** Area. The MSS Operator shall be solely responsible for the preparation of any reports required by any governmental entity or the WECC with respect to any Outage that affects solely customers on the MSS.

**4.9.10.3.4 Reliability Information.**

Each MSS Operator shall inform the CAISO, and the CAISO shall inform each MSS Operator, in each case as promptly as possible, of any circumstance of which it becomes aware (including, but not limited to, abnormal temperatures, storms, floods, earthquakes, and equipment depletions and malfunctions and deviations from Registered Data and operating characteristics) that is reasonably likely to threaten the reliability of the CAISO Controlled Grid or the integrity of the MSS respectively. Each MSS Operator and the CAISO each shall also inform the other as promptly as possible of any incident of which it becomes aware (including, but not limited to, equipment Outages, over-loads or alarms) which, in the case of the MSS Operator, is reasonably likely to threaten the reliability of the CAISO Controlled Grid, or, in the case of the CAISO, is reasonably likely to adversely affect the MSS. Such information shall be provided in a form and content which is reasonable in all the circumstances, sufficient to provide timely warning to the entity receiving the information of the threat and, in the case of the CAISO, not unduly discriminatory with respect to the CAISO's provision of similar information to other entities.

**4.9.10.3.5 Forms.**

The CAISO shall, in consultation with MSS Operators, jointly develop and, as necessary, revise, any necessary forms and procedures for collection, study, treatment, and transmittal of system data, information, reports and forecasts.

**4.9.10.4** Each MSS Operator shall provide to the CAISO information as provided in Section 36.8.5.2 that enables the CAISO to perform transfers of CRRs to reflect Load Migration in a timely manner as required in Section 36.8.5.

**4.9.11 Installation of and Rights of Access to MSS Facilities.**

**4.9.11.1 Installation of Facilities.**

**4.9.11.1.1 Meeting Service Obligations.**

The CAISO and each MSS Operator shall each have the right, if mutually agreed, on reasonable notice to install or to have installed equipment (including metering equipment) or other facilities on the property of the other, to the extent that such installation is necessary for the installing party to meet its service obligations unless to do so would have a negative impact on the reliability of the service provided by the party owning the property.

**4.9.11.1.2 Governing Agreements for Installations.**

The CAISO and the MSS Operator shall enter into agreements governing the installation of equipment or other facilities containing customary and reasonable terms and conditions.

**4.9.11.2 Access to Facilities.**

Each MSS Operator shall grant the CAISO reasonable access to MSS facilities free of charge for purposes of inspection, repair, maintenance, or upgrading of facilities installed by the CAISO on the MSS's system, provided that the CAISO must provide reasonable advance notice of its intent to access MSS facilities. Such access shall not be provided unless the parties mutually agree to the date, time and purpose of each access. Agreement on the terms of the access shall not be unreasonably withheld.

**4.9.11.3 Access During Emergencies.**

Notwithstanding any provision in this Section 4.9, the CAISO may have access, without giving prior notice, to any MSS Operator's equipment or other facilities during times of a System Emergency or where access is needed in connection with an audit function.

**4.9.12 MSS System Unit.**

**4.9.12.1** A MSS Operator may aggregate one or more Generating Units and/or Participating Loads as a System Unit. A System Unit must be modeled as an aggregated Generating Unit and must provide a set of Generation Distribution Factors. Except as specifically provided in the MSS Agreement referred to in Section 4.9.1.1, all provisions of the CAISO Tariff applicable to Participating Generators and to Generating Units (and, if the System Unit includes a Load, to Participating Loads), shall apply fully to the System Unit and the Generating Units and/or Loads included in it. The MSS Operator's MSS Agreement with the CAISO in accordance with Section 4.9.1.1 shall obligate the MSS Operator to comply with all provisions of the CAISO Tariff, as amended from time to time, applicable to the System Unit, including, without limitation, the applicable provisions of Sections 4.6.1 and 7.7. In accordance with Section 7.6.1, the CAISO will obtain control over the System Unit, not the individual Generating Unit, except for Regulation, to comply with Section 4.6.

**4.9.12.2** Without limiting the generality of Section 4.9.12.1, a MSS Operator that owns or has an entitlement to a System Unit:

**4.9.12.2.1** is required to have a direct communication link to the CAISO's EMS satisfying the requirements applicable to Generating Units owned by Participating Generators, or Participating Loads, as applicable, for the System Unit and the individual resources that make up the System Unit;

**4.9.12.2.2** shall provide resource-specific information regarding the Generating Units and Loads comprising the System Unit to the CAISO through telemetry to the CAISO's EMS;

**4.9.12.2.3** shall obtain CAISO certification of the System Unit's Ancillary Service capabilities in accordance with Sections 8.4 and 8.9 before the Scheduling Coordinator representing the MSS may self-provide its Ancillary Service Obligations or bid into the CAISO Markets from that System Unit;

**4.9.12.2.4** shall provide the CAISO with control over the AGC of the System Unit, if the System Unit is supplying Regulation to the CAISO or is designated to self-provide Regulation; and



**4.9.12.2.5** shall install CAISO certified meters on each individual resource or facility that is aggregated to a System Unit.

**4.9.12.3** Subject to Section 4.9.12.4, the CAISO shall have the authority to exercise control over the System Unit to the same extent that it may exercise control pursuant to the CAISO Tariff over any other Participating Generator, Generating Unit or, if applicable, Participating Load, but the CAISO shall not have the authority to direct the MSS Operator to adjust the operation of the individual resources that make up the System Unit to comply with directives issued with respect to the System Unit.

**4.9.12.4** When and to the extent that Energy from a System Unit is self-scheduled to provide for the needs of Loads within the MSS and is not being bid to the CAISO Markets, the CAISO shall have the authority to dispatch the System Unit only to avert or respond to a circumstance described in the third sentence of Section 7.6.1 or, pursuant to Section 7.7.2.3, to a System Emergency.

**4.9.13 MSS Elections and Participation in CAISO Markets.**

MSS Operators must make an election or choice on four (4) issues that govern the manner in which the MSS participates in the CAISO Markets. The MSS Operator must choose either: (i) net Settlements or gross Settlements, (ii) to Load follow or not Load follow with its generating resources, (iii) to have its Load participate in the RUC procurement process or not have its Load participate in the RUC procurement process; and (iv) whether or not to charge the CAISO for their Emissions Costs as provided in Section 11.7.4. The MSS Operator shall make annual elections regarding these four (4) sets of options pursuant to the timeline specified for such elections in the Business Practice Manuals.

The default for the first twelve months after this Section 4.9.13 and Section 36 become effective shall be: 1) non Load following; 2) gross Settlement; and 3) to opt-in to the RUC procurement process. In subsequent years, the prior year election will be the default if the MSS Operator does not make a timely election, unless the MSS Operator has been found to have violated Load following or RUC opt out requirements and is no longer eligible for making such elections. If the MSS Operator fails to elect net Settlement as specified in Section 11.2.3.2, the default mechanism for all MSS Settlements shall be gross Settlement as specified in Section 11.2.3.1.

The Load following, net or gross Settlement, and RUC procurement elections of an MSS Operator change certain aspects of, but do not preclude, the participation of the MSS in the CAISO Markets. An MSS Operator may: (i) bid to supply Energy to, or purchase Energy from, the CAISO Markets, (ii) bid to provide available capacity in RUC, and (iii) bid or make a Submission to Self-Provide an Ancillary Service from a System Unit or from individual Generating Units or Participating Loads within the MSS. An MSS Operator also may purchase Ancillary Services from CAISO or third parties to meet its Ancillary Service Obligations under the CAISO Tariff.

#### **4.9.13.1 Gross or Net Settlement.**

An MSS Operator has the option to settle with the CAISO on either a gross basis or a net basis for its Load and generating resources. This election shall be made annually for a period consistent with annual CRR Allocation. If the MSS Operator elects net Settlement, then CRRs would be allocated on MSS net Load and the MSS may choose the MSS LAP as its CRR Sink in the first tiers of CRR Allocation. If the MSS Operator elects gross Settlement, then CRRs would be allocated on a gross Load basis and the MSS may not choose the MSS LAPs as its CRR Sink in the first tiers of CRR Allocation.

#### **4.9.13.2 Load-Following or Non Load-Following Election.**

The MSS Operator has the option to elect to operate a System Unit of Generating Units in the MSS to follow its Load, provided that: (a) the Scheduling Coordinator for the MSS Operator shall remain responsible for purchases of Energy in accordance with the CAISO Tariff if the MSS Operator does not operate its System Unit or Generating Units and bid or schedule imports into the MSS, to match the metered Demand in the MSS and exports from the MSS; and (b) if the deviation between Generation and imports into the MSS and metered Demand and exports from the MSS exceeds the MSS Deviation Band, then the Scheduling Coordinator for the MSS Operator shall pay the additional amounts specified in Section 11.7. If an MSS Operator elects Load-following and net Settlements, all generating resources

within the MSS must be designated as Load-following resources. If an MSS Operator elects Load-following and gross Settlements, generating resources within the MSS can be designated as either Load-following or non Load-following resources. Consistent with these requirements, the MSS Operator may also modify the designation of generating resources within the MSS within the timing requirements specified for such Master File changes as described in the Business Practice Manuals.

If the MSS Operator has elected gross Settlement and is a Load-following MSS: (i) it must designate in the Master File which of its generating resources are Load-following resources, (ii) it must comply with the additional bidding requirements in Section 30.5.2.5, and (iii) the generation resources designated as Load-following resources cannot set Real-Time prices. However, Load-following resources will be eligible to receive Bid Cost Recovery to ensure that the price paid for Energy dispatched by the CAISO is not less than the MSS Operator's accepted Bid price. Bid Cost Recovery for a Load-following MSS resource is only applicable to generation capacity provided to the CAISO Markets by that MSS resource and is not applicable for the generating capacity that is designated or used by an MSS Operator to follow its own Load.

An MSS Operator may designate RMR Units as Load-following. Load-following RMR Units must be available to the CAISO for Dispatch up to the Maximum Net Dependable Capacity specified in the RMR Contract. Energy delivered in response to an RMR Dispatch shall be accounted for as a delivery from the MSS to the CAISO for the purposes of determining if the MSS Operator followed its metered Demand and exports from the MSS as described in this Section 4.9.13.2 except that Energy from an RMR Unit in a Day-Ahead Schedule can be used for Load-following to satisfy Day-Ahead scheduled Demand like any other non-RMR Unit Load-following resource. If no RMR Dispatch is received for a Load-following RMR Unit, such Load-following RMR Unit may participate in the CAISO Markets as any other non-RMR Unit Load-following resource subject to Section 30.5.2.5.

**4.10 Candidate CRR Holder and CRR Holder Registration.**

Only entities that are registered and qualified as a Candidate CRR Holder or CRR Holder shall: 1) submit nominations to CRR Allocations; 2) submit Bids to CRR Auctions; and 3) register as a CRR Holder through the Secondary Registration System. In order to be registered and qualified as Candidate CRR Holders or CRR Holders, entities must have met the all of the requirements specified in this Section 4.10.

**4.10.1 Procedure to Become a Candidate CRR Holder.**

**4.10.1.1 Candidate CRR Holder Application.**

To become a Candidate CRR Holder, a Candidate CRR Holder applicant must submit a completed written application, as provided in the applicable form posted on the CAISO Website, to the CAISO by mail, or in person. A Candidate CRR Holder applicant may retrieve the application and necessary information from the CAISO Website.

**4.10.1.2 CAISO Information.**

The CAISO will provide the following information, in its most current form, on the CAISO Website and, upon request by a Candidate CRR Holder applicant, the CAISO will send the requested information by electronic mail:

- (a) the Candidate CRR Holder application form;
- (b) the CAISO Tariff and Business Practice Manuals; and
- (c) an application for an Unsecured Credit Limit for Candidate CRR Holder applicants requesting an Unsecured Credit Limit in lieu of another form of Financial Security.

**4.10.1.3 Candidate CRR Holder Applicant Submits Application.**

At least sixty (60) days before the proposed commencement of the CRR Allocation or CRR Auction, or the effective date of the CRR transfer through the Secondary Registration System, in which a Candidate CRR Holder desires to participate as applicable, the Candidate CRR Holder applicant must return a completed application form with the non-refundable application fee set by the CAISO Governing Board to cover the application processing costs and the costs of furnishing the CAISO Tariff and other documents.

**4.10.1.4 Notice of Receipt.**

Within three (3) Business Days of receiving the application, the CAISO will send a written notification to the Candidate CRR Holder applicant that it has received the application and the non-refundable fee.

**4.10.1.5 CAISO Review of Application.**

Within ten (10) Business Days after receiving an application, the CAISO will notify the Candidate CRR Holder applicant whether the Candidate CRR Holder applicant has fulfilled all necessary information as set forth in Section 4.10.1. If the Candidate CRR Holder applicant fails to fulfill all application requirements within a year from the date that the CAISO acknowledges receipt of the Candidate CRR Holder application, the application will be nullified and the applicant will be required to resubmit a new application in order to reinstate its status as a Candidate CRR Holder applicant.

**4.10.1.5.1 Information Requirements.**

The Candidate CRR Holder applicant must submit with its application:

- (a) the proposed date for commencement of the CRR Allocation, CRR Auction or Secondary Registration System in which the applicant intends to qualify to participate, which may not be less than sixty (60) days after the date the application was filed, unless waived by the CAISO;
- (b) Financial Security information as set forth in Section 12;
- (c) proof of completion of CRR training or expected completion of CRR training; and
- (d) the prescribed non-refundable application fee.

**4.10.1.5.2 Candidate CRR Holder Load Serving Entity Certifications.**

A Candidate CRR Holder applicant that intends to obtain CRRs through the CRR Allocation process must certify that it qualifies as a Load Serving Entity as defined in the CAISO Tariff. A Candidate CRR Holder applicant that intends to participate in the CRR Allocation for load it serves located outside the CAISO **Balancing Authority** Area must certify that it qualifies as that load's load serving entity and prior to actual participation in the CRR Allocation will also be required to fulfill the requirements in Section 36.9.

**4.10.1.6 Deficient Application.**

In the event that the CAISO has determined that the Candidate CRR Holder application as submitted is deficient the CAISO will send a written notification of the deficiency to the Candidate CRR Holder applicant within ten (10) Business Days of receipt by the CAISO of the application explaining the deficiency and requesting additional information.

**4.10.1.6.1 Candidate CRR Holder Applicant's Additional Information.**

Once the CAISO requests additional information, the Candidate CRR Holder applicant has five (5) Business Days, or such longer period as the CAISO may agree, to provide the additional material requested by the CAISO.

**4.10.1.6.2 No Response from Candidate CRR Holder Applicant.**

If the Candidate CRR Holder applicant does not submit additional information within five (5) Business Days or the longer period referred to in Section 4.10.1.6.1, the application may be rejected by the CAISO.

**4.10.1.7 CAISO Acceptance or Rejection of an Application.**

**4.10.1.7.1 Acceptance or Rejection Notification.**

- (a) If the CAISO accepts the application, it will send a written notification to the Candidate CRR Holder applicant stating that its application has been accepted.
- (b) If the CAISO rejects the application, the CAISO will send a rejection letter stating one or more of the following grounds:
  - (i.) incomplete information;
  - (ii.) non-compliance with Financial Security requirements; or
  - (iii.) non-compliance with any other CAISO Tariff requirements.

Upon request, the CAISO will provide guidance as to how the Candidate CRR Holder applicant can cure the grounds for the rejection.

**4.10.1.7.2 Time for Processing Application.**

The CAISO will make a decision whether to accept or reject the application within ten (10) Business Days of receipt of the application. If more information is requested, the CAISO will make a final decision within ten (10) Business Days of the receipt of all outstanding or additional information requested.

**4.10.1.8 Candidate CRR Holder Applicant's Response.**

**4.10.1.8.1 Candidate CRR Holder Applicant's Acceptance.**

If the CAISO accepts the application, the Candidate CRR Holder applicant must return an executed CRR Entity Agreement and any required letter of credit, guaranty, escrow agreement or other form of Financial Security, as applicable.

**4.10.1.8.2 Candidate CRR Holder Applicant's Rejection.**

**4.10.1.8.2.1 Resubmittal.**

If a Candidate CRR Holder's application is rejected, the Candidate CRR Holder applicant may resubmit its application at any time. An additional application fee will not be required for the second application submitted within six (6) months after the CAISO's issuance of a rejection.

**4.10.1.8.2.2 Appeal.**

The Candidate CRR Holder applicant may also appeal against the rejection of an application by the CAISO. An appeal must be submitted within twenty (20) Business Days following the CAISO's issuance of a rejection of its application.

**4.10.1.9 Final Registration and Qualification of Candidate CRR Holder Applicant.**

**4.10.1.9.1 Notice of Completed Registration and Qualification of Candidate CRR Holder.**

Once the CAISO has accepted a Candidate CRR Holder applicant's application, the CAISO will provide the Candidate CRR Holder applicant with a final written notice to certify that a Candidate CRR Holder applicant has become a Candidate CRR Holder. The CAISO shall issue such final written notice of full registration and qualification as a Candidate CRR Holder after the CAISO has determined that the Candidate CRR Holder applicant has fully satisfied all the following requirements:

- (a) fully executed a CRR Entity Agreement with the CAISO;
- (b) provided its bank account information and arranged for Fed-Wire transfers;
- (c) met the Financial Security requirements of Section 12;
- (d) certified that it has attended required CRR training; and
- (e) obtained and installed any necessary software for communication with the CAISO as necessary.

**4.10.1.9.2 Market Notice.**

The CAISO shall issue a Market Notice stating the new Candidate CRR Holder status.

**4.10.2 Candidate CRR Holder's and CRR Holder's Ongoing Obligations After Registration and Qualification.**

**4.10.2.1 Candidate CRR Holder and CRR Holder Obligation to Report Changes.**

**4.10.2.1.1 Obligation to Report a Change in Filed Information.**

Each Candidate CRR Holder and CRR Holder has an ongoing obligation to inform the CAISO of any changes to any of the information submitted by it to the CAISO as part of its application to become a Candidate CRR Holder, including any changes to the additional information requested by the CAISO. The applicable Business Practice Manual sets forth the procedures for changing the Candidate CRR Holder or CRR Holder information and timing of notifying the CAISO of such changes.

**4.10.2.1.2 Obligation to Report a Material Change in Financial Condition.**

The Candidate CRR Holder or CRR Holder that has been granted Unsecured Credit Limit has an ongoing obligation to inform the CAISO within five (5) Business Days of any Material Change in Financial Condition including but not limited to credit rating changes described in Section 12.



**4.10.2.2 Failure to Promptly Report a Material Change.**

If a Candidate CRR Holder or CRR Holder fails to inform the CAISO of a material change in its information provided to the CAISO including a Material Change in Financial Condition, that may affect the Financial Security of the CAISO, the CAISO may suspend or terminate the Candidate CRR Holder or CRR Holder's rights under the CAISO Tariff in accordance with the terms of Sections 12 and 4.10.4.2, respectively. If the CAISO intends to terminate the Candidate CRR Holder's status, it shall file a notice of termination with FERC in accordance with the terms of the CRR Entity Agreement. Such termination shall be effective upon acceptance by FERC of a notice of termination in accordance with the terms of the CRR Entity Agreement.

**4.10.3 Termination of a CRR Entity Agreement.**

**4.10.3.1 Prior Notice Requirements.**

- (a) A CRR Entity Agreement may be terminated by the CAISO on written notice to the Candidate CRR Holder or CRR Holder that is a party to the CRR Entity Agreement in accordance with the terms of the CRR Entity Agreement:
  - (i) if the Candidate CRR Holder or CRR Holder no longer meets the requirements for eligibility set out in Section 4.10 and fails to remedy the default within a period of seven (7) days after the CAISO has given written notice of the default;
  - (ii) if the Candidate CRR Holder or CRR Holder fails to pay any sum under this CAISO Tariff and fails to remedy the default within a period of five (5) Business Days after the CAISO has given written notice of the default; or
  - (iii) if the Candidate CRR Holder or CRR Holder commits any other default under this CAISO Tariff or any of the Business Practice Manuals which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given it written notice of the default.

- (b) The Candidate CRR Holder or CRR Holder may terminate its CRR Entity Agreement in accordance with the provisions of that agreement.
- (c) Upon termination of the CRR Entity Agreement, Candidate CRR Holders or CRR Holders shall continue to be liable for any outstanding financial or other obligations incurred under the CAISO Tariff as a result of their status as a Candidate CRR Holder or CRR Holder.
- (d) The CAISO shall, following termination of a CRR Entity Agreement and within thirty (30) days of being satisfied that no sums remain owing by the Candidate CRR Holder or CRR Holder under the CAISO Tariff, return or release to the Candidate CRR Holder or CRR Holder, as appropriate, any Financial Security support provided by such Candidate CRR Holder or CRR Holder to the CAISO under Section 12.

**4.10.3.2 Suspension of Registration and Qualification.**

Pending FERC acceptance of termination of service pursuant to the filing of a notice of termination of the CRR Entity Agreement, the CAISO will suspend the registration and qualification of a Candidate CRR Holder or CRR Holder that has received a notice of termination under the CRR Entity Agreement and the Candidate CRR Holder will not be able to submit nominations in the CRR Allocation or bids in the CRR Auction, or to register as a CRR Holder in the Secondary Registration System.

**4.11 RELATIONSHIP BETWEEN CAISO AND SUDCS**

**4.11.1 General Nature of Relationship Between CAISO and SUDCs.**

**4.11.1.1** The CAISO shall not be obliged to accept Bids, including Self-Schedules, or Bids for Ancillary Services which would require Energy to be transmitted to or from the Distribution System of a SUDC directly connected to the CAISO Controlled Grid unless the relevant SUDC has entered into a SUDC Operating Agreement. The SUDC Operating Agreement shall require SUDCs to comply with the applicable provisions of this Section 4.11 and any other expressly applicable Sections of this CAISO Tariff and the CAISO Protocols, as they may be amended from time to time. The CAISO shall maintain a pro forma SUDC Operating Agreement available for SUDCs to enter into with the CAISO, as set forth in Appendix B.10.

**4.11.1.2** The CAISO shall operate the CAISO **Balancing Authority** Area and the CAISO Controlled Grid and each SUDC shall operate its Distribution System at all times in accordance with Good Utility Practice and in a manner which ensures safe and reliable operation. The CAISO shall, in respect of its obligations set forth in this Section 4.11, have the right by mutual agreement to delegate certain operational responsibilities to the relevant Participating TO or SUDC pursuant to this Section 4.11. All information made available to SUDCs by the CAISO shall also be made available to Scheduling Coordinators. Any information, pertaining to the physical state, operation, maintenance or failure of the SUDC Distribution System that may cause a material adverse affect to the operation of the CAISO Controlled Grid, that is made available to the CAISO by the SUDC shall also be made available to Scheduling Coordinators upon receipt of reasonable notice.

**4.11.2 Coordinating Maintenance Outages of SUDC Facilities.**

Each SUDC and the Participating TO with which it is interconnected shall coordinate their Outage requirements with respect to their transmission interconnection facilities prior to the submission by that Participating TO of its maintenance Outage requirements under Section 9.3.

**4.11.3 SUDC Responsibilities.**

Recognizing the CAISO's duty to ensure efficient use and reliable operation of the CAISO **Balancing Authority** Area and the CAISO Controlled Grid consistent with the Applicable Reliability Criteria, each SUDC shall:

**4.11.3.1** operate and maintain its Distribution System in accordance with applicable reliability standards, statutes and regulations, and Good Utility Practice so as to avoid any material adverse impact on the reliability of the CAISO **Balancing Authority** Area and the CAISO Controlled Grid;

**4.11.3.2** provide the CAISO Outage Coordination Office each year with a schedule of upcoming maintenance on its transmission interconnection facilities with the CAISO Controlled Grid that has a reasonable potential of causing a material adverse impact to the reliability of the CAISO Controlled Grid.

**4.11.4 System Emergencies.**

**4.11.4.1** In the event of a System Emergency, SUDCs shall comply with all directions from the CAISO concerning the management and alleviation of the System Emergency and shall comply with all procedures concerning SUDCs for System Emergencies set out in the individual SUDC Operating Agreements.

**4.11.4.2** During a System Emergency, the CAISO and SUDCs shall communicate in accordance with procedures established in individual SUDC Operating Agreements.

**4.11.5 Load Reduction.**

**4.11.5.1** If the CAISO declares a Stage 1 System Emergency, the SUDC shall use any reasonably available local communication infrastructure to request that its customers curtail their electricity usage. The SUDC shall not be called separately in Stage 3 System Emergencies to manually shed Load. Load restoration of any voluntary Load reduction will occur once the CAISO declares that a System Emergency no longer exists.

**4.11.5.2** If the Participating TO sheds the SUDC Load associated with the Participating TO's transmission facilities, the Participating TO will provide timely information and work with the SUDC regarding SUDC Load restoration.

**4.11.6 System Emergency Reports: SUDC Obligations.**

**4.11.6.1** Each SUDC shall maintain all appropriate records pertaining to a System Emergency in accordance with the SUDC's then-existing record retention practice or policy, provided the records are kept for a minimum of six (6) years.

**4.11.6.2** In accordance with its SUDC Operating Agreement, each SUDC shall provide available information to the CAISO regarding the CAISO's preparation of an Outage review.

**4.11.7 Coordination of Expansion or Modifications to SUDC Facilities.**

Each SUDC and the Participating TO with which it is interconnected shall coordinate in the planning and implementation of any expansion or modifications of a SUDC's or Participating TO's system that will materially affect the reliability of their transmission interconnection facilities, the CAISO Controlled Grid or the transmission services to be required by the SUDC. The Participating TO shall be responsible for coordinating with the CAISO.

**4.11.8 Information Sharing.**

**4.11.8.1 System Planning Studies.**

The CAISO, Participating TOs and SUDCs shall share available information such as projected SUDC Load growth and SUDC system expansions necessary for the CAISO or the Participating TOs to conduct necessary system planning studies to the extent that such SUDC Load growth or SUDC system expansions will materially impact the operation of the CAISO **Balancing Authority** Area and the CAISO Controlled Grid.

#### **4.11.8.2 System Surveys and Inspections.**

The CAISO, each UDC and each SUDC shall cooperate, to the extent economically feasible for the SUDC, in performing system surveys and inspections regarding the operation of the CAISO **Balancing Authority** Area and the CAISO Controlled Grid.

#### **4.11.8.3 Reports.**

**4.11.8.3.1** The CAISO shall make available to the SUDCs any public annual reviews or reports regarding performance standards, measurements and incentives relating to the CAISO **Balancing Authority** Area and the CAISO Controlled Grid and shall also make available, upon reasonable notice, any such reports that the CAISO receives from the Participating TOs. Each SUDC shall make available to the CAISO upon request any public annual reviews or reports regarding performance standards, measurements and incentives relating to the SUDC's Distribution System to the extent these relate to the operation of the CAISO **Balancing Authority** Area and the CAISO Controlled Grid.

**4.11.8.3.2** The CAISO and SUDCs shall develop an operating procedure for the CAISO to record requests received from the SUDC for Maintenance Outages and the completion of the requested maintenance and turnaround times.

#### **4.11.9 Installation of Equipment on and Rights of Access to SUDC Facilities.**

##### **4.11.9.1 Installation of Facilities.**

The CAISO and the SUDC shall each have the right on reasonable notice to install or to have installed equipment (including metering equipment) or other facilities on the property of the other, to the extent that such installation is necessary for the installing party to meet its service obligations unless to do so would have a negative impact on the reliability of the service provided by the party owning the property. The CAISO and the SUDC shall enter into agreements governing the installation of such equipment or other facilities containing customary, reasonable terms and conditions.

**4.11.9.2 Access to Facilities.**

The SUDCs shall grant, free of charge, the CAISO reasonable access to SUDC facilities for purposes of inspection, repair, maintenance, or upgrading of facilities installed by the CAISO on the SUDC's system, provided that the CAISO must provide reasonable advance notice of its intent to access SUDC facilities and opportunity for SUDC staff to be present. Such access shall not be provided unless the parties mutually agree to the date, time and purpose of each access. Agreement on the terms of the access shall not be unreasonably withheld.

**4.11.9.3 Access During Emergencies.**

Notwithstanding any provision in this Section 4.11 the CAISO may have access, without giving prior notice, to any SUDC's equipment or other facilities during times of a System Emergency.

**4.11.9.4 Access For Audit Functions.**

Notwithstanding any provision in this Section 4.11 the CAISO may have access, without giving prior notice, to any SUDC's equipment or other facilities where the CAISO has a reasonable basis to believe the SUDC has failed to comply with the SUDC Operating Agreement, applicable CAISO Tariff or CAISO Protocol provisions and access is required to conduct an audit to gather relevant facts.

**5**

**[NOT USED]**

**[Ten Sheet Numbers Reserved for Future Filings.]**



## **6 COMMUNICATIONS.**

### **6.1 Methods of Communications.**

#### **6.1.1 Full-Time Communications Facility Requirement.**

Each Scheduling Coordinator, Utility Distribution Company, Participating TO, Participating Generator, **Balancing Authority** (to the extent the agreement between the **Balancing Authority** and the CAISO so provides), and **MSS** Operator must provide a communications facility manned twenty-four (24) hours a day, seven (7) days a week capable of receiving Dispatch Instructions issued by the CAISO.

#### **6.1.2 Information Transfer from Scheduling Coordinator to CAISO.**

Unless otherwise agreed by the CAISO, Scheduling Coordinators who wish to submit Bids into CAISO Markets for Energy or Ancillary Services to the CAISO must submit the information to the CAISO's secure communication system. Scheduling Coordinators that wish to submit Dynamic Schedules or Bids for Ancillary Services to the CAISO must also comply with the applicable requirements of Sections 4.5.4.3, 8.4.5 and 8.4.7.2.1.

#### **6.1.3 Submitting Information to the CAISO's Secure Communication System.**

For Scheduling Coordinators submitting information to the CAISO's secure communication system, each such Scheduling Coordinator shall establish a network connection with the CAISO's secure communication system. Link initialization procedures shall be necessary to establish a connection to the CAISO's secure communication system. In order to log in, each Scheduling Coordinator will be furnished a digital certificate by the CAISO.

**6.1.3.1** The CAISO will make available data templates and validation rules information that provides a description of the templates which will be utilized to enter data into the CAISO's secure communication system.

**6.1.4 Information Transfer from CAISO to Scheduling Coordinator.**

Unless otherwise agreed between a Scheduling Coordinator and the CAISO, the CAISO shall furnish scheduling information to Scheduling Coordinators by electronic transfer as described in Section 6. If electronic data transfer is not available, the information may be furnished by facsimile. If it is not possible to communicate with the Scheduling Coordinator using the primary means of communication, an alternate means of communication shall be selected by the CAISO.

**6.1.5 Information to be Provided By Connected Entities to the CAISO.**

Each Connected Entity shall provide to the CAISO:

- (a) A single and an alternative telephone number and a single and an alternative facsimile number by which the CAISO may contact ~~twenty-four (24)~~ hours a day a representative of the Connected Entity in, or in relation to, a System Emergency; ~~and~~
- (b) The names or titles of the Connected Entity's representatives who may be contacted at such telephone and facsimile numbers.

**6.1.5.1** Each representative specified pursuant to ~~this~~ Section 6.1.5 shall be a person having appropriate experience, qualification, authority, responsibility and accountability within the Connected Entity to act as the primary contact for the CAISO in the event of a System Emergency.

**6.1.5.2** The details required under this Section 6.1.5 shall at all times be maintained up to date and the Connected Entity shall notify the CAISO of any changes promptly and as far in advance as possible.

**6.2 CAISO's Secure Communication System.**

**6.2.1 Scheduling Coordinators.**

**6.2.1.1** Scheduling Coordinators shall arrange access to the CAISO's secure communication system. Scheduling Coordinators shall maintain a secure electronic communication system for receiving Dispatch Instructions that is approved by the CAISO.

**6.2.1.2** Details of the technical aspects of the CAISO's secure communication system, including information on how to change mechanisms and back-up procedures for individual Scheduling Coordinator failures, will be made available by the CAISO to Scheduling Coordinators on request. It is assumed that each Scheduling Coordinator has made application for and signed a Scheduling Coordinator Agreement. As such, each Scheduling Coordinator will already be familiar with and have arranged the mechanism, including security arrangements, by which it will initially communicate with the CAISO.

**6.2.1.3 Individually Assigned Login Accounts.**

The CAISO will provide an interface for data exchange between the CAISO and Scheduling Coordinators who shall each have individually assigned login accounts via digital certificates. Through the use of the security provisions of CAISO's secure communication system, data will be provided by the CAISO to Scheduling Coordinators on a confidential basis (such as Day-Ahead Schedules for individual Scheduling Coordinators). Other CAISO data that is not confidential (such as CAISO Demand Forecasts) will be published on the public access reporting system of the CAISO Website and be available to anyone.

**6.2.1.4 Failure or Corruption of the CAISO's Secure Communication System.**

The CAISO shall, in consultation with Scheduling Coordinators, make provision for procedures to be implemented in the event of a total or partial failure of the CAISO's secure communication system or the material corruption of data on the CAISO's secure communication system. The CAISO shall ensure that such alternative communications systems are tested periodically.

**6.2.1.5 Confidentiality.**

All information posted on the CAISO's secure communication system shall be subject to the confidentiality obligations contained in Section 20.

**6.2.1.6 Standards of Conduct.**

The CAISO and all Market Participants shall comply with their obligations, to the extent applicable, under the standards of conduct set out in 18 C.F.R. §37.

**6.2.2 Public Market Information.**

**6.2.2.1 Non-Discriminatory Access to Information.**

The CAISO shall provide non-discriminatory access to information concerning the status of the CAISO Controlled Grid or facilities that affect the CAISO Controlled Grid by posting that information on the CAISO Website, or other similar computer communications device, or by telephone or facsimile in the event of computer systems failure.

**6.2.2.2 Open Access Same-Time Information System.**

The CAISO shall provide a public access information reporting system, Open Access Same-Time Information System (OASIS), to deliver market operations and grid management information to accommodate users other than Market Participants. OASIS will be accessible to the public via a link on the CAISO Website.

**6.3 Communication of Dispatch Instructions.**

Normal verbal and electronic communication of Dispatch Instructions between the CAISO and Generators or Participating Loads will be via the relevant Scheduling Coordinator.

**6.3.1 Scheduling Coordinator Responsibility to Pass Dispatch Instructions to Participating Generator or Load.**

Each Scheduling Coordinator must immediately pass on to the Generator or Participating Load concerned any communication for the Generator or Participating Load which it receives from the CAISO.

Communication delays by the Scheduling Coordinator may result in Uninstructed Deviation Penalties or other adjustments pursuant to this CAISO Tariff. The CAISO may, with the prior permissions of the Scheduling Coordinator concerned, communicate with and give Dispatch Instructions to the operators of Generating Units and Loads directly without having to communicate through their appointed Scheduling Coordinator. In situations of deteriorating system conditions or emergency, the CAISO reserves the right to communicate directly with the Generator(s) as required to ensure System Reliability.

### **6.3.2 Recording of Dispatch Instructions.**

The CAISO shall maintain records of all electronic, fax and verbal communications related to a Dispatch Instruction. The CAISO shall maintain a paper or electronic copy of all Dispatch Instructions delivered by fax and all Dispatch Instructions delivered electronically. The CAISO shall record all voice conversations that occur related to Dispatch Instructions on the Dispatch Instruction communication equipment. These records, copies and recordings may be used by the CAISO to audit the Dispatch Instruction, and to verify the response of the Market Participant concerned to the Dispatch Instruction.

### **6.3.3 Contents of Dispatch Instructions.**

Dispatch Instructions shall include, but are not limited to, the following information:

- (a) exchange of operator names;
- (b) specific resource being dispatched;
- (c) specific MW value of the resource being dispatched;
- (d) specific type of instruction (action required);
- (e) time the resource is required to begin initiating the Dispatch Instruction;
- (f) time the resource is required to achieve the Dispatch Instruction;
- (g) time of notification of the Dispatch Instruction; and
- (h) any other information which the CAISO considers relevant.

**6.4 Communication of Operating Orders.**

The CAISO shall use normal verbal and electronic communication to issue operating orders to the Connected Entity.

**6.5 CAISO Communications.**

The CAISO will provide a secure communication system to publish confidential information and communicate with Scheduling Coordinators, and OASIS to publish public information.

**6.5.1 Communication With Market Participants, Congestion Revenue Rights Participants, and the Public.**

**6.5.1.1 Market Participants With Non-Disclosure Agreements.**

**6.5.1.1.1** Annually, the CAISO shall provide information that will include, but is not limited to, the following:

- (a) CRR Full Network Model;
- (b) Constraints and **Transmission** Interface definitions;
- (c) Load Distribution Factors for each CRR Allocation and CRR Auction that is published prior to the CRR Allocation and CRR Auction; and
- (d) Nominations and/or parameters to be used for modeling in each annual CRR Allocation and CRR Auction processes: Transmission Ownership Rights, Existing Contracts and Converted Rights expected usage, and Merchant Transmission CRRs.

**6.5.1.1.2** Monthly, the CAISO shall provide information that will include, but is not limited to, the following:

- (a) CRR Full Network Model;
- (b) Constraints and **Transmission** Interface definitions;

- (c) Load Distribution Factors for each CRR Allocation and CRR Auction that is published prior to the CRR Allocation or CRR Auction; and
- (d) Nominations and/or parameters to be used for modeling in each monthly CRR Allocation and CRR Auction processes: Transmission Ownership Rights, Existing Contracts and Converted Rights expected usage, and Merchant Transmission CRRs.

**6.5.1.2 CRR Participants Without Non-Disclosure Agreements.**

**6.5.1.2.1** Annually, the CAISO shall provide CRR information specific to that CRR Holder or Candidate CRR Holder as it relates to participation in the annual CRR Allocation or CRR Auction.

**6.5.1.2.2** Monthly, the CAISO shall provide CRR information specific to that CRR Holder or Candidate CRR Holder as it relates to participation in the monthly CRR Allocation or CRR Auction.

**6.5.1.3 Public Market Information.**

**6.5.1.3.1** Annually, the CAISO shall publish the following information including, but not limited to:

- (a) Market Clearing Prices for all Aggregated PNodes used in the CRR Auction clearing for on-peak and off-peak;
- (b) CRR Holdings by CRR Holder (including):
  - (i) CRR Source name(s);
  - (ii) CRR Sink name(s);
  - (iii) CRR quantity (MW) for each CRR Source(s) and CRR Sink(s);
  - (iv) CRR start and end dates;
  - (v) Time of use specifications for the CRR(s); and
  - (vi) Whether the CRR is a CRR Option or CRR Obligation.

**6.5.1.3.2** Monthly, the CAISO shall publish the following information including, but not limited to:

- (a) Market Clearing Prices for all Aggregated PNodes used in the CRR Auction clearing for on-peak and off-peak;
- (b) CRR Holdings by CRR Holder (including):
  - (i) CRR Source name(s);
  - (ii) CRR Sink name(s);
  - (iii) CRR quantity (MW) for each CRR Source(s) and CRR Sink(s);
  - (iv) CRR start and end dates;
  - (v) Time of use specifications for the CRR(s); and
  - (vi) Whether the CRR is a CRR Option or a CRR Obligation.

**6.5.1.3.3** Seasonally, the CAISO shall publish the following information including, but not limited to:

- (a) Set of LDFs that represent typical seasonal on-peak and off-peak values, not used for Settlements, before the new season.

**6.5.1.4 Requirements to Obtain the CRR Full Network Model.**

The CAISO shall distribute the CRR Full Network Model only to those Market Participants and non-Market Participants that satisfy the following requirements and the related procedures set forth in the Business Practice Manual.

- (a) A Market Participant that is a member of the WECC and that requests the CRR Full Network Model: (i) shall execute the Non-Disclosure Agreement for CRR Full Network Model Distribution that is posted on the CAISO Website and (ii) shall provide to the CAISO a non-disclosure statement, the form of which is attached as an exhibit to the Non-Disclosure Agreement executed by the Market Participant, executed by each employee and consultant of the Market Participant who will have access to the CRR Full Network Model.



- (b) A Market Participant that is not a member of the WECC and that requests the CRR Full Network Model: (i) shall execute the Non-Disclosure Agreement for CRR Full Network Model Distribution that is posted on the CAISO Website, (ii) shall provide to the CAISO a fully executed WECC Non-Member Confidentiality Agreement for WECC Data, and (iii) shall provide to the CAISO a non-disclosure statement, the form of which is attached as an exhibit to the Non-Disclosure Agreement executed by the Market Participant, executed by each employee and consultant of the Market Participant who will have access to the CRR Full Network Model.
- (c) A non-Market Participant that is a member of the WECC and that requests the CRR Full Network Model: (i) shall reasonably demonstrate a legitimate business or governmental interest in the CAISO Markets, (ii) shall execute the Non-Disclosure Agreement for CRR Full Network Model Distribution that is posted on the CAISO Website, and (iii) shall provide to the CAISO a non-disclosure statement, the form of which is attached as an exhibit to the Non-Disclosure Agreement executed by the non-Market Participant, executed by each employee and consultant of the non-Market Participant who will have access to the CRR Full Network Model.

- (d) A non-Market Participant that is not a member of the WECC and that requests the CRR Full Network Model: (i) shall reasonably demonstrate a legitimate business or governmental interest in the CAISO Markets, (ii) shall execute the Non-Disclosure Agreement for CRR Full Network Model Distribution that is posted on the CAISO Website, (iii) shall provide to the CAISO a fully executed WECC Non-Member Confidentiality Agreement for WECC Data, and (iv) shall provide to the CAISO a non-disclosure statement, the form of which is attached as an exhibit to the Non-Disclosure Agreement executed by the non-Market Participant, executed by each employee and consultant of the non-Market Participant who will have access to the CRR Full Network Model.

**6.5.1.5 Non-Disclosure Agreement.**

The CAISO's Non-Disclosure Agreement for CRR Full Network Model Distribution shall be posted on the CAISO Website. This Non-Disclosure Agreement shall provide for the CAISO to receive the costs of litigation, including attorneys' fees, related to the Non-Disclosure Agreement if the CAISO prevails in litigation. Recipients of the CRR Full Network Model may use the CRR Full Network Model and related studies in pleadings to the FERC provided they request confidential treatment of all information subject to the Non-Disclosure Agreement.

**6.5.1.6 Obligation to Report Violations of Section 6.5.1.4.**

Each Market Participant, non-Market Participant, employee of a Market Participant, employee of a non-Market Participant, consultant, and employee of a consultant to whom the CAISO distributes the CRR Full Network Model shall be obligated to immediately report to the CAISO any violation of the requirements of Section 6.5.1.4.

**6.5.2 Communications Prior to the Day-Ahead Market.**

**6.5.2.1 Communications Regarding the State of the CAISO Controlled Grid.**

The CAISO shall use OASIS to provide public information to Market Participants regarding the CAISO Controlled Grid or facilities that affect the CAISO **Controlled** Grid. Such information may include but is not limited to:

- (a) Future planned Outages of transmission facilities;
- (b) Operational Transfer Capability (OTC); and
- (c) Available Transfer Capability (ATC) for WECC paths and **Transmission Interfaces** with external **Balancing Authority** Areas.

**6.5.2.2 Communications With Scheduling Coordinators.**

**6.5.2.2.1 Bid Adder Eligibility.**

**6.5.2.2.1.1** By the 20<sup>th</sup> of each month, the CAISO will notify Scheduling Coordinators of Bid Adder eligibility, applicable Bid Adder value for the following month, and Frequently Mitigated Units that are eligible for a Bid Adder.

**6.5.2.2.1.2** Scheduling Coordinators shall have one week to review Bid Adder information and provide comment back to the CAISO by the 27<sup>th</sup> of each month.

**6.5.2.2.2 Day-Ahead Market Bid Submittal.**

Seven **(7)** days prior to the target Day-Ahead Market, Scheduling Coordinators can begin submitting Bids for that DAM.

**6.5.2.3 Public Market Information.**

**6.5.2.3.1 Demand Forecasts.**

**6.5.2.3.1.1** Beginning seven (7) days prior to the target Day-Ahead Market, and updated as necessary, the CAISO will publish the CAISO Forecast of CAISO Demand.

**6.5.2.3.1.2** By 6:00 p.m. the day prior to the target Day-Ahead Market, the CAISO will publish the updated CAISO Forecast of CAISO Demand.

**6.5.2.3.2 Network and System Conditions.**

By 6:00 p.m. the day prior to the target Day-Ahead Market, the CAISO will publish known network and system conditions, including but not limited to OTC and ATC, the total capacity of Inter-Balancing Authority Area Transmission Interfaces, and the available capacity.

**6.5.2.3.3 Ancillary Services Requirements.**

By 6:00 p.m. the day prior to the target Day-Ahead Market, the CAISO will publish forecasted Ancillary Services requirements and regional constraints by AS Region.

**6.5.2.3.4 Gas Price Indices.**

The CAISO will publish relevant gas price indices when available.

**6.5.2.3.5 Extremely Long-Start Unit Commitment.**

The CAISO will communicate commitment instructions to Scheduling Coordinators for Extremely Long-Start Resources by 3:00 p.m. two (2) days in advance of the Operating Day through a secure communication system.

**6.5.3 Day-Ahead Market Communications.**

**6.5.3.1 Communications With Scheduling Coordinators.**

**6.5.3.1.1** Prior to 6:00 a.m., the CAISO will continuously screen Inter-SC Trades of Energy for the DAM submitted by Scheduling Coordinators and will provide feedback to the Scheduling Coordinators about the consistency and validity of these Inter-SC Trades based on information available to the CAISO.

**6.5.3.1.2** Between 6:00 a.m. and the end of the Day-Ahead Inter-SC Trade Period, the CAISO performs the validation of Inter-SC Trades of Energy for the DAM and will notify the participants of the status of these Inter-SC Trades.

**6.5.3.1.3** Between 5:00 a.m. and 10:00 a.m., the CAISO will provide feedback to Scheduling Coordinators about their validated ETC and TOR quantities, and calculated Default Energy Bids curves provided by Independent Entities, and in addition, default Minimum Load and Start-Up Cost Bid curves for RMR Units, as provided by Independent Entities.

**6.5.3.1.4** After the close of the DAM bidding at 10:00 a.m., the CAISO will send a message to the Scheduling Coordinators regarding the outcome of the Bid validation.

**6.5.3.1.5** By 1:00 p.m., the CAISO will publish the result of the DAM and the resource will be flagged if it is being dispatched under its RMR Contract. Any such Dispatch shall be deemed an RMR Dispatch Notice under the RMR Contract.

**6.5.3.1.6** After the results of the DAM are published by 1:00 p.m., the CAISO performs the Inter-SC Trade of Energy post-market validation and communicates the results back to the applicable Scheduling Coordinator.

**6.5.3.1.7** The results of the Day-Ahead Market will be published by 1:00 p.m. and will include:

- (a) Unit Commitment status for resources committed in the IFM;
- (b) Day-Ahead Schedules and prices;
- (c) Day-Ahead AS Awards and prices;
- (d) RUC Awards and RUC Capacity and resource-specific RUC Prices;
- (e) RUC Start-Up Instructions;
- (f) Start-Up Instructions resulting from the ELC Process;
- (g) Post-market summary of Day-Ahead and Real-Time Energy Schedules, Ancillary Service Awards, RMR Dispatches, and CCR results of RMR Units;
- (h) Day-Ahead final resource Bid mitigation results; and
- (i) Day-Ahead finally qualified Load following capacity.

**6.5.3.1.8** All Expected Energy results will be published at one (1) day after the Trading Day and will include post-market Energy accounting results for Settlement calculations.

**6.5.3.2 Public Market Information.**

**6.5.3.2.1** Before 10:00 a.m. one (1) day before the Operating Day) the CAISO will publish updated Outage information regarding the transmission system on OASIS. The updated Outage information will include planned and actual Outage events per Transmission Interface, including Outage description, Outage start time and end time, and rating of the curtailed line.

**6.5.3.2.2** The results of the Day-Ahead Market will be published on OASIS by 1:00 p.m. and will include:

- (a) Total Day-Ahead Schedules (MWh) by Generator, Demand and Scheduling Point for the CAISO Balancing Authority Area;
- (b) Total Day-Ahead AS Awards by AS Region;
- (c) RUC Prices by bus PNode, RUC Forecast Demand and Day-Ahead Schedules, for each RUC Zone, plus CAISO total for each Operating Hour, hourly RUC Capacity from Generation, and hourly RUC Capacity from imports;
- (d) Day-Ahead LMP for Energy, including the Energy, MCC and MCL components;
- (e) Day-Ahead ASMP by bus by PNode;
- (f) Day Ahead mitigation indicator;
- (g) CAISO Forecast of CAISO Demand;
- (h) Shadow Prices; and
- (i) Total Day-Ahead system Marginal Cost of Losses in MWh for each Trading Hour of the next Trading Day.

**6.5.4 HASP Communications.**

The HASP opens at 1:00 p.m. the day before the target Operating Day and Scheduling Coordinators can submit Bids into the HASP as of that time.

**6.5.4.1 Communications With Scheduling Coordinators.**

**6.5.4.1.1** Before one hundred thirty-five (135) minutes before the Trading Hour, the CAISO will continuously screen Inter-SC Trades of Energy for the HASP, Inter-SC Trades of Ancillary Services, and Inter-SC Trades of IFM Load Uplift Obligations submitted by Scheduling Coordinators and will communicate with the Scheduling Coordinators about the consistency and validity of these Inter-SC Trades based on information available to the CAISO.

**6.5.4.1.2** Between one hundred thirty-five (135) minutes before the Trading Hour and forty-five (45) minutes before the Trading Hour, the CAISO will perform the pre-market validation check for Inter-SC Trades for the HASP and Inter-SC Trades of Ancillary Services and will provide feedback to the Scheduling Coordinators about the validity of these Inter-SC Trades based on information available to the CAISO.

**6.5.4.1.3** At approximately seventy-five (75) minutes before the Trading Hour, the CAISO will send a message to the Scheduling Coordinators regarding the outcome of the Bid validation.

**6.5.4.1.4** In between two hundred seventy (270) minutes before the Trading Hour and the top of the Trading Hour, the CAISO will issue RTM Start-Up Instructions for Short Start Units consistent with the resource's Start-Up Time.

**6.5.4.1.5** No later than forty (40) minutes before the Trading Hour, on an hourly basis, the CAISO will publish via the secure communication system the following:

- (a) HASP Intertie Schedules and LMPs; and
- (b) HASP AS Awards and ASMPs



**6.5.4.1.6** No later than thirty (30) minutes before the Trading Hour, on an hourly basis, the CAISO will publish via the secure communication system the following:

- (a) HASP Advisory Schedules;
- (b) HASP AS Awards; and
- (c) HASP final resource Bid mitigation results.

**6.5.4.1.7** At approximately thirty (30) minutes before the Trading Hour, the CAISO performs the Inter-SC Trade of Energy post-market validation and sends the results back to the applicable Scheduling Coordinators.

**6.5.4.1.8** After thirty (30) minutes before the Trading Hour, on an hourly basis, the CAISO will publish via the secure communication system the following:

- (a) Advisory Resource-Specific Settlement Interval LMPs, and
- (b) Resource-Specific ASMPs.

**6.5.4.2 Public Market Information.**

**6.5.4.2.1** By one hundred five (105) minutes before the Trading Hour the CAISO will publish information regarding Outages on the transmission system on OASIS that will be used for HASP Schedules and Congestion Management.

**6.5.4.2.2** At thirty (30) minutes before the Trading Hour, on an hourly basis, the CAISO will publish on OASIS the following:

- (a) HASP Intertie Schedules;
- (b) Total HASP Advisory Schedules (MWh) by Scheduling Point;
- (c) HASP AS Awards by Scheduling Point;
- (d) HASP LMPs for Scheduling Points;
- (e) HASP advisory LMPs by PNode and APNode;
- (f) HASP Intertie ASMP for AS by bus PNode;
- (g) HASP advisory ASMP for AS by bus PNode;
- (h) HASP Shadow Prices; and
- (i) Total HASP system losses in MWh for the next Operating Hour.

**6.5.5 Real-Time Market Communications.**

The CAISO shall issue Dispatch Instructions to Scheduling Coordinators determined pursuant to the RTM throughout any given day.

**6.5.5.1 Communications with Scheduling Coordinators.**

Communications between the CAISO and Scheduling Coordinators shall take place via the CAISO's secure communication system to a dedicated terminal at the Scheduling Coordinator's scheduling center. If there is a failure of electronic communications with a Scheduling Coordinator, then, at the CAISO's discretion, the Scheduling Coordinator may communicate by facsimile. Communication by facsimile requires verbal approval by the CAISO.

**6.5.5.1.1** Every fifteen (15) minutes, the CAISO will communicate via the secure communication system Start-Up and Shut-Down Instructions and Real-Time AS Awards to internal resources.

**6.5.5.1.2** Every ~~five~~ (5) minutes for Target T+10, the CAISO will send Dispatch Instructions via the secure communication system. The Dispatch Instruction will be flagged if a resource is being dispatched under its RMR Contract.

**6.5.5.2 Public Market Information.**

**6.5.5.2.1** Every hour the CAISO shall post via OASIS information regarding the status of the RTM. This information shall include but is not limited to the following:

- (a) Mitigation indicator.

**6.5.5.2.2** Every ~~fifteen~~ (15) minutes the CAISO shall post via OASIS information regarding the status of the RTM. This information shall include but is not limited to the following:

- (a) Total Real-Time AS Awards by Region; and
- (b) Real-Time ASMPs by bus.

**6.5.5.2.3** Every ~~ten~~ (10) minutes the CAISO shall post via OASIS information regarding the status of the RTM. This information shall include but is not limited to the following:

- (a) Settlement Interval LMPs.

**6.5.5.2.4** Every ~~five~~ (5) minutes the CAISO shall post via OASIS information regarding the status of the RTM. This information shall include but is not limited to the following:

- (a) ~~CAISO Forecast of CAISO Demand~~;
- (b) Total Real-Time dispatched Energy and Demand on a 24-hour delayed basis;
- (c) Real-Time Dispatch Interval LMP;
- (d) Real-Time system losses; and
- (e) Actual Operating Reserve.

**6.5.6 Market Bid Information.**

**6.5.6.1 Public Market Information.**

**6.5.6.1.1** The following information shall be published on OASIS 180 days following the applicable Trading Day, with the exclusion of the information that is specific to Scheduling Coordinators:

- (a) AS market Bids;
- (b) Energy market Bids; and
- (c) RUC market Bids.

**6.5.6.1.2** Within seven (7) days after the Trading Day, the CAISO will publish via OASIS all Start-Up Costs and Minimum Load Costs for CAISO committed resources.

**7 SYSTEM OPERATIONS UNDER NORMAL AND EMERGENCY OPERATING CONDITIONS.**

**7.1 CAISO Control Center Operations.**

**7.1.1 Maintain CAISO Control Center.**

The CAISO shall maintain a WECC approved **Balancing Authority** Area and control center to direct the operation of all facilities forming part of the CAISO Controlled Grid, including Reliability Must-Run Units, System Resources, and Generating Units providing Ancillary Services. The Primary CAISO Control Center shall have Operational Control over:

- (a) all transmission lines greater than 230 kV and associated station equipment on the CAISO Controlled Grid;
- (b) all Interconnections; and
- (c) all 230 kV and lower voltage transmission lines and associated station equipment identified in the CAISO Register as that portion of the CAISO Controlled Grid located in the **Pacific Gas and Electric Company** PTO Service Territory.

**7.1.2 Maintain Back-up Control Facility.**

The CAISO shall maintain back-up control facilities remote from the **Primary** CAISO Control Center sufficient to enable the CAISO to continue to direct the operation of the CAISO Controlled Grid, Reliability Must-Run Units, System Resources and Generating Units providing Ancillary Services in the event of the **Primary** CAISO Control Center becoming inoperable. The Backup CAISO Control Center shall have Operational Control over all 230 kV and lower voltage transmission lines and associated station equipment identified in the CAISO Register as that portion of the CAISO Controlled Grid located in the **Southern California Edison Company** and **San Diego Gas & Electric Company** PTO Service Territories.

**7.1.3 CAISO Control Center Authorities.**

The CAISO shall have full authority, subject to this CAISO Tariff, to direct the operation of the facilities referred to in Section 7.1.1 and 7.1.2 including (without limitation), to:

- (a) direct the physical operation by the Participating TOs of transmission facilities under the Operational Control of the CAISO, including (without limitation) circuit breakers, switches, voltage control equipment, protective relays, metering, and Load Shedding equipment;
- (b) commit and dispatch Reliability Must-Run Units, except that the CAISO shall only commit Reliability Must-Run Generation for Ancillary Services capacity according to Section 41;
- (c) order a change in operating status of auxiliary equipment required to control voltage or frequency;
- (d) take any action it considers to be necessary consistent with Good Utility Practice to protect against uncontrolled losses of Load or Generation and/or equipment damage resulting from unforeseen occurrences;
- (e) control the output of Generating Units, Interconnection schedules, and System Resources that are selected to provide Ancillary Services or Energy;
- (f) Dispatch Curtailable Demand which has been scheduled to provide Non-Spinning Reserve;
- (g) procure Energy for a threatened or imminent System Emergency; and
- (h) require the operation of resources which are at the CAISO's disposal in a System Emergency, as described in Section 7.7.

The CAISO will exercise its authority under this Section 7.1.3 by issuing Dispatch Instructions to the relevant Market Participants using the relevant communications method described in this CAISO Tariff.

## **7.2 Operating Reliability Criteria.**

The CAISO shall exercise Operational Control over the CAISO Controlled Grid in compliance with all Applicable Reliability Criteria. The Applicable Reliability Criteria are the standards established by NERC, WECC and Local Reliability Criteria and include the requirements of the Nuclear Regulatory Commission (NRC) all as modified from time to time.

### **7.2.1 Reliability Coordinator.**

The CAISO shall be the WECC Reliability Coordinator for the CAISO Controlled Grid. As Reliability Coordinator, the CAISO, in conjunction with the other WECC Reliability Coordinators, will be responsible for the stable and reliable operation of the Western Interconnection in accordance with the WECC Regional Security Plan.

As Reliability Coordinator, the CAISO may direct activities as appropriate to curtail Schedules, dispatch Generation or impose transfer limitations as necessary to relieve grid Congestion, mitigate potential overloads or eliminate operation outside of existing Nomogram criteria.

### **7.2.2 Authority of the CAISO as a WECC Reliability Coordinator.**

As a the Reliability Coordinator, the CAISO shall have all the authority prescribed to such entities by the WECC, as amended from time to time, that shall including but not be limited to the following:

- (a) The Reliability Coordinator has the final authority to direct operations before, during and after problems or disturbances that have regional impacts. The WECC Security Monitoring plans include collaboration with sub-regional Reliability Coordinators and **Balancing Authorities** to determine actions for anticipated problems. If there is insufficient time, or mutual concurrence is not reached, the Reliability Coordinator is authorized to direct actions and the **Balancing Authorities** must comply.

- (b) In the event of any situation occurring which is outside those problems already identified in the list of known problems, the Reliability Coordinator shall have the responsibility and authority to implement whatever measures are necessary to maintain System Reliability. Those actions include but are not limited to; Interchange curtailment, Generation Dispatch adjustment (real power, reactive power and voltage), transmission configuration adjustments, Special Protection System activation, Load curtailment and any other action deemed necessary to maintain System Reliability.
- (c) The Reliability Coordinator shall also have the responsibility and authority to take action in its WECC sub-region for problems in another sub-region that it may help resolve. This must be accomplished at the request of and in coordination with the Reliability Coordinators of the other WECC sub-regions.

### **7.3 Transmission Planning Authority.**

**7.3.1** The CAISO shall exercise Operational Control over the CAISO Controlled Grid to meet planning and Operating Reserve criteria no less stringent than those established by WECC and NERC as those standards may be modified from time to time, and Local Reliability Criteria that are in existence on the CAISO Operations Date and have been submitted to the CAISO by each Participating TO pursuant to Section 2.2.1(v) of the TCA. All Market Participants and the CAISO shall comply with the CAISO Reliability Criteria, standards, and procedures.

**7.3.2** The CAISO Governing Board may establish planning guidelines more stringent than those established by NERC and WECC as needed for the secure and reliable operation of the CAISO Controlled Grid. The CAISO may revise the Local Reliability Criteria subject to and in accordance with Section 5 of the TCA.



### **7.3.3 NAESB Standards.**

The following standards of the Wholesale Electric Quadrant (WEQ) of the North American Energy Standards Board (NAESB) are incorporated by reference:

- Coordinate Interchange (WEQ-004, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Purpose, Applicability, and Standards 004-0 through 004-13, and 004-A through 004-D;
- Area Control Error (ACE) Equation Special Cases Standards (WEQ-005, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Purpose, Applicability, and Standards 005-0 through 005-3.1.3, and 005-A;
- Inadvertent Interchange Payback (WEQ-007, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Purpose, Applicability, and Standards 007-0 through 007-2, and 007-A; and
- Manual Time Error Correction – Time Error Initiation (WEQ-006-4, Version 000, with minor corrections applied on October 17, 2206).

The CAISO has obtained a waiver of the following NAESB WEQ standards:

- Business Practices for Open Access Same-Time Information Systems (OASIS) (WEQ-001, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Standards 001-0.2 through 001-0.8, 001-2.0 through 001-9.6.2, 001-9.8 through 001-10.8.6, and Examples 001-8.3-A, 001-9.2-A, 001-10.2-A, 001-9.3-A, 001-10.3-A, 001-9.4.1-A, 001-10.4.1-A, 001-9.4.2-A, 001-10.4.2-A, 001-9.5-A, 001-10.5-A, 001-9.5.1-A, and 001-10.5.1-A;

- Business Practices for Open Access Same-Time Information Systems (OASIS) Standards & Communication Protocols (WEQ-002, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Standards 002-1 through 002-5.10; and
- Open Access Same-Time Information Systems (OASIS) Data Dictionary (WEQ-003, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Standard 003-0.

WECC has obtained a waiver of the following NAESB WEQ standard on its own behalf and on behalf of the **Balancing Authority** Areas in the Western Interconnection, including the CAISO:

- Manual Time Error Correction (WEQ-006, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Purpose, Applicability, and Standards 006-0 through 006-12.

#### **7.4 General Standard of Care.**

When the CAISO is exercising Operational Control of the CAISO Controlled Grid, the CAISO and Market Participants shall comply with Good Utility Practice.

#### **7.5 Routine Operation of the CAISO Controlled Grid.**

The CAISO shall operate the CAISO Controlled Grid in accordance with the standards described in Section 7.2 and within the limit of all applicable Nomograms and established operating limits and procedures.

**7.5.1 CAISO Controlled Facilities.**

**7.5.1.1 General.**

The CAISO shall have Operational Control of all transmission lines and associated station equipment that have been transferred to the CAISO Controlled Grid from the Participating TOs as listed in the CAISO Register.

**7.5.2 Clearing Equipment for Work.**

The clearance procedures of the CAISO and the relevant UDC and Participating TO must be adhered to by all parties, to ensure the safety of all personnel working on CAISO Controlled Grid transmission lines and equipment. In accordance with Section 9.3, no work shall start on any equipment or line which is under the Operational Control of the CAISO unless final approval has first been obtained from the appropriate CAISO Control Center. Prior to starting the switching to return any line or equipment to service the CAISO shall confirm that all formal requests to work on the cleared line or equipment have been released.

**7.5.3 Equipment De-energized for Work.**

In some circumstances, System Reliability requirements may require a recall capability that can only be achieved by allowing work to proceed with the line or equipment de-energized only (i.e. not cleared and grounded). Any personnel working on such de-energized lines and equipment must take all precautions as if the line or equipment were energized. Prior to energizing any such lines or equipment de-energized for work, the CAISO shall confirm that all formal requests to work on the de-energized line or equipment have been released.

#### **7.5.4 Hot-Line Work.**

The CAISO has full authority to approve requests by Participating TOs to work on energized equipment under the Operational Control of the CAISO, and no such work shall be commenced until the CAISO has given its approval.

#### **7.5.5 Intertie Switching.**

The CAISO and the appropriate single point of contact for the relevant Participating TO and the adjacent Balancing Authority Area shall coordinate during the de-energizing or energizing of any Interconnection.

#### **7.5.6 Operating Voltage Control Equipment.**

##### **7.5.6.1 Operating Voltage Control Equipment Under CAISO Control.**

The CAISO will direct each Participating TO's single point of contact in the operation of voltage control equipment that is under the CAISO's Operational Control.

##### **7.5.6.2 Operating Voltage Control Equipment Under UDC Control.**

Each UDC must operate voltage control equipment under UDC control in accordance with existing UDC voltage control guidelines.

##### **7.5.6.3 Special CAISO Voltage Control Requirements.**

The CAISO may request a Participating TO via its single point of contact or a UDC via its single point of contact to operate under special voltage control requirements from time to time due to special system conditions.

#### **7.6 Normal System Operations.**

##### **7.6.1 Actions for Maintaining Reliability of CAISO Controlled Grid.**

The CAISO shall obtain the control over Generating Units that it needs to control the CAISO Controlled Grid and maintain reliability by ensuring that sufficient Energy and Ancillary Services are procured through the CAISO Markets. When the CAISO responds to events or circumstances, it shall first use the generation control it is able to obtain from the Energy and Ancillary Services Bids it has received to

respond to the operating event and maintain reliability. Only when the CAISO has used the Energy and Ancillary Services that are available to it under such Energy and Ancillary Services Bids which prove to be effective in responding to the problem and the CAISO is still in need of additional control over Generating Units, shall the CAISO assume supervisory control over other Generating Units. It is expected that at this point, the operational circumstances will be so severe that a Real-Time system problem or emergency condition could be in existence or imminent.

Each Participating Generator shall take, at the direction of the CAISO, such actions affecting such Generator as the CAISO determines to be necessary to maintain the reliability of the CAISO Controlled Grid. Such actions shall include (but are not limited to):

- (a) compliance with Dispatch Instructions including instructions to deliver Energy and Ancillary Services in Real-Time pursuant to the AS Awards, Day-Ahead Schedules and HASP Intertie Schedules, and HASP AS Awards;
- (b) compliance with the system operation requirements set out in ~~this~~ Section 7;
- (c) notification to the CAISO of the persons to whom an instruction of the CAISO should be directed on a 24-hour basis, including their telephone and facsimile numbers; and
- (d) the provision of communications, telemetry and direct control requirements, including the establishment of a direct communication link from the control room of the Generator to the CAISO in a manner that ensures that the CAISO will have the ability, consistent with this CAISO Tariff, to direct the operations of the Generator as necessary to maintain the reliability of the CAISO Controlled Grid, except that a Participating Generator will be exempt from CAISO requirements imposed in accordance with this subsection (d) with regard to any Generating Unit with a rated capacity of less than ~~ten~~ (10) MW, unless that Generating Unit is certified by the CAISO to provide Ancillary Services.

## **7.7 Management of System Emergencies.**

### **7.7.1 System Emergency.**

When, in the judgment of the CAISO, the System Reliability of the CAISO Controlled Grid is in danger of instability, voltage collapse or under-frequency caused by transmission or Generation trouble in the CAISO **Balancing Authority** Area, or events outside of the CAISO **Balancing Authority** Area that could result in a cascade of events throughout the WECC grid, the CAISO will declare a System Emergency. This declaration may include a notice to suspend the Day-Ahead Market, HASP and Real-Time Markets, authorize full use of Black Start Generating Units, initiate full control of manual Load Shedding, and authorize the curtailment of Curtailable Demand (even though not scheduled as an Ancillary Service). The CAISO will reduce the System Emergency declaration to a lower alert status when it is satisfied, after conferring with Reliability Coordinators within the WECC, that the major contributing factors have been corrected, and all involuntarily interrupted Demand is back in service (except interrupted Curtailable Demand selected as an Ancillary Service). This reduction in alert status will reinstate the competitive markets if they have been suspended.

### **7.7.2 Emergency Procedures.**

In the event of a System Emergency, the CAISO shall take such action as it considers necessary to preserve or restore stable operation of the CAISO Controlled Grid. The CAISO shall act in accordance with Good Utility Practice to preserve or restore reliable, safe and efficient service as quickly as reasonably practicable. The CAISO shall keep system operators in adjacent **Balancing Authority** Areas informed as to the nature and extent of the System Emergency in accordance with WECC procedures and, where practicable, shall additionally keep the Market Participants within the **Balancing Authority** Area informed.

The CAISO shall, when it considers that conditions giving rise to a System Emergency exist, declare the existence of such System Emergency. A declaration by the CAISO of a System Emergency shall be binding on all Market Participants until the CAISO announces that the System Emergency no longer exists.

In the event of a System Emergency, UDCs shall comply with all directions from the CAISO concerning the management and alleviation of the System Emergency and shall comply with all procedures concerning System Emergencies set out in this CAISO Tariff, the Business Practice Manuals, and the Operating Procedures, and each MSS Operator shall comply with all directions from the CAISO concerning the avoidance, management and alleviation of the System Emergency and shall comply with all procedures concerning System Emergencies set forth in the CAISO Tariff, Business Practice Manuals and Operating Procedures. During a System Emergency, the CAISO and UDCs shall communicate through their respective control centers and in accordance with procedures established in individual UDC Operating Agreements, and the CAISO and the MSS Operator shall communicate through their respective control centers and in accordance with procedures established in the MSS Agreement.

All Generating Units, System Units and System Resources that are owned or controlled by a Participating Generator are (without limitation to the CAISO's other rights under this CAISO Tariff) subject to control by the CAISO during a System Emergency and in circumstances in which the CAISO considers that a System Emergency is imminent or threatened. The CAISO shall, subject to **this** Section 7, have the authority to instruct a Participating Generator to bring its Generating Unit on-line, off-line, or increase or curtail the output of the Generating Unit and to alter scheduled deliveries of Energy and Ancillary Services

into or out of the CAISO Controlled Grid, if such an instruction is reasonably necessary to prevent an imminent or threatened System Emergency or to retain Operational Control over the CAISO Controlled Grid during an actual System Emergency. The CAISO shall have the authority to instruct an RMR Unit whose owner has selected Condition 2 of its RMR Contract to start-up and change its output if the CAISO has reasonably used all other available and effective resources to prevent a threatened System Emergency without declaring that a System Emergency exists. If the CAISO so instructs a Condition 2 RMR Unit, it shall compensate that unit in accordance with Section 11.5.6.3 and allocate the costs in accordance with Section 11.5.6.3.2. Each QF subject to an existing agreement with a Participating TO for the supply of Energy to the Participating TO and not subject to a QF PGA will make reasonable efforts to comply with the CAISO's instructions during a System Emergency without penalty for failure to do so.

### **7.7.3 Notifications by CAISO of System Conditions.**

The CAISO will provide the following notifications to Market Participants to communicate unusual system conditions or emergencies.

#### **7.7.3.1 System Alert.**

CAISO will give an AWE Notice of a system alert when the operating requirements of the CAISO Controlled Grid are marginal because of Demand exceeding forecast, loss of major Generation or loss of transmission capacity that has curtailed imports into the CAISO Balancing Authority Area, or if it otherwise appears that there is insufficient Energy and Ancillary Services to meet Real-Time Demand in the CAISO Balancing Authority Area.



**7.7.3.2 System Warning.**

The CAISO will give an AWE Notice of a system warning when the operating requirements for the CAISO Controlled Grid are not being met in the HASP or Real-Time Market, or the quantity of Regulation, Spinning Reserve, Non-Spinning Reserve, and Energy available to the CAISO is not acceptable for the Applicable Reliability Criteria. This system warning notice will notify Market Participants that the CAISO will, acting in accordance with Good Utility Practice, take such steps as it considers necessary to ensure compliance with Applicable Reliability Criteria, including the negotiation of Generation through processes other than competitive Bids.

**7.7.4 Intervention in CAISO Market Operations.**

The CAISO may intervene in the operation of the CAISO Markets and set the Administrative Price, if the CAISO determines that such intervention is necessary in order to prevent, contain or correct a System Emergency as follows.

- (1) The CAISO will not intervene in the operation of the Day-Ahead Market unless there has been a total or major collapse of the CAISO Controlled Grid and the CAISO is in the process of restoring it. The CAISO shall, where reasonably practicable, utilize Ancillary Services which it has the contractual right to instruct and which are capable of contributing to containing or correcting the actual, imminent or threatened System Emergency prior to issuing instructions to a Participating Generator under Section 7.7.2.3. In the event that the CAISO has exhausted all Economic Bids in the IFM, the CAISO shall use the scheduling priorities listed in Section 31.4 to clear the IFM.

- (2) Before any such intervention the CAISO must (in the following order):
  - (a) dispatch all Supply Bids offered or available to it regardless of price (including all Energy Bids and Ancillary Services Bids); (b) dispatch all interruptible Loads made available by UDCs to the CAISO in accordance with the relevant agreements with UDCs; (c) dispatch or curtail all price-responsive Demand that has been bid into the Day-Ahead Market and exercise its rights under all Load curtailment contracts available to it; (d) exercise Load Shedding to curtail Demand on an involuntary basis to the extent that the CAISO considers necessary.
- (3) The Administrative Price in relation to each of the markets for Imbalance Energy and Ancillary Services shall be set at the applicable price in the Settlement Period immediately preceding the Settlement Period in which the intervention took place.
- (4) The intervention will cease as soon as the CAISO has restored all Demand that was curtailed on an involuntary basis.

#### **7.7.5 Emergency Guidelines.**

The CAISO shall issue guidelines for all Market Participants to follow during a System Emergency. These guidelines shall be consistent with the specific obligations of Scheduling Coordinators and Market Participants referenced in Sections 7.7.10, 7.7.11, 7.7.2, 7.7.2.3 and 7.7.4(1). All Market Participants shall respond to CAISO Dispatch Instructions with an immediate response during System Emergencies.

**7.7.5.1** The CAISO shall in accordance with this Section 7.7.5 implement the Electrical Emergency Plan in consultation with the UDCs, the MSS Operators, or other entities, at the CAISO's discretion, when Energy reserve margins are forecast to be at the levels specified in the plan.

**7.7.5.2** Each UDC and MSS Operator will notify its End-Use Customers connected to the UDC's or the MSS's Distribution System of any voluntary curtailments notified to the UDC or to the MSS Operator by the CAISO pursuant to the provisions of the EEP.

**7.7.6 Periodic Tests of Emergency Procedures.**

The CAISO shall develop and administer periodic unannounced tests of System Emergency procedures. Such tests shall be designed to ensure that the CAISO Market Participants are capable of promptly and efficiently responding to imminent or actual System Emergencies.

**7.7.7 Prioritization Schedule for Shedding and Restoring Load.**

On an annual basis, the CAISO shall, in consultation with Market Participants and subject to the provisions of Section 3, develop a prioritization schedule for Load Shedding should a System Emergency require such action. The prioritization schedule shall also establish a sequence for the restoration of Load in the event that multiple Scheduling Coordinators or Market Participants are affected by service interruptions and Load must be restored in blocks. For Load shed in accordance with Section 7.7.11.4.2, the prioritization schedule will only include those UDCs or MSS Operators that have Scheduling Coordinators that have failed to submit Bids with sufficient resources to meet the Load in the UDC or MSS Service Area. For Load shed in accordance with Section 7.7.11.4.3, the prioritization schedule will include all UDCs and MSS Operators.

**7.7.8 Under Frequency Load Shedding (UFLS).**

**7.7.8.1** Each UDC's UDCOA with the CAISO and each MSS Agreement through which the MSS Operator undertakes to the CAISO to comply with the provisions of the CAISO Tariff shall describe the UFLS program for that UDC or for that MSS. The CAISO and UDC or the CAISO and the MSS Operator shall review the UFLS program periodically to ensure compliance with Applicable Reliability Criteria.

**7.7.8.2** The CAISO shall perform periodic audits of each UDC's UFLS system and of each MSS's UFLS system to verify that the system is properly configured for each UDC or MSS.

**7.7.8.3** The CAISO will use its reasonable endeavors to ensure that UFLS is coordinated among the UDCs and MSSs so that no UDC bears a disproportionate share of the CAISO's UFLS program.

**7.7.8.4** In compiling its UFLS program, the CAISO, at its discretion, may also coordinate with other entities, and review and audit their UFLS programs and systems as described in this Section 7.7.8.

**7.7.9 [NOT USED]**

**7.7.10 Further Obligations Relating to System Emergencies.**

The CAISO and Participating TOs shall comply with their obligations in Section 9 of the TCA.

**7.7.11 Use of Load Curtailment Programs.**

**7.7.11.1 Use of UDC's Existing Load Curtailment Programs.**

As an additional resource for managing System Emergencies, the CAISO will, subject to Section 3, notify the UDCs when the conditions to implement their Load curtailment programs have been met in accordance with their terms. The UDCs will exercise their best efforts, including seeking any necessary regulatory approvals, to enable the CAISO to rely on their curtailment rights at specified levels of Operating Reserve. Each UDC shall by not later than October 1 of each year advise the CAISO of the capabilities of its Load curtailment programs for the forthcoming year, and the conditions under which those capabilities may be exercised, and shall give the CAISO as much notice as reasonably practicable of any change to such programs.

**7.7.11.2 Load Curtailment.**

A Scheduling Coordinator may specify that Loads will be reduced at specified prices or, pursuant to a Participating Load Agreement, offer the right to exercise Load curtailment to the CAISO as an Ancillary Service or utilize Load curtailment itself (by way of self-provision of Ancillary Services) as Non-Spinning Reserve. The CAISO, at its discretion, may require direct control over such Curtailable Demand to assume response capability for managing System Emergencies. However, non-firm Loads shall not be eligible to provide Curtailable Demand if they are receiving incentives for interruption under existing programs approved by a Local Regulatory Authority, unless: a) participation in the CAISO's Ancillary Services markets is specifically authorized by such Local Regulatory Authority, and b) there exist no contingencies on the availability, nor any unmitigated incentives encouraging prior curtailment, of such interruptible Load for Dispatch as Curtailable Demand as a result of the operation of such existing program. The CAISO may establish standards for automatic communication of curtailment instructions to implement Load curtailment as a condition for accepting any offered Load curtailment as an Ancillary Service.

**7.7.11.3** The CAISO shall have the authority to direct a UDC or an MSS Operator to disconnect Load from the CAISO Controlled Grid if necessary to avoid an anticipated System Emergency or to regain Operational Control over the CAISO Controlled Grid during an actual System Emergency. The CAISO shall direct the UDC or the MSS Operator to shed Load in accordance with the prioritization schedule developed pursuant to Section 7.7.7. When CAISO Controlled Grid conditions permit restoration of Load, the CAISO shall restore Load according to the prioritization schedule developed pursuant to Section 7.7.7. The MSS Operator shall restore Load internal to the MSS.

**7.7.11.4 Load Shedding.**

**7.7.11.4.1** A portion of the CAISO forecast of **Balancing Authority** Area Load for each Trading Day will be allocated to each UDC or MSS Service Area. The CAISO will aggregate each Scheduling Coordinator's Day-Ahead Schedules to Load in each UDC or MSS Service Area and will compare those aggregated Load Schedules to the CAISO **Balancing Authority** Area Load forecast of metered Demand for that UDC or MSS Service Area to determine if the Load in the UDC or MSS Service Area has a resource deficiency based on the Day-Ahead Schedules.

**7.7.11.4.2** If the CAISO forecasts in advance of the HASP that Load curtailment will be necessary due to a resource deficiency, the CAISO will identify any UDC or MSS Service Area that is resource deficient. The CAISO will provide notice to all Scheduling Coordinators if one or more UDC or MSS is deficient. If Load curtailment is required to manage a System Emergency associated with insufficient HASP Schedules of resources, the CAISO will determine the amount and location of Load to be curtailed and will allocate a portion of that required Load curtailment to each UDC or MSS Operator whose Service Area has been identified, based on HASP Schedules, as being resource-deficient based on the ratio of its resource deficiency to the total **Balancing Authority** Area resource deficiency. Each UDC or MSS Operator shall be responsible for notifying its customers and Generators connected to its system of curtailments and service interruptions.

**7.7.11.4.3** If a Load curtailment is required to manage System Emergencies, in any circumstances other than those described in Section 7.7.11.4.2, the CAISO will determine the amount and location of Load to be reduced and to the extent practicable, will allocate a portion to each UDC based on the ratio of its Demand (at the time of the **Balancing Authority** Area annual peak for the previous year) to total **Balancing Authority** Area annual peak Demand for the previous year taking into account system considerations and the UDC's curtailment rights under their tariffs. Each UDC or MSS Operator shall be responsible for notifying its customers and Generators connected to its system of curtailments and service interruption.

**7.7.12 Curtailment Under Emergency and Non-Emergency Conditions.**

**7.7.12.1 Emergency Conditions.**

To the extent practicable, the CAISO shall allocate necessary curtailments of Existing Rights or non-Converted Rights under emergency conditions in accordance with the instructions submitted by the Responsible PTO pursuant to Section 16. If circumstances prevent the CAISO's compliance with such instructions, the CAISO shall allocate such curtailments in a non-discriminatory manner consistent with Good Utility Practice.

**7.7.12.2 Non-Emergency Conditions.**

Unless otherwise specified by the Responsible PTO in the instructions that it submits to the CAISO under Section 16, the CAISO will allocate any necessary curtailments under non-emergency conditions, pro rata, among holders of Existing Rights, at particular Scheduling Points and/or on particular contract paths, in the order of: (1) non-firm, (2) each priority of conditional firm, and (3) each priority of firm rights. Priorities for firm and conditional firm transmission service are indicated using the TRTC Instructions as described in Section 16.

**7.7.13 System Emergency Reports and Sanctions.**

**7.7.13.1 Review of Major Outages.**

The CAISO with the cooperation of any affected UDC shall jointly perform a review following a major Outage that affects at least ten (10) percent of the Load served by the Distribution System of a UDC or any Outage that results in major damage to the CAISO Controlled Grid or to the health and safety of personnel. The review shall address the cause of the Outage, the response time and effectiveness of emergency management efforts, and whether the operation, maintenance or scheduling practices of the CAISO, any Participating TOs, Eligible Customers, UDCs or Participating Generators enhanced or undermined the ability of the CAISO to maintain or restore service efficiently and in a timely manner.

**7.7.13.2 Provide Information to Review Outages.**

Participating TOs, Participating Generators, Eligible Customers, Scheduling Coordinators and UDCs shall promptly provide information requested by the CAISO to review Outages pursuant to Section 7.7.13.1 and to prepare Outage reports. The CAISO shall seek the views of any affected Participating TOs, Participating Generators, Eligible Customers, Scheduling Coordinator or UDCs and allow such affected Participating TOs, Participating Generators, Eligible Customers, Scheduling Coordinators or UDCs to comment on any issues arising during the preparation of a report. All findings and reports arising from the CAISO's review shall be shared with Participating TOs, Participating Generators, Eligible Customers and UDCs.

**7.7.13.3 Imposing Sanctions.**

If the CAISO finds that the operation and maintenance practices of any Participating TOs, Participating Generators, Eligible Customers, or UDCs prolonged the response time or contributed to the Outage, the CAISO may impose sanctions on the responsible Participating TOs, Participating Generators, Eligible Customers, or UDCs provided that no sanction shall be imposed in respect of actions taken in compliance with the CAISO's instructions or pursuant to a Remedial Action Scheme. The CAISO shall develop and file with FERC a schedule of such sanctions. Any dispute concerning whether sanctions should be imposed under this Section shall be resolved through the CAISO ADR Procedures. The schedule of sanctions filed with FERC (including categories and levels of sanctions) shall not be subject to the CAISO ADR Procedures. The CAISO shall publish on the CAISO Website details of all instances in which a sanction has been imposed.



**7.7.14 CAISO Facilities and Equipment.**

**7.7.14.1 CAISO Facility and Equipment Outages.**

The CAISO has installed redundant control centers, communication systems and computer systems. Most, but not necessarily all, equipment problems or failures should be transparent to Market Participants. This Section 7.7.14.1 addresses some situations when Market Participants could be affected, but it is impossible to identify and plan for every type of equipment problem or failure. Real-Time situations will be handled by the Real-Time CAISO dispatchers. The CAISO control room in Folsom is the Primary CAISO Control Center and the CAISO control room in Alhambra is the Backup CAISO Control Center.

**7.7.14.2 CAISO's Secure Communication System Unavailable.**

**7.7.14.2.1 Unavailable Critical Functions of CAISO's Secure Communication System.**

During a total disruption of the CAISO's secure communication system several critical functions of the CAISO will not be available including:

- (a) the CAISO's scheduling infrastructure computer systems will not be able to communicate with Scheduling Coordinators to receive any type of updated Bid or Schedule information;
- (b) the CAISO's scheduling infrastructure computer systems will not be able to communicate Congestion Management information and Schedule changes to the Scheduling Coordinators; and
- (c) the CAISO will not be able to communicate general information, including emergency information, to any Market Participants.

**7.7.14.2.2 Communications during Unavailability of CAISO's Secure Communication System.**

During any period of CAISO's secure communication system unavailability, the CAISO shall:

- (a) make all reasonable efforts to keep Market Participants aware of current CAISO Controlled Grid status using voice communications;
- (b) use the most recent set of Day-Ahead Schedules, RUC Schedules, AS Awards, HASP Intertie Schedules, and Dispatch Instructions for each Scheduling Coordinator for the current and all future Settlement Periods and/or Trading Days until the CAISO's secure communication system is restored; and
- (c) attempt to take critical Bids, including ETC and TOR Self-Schedules changes, from Scheduling Coordinators via voice communications as time and personnel availability allows.

**7.7.14.2.3 Primary CAISO Control Center – Loss of all Voice Communications.**

In the event of loss of all voice communication at the Primary CAISO Control Center, the Primary CAISO Control Center will use alternate communications to notify the Backup CAISO Control Center of the loss of voice communications. The Backup CAISO Control Center will post information on the situation on the CAISO's secure communication system. Additional voice notifications will be made as time permits.

Once voice communications have been restored to the Primary CAISO Control Center, the CAISO will post this information on the CAISO's secure communication system.

**7.7.14.2.4 Primary CAISO Control Center – Control Center Completely Unavailable.**

In the event that the Primary CAISO Control Center becomes completely unavailable, the Primary CAISO Control Center will use alternate communications to notify the Backup CAISO Control Center that the Primary CAISO Control Center is unavailable. The Backup CAISO Control Center will post information on the situation on the CAISO's secure communication system. Additional voice notifications will be made as time permits.

The Backup CAISO Control Center will post confirmation on the CAISO's secure communication system that all computer systems are functioning normally (if such is the case) and take complete control of the CAISO Controlled Grid. The Backup CAISO Control Center will notify the single point of contact at the transmission operations center of Pacific Gas and Electric Company by direct voice communication of the situation.

Once the Primary CAISO Control Center is again available, all functions will be transferred back, and the Primary CAISO Control Center will notify all Market Participants via the CAISO's secure communication system.

**7.7.14.2.5      Primary CAISO Control Center - CAISO Energy Management System (EMS) Unavailable.**

Should an outage occur to the redundant EMS computer systems in the Primary CAISO Control Center, an auto transfer should occur to transfer EMS operation to the redundant EMS back up computers at the Backup CAISO Control Center. Due to the severity of a total CAISO EMS computer outage, the Primary CAISO Control Center will post information on the CAISO's secure communication system that the Primary CAISO Control Center EMS computer is unavailable and that EMS control has been transferred to the Backup CAISO Control Center.

When the Primary CAISO Control Center EMS computer is restored, the Backup CAISO Control Center will initiate a transfer back of the EMS system to the Primary CAISO Control Center. The Primary CAISO Control Center will post information on the restored EMS computer system status on the CAISO's secure communication system.

**7.7.14.2.6 Backup CAISO Control Center – Loss of all Voice Communications.**

In the event of a loss of all voice communications at the Backup CAISO Control Center, the Backup CAISO Control Center will use alternate communications to notify the Primary CAISO Control Center of the loss of voice communications. The Primary CAISO Control Center will post information on the situation via the CAISO's secure communication system. Additional voice notifications will be made as time permits. Once voice communications have been restored to the Backup CAISO Control Center, the Primary CAISO Control Center will post this information on the CAISO's secure communication system.

**7.7.14.2.7 Backup CAISO Control Center – Control Center Completely Unavailable.**

In the event that the Backup CAISO Control Center becomes completely unavailable, the Backup CAISO Control Center will use alternate communications to notify the Primary CAISO Control Center that the Backup CAISO Control Center is unavailable. The Primary CAISO Control Center will post information on the situation on the CAISO's secure communication system. Additional voice notifications will be made as time permits.

The Primary CAISO Control Center will post confirmation on the CAISO's secure communication system that all computer systems are functioning normally (if such is the case) and take complete control of the CAISO Controlled Grid. The Primary CAISO Control Center will notify the **grid control center of Southern California Edison Company** by direct voice communications of the situation.

Once the Backup CAISO Control Center is again available, all functions will be transferred back, and the Backup CAISO Control Center will notify all Market Participants via the CAISO's secure communication system.

**7.7.14.2.8 Use of IOUs' Energy Control Center Computers.**

The CAISO and the IOUs will comply with the procedures for the utilization by the CAISO of the IOUs' Energy control center computers when developed. The CAISO will post such procedures on the CAISO's secure communication system when agreed.

**7.7.15 System Operations in the Event of a Market Disruption.**

The CAISO may take one or more of the following actions in the event of a Market Disruption, to prevent a Market Disruption, or minimize the extent of a Market Disruption:

- (a) postpone the closure of the applicable CAISO Market;
- (b) remove Bids and Self-Schedules that have resulted in a Market Disruption previously;
- (c) close the applicable CAISO Market and manually copy Bids and Self-Schedules from the previous day or other applicable market period;
- (d) close the applicable CAISO Market and use submitted Bids and Self-Schedules to the extent possible;
- (e) cancel the applicable CAISO Market, in which case import/export schedules shall be determined by submittal of E-Tags;
- (f) utilize Administrative Prices to settle metered Supply and Demand; and
- (g) utilize Exceptional Dispatch and issue operating orders for resources to be committed and dispatched to meet Demand.

The CAISO's choice of action in the event of a Market Disruption shall depend on the cause of the Market Disruption, the expected time to resolve the Market Disruption, and the status of submitted Bids and Self-Schedules at the time the Market Disruption occurs. Nothing in this Section 7.7.15 shall prevent the CAISO from taking any other action permitted under the CAISO Tariff.

## **7.8 Management of Overgeneration Conditions.**

The CAISO's management of Overgeneration relates only to Real-Time. In the event that Overgeneration conditions occur during Real-Time, the CAISO will direct the Scheduling Coordinators to take the steps described in this Section 7.8 and Scheduling Coordinators shall implement CAISO directions without delay. Overgeneration in Real-Time will be mitigated by the CAISO as follows; provided that the CAISO Operator will have the discretion, if necessary to avoid a System Emergency, to eliminate one or more of the following steps.

**7.8.1** Commencing one hour prior to the start of the Settlement Period, the CAISO will, based on available Bids issue Dispatch Instructions to Scheduling Coordinators to reduce Generation and imports for the next Operating Hour.

**7.8.2** To the extent that there are insufficient Bids available for the Operating Hour to fully mitigate the Overgeneration condition, the CAISO will notify Scheduling Coordinators of the projected amount of Overgeneration to be mitigated in that hour.

**7.8.3** In addition to the action taken under 7.8.2, the CAISO will, if it considers it necessary to maintain the reliable operation of the CAISO **Balancing Authority** Area, offer Energy for sale on behalf of Scheduling Coordinators to adjacent **Balancing Authorities** at the estimated LMP or, if the CAISO considers it necessary, at a price established by the CAISO on behalf of Scheduling Coordinators, to be paid to adjacent **Balancing Authorities**.

**7.8.4** To the extent that the steps described in Sections 7.8.1 through 7.8.3 fail to mitigate Overgeneration, the CAISO will instruct Scheduling Coordinators to reduce either Generation, or imports, or both. The amount of the reduction for each Scheduling Coordinator will be calculated pro rata based on the product of the total required reduction in Generation and imports (or increase in exports) and the ratio of its Demand to the total Demand in the CAISO **Balancing Authority** Area.

**7.8.5** To the extent that the above steps fail to fully mitigate the Overgeneration, the CAISO will issue mandatory Dispatch Instructions for specific reductions in Generating Unit output and external imports and all relevant Scheduling Coordinators shall be obligated to comply with such Dispatch Instructions.

**7.8.6** Any costs incurred by the CAISO in implementing Section 7.8.3 shall be reimbursed to the CAISO by Scheduling Coordinators based upon the extent to which they supplied Energy, in metered amounts, greater than the Generation and imports dispatched by the CAISO as provided in the Day-Ahead Schedule or in response to Dispatch Instructions and consumed Energy, in metered amounts, less than the Demand scheduled, as a proportion of the total amount of such excess or shortfall among all Scheduling Coordinators.

## **8. ANCILLARY SERVICES.**

### **8.1 Scope.**

The CAISO shall be responsible for ensuring that there are sufficient Ancillary Services available to maintain the reliability of the CAISO Controlled Grid consistent with WECC and NERC Reliability Standards, WECC Reliability Criteria, and other WECC and NERC criteria. The CAISO's Ancillary Services requirements may be self-provided by Scheduling Coordinators as further provided in the Business Practice Manuals. Those Ancillary Services which the CAISO requires to be available but which are not being self-provided will be competitively procured by the CAISO from Scheduling Coordinators in the Day-Ahead Market, the Hour-Ahead Scheduling Process (the hourly HASP Ancillary Service Awards) and the RTM consistent with Section 8.3. The provision of Ancillary Services from the Interties with interconnected Balancing Authority Areas is limited to Ancillary Services bid into the competitive procurement processes in the IFM, HASP and RTM. The CAISO will not accept Submissions to Self-Provide Ancillary Services that are imports to the CAISO Balancing Authority Area over the Interties with interconnected Balancing Authority Areas, except from Dynamic System Resources certified to provide Ancillary Services or if provided pursuant to ETCs, TORs or Converted Rights. The CAISO will calculate payments for Ancillary Services supplied by Scheduling Coordinators and charge the cost of Ancillary Services to Scheduling Coordinators based on their Ancillary Service Obligations.



For purposes of this CAISO Tariff, Ancillary Services are: (i) Regulation Up and Regulation Down, (ii) Spinning Reserve, (iii) Non-Spinning Reserve, (iv) Voltage Support, and (v) Black Start capability.

These services will be procured as stated in Section 8.3.5. Bids for Non-Spinning Reserve may be submitted by Scheduling Coordinators for Curtailable Demand as well as for Generation. Bids for Regulation, Spinning Reserve, Non-Spinning Reserve, and Voltage Support may be submitted by a Scheduling Coordinator for other non-generation resources that are capable of providing the specific service and that meet applicable Ancillary Service standards and technical requirements, as set forth in Sections 8.1 through 8.4, and are certified by the CAISO to provide Ancillary Services. The provision of Regulation, Spinning Reserve, Non-Spinning Reserve, and Voltage Support by other non-generation resources is subject to the same requirements applicable to other providers of these Ancillary Services, as set forth in Sections 8.5 through 8.11. Identification of specific services in this CAISO Tariff shall not preclude development of additional interconnected operation services over time. The CAISO and Market Participants will seek to develop additional categories of these unbundled services over time as the operation of the CAISO Controlled Grid matures or as required by regulatory authorities.

## **8.2 Ancillary Services Standards.**

All Ancillary Services shall meet the CAISO's Ancillary Services standards.

### **8.2.1 Determination of Ancillary Service Standards.**

The CAISO shall set the required standard for each Ancillary Service necessary to maintain the reliable operation of the CAISO Controlled Grid. Ancillary Services standards shall be based on WECC Minimum Operating Reliability Criteria (MORC), NERC and CAISO Controlled Grid reliability requirements. The CAISO, in conjunction with the relevant reliability council (WECC), shall develop these Ancillary Services standards to determine reasonableness, cost effectiveness, and adherence to NERC and WECC standards. The standards developed by the CAISO shall be used as a basis for determining the quantity and type of each Ancillary Service which the CAISO requires to be available. These requirements and standards apply to all Ancillary Services whether self-provided or procured by the CAISO.

### **8.2.2 Time-frame For Revising Ancillary Service Standards.**

The CAISO shall periodically undertake a review of the CAISO Controlled Grid operation to determine any revision to the Ancillary Services standards to be used in the CAISO **Balancing Authority** Area. At a minimum the CAISO shall conduct such reviews to accommodate revisions to WECC and NERC standards. The CAISO may adjust the Ancillary Services standards temporarily to take into account, among other things variations in system conditions, Real-Time Dispatch constraints, contingencies, and voltage and dynamic stability assessments. Where practicable, the CAISO will provide notice, via the CAISO Website, of any temporary adjustments to Ancillary Service standards by 6:00 p.m. **two (2)** days ahead of the **Operating** Day to which the adjustment will apply. Periodic reviews by the CAISO may

include, but are not limited to: (a) analysis of the deviation between actual and forecast Demand; (b) analysis of patterns of unplanned Generating Unit Outages; (c) analysis of compliance with NERC and WECC criteria and Reliability Standards; (d) analysis of operation during system disturbances; (e) analysis of patterns of shortfalls between Day-Ahead Schedules and actual Generation and Demand; and (f) analysis of patterns of unplanned transmission Outages.

### **8.2.3 Quantities of Ancillary Services Required and Use of Ancillary Services Regions.**

For each of the Ancillary Services, the CAISO shall determine the quantity and location of the Ancillary Service which is required using Ancillary Service Regions as described in Section 8.3.3. For each of the Ancillary Services, the CAISO shall determine the required locational dispersion in accordance with CAISO Controlled Grid reliability requirements. The Ancillary Services provided must be under the direct Dispatch control of the CAISO on a Real-Time Dispatch Interval basis. The CAISO shall determine the quantities it requires as provided for in Sections 8.2.3.1 to 8.2.3.3.

#### **8.2.3.1 Regulation Service.**

The CAISO shall maintain sufficient Generating Units immediately responsive to AGC in order to provide sufficient Regulation service to allow the CAISO Balancing Authority Area to meet WECC and NERC control performance criteria by continuously balancing Generation to meet deviations between actual and scheduled Demand and to maintain Interchange Schedules. The quantity of Regulation Down and Regulation Up capacity needed for each Settlement Period of the Day-Ahead Market and the HASP, and in each fifteen (15) minute period in Real-Time shall be determined by the CAISO as a percentage of the applicable CAISO Forecast of CAISO Demand for the Day-Ahead, HASP, and Real-Time Markets. The CAISO's determination is based upon its need to meet the WECC and NERC control performance criteria.

The CAISO will publish on OASIS the estimated quantity, or the percentage used to determine the estimated quantity, of Regulation Reserves required for each hour of the Day-Ahead Market, each hour in the HASP, and in each ~~fifteen~~ (15) minute period in Real-Time for the Trading Day.

### **8.2.3.2 Spinning and Non-Spinning Reserves.**

The CAISO shall maintain minimum contingency Operating Reserve made up of Spinning Reserve and Non-Spinning Reserve in accordance with WECC MORC criteria equal to (a) ~~five percent~~ (5%) of the Demand to be met by Generation from hydroelectric resources (excluding the Demand covered by firm purchases from outside the CAISO **Balancing Authority** Area) plus ~~seven percent~~ (7%) of the Demand to be met by Generation from other resources (excluding the Demand covered by firm purchases from outside the CAISO **Balancing Authority** Area), or (b) the single largest Contingency, if this is greater. The CAISO from time to time may determine to use more stringent criteria. In determining the procurement of Operating Reserves, the CAISO will estimate the amount of Operating Reserves associated with firm imports of Energy and will include such estimates in determining the amount of Operating Reserves to be procured in the IFM and HASP and the scheduled imports in RTM. The Spinning Reserve component of Operating Reserve shall be no less than one-half the Operating Reserve required for each Settlement Period of the Day-Ahead Market, each hour in the HASP, and in each ~~fifteen~~ (15) minute period in Real-Time. When the level of Operating Reserve is determined by Demand, the CAISO shall not maintain Operating Reserve with respect to Demand covered by firm purchases from outside the CAISO **Balancing Authority** Area. In determining its Operating Reserve requirements, the CAISO will estimate the amount of Operating Reserves associated with firm imports of Energy and will include such estimates in determining the Operating Reserve requirements in the IFM, HASP, and RTM. In addition, the CAISO shall maintain Operating Reserve equal to the total amount of: (i) Demand covered by Interruptible Imports scheduled by Scheduling Coordinators for any hour and, (ii) on-demand obligations of Scheduling Coordinators (i.e., the demand obligations to other entities or **Balancing Authority** Areas that the Scheduling Coordinator is to provide from resources within the CAISO Controlled Grid). Such additional

Operating Reserve is the responsibility of the Scheduling Coordinator either scheduling Interruptible Imports or with on demand obligations and such additional Operating Reserve must be self-provided from the CAISO by Scheduling Coordinators from generation capacity that for the Operating Hour in question has not been paid a RUC Availability Payment, has not received an RMR Dispatch, and is not satisfying a Resource Adequacy Capacity obligation to serve CAISO Balancing Authority Area Load. The specific resource self providing the additional Operating Reserve must have sufficient unloaded capacity available based on Energy and Ancillary Service Schedules in HASP. When the on-demand obligation is called upon to deliver Energy, the CAISO will schedule such Energy and also simultaneously Dispatch the identified resource supporting the on-demand obligation for the same quantity of Energy. Operating Reserves includes both Spinning and Non-Spinning Reserves.

#### **8.2.3.3 Voltage Support.**

The CAISO shall determine on an hourly basis for each day the quantity and location of Voltage Support required to maintain voltage levels and reactive margins within WECC and NERC criteria using a power flow study based on the quantity and location of scheduled Demand. The CAISO shall issue daily voltage schedules (Dispatch Instructions) to Participating Generators, Participating TOs and UDCs, which are required to be maintained for CAISO Controlled Grid reliability. All other Generating Units shall comply with the power factor requirements set forth in contractual arrangements in effect on the CAISO Operations Date, or, if no such contractual arrangements exist and the Generating Unit exists within the system of a Participating TO, the power factor requirements applicable under the Participating TO's TO Tariff or other tariff on file with the FERC.

All Participating Generators shall maintain the CAISO specified voltage schedule at the transmission interconnection points to the extent possible while operating within the power factor range specified in

their interconnection agreements or, for Regulatory Must-Take Generation, Regulatory Must-Run Generation and Reliability Must-Run Generation, consistent with existing obligations. For Generating Units that do not operate under one of these agreements, the minimum power factor range will be within a band of 0.90 lag (producing VARs) and 0.95 lead (absorbing VARs) power factors. Participating Generators with Generating Units existing at the CAISO Operations Date that are unable to meet this operating power factor requirement may apply to the CAISO for an exemption. Prior to granting such an exemption, the CAISO shall require the Participating TO or UDC to whose system the relevant Generating Units are interconnected to notify it of the existing contractual requirements for Voltage Support established prior to the CAISO Operations Date for such Generating Units. Such requirements may be contained in CPUC Electric Rule 21 or the Interconnection Agreement with the Participating TO or UDC. The CAISO shall not grant any exemption under this Section from such existing contractual requirements. The CAISO shall be entitled to instruct Participating Generators to operate their Generating Units at specified points within their power factor ranges. Participating Generators shall receive no compensation for operating within these specified ranges.

If the CAISO requires additional Voltage Support, it shall procure this either through Reliability Must-Run Contracts or, if no other more economic sources are available, by instructing a Generating Unit to move its MVar output outside its mandatory range. Only if the Generating Unit must reduce its MW output in order to comply with such an instruction will it be compensated in accordance with Section 8.5.6.2.

All Loads directly connected to the CAISO Controlled Grid shall maintain reactive flow at grid interface points within a specified power factor band of 0.97 lag to 0.99 lead. Loads shall not be compensated for the service of maintaining the power factor at required levels within the bandwidth. A UDC interconnecting with the CAISO Controlled Grid at any point other than a Scheduling Point shall be subject to the same power factor requirement.

The power factor for both the Generating Units and Loads shall be measured at the interconnection point with the CAISO Controlled Grid. The CAISO will develop and will be authorized to levy penalties against Participating Generators, UDCs or Loads whose Voltage Support does not comply with the CAISO's requirements. The CAISO will establish voltage control standards with UDCs and the operators of other **Balancing Authority** Areas and will enter into operational agreements providing for the coordination of actions in the event of a voltage problem occurring.

Wheeling Through and Wheeling Out transactions may also be subject to a reactive charge as developed by the CAISO. If the CAISO shall determine that a reactive charge should be payable at a future date, it shall, subject to FERC acceptance and approval, publish annually the Voltage Support obligations and applicable charges for Wheeling Through and Wheeling Out transactions at Scheduling Points. The obligations shall be predetermined by the CAISO based on the estimated amount of the Wheeling Through and Wheeling Out transactions each year.

#### **8.2.3.4 Black Start Capability.**

The CAISO shall determine the amount and location of Black Start Generation it requires through contingency studies that are used as the basis of the CAISO's emergency plans. The studies shall specify:

- (a) the initiating disturbance;
- (b) the magnitude of the Outage, including the extent of the Outage (local area, CAISO Controlled Grid, or WECC), the assumed status of Generation after the initiating disturbance, the status of interconnections, the system Demand level at the time of the disturbance, the interconnection support, and assumptions regarding the availability of support from other utilities to help restore Generation and Demand;
- (c) the Generator performance including a percentage of Black Start units (to be determined by the CAISO) which are expected to fail to start, and;
- (d) expected transmission system damage.

The CAISO shall also specify the following Load restoration performance goals:

- (i) Black Start unit startup and connection times;
- (ii) CAISO Controlled Grid restoration times; and
- (iii) Load restoration times.

Scheduling Coordinators shall provide the CAISO with their Load restoration time requirements for any Loads that provide emergency services.

#### **8.2.3.4.1 Black Start Units.**

The CAISO will select Black Start capacity in locations where adequate transmission capacity can be made readily available (assuming no transmission damage) to connect the Black Start Generating Unit to the station service bus of a Generating Unit designated by the CAISO. Black Start Generating Units:

- (a) must be located in the CAISO Balancing Authority Area;
- (b) may be located anywhere in the CAISO Balancing Authority Area provided that the Black Start resource is capable of meeting the CAISO performance requirements for starting and interconnection to the CAISO Controlled Grid; but
- (c) must be dispersed throughout the CAISO Balancing Authority Area.

#### **8.2.3.4.2 Black Start Services.**

- (a) All Participating Generators with Black Start Generating Units must satisfy technical requirements specified by the CAISO.
- (b) The CAISO shall from time to time undertake performance tests, with or without prior notification.



- (c) The CAISO shall have the sole right to determine when the operation of Black Start Generating Units is required to respond to conditions on the CAISO Controlled Grid.
- (d) If the CAISO has intervened in the market for Energy and/or Ancillary Services pursuant to Section 7.7.4, the price paid by the CAISO for Black Start services shall be sufficient to permit the relevant Participating Generator to recover its costs over the period that it is directed to operate by the CAISO.
- (e) If a Black Start Generating Unit fails to achieve a Black Start when called upon by the CAISO, or fails to pass a performance test administered by the CAISO, the Market Participant that has contracted to supply Black Start service from the Generating Unit shall re-pay to the CAISO any reserve payment(s) that it has received since the administration of the last performance test or the last occasion upon which it successfully achieved a Black Start when called upon by the CAISO, whichever is the shorter period.

#### **8.2.3.5 Ancillary Service Substitution.**

The CAISO, whenever possible, will increase its purchases of an Ancillary Service that can substitute for another Ancillary Service, when doing so is expected to reduce its total cost of procuring Ancillary Services while meeting reliability requirements. The substitution described in this section can only occur with the purchase of bid-in Ancillary Services; substitution may not involve Self-Provided Ancillary Services. The CAISO will make such adjustments in accordance with the following principles:

- (a) The Regulation requirement must be satisfied only by Regulation Bids for resources qualified to provide Regulation;
- (b) Additional Regulation Up capacity can be used to satisfy requirements for Spinning Reserve, or Non-Spinning Reserve;

- (c) Regulation Up and Spinning Reserve requirements must be collectively satisfied by the combination of Regulation Up and Spinning Reserve Bids. Spinning Reserve and Regulation may be provided as separate services from the same Generating Unit, provided that the sum of Spinning Reserve and Regulation Up provided is not greater than the maximum Ramp Rate of the Generating Unit (MW/minute) times ten (10);
- (d) Additional Regulation Up and Spinning Reserve capacity can be used to satisfy requirements for Non-Spinning Reserve.
- (e) Regulation Up, Spinning Reserve, and Non-Spinning Reserve requirements must be collectively satisfied by the combination of Regulation Up, Spinning Reserve and Non-Spinning Reserve Bids;
- (f) Total MW purchased from the Regulation Up, Spinning Reserve, and Non-Spinning Reserve markets will not be changed by this Section 8.2.3.5; and
- (g) Regulation Energy resulting from Regulation that substituted for another Ancillary Service continues to be treated as Regulation Energy regardless of for what service it substituted.

### **8.3 Procurement of Ancillary Services, Certification and Testing Requirements for Providers of Ancillary Services, and Time-frame For Contracting for Ancillary Services.**

#### **8.3.1 Procurement of Ancillary Services.**

The CAISO shall operate competitive Day-Ahead, HASP, and Real-Time Markets to procure Ancillary Services. The Security Constrained Unit Commitment (SCUC) and Security Constrained Economic Dispatch (SCED) applications used in the Integrated Forward Market (IFM), HASP, and the Real-Time Market (RTM) shall calculate optimal resource commitment, Energy, and Ancillary Services Awards and Schedules at least cost to End-Use Customers consistent with maintaining System Reliability. Any

Scheduling Coordinator representing Generating Units, System Units, Loads or imports of System

Resources may submit Bids into the CAISO's Ancillary Services markets provided that it is in possession of a current certificate for the Generating Units, System Units, imports of System Resources or Loads concerned. Regulation Up, Regulation Down, and Operating Reserves necessary to meet CAISO requirements not met by self-provision will be procured by the CAISO as described in this CAISO Tariff. The amount of Ancillary Services procured in the IFM and HASP and in the Real-Time Market is based upon the CAISO Forecast of CAISO Demand plus HASP Intertie Schedule for the Operating Hour net of (i) Self-Provided Ancillary Services from Generating Units internal to the CAISO **Balancing Authority** Area and Dynamic System Resources certified to provide Ancillary Services and (ii) Ancillary Services self-provided pursuant to an ETC, TOR or Converted Right. The CAISO will manage both CAISO procured and Self-Provided Ancillary Services as part of the Real-Time Dispatch. In the Day-Ahead Market, the CAISO procures one-hundred percent (100%) of its Ancillary Service requirements based on the Day-Ahead Demand Forecast net of Self-Provided Ancillary Services. After the Day-Ahead Market, the CAISO procures additional Ancillary Services needed to meet system requirements from: (a) imports or System Resources in the HASP, and (b) **Generation** internal to the CAISO **Balancing Authority** Area in the Real-Time Market. The amount of Ancillary Services procured in the HASP and in the Real-Time Market is based upon the CAISO Forecast of CAISO Demand for the Operating Hour net of Self-Provided Ancillary Services.

The CAISO procurement of Ancillary Services from imports or System Resources in the HASP is for the entire Operating Hour. The procurement of Ancillary Services from **Generation** internal to the CAISO **Balancing Authority** Area for the Real-Time Market is for a fifteen (15) minute time period. The CAISO's procurement of Ancillary Services from imports or System Resources in the HASP and from Generating Units for the Real-Time Market is based on the Ancillary Service Bids submitted in the HASP.

As of the CAISO Operations Date, the CAISO will contract for long-term Voltage Support service with owners of Reliability Must-Run Units under Reliability Must-Run Contracts. Black Start capability will initially be procured by the CAISO through individual contracts with Scheduling Coordinators for Reliability Must-Run Units and other Generating Units which have Black Start capability. These requirements and standards apply to all Ancillary Services whether self-provided or procured by the CAISO.

### **8.3.2 Procurement Not Limited to CAISO *Balancing Authority* Area.**

The CAISO will procure Spinning Reserves and Non-Spinning Reserves from Generating Units operating within the CAISO *Balancing Authority* Area and from imports of System Resources. Scheduling Coordinators are allowed to bid Regulation from resources located outside the CAISO *Balancing Authority* Area by dynamically scheduling such resources. Each System Resource used to bid Regulation must comply with the Dynamic Scheduling Protocol in Appendix X. When bidding to supply Ancillary Services in the IFM, HASP or RTM, imports compete for use of Intertie transmission capacity when the requested use is in the same direction, e.g., imports of Ancillary Services compete with Energy on Interties in the import direction and exports of Ancillary Services (i.e., on demand obligations) compete with Energy on Interties in the export direction. To the extent there is Congestion, imports of Ancillary Services will pay Congestion costs in the IFM, HASP and RTM markets pursuant to Section 11.

### **8.3.3 Ancillary Service Regions and Regional Limits.**

The CAISO will procure Ancillary Services using Ancillary Service Regions and Ancillary Service Sub-Regions. There are two Ancillary Services Regions and eight Ancillary Service Sub-Regions. The two Ancillary Service Regions are the System Region (i.e., the CAISO *Balancing Authority* Area) and the Expanded System Region (i.e., the System Region and Intertie Scheduling Points with adjacent

**Balancing Authority** Areas). As defined by a Business Practice Manual, the eight identified Ancillary Service Sub-Regions are (1) the South of Path 15 Sub-Region, (2) the Expanded South of Path 15 Sub-Region, (3) the South of Path 26 Sub-Region, (4) the Expanded South of Path 26 Sub-Region, (5) the North of Path 15 Sub-Region, (6) the Expanded North of Path 15 Sub-Region, (7) the North of Path 26 Sub-Region, and (8) the Expanded North of Path 26 Sub-Region. The eight Ancillary Service Sub-Regions are embedded within either the System Region or the Expanded System Region. The CAISO may use Ancillary Service Sub-Regions within the System Region or the Expanded System Region to ensure appropriate distribution of the Ancillary Services procured for the CAISO **Balancing Authority** Area. The definition of the Expanded System Region, the System Region, and the eight Sub-Regions shall apply collectively to the following Ancillary Services: Regulation Up, Regulation Down, Spinning Reserves and Non-Spinning Reserves.

#### **8.3.3.1 Use of Ancillary Service Regions and Ancillary Service Regional Limits.**

Within the Expanded System Region, the System Region, and the Sub-Regions, the CAISO may establish limits on the amount of Ancillary Services that can be provided from each region or can be provided within each region. When used, these Ancillary Service Regional Limits identify either a maximum or a minimum (or both a maximum and a minimum) amount of Ancillary Services to be obtained within the region. The minimum Ancillary Service limit in the Expanded System Region shall be the quantities of each Ancillary Service required to meet the WECC and NERC requirements for the CAISO **Balancing Authority** Area. The CAISO may establish a restriction on the amount of Ancillary Services to be procured from outside the CAISO **Balancing Authority** Area by establishing a minimum limit for the System Region.

### **8.3.3.2 Criteria For Use of Ancillary Service Regions and Sub-Regions.**

The CAISO's use of an Ancillary Service Sub-Region occurs when the CAISO establishes a minimum or maximum limit for that Sub-Region. The CAISO's use of minimum and maximum procurement limits for Ancillary Services help to ensure that the Ancillary Services required in the CAISO **Balancing Authority** Area are dispersed appropriately throughout the CAISO **Balancing Authority** Area and accurately reflect the system topology and deliverability needs. The factors the CAISO will look to in determining whether to establish or change minimum or maximum limits, include but are not limited to, the following: (a) the CAISO Forecast of CAISO Demand, (b) the location of Demand within the **Balancing Authority** Area, (c) information regarding network and resource operating constraints that affect the deliverability of Ancillary Services into or out of an Ancillary Service Region, (d) the locational mix of generating resources, (e) generating resource Outages, (f) historical patterns of transmission and generating resource availability, (g) regional transmission limitations and Constraints, (h) transmission Outages, (i) Available Transfer Capability, (j) DA Schedules or HASP Intertie Schedules, (k) whether any Ancillary Services provided from System Resources requiring a NERC tag fail to have a NERC tag, and (l) other factors affecting System Reliability. Ancillary Services procured within a Sub-Region count toward satisfying the Ancillary Service requirements for the System Region or the Expanded System Region.

### **8.3.3.3 Notice to Market Participants.**

Pursuant to Section 6.5.2.3.3, the CAISO will publish forecasted Ancillary Service requirements, regional constraints, and the minimum and/or maximum Ancillary Service Regional Limits for the Ancillary Service Regions and any Sub-Regions by 6:00p.m. prior to the Day-Ahead Market (two days prior to the Operating Day). After the completion of the DAM for a given Trading Day, the CAISO will publish the limits that were used in the DAM. If prior to the close of the HASP for a Trading Hour the CAISO makes a substantial change to a minimum and/or maximum limit for an Ancillary Service Region or Sub-Region, it

will issue a Market Notice as soon as reasonably practicable after the occurrence of the circumstances that led to the change. After the close of the HASP for a Trading Hour, the CAISO will publish the limits that were used in the HASP.

#### **8.3.3.4 Establishment of New Ancillary Service Regions or Sub-Regions.**

The CAISO will consider adjusting the boundaries of the existing Ancillary Service Regions or creating a new Ancillary Service Region through a stakeholder process if: (a) there is a persistent difficulty in obtaining an appropriate distribution of Ancillary Services in the CAISO **Balancing Authority** Area using market procurement mechanisms, and (b) adjusting the boundaries of the existing Ancillary Service Regions or creating a new Ancillary Service Region would reduce the persistent difficulty in obtaining an appropriate distribution of Ancillary Services in the CAISO **Balancing Authority** Area using market procurement mechanisms. Factors that would affect the CAISO's determination to consider adjusting the boundaries of the existing Ancillary Service Regions or creating a new Ancillary Service Region include, but are not limited to operational reliability needs, the pattern of the growth of Demand in the CAISO **Balancing Authority** Area, the addition of new generating resources, the retirement of existing generating resources, the addition of new transmission facilities, changes in regional transmission limitations, changes in Available Transfer Capability, and extended transmission or generating resource Outages. If the CAISO considers adjusting the boundaries of the existing Ancillary Service Regions or creating a new Ancillary Service Region, the CAISO will conduct an analysis to determine whether the adjustments being considered create market power issues in either the new Ancillary Service Regions being considered or the pre-existing Ancillary Service Regions. The CAISO's analysis will be included in the stakeholder process and stakeholders will be able to comment on any new market power mitigation measures proposed for the CAISO's procurement of Ancillary Services.

### **8.3.3.5 Use of the Full Network Model and Procurement of Ancillary Services.**

The Full Network Model and the SCUC application optimize the provision of Ancillary Services and Energy in order to meet Ancillary Service requirements and Energy requirements. The Full Network Model incorporates Transmission Losses and models and enforces all network constraints, which are reflected in the Ancillary Services Awards as well as the other results from each of the CAISO Market Processes. The Ancillary Service requirements, the definition of Ancillary Service Regions and Ancillary Service Sub-Regions, and any minimum or maximum limit that is used within an Ancillary Service Region or Ancillary Service Sub-Region are all inputs to the Full Network Model and are incorporated into the CAISO Market Processes.

### **8.3.4 Certification and Testing Requirements.**

The owner of and Scheduling Coordinator for each Generating Unit, System Unit, Dynamic System Resource, or Participating Load for which a Bid to provide Ancillary Services or Submission to Self-Provide Ancillary Services is allowed under the CAISO Tariff, and all other System Resources that are allowed to submit a Bid to provide Ancillary Services under this CAISO Tariff, must comply with the CAISO's certification and testing requirements as contained in Appendix K and the CAISO's Operating Procedures. Each Generating Unit, Dynamic System Resource, and System Unit used to bid Regulation or used to self-provide Regulation must have been certified and tested by the CAISO using the process defined in Part A of Appendix K. Each Dynamic System Resource offering Regulation must comply with the Dynamic Scheduling Protocol in Appendix X. Spinning Reserve may be provided only from Generating Units, System Resources that submit Bids to provide Spinning Reserve from imports, or System Units, which have been certified and tested by the CAISO using the process defined in Part B of Appendix K. Non-Spinning Reserve may be provided from Curtailable Demand, on-demand rights from other entities or Balancing Authority Areas, Generating Units, System Resources that submit Bids to provide Non-Spinning Reserve from imports, or System Units, which have been certified and tested by the CAISO using the process defined in Part C of Appendix K. Voltage Support may only be provided



from resources including Loads, Generating Units, and System Units, which have been certified and tested by the CAISO using the process defined in Part D of Appendix K. Black Start capability may only be provided from Generating Units which have been certified and tested by the CAISO using the process defined in Part E of Appendix K. CAISO certification to provide Ancillary Services may be revoked by the CAISO under the provisions of this CAISO Tariff, including Appendix K.

**8.3.5** The CAISO shall procure Regulation Up, Regulation Down, Spinning Reserve, and Non-Spinning Reserve on a daily, hourly and Real-Time basis in the IFM, HASP and RTM respectively. The CAISO shall procure Ancillary Services on a longer-term basis pursuant to Section 42.1.3 if necessary to meet Reliability Criteria. The CAISO Governing Board must approve all long-term contracts. The CAISO shall contract for Voltage Support annually (or for such other period as the CAISO may determine is economically advantageous) and on a daily or hourly basis as required to maintain System Reliability. The CAISO shall contract annually (or for such other period as the CAISO may determine is economically advantageous) for Black Start Generation.

**8.3.6 Market-Based Prices.**

Public utilities under the FPA must submit Bids for Ancillary Services capped at FERC authorized cost-based rates unless and until FERC authorizes different pricing. Public utilities under the FPA shall seek FERC Ancillary Services rate approval on bases consistent with the CAISO time-frame for contracting for each Ancillary Service (hourly rate for some Ancillary Services, annual rate or otherwise for other Ancillary Services) so that cost-based Bids and market-based Bids for each service shall be on comparable terms. All other entities may use market-based rates not subject to any restrictions apart from those found in this CAISO Tariff. Public utilities under the FPA which have not been approved to bid at market-based rates will not be paid above their cost-based Bid for the Ancillary Service concerned even if the relevant Market Clearing Price is higher.

**8.3.7 Bidding Requirements, Including Submission to Self-Provide an Ancillary Service.**

Scheduling Coordinators may submit Bids or Submissions to Self-Provide an Ancillary Service consistent with the rules specified in Section 30 and any further requirements in this Section 8.3.7. Scheduling Coordinators may (i) submit Bids or Submissions to Self-Provide an Ancillary Service from resources located within the CAISO **Balancing Authority** Area or Dynamic System Resources certified to provide Ancillary Services, (ii) submit Submissions to Self-Provide an Ancillary Service from resources located outside the CAISO Balancing Authority Area if provided pursuant to ETCs, TORs, or Converted Rights, (iii) submit Bids for Ancillary Services from resources located outside the CAISO **Balancing Authority** Area, or (iv) specify Inter-SC Trades of Ancillary Services. Ancillary Services in the Day-Ahead Market, in the HASP, and in the Real-Time Market are comprised of the following: Regulation Up, Regulation Down, Spinning Reserve, and Non-Spinning Reserve. Each Generating Unit (including Physical Scheduling Plants), System Unit, Participating Load, or System Resource for which a Scheduling Coordinator wishes to submit Ancillary Service Bids must meet the requirements set forth in this CAISO Tariff. The same resource capacity may be offered into more than one CAISO Ancillary Service auction at the same time. Ancillary Services Bids and Submissions to Self-Provide an Ancillary Service can be submitted up to seven (7) days in advance. Ramp Rates will be only used by the CAISO for procuring capacity associated with the specific Ancillary Services. The CAISO will issue Real-Time Dispatch Instructions in the Real-Time Market for the Energy associated with the awarded capacity based upon the applicable Operational Ramp Rate submitted with the single Energy Bid Curve in accordance with Section 30.10. There is no ability to procure Ancillary Services for export. To the extent a Scheduling Coordinator has an on-demand obligation to serve loads outside the CAISO **Balancing Authority** Area, it can do so provided that (1) it is using export transmission capacity available in Real-Time, and (2) the resource capacity providing Energy to satisfy the on-demand obligation is not under an RMR Contract or Resource Adequacy Capacity obligation, and has not been paid a RUC Availability Payment for the Trading Hour.

**8.3.7.1 Requirement for Imports of Spinning or Non-Spinning Reserves.**

Scheduling Coordinators may submit Bids for imports of Spinning Reserve, or Non-Spinning Reserve from System Resources located outside the CAISO **Balancing Authority** Area including Dynamic System Resources, where technically feasible and consistent with WECC criteria; and provided that such Scheduling Coordinators have certified to the CAISO their ability to deliver the service to the point of interchange with the CAISO **Balancing Authority** Area (including with respect to their ability to make changes, or cause such changes to be made, to **Interchange Schedules** during any interval of a Settlement Period at the discretion of the CAISO).

**8.3.7.2 Requirement for Imports of Regulation.**

Scheduling Coordinators may bid imports of Regulation from System Resources located outside the CAISO **Balancing Authority** Area, where technically feasible and consistent with WECC criteria by dynamic scheduling; provided that the operator of the **Balancing Authority** Area in which the System Resources are located has entered into an agreement with the CAISO for interconnected **Balancing Authority** Area operations; and provided that such Scheduling Coordinator and the operator of the **Balancing Authority** Area in which the resources are located have been certified by the CAISO as to their ability to dynamically adjust **Interchange Schedules** based on control signals issued by the CAISO anytime during a Settlement Period at the discretion of the CAISO. Such certification shall include a demonstration of their ability to support the dynamic **Interchange** of Regulation service based on CAISO control signals received on dedicated communications links (either directly or through EMS computers) for CAISO computer control and telemetry to provide this function in accordance with CAISO standards and procedures posted on the CAISO Website.

### **8.3.8 Procurement of Voltage Support.**

As of the CAISO Operations Date, the CAISO will contract for Voltage Support service with the owners of Reliability Must-Run Units. Payments for public utilities under the FPA shall be capped at the FERC authorized cost-based rates unless and until FERC authorizes different pricing. The CAISO shall pay owners of Reliability Must-Run Units for long-term Voltage Support through their Scheduling Coordinators.

In addition, any Participating Generator who is producing Energy shall, upon the CAISO's specific request, provide reactive energy output outside the Participating Generator's Voltage Support obligation defined in Section 8.2.3.3.

The CAISO shall select Participating Generator's Generating Units which have been certified for Voltage Support to provide this additional Voltage Support. Subject to any locational requirements, the CAISO shall select the least costly Generating Units from a computerized merit order stack to back down to produce additional Voltage Support in each location where Voltage Support is needed.

The CAISO shall pay to the Scheduling Coordinator for that Participating Generator the opportunity cost of reducing Energy output to enable reactive energy production. This opportunity cost shall be:

$\text{Max } \{0, \text{LMP} - \text{Generating Unit Bid price}\} \times \text{reduction in Energy output (MW)}.$

If necessary, the CAISO shall develop a regulatory cost-based determination of marginal operating cost to be used in place of the Generating Unit Bid price.

### **8.3.9 Black Start Capability and Energy Output.**

As of the CAISO Operations Date, the CAISO will contract for Black Start capability and Energy with owners of Reliability Must-Run Units and Black Start Generators. Public utilities under the FPA will be paid rates capped at the FERC authorized cost base rates unless and until FERC authorizes different pricing.

The CAISO shall pay owners of Reliability Must-Run Units for Black Start Energy output through their Scheduling Coordinators. The CAISO shall pay Black Start Generators for Black Start Energy output directly.

#### **8.4 Technical Requirements for Providing Ancillary Services.**

All Generating Units, System Units, Participating Loads and System Resources providing Ancillary Services shall comply with the technical requirements set out in Sections 8.4.1 to 8.4.3 below relating to their operating capabilities, communication capabilities and metering infrastructure. No Scheduling Coordinator shall be permitted to submit a Bid to the CAISO for the provision of an Ancillary Service from a Generating Unit, System Unit, Participating Load or System Resource, or to provide a Submission to Self-Provide an Ancillary Service from a Generating Unit, System Unit, Participating Load, or Dynamic System Resource, unless the Scheduling Coordinator is in possession of a current certificate issued by the CAISO confirming that the Generating Unit, System Unit, Participating Load or System Resource complies with the CAISO's technical requirements for providing the Ancillary Service concerned. Scheduling Coordinators can apply for Ancillary Services certificates in accordance with the requirements for considering and processing such applications in Appendix K and the CAISO's Operating Procedures. The CAISO shall have the right to inspect Generating Units, Participating Loads or the individual resources comprising System Units and other equipment for the purposes of the issue of a certificate and periodically thereafter to satisfy itself that its technical requirements continue to be met. If at any time the CAISO's technical requirements are not being met, the CAISO may withdraw the certificate for the Generating Unit, System Unit, Participating Load or System Resource concerned.

##### **8.4.1 Operating Characteristics Required to Provide Ancillary Services.**

Each Generating Unit, System Unit, Participating Load or System Resource for which a Scheduling Coordinator wishes to submit a Bid to provide Ancillary Services must comply with the requirements for the specific Ancillary Service as set forth in Appendix K and the Business Practice Manual. The

requirements in Appendix K and the Business Practice Manuals include Ancillary Service control, capability and availability standards. The requirements also involve the following operating characteristics:

- (a) Ramp Rate increase and decrease (MW/minute);
- (b) power factor (leading and lagging) as required by Section 8.2.3.3;
- (c) maximum output (real and reactive), except that System Resources shall be required to comply only with the requirement for maximum real power;
- (d) minimum output (real and reactive), except that System Resources shall be required to comply only with the requirement for minimum real power;
- (e) AGC capability, control scheme, and range; and
- (f) minimum length of time the resource can be available to provide the relevant Ancillary Service.

In Appendix K and the Business Practice Manuals the CAISO will differentiate the operating characteristics according to the Ancillary Service being provided.

#### **8.4.1.1 Regulation.**

A Generating Unit offering Regulation must have the following operating characteristics and technical capabilities:

- (a) it must be capable of being controlled and monitored by the CAISO Energy Management System (EMS) by means of the installation and use of a standard CAISO direct communication and direct control system, a description of which and criteria for any temporary exemption from which, the CAISO shall publish on the CAISO Website;

- (b) it must be capable of achieving at least the Ramp Rates (increase and decrease in MW/minute) stated in its Bid for the full amount of Regulation capacity offered;
- (c) the Regulation capacity offered must not exceed the maximum Ramp Rate (MW/minute) of that unit times a value within a range from a minimum of ten (10) minutes to a maximum of thirty (30) minutes, which value shall be specified by the CAISO and published on the CAISO Website;
- (d) the Generating Unit to CAISO Control Center telemetry must in a manner meeting CAISO standards include indications of whether the Generating Unit is on or off AGC at the Generating Unit terminal equipment;
- (e) the Generating Unit must be capable of the full range of movement within the amount of Regulation capability offered without manual Generating Unit operator intervention of any kind; and
- (f) each Participating Generator must ensure that the CAISO EMS control and related SCADA equipment for its generating facility are operational throughout the time period during which Regulation is required to be provided.

#### **8.4.1.2 Voltage Support.**

A Generating Unit providing Voltage Support must be under the control of generator automatic voltage regulators throughout the time period during which Voltage Support is required to be provided. A Generating Unit may be required to operate underexcited (absorb reactive power) at periods of light system Demand to avoid potential high voltage conditions, or overexcited (produce reactive power) at periods of heavy system Demand to avoid potential low voltage conditions.

**8.4.2 Ancillary Service Control Standards.**

The providers of Ancillary Services under this Tariff must comply with the following control standards:

- (a) Regulation. The Area Control Error will be calculated by the CAISO Energy Management System. Control signals will be sent from the CAISO EMS to raise or lower the output of Generating Units or System Resources providing Regulation when ACE exceeds the allowable CAISO **Balancing Authority** Area dead band for ACE;
- (b) Spinning **Reserve** and Non-Spinning Reserve. Each provider of Spinning Reserve or Non-Spinning Reserve must be capable of receiving a Dispatch Instruction within one **(1)** minute from the time the CAISO Control Center elects to Dispatch the Spinning Reserve resource or Non-Spinning Reserve resource and must ensure that its resource can be at the Dispatched operating level within ten **(10)** minutes after issue of the Dispatch Instruction;
- (c) Voltage Support. Generating Units providing Voltage Support must have automatic voltage regulators which can correct the bus voltages to be within the prescribed **Voltage Limits** and within the machine capability in less than one **(1)** minute; and
- (d) Black Start. (i) Voice Communications: each supplier of Black Start capability must ensure that normal and emergency voice communications are available to permit effective Dispatch of the Black Start capability; (ii) CAISO Confirmation: No **L**oad served by the Black Start Generating Unit or by any designated Generating Unit or by any transmission facility used for Black Start service may be restored until the CAISO has confirmed that the need for such service has passed.



#### **8.4.3 Ancillary Service Capability Standards.**

The providers of Ancillary Services under this CAISO Tariff must comply with the following capability standards:

- (a) Spinning Reserve and Non-Spinning Reserve Capability. Each Generating Unit or external import of a System Resource scheduled to provide Spinning Reserve and each resource providing Non-Spinning Reserve must be capable of converting the full capacity reserved to Energy production within ten (10) minutes after the issue of the Dispatch Instruction by the CAISO, and of maintaining that output or scheduled Interchange for at least two (2) hours.
- (b) Black Start. Each Black Start Generating Unit must be able to start up with a dead primary and station service bus within ten (10) minutes of issue of a Dispatch Instruction by the CAISO requiring a Black Start. Each Black Start Generating Unit must provide sufficient reactive capability to keep the energized transmission bus voltages within emergency Voltage Limits over the range of no load to full load. Each Black Start Generating Unit must be capable of sustaining its output for a minimum period of twelve (12) hours from the time when it first starts delivering Energy.

#### **8.4.4 Ancillary Service Availability Standards.**

The providers of Spinning Reserve and Non-Spinning Reserve under this CAISO Tariff must comply with the following availability standards. Each Participating Generator shall ensure: (i) that its Generating Units scheduled to provide Spinning Reserve and Non-Spinning Reserve are available for Dispatch throughout the Settlement Period for which they have been scheduled; and (ii) that its Generating Units scheduled to provide Spinning Reserve are responsive to frequency deviations throughout the Settlement Period for which they have been scheduled.

#### **8.4.5            Communication Equipment.**

Unless otherwise authorized by the CAISO, all Scheduling Coordinators wishing to submit an Ancillary Service Bid must have the capability to submit to and receive information from the CAISO's secure communication system. In addition, they must be capable of receiving Dispatch Instructions electronically and they must provide the CAISO with a telephone number, or fax number through which Dispatch Instructions for each Generating Unit, System Unit, Load and System Resource may be given if necessary. The CAISO will determine which method of communication is appropriate; provided that the CAISO will consult with the Scheduling Coordinator, if time permits, and will consider the method of communication then utilized by such Scheduling Coordinator; provided further, that the CAISO shall make the final determination as to the additional communication methods. Participating Generators, owners or operators of Loads, and operators of System Units or System Resources whose resources are scheduled, bid in or under contract, shall ensure that there is a **twenty-four (24)** hour personal point of contact with the CAISO for the Generating Unit, System Unit, Load or System Resource. A Participating Generator or provider of Curtailable Demand wishing to offer any Ancillary Service must provide a direct ring down voice communications circuit (or a dedicated telephone line available **twenty-four (24)** hours a day every day of the year) between the control room operator for the Generating Unit or Curtailable Demand providing the Ancillary Service and the CAISO Control Center. Each Participating Generator must also provide an alternate method of voice communications with the CAISO from the control room in addition to the direct communication link required above. Operators of Dynamic System Resources from which Dynamic Schedules or Bids are submitted to the CAISO shall provide communications links meeting CAISO standards for dynamic imports from System Resources. Participating Generators and operators of System Units providing Regulation shall also provide communication links meeting CAISO standards for direct digital control. Operators of System Resources providing Regulation shall provide communications links meeting CAISO standards for imports of Regulation. If any communication system

becomes unavailable, the relevant Participating Generators, operators of System Units, Loads and System Resources and the CAISO shall take immediate action to identify the cause of the interruption and to restore the communication system. A Scheduling Coordinator that has provided a Submission to Self-Provide an Ancillary Service, or has submitted a Bid to provide or contracted for Ancillary Services, shall ensure that the Generating Unit, System Unit, Load or System Resource concerned is able to receive and implement Dispatch Instructions.

#### **8.4.6 Metering Infrastructure.**

All Participating Generators, owners or operators of Loads and operators of System Units or System Resources which a Scheduling Coordinator wishes to bid to provide Ancillary Services shall have the metering infrastructure for the Generating Units, System Units, Loads or System Resources concerned which complies with requirements to be established by the CAISO relating to:

- (a) meter type;
- (b) meter location;
- (c) meter reading responsibility;
- (d) meter capability in regard to AGC response; and
- (e) any other aspect of metering infrastructure required by the CAISO under this CAISO Tariff.

##### **8.4.6.1 Additional Requirements for Black Start Units.**

A Participating Generator who wishes to offer Black Start must ensure that the requirements set out in Appendix D are met in relation to the Generating Units from which Black Start will be offered.

#### **8.5 Time Frame for Submitting and Evaluating Ancillary Services Bids.**

All Ancillary Services Bids must be submitted pursuant to the rules provided in Section 30.5.

## **8.6 Obligations for and Self-Provision of Ancillary Services.**

### **8.6.1 Ancillary Service Obligations.**

Each Scheduling Coordinator shall be assigned a share of the total Regulation Down, Regulation Up, Spinning Reserve, and Non-Spinning Reserve requirements by the CAISO, as set forth in Sections 11.10.2, 11.10.3 and 11.10.4, (i.e., a share of the total requirements for each Ancillary Service in the Day-Ahead Market, HASP, and the Real-Time Market). Any references in this CAISO Tariff to Regulation shall be read as referring to Regulation Up or Regulation Down.

### **8.6.2 Right to Self-Provide.**

Each Scheduling Coordinator may choose to self-provide all, or a portion, of its Regulation Up, Regulation Down, Spinning Reserve, and Non-Spinning Reserve obligations in the Day-Ahead Market, and, to the extent needed to satisfy CAISO's additional requirement, HASP and Real-Time Market from resources eligible for self-provision. The right to self-provide Ancillary Services from capacity that is under a contractual obligation to provide Energy, including but not limited to capacity subject to an RMR Contract and local Resource Adequacy Resources, shall be conditional; self-provision of Ancillary Services from such capacity will only be permitted to the extent that capacity is not needed for Energy as a result of the MPM-RRD process described in this CAISO Tariff. To self-provide Ancillary Services a Scheduling Coordinator must provide the CAISO with a Submission to Self-Provide an Ancillary Service. Both Ancillary Service Bids and Submissions to Self-Provide an Ancillary Service can be provided to the CAISO for the same Ancillary Service and for the same hour in the same market. To the extent the Submission to Self-Provide an Ancillary Service is from a resource that is a Partial Resource Adequacy Resource, and Energy is needed, including for purposes under Section 31.3.1.3, from that resource the

CAISO shall only disqualify the self-provision of Ancillary Services from the portion of the resource's capacity that has must-offer obligation, provided that the Scheduling Coordinator has not submitted an Energy Bid for the capacity that is not subject to a must-offer obligation. If there is an Energy Bid submitted for the capacity of a Partial Resource Adequacy Resource that is not subject to a must-offer obligation the CAISO may disqualify the Submission to Self-Provide an Ancillary Service for the portion of the resources capacity that is not under a must-offer obligation consistent with the principles of co-optimization under the CAISO Tariff.

Prior to evaluating Ancillary Service Bids, the CAISO will determine whether Submissions to Self-Provide Ancillary Services are feasible with regard to resource operating characteristics and regional constraints and are qualified to provide the Ancillary Services in the markets for which they were submitted.

If the total Submissions to Self-Provide Ancillary Services exceed the maximum regional requirement for the relevant Ancillary Service in an Ancillary Service Region, the submissions that would otherwise be accepted by the CAISO as feasible and qualified will be awarded on a pro-rata basis among the suppliers offering to self-provide the Ancillary Service up to the amount of the requirement. If a regional constraint imposes a limit on the total amount of Regulation Up, Spinning Reserve, and Non-Spinning Reserve, and the total self-provision of these Ancillary Services in that region exceeds that limit, Self-Provided AS are qualified pro rata from higher to lower quality service in three tiers: Regulation Up first, followed by Spinning Reserve, and then by Non-Spinning Reserve. Following this process, unless a higher quality Self-Provided Ancillary Service in a constrained region is fully qualified, the pro rata allocation in the subsequent lower quality Self-Provided Ancillary Service for that region will be nil. Submissions to Self-Provide Ancillary Services in excess of the maximum regional requirement for the relevant Ancillary Service in an Ancillary Service Region will not be accepted and qualified by the CAISO as Self-Provided Ancillary Services.

The CAISO shall schedule Self-Provided Ancillary Services in the Day-Ahead Market and the RTM and Dispatch Self-Provided Ancillary Services in the Real-Time. To the extent that a Scheduling Coordinator self-provides Regulation Up, Regulation Down, Spinning Reserve, and Non-Spinning Reserve, the CAISO shall correspondingly reduce the quantity of the Ancillary Services it procures from Bids submitted in the Day-Ahead Market, HASP, and the Real-Time Market. To the extent a Scheduling Coordinator's Self-Provided Ancillary Service for a particular Ancillary Service is greater than the Scheduling Coordinator's obligation for that particular Ancillary Service in a Settlement Interval, the Scheduling Coordinator will receive the user rate for the Self-Provided Ancillary Service for the amount of the Self-Provided Ancillary Service in excess of the Scheduling Coordinator's obligation.

Scheduling Coordinators may trade Ancillary Services so that any Scheduling Coordinator may reduce its Ancillary Services Obligation through purchase of Ancillary Services capacity from another Scheduling Coordinator, or self-provide in excess of its obligation to sell Ancillary Services to another Scheduling Coordinator.

### **8.6.3 Services Which May Be Self-Provided.**

The CAISO shall permit Scheduling Coordinators to self-provide the following Ancillary Services:

- (a) Regulation Up;
- (b) Regulation Down;
- (c) Spinning Reserve; and
- (d) Non-Spinning Reserve.

Submissions to Self-Provide Ancillary Services for Regulation Up and Regulation Down capacity will be rejected if the Energy Bid provided in the submission is outside of the resource's Regulating Range. The CAISO may from time to time add other Ancillary Services to this list as it considers appropriate.

### **8.6.4 Time Frame for Informing CAISO of Self-Provision.**

#### **8.6.4.1 Day-Ahead Schedule.**

At the Day-Ahead Market, Scheduling Coordinators shall be required to submit information on Self-Provided Ancillary Services within the time frame stated in Section 30. Failure to submit the required information within the stated time frame for any hour shall lead to the self-provision for that hour being declared invalid by the CAISO.

#### **8.6.4.2 HASP.**

In the HASP, Scheduling Coordinators shall be required to submit information on Self-Provided Ancillary Services within the time frame stated in Section 30.1. Failure to submit the required adjusted information within the stated time frame shall lead to the self-provision being declared invalid by the CAISO.

**8.6.4.2.3 Information To Be Submitted By Scheduling Coordinators For Each Service.**

Scheduling Coordinators electing to self-provide Ancillary Services shall submit the information for each Self-Provided Ancillary Service as described in Section 30.

In the event of an Ancillary Service Inter-SC Trade, the Scheduling Coordinators who are parties to that trade must comply with requirements in Section 28.2.

**8.6.4.4 Acceptance of Self-Provided Ancillary Service Submissions.**

The CAISO will refuse to accept a Submission to Self-Provide an Ancillary Service to the extent it fails to meet the requirements contained in this CAISO Tariff. In particular, Self-Provided Ancillary Services must satisfy the following conditions:

- (a) the Scheduling Coordinator has a current certificate of technical eligibility for the Generating Units, System Units, Loads or System Resources selected for the Ancillary Services in question;
- (b) to the extent not provided under (a), the Generating Units, System Units, Loads and System Resources have the instrumentation, communication and metering equipment necessary to permit the CAISO to dispatch the offered Ancillary Services and verify that the services have been provided;
- (c) the Bid information provided by the Scheduling Coordinator is deemed to be valid in accordance with Appendix E and other provisions of the CAISO Tariff; and
- (d) the Generating Units, System Units, Loads or System Resources meet the CAISO's locational requirements for the Ancillary Services.



## **8.7 Scheduling of Units to Provide Ancillary Services.**

The CAISO shall provide Scheduling Coordinators with Ancillary Services Awards for the Day-Ahead, HASP and Real-Time Markets. The CAISO shall notify each Scheduling Coordinator no later than 1:00 p.m. of the day prior to the **Operating Day** of their Ancillary Service Awards and Ancillary Service Schedules for the Day-Ahead Market; no later than one (1) hour prior to the **Operating Hour** of their Ancillary Services **S**chedules for Ancillary Services from imports or System Resources in the HASP; and no later than fifteen (15) minutes prior to the **Operating Hour** in the Real-Time Market. Where long-term contracts are involved, the information may be treated as standing information for the duration of the contract.

Once the CAISO has given Scheduling Coordinators notice of the Day-Ahead Market, HASP and Real-Time Market Ancillary Service Awards and Ancillary Service Schedules, these awards and **S**chedules represent binding commitments made in the markets between the CAISO and the Scheduling Coordinators concerned, subject to any amendments issued as described above.

## **8.8 Black Start.**

- (a) Black Start shall meet the standards specified for Black Start in this **CAISO** Tariff and Appendix K; and
- (b) the CAISO will **dispatch** Black Start **Generating Units** as required in accordance with the applicable Black Start agreement.

## **8.9 Verification, Compliance Testing, and Audit of Ancillary Services.**

Availability of contracted and Self-Provided Ancillary Services and RUC Capacity shall be verified by the CAISO by unannounced testing of Generating Units, Loads and System Resources, by auditing of response to CAISO Dispatch Instructions, and by analysis of the appropriate Meter Data, or **I**nterchange **S**chedules. The CAISO may test the capability of any Generating Unit, System Unit, System Resource, external import of a System Resource, Participating Load, or reactive device providing Ancillary Services or RUC Capacity. Participating Generators, owners or operators of Participating Loads, operators of

System Units or System Resources, owners or operators of reactive devices and Scheduling Coordinators shall notify the CAISO immediately whenever they become aware that an Ancillary Service or RUC Capacity is not available in any way. All Participating Generators, owners or operators of Loads, operators of System Units or System Resources and owners or operators of reactive devices shall check, monitor and/or test their system and related equipment routinely to assure availability of the committed Ancillary Services and RUC Capacity. These requirements apply to Ancillary Services whether the Ancillary Services are contracted or self-provided. For a duration specified by the CAISO, the CAISO may suspend the technical eligibility certificate of a Scheduling Coordinator for a Generating Unit, System Unit, Load or System Resource, which repeatedly fails to perform. The CAISO shall develop measures to discourage repeated non-performance on the part of both bidders and self-providers.

**8.9.1 Compliance Testing for Spinning Reserve.**

Compliance testing for Spinning Reserve is addressed in Section 8.10.2.

**8.9.2 Compliance Testing for Regulation.**

The CAISO may test the capability of any Generating Unit or System Resource providing Regulation by using the CAISO EMS to move that Generating Unit's or System Resource's output over the full range of its Regulation capacity within a ten-minute period.

**8.9.3 Compliance Testing for Non-Spinning Reserve.**

**8.9.3.1 Compliance Testing of a Generating Unit, System Unit or System Resource.**

The CAISO may test the Non-Spinning Reserve capability of a Generating Unit, System Unit or an external import of a System Resource by issuing unannounced Dispatch Instructions requiring the Generating Unit or System Unit to come on line and ramp up or, in the case of a System Resource, to affirmatively respond to Real-Time interchange schedule adjustment; all in accordance with the Scheduling Coordinator's Bid. Such tests may not necessarily occur on the hour. The CAISO shall

measure the response of the Generating Unit, System Unit or external import of a System Resource to determine compliance with its stated capabilities.

**8.9.3.2 Compliance Testing of Curtailable Demand.**

The CAISO may test the Non-Spinning Reserve capability of a Load providing Curtailable Demand by issuing unannounced Dispatch Instructions requiring the operator of the Load to report the Curtailable Demand of that Load actually being served by the operator at the time of the instruction. No Load will be disconnected as part of the test.

**8.9.4 Compliance Testing for Voltage Support.**

**8.9.4.1 Compliance Testing of a Generating Unit.**

The CAISO may test the Voltage Support capability of a Generating Unit by issuing unannounced Dispatch Instructions requiring the Generating Unit to adjust its power factor outside the specified power factor band of 0.90 lag to 0.95 lead, but within the limits of the Generating Unit capability curve.

**8.9.4.2 Compliance Testing of Other Reactive Devices.**

The CAISO may test the Voltage Support capability of other reactive devices (shunt capacitors, static var compensators, and synchronous condensers) by issuing unannounced Dispatch Instructions requiring operation of such devices.

**8.9.5 Compliance Testing for Black Start.**

The CAISO may test the Black Start capability of a Generating Unit by unannounced tests, which may include issuing Dispatch Instructions to start and synchronize the resource, testing of all communications circuits, simulating switching needed to connect the Black Start Generating Unit to the transmission system, and testing the features unique to each facility that relate to Black Start service.

#### **8.9.6 Compliance Testing for RUC Capacity.**

The CAISO may test the capability of a Generating Unit, System Unit or an external import of a System Resource to provide RUC Capacity by issuing unannounced Dispatch Instructions requiring the Generating Unit or System Unit to come on line and ramp up or, in the case of a System Resource, to affirmatively respond to a Real-Time Interchange Schedule adjustment; all in accordance with the Scheduling Coordinator's Bid. Such tests may not necessarily occur on the hour. The CAISO shall measure the response of the Generating Unit, System Unit or external import of a System Resource to determine compliance with its stated capabilities.

#### **8.9.7 Consequences of Failure to Pass Compliance Testing.**

##### **8.9.7.1 Notification of Compliance Testing Results.**

If a Generating Unit, Load, or System Resource fails a compliance test, the CAISO shall notify the Scheduling Coordinator whose resource was the subject of the test and the provider or owner or operator of the Generating Unit, Participating Load, or System Resource providing Ancillary Services or RUC Capacity of such failure by any means as soon as reasonably practicable after the completion of the test. In addition, regardless of the outcome of the test, the CAISO shall provide the Scheduling Coordinator whose resource was subject to a compliance test written notice of the results of such test. The CAISO shall at the same time send a copy of the notice to the provider or owner or operator of the Generating Unit, Load, or System Resource providing Ancillary Services or RUC Capacity. For any Resource Adequacy Resource failing a compliance test, the CAISO also will provide notification of the failure to the California Public Utilities Commission, Local Regulatory Authority, or federal agency with jurisdiction over the Load Serving Entity that listed the Resource Adequacy Resource on its Resource Adequacy Plan, and FERC.

**8.9.7.2 Penalties for Failure to Pass Compliance Testing.**

The Scheduling Coordinator whose resource fails a compliance test shall be subject to the financial penalties provided for in the CAISO Tariff. In addition, the CAISO shall institute the sanctions described in Section 8.9.16.

**8.9.8 Performance Audits for Standard Compliance.**

In addition to testing under Section 8.10, the CAISO will periodically audit the performance of resources providing RUC Capacity or Ancillary Services to confirm the ability of such resources to provide the RUC Capacity or to meet the applicable Ancillary Service standard for performance and control.

**8.9.9 Performance Audit for Regulation.**

The CAISO will audit the performance of a Generating Unit providing Regulation by monitoring its response to CAISO EMS control or, in the case of an external import of a System Resource providing Regulation, by monitoring the dynamic interchange response to CAISO EMS control around its Set Point within its rated MW/minute capability over the range of Regulation capacity scheduled for the current Settlement Period.

**8.9.10 Performance Audit for Spinning Reserve.**

The CAISO will audit the performance of a Generating Unit or external import of a System Resource providing Spinning Reserve by auditing its response to Dispatch Instructions and by analysis of Meter Data associated with the Generating Unit. Such audits may not necessarily occur on the hour. A Generating Unit providing Spinning Reserve shall be evaluated on its ability to respond to a Dispatch Instruction, move at the MW/minute capability stated in its Bid, reach the amount of Spinning Reserve capacity scheduled for the current Settlement Period within ten (10) minutes of issue of the Dispatch Instruction by the CAISO, and respond to system frequency deviations outside the allowed frequency deadband. An external import of a System Resource providing Spinning Reserve shall be evaluated on

its ability to respond to a Dispatch Instruction, move at the MW/minute capability stated in its Bid, reach the amount of Spinning Reserve capacity scheduled for the current Settlement Period within ten (10) minutes of issue of the Dispatch Instruction by the CAISO.

**8.9.11 Performance Audit for Non-Spinning Reserve.**

The CAISO will audit the performance of a Generating Unit, Load, or System Resource providing Non-Spinning Reserve by auditing its response to Dispatch Instructions, and by analysis of Meter Data associated with the resource. Such audits may not necessarily occur on the hour. A Generating Unit providing Non-Spinning Reserve shall be evaluated on its ability to respond to a Dispatch Instruction, move in accordance with the time delay and MW/minute capability stated in its Bid, and reach the amount of Non-Spinning Reserve capacity under the control of the CAISO scheduled for the current Settlement Period within ten (10) minutes of issue of the Dispatch Instruction by the CAISO. An external import of a System Resource providing Non-Spinning Reserve shall be evaluated on its ability to respond to a Dispatch Instruction, move in accordance with the time delay and MW/minute capability stated in its Bid, and reach the amount of Non-Spinning Reserve capacity scheduled for the current Settlement Period within ten (10) minutes of issue of the Dispatch Instruction by the CAISO. A Load providing Non-Spinning Reserve from Curtailable Demand shall be evaluated on its ability to respond to a Dispatch Instruction, move in accordance with the time delay and MW/minute capability stated in its Bid, and reach the amount of Non-Spinning Reserve capacity scheduled for the current Settlement Period within ten (10) minutes of issue of the Dispatch Instruction by the CAISO.

**8.9.12 Performance Audit for Voltage Support.**

The CAISO will audit the performance of a resource providing Voltage Support by auditing of its response to Dispatch Instructions, and by analysis of Meter Data associated with the resource. A resource

providing Voltage Support shall be evaluated on its ability to provide reactive support over the stated power factor range of the resource, provide reactive support within the prescribed time periods, and demonstrate the effective function of automatic voltage control equipment for the amount of Voltage Support under the control of the CAISO for the current Settlement Period.

**8.9.13 Performance Audit for Black Start.**

The CAISO will audit the performance of a Black Start Generating Unit by analysis of Meter Data and other records to determine that the performance criteria relating to the Black Start from that Black Start Generating Unit were met when required.

**8.9.14 Performance Audit for RUC Capacity.**

The CAISO will audit the performance of a Generating Unit, Participating Load, or System Resource providing RUC Capacity by auditing its response to Dispatch Instructions, and by analysis of Meter Data associated with the resource. Such audits may not necessarily occur on the hour. A Generating Unit providing RUC Capacity shall be evaluated on its ability to respond to a Dispatch Instruction, start within the designated time delay, move at the MW/minute capability stated in its Bid, reach the amount of RUC Capacity scheduled for the Settlement Period concerned and sustain operation at this level for a sufficient time to assure availability over the specified period. An external import of a System Resource providing RUC Capacity shall be evaluated on its ability to respond to a Dispatch Instruction, start within the designated time delay, move at the MW/minute capability stated in its Bid, reach the amount of RUC Capacity scheduled for the Settlement Period concerned and sustain operation at this level for a sufficient time to assure availability over the specified period.

**8.9.15 Consequences of Failure to Pass Performance Audits.**

**8.9.15.1 Notification of Performance Audit Results.**

The CAISO shall give the Scheduling Coordinator for a provider of RUC Capacity or Ancillary Services written notice of the results of such audit. The CAISO will at the same time send a copy of the notice to the provider of RUC Capacity or Ancillary Services. For any Resource Adequacy Resource failing to pass a performance audit, the CAISO also will provide notification of the failure to the California Public Utilities Commission, Local Regulatory Authority, or federal agency with jurisdiction over the Load Serving Entity that listed the Resource Adequacy Resource on its Resource Adequacy Plan, and the FERC.

**8.9.15.2 Penalties for Failure to Pass Performance Audit.**

The Scheduling Coordinator for a provider of RUC Capacity or an Ancillary Service whose resource fails a performance audit shall be subject to the financial penalties provided for in the CAISO Tariff. In addition the sanctions described in Section 8.10 shall come into effect.

**8.9.16 Sanctions for Poor Performance.**

**8.9.16.1 Warning Notice.**

If an Ancillary Service or RUC Capacity resource fails a compliance test or a performance audit, the CAISO will issue a warning notice to the Scheduling Coordinator for that resource and at the same time will send a copy of the notice to the owner and operator of the resource.

**8.9.16.2 Scheduling Coordinator's Option to Test.**

On receipt of a warning notice the provider of the Ancillary Service or RUC Capacity may request the CAISO, through its Scheduling Coordinator, to test the capability of the Ancillary Service or RUC Capacity resource. The CAISO shall carry out such test as soon as practicable and the cost of such test shall be paid by the Scheduling Coordinator irrespective of the result of the test.



**8.9.16.3 Duration of Warning Notice.**

A warning notice shall continue in effect until:

- (a) the Ancillary Service or RUC Capacity resource is next tested by the CAISO whether such a test is called for by the Scheduling Coordinator under Section 8.9.16.2 or carried out by the CAISO under Section 8.10; or
- (b) the expiration of a period of six (6) calendar months from the date upon which the CAISO notified the Scheduling Coordinator that the Ancillary Service or RUC Capacity resource failed the test or the performance audit which gave rise to the issue of the warning notice, whichever is the earlier.

**8.9.16.4 Second failure.**

A RUC Capacity or Ancillary Service resource which fails a compliance test or a performance audit conducted during the period when a warning notice for that resource is in effect shall be disqualified immediately from providing the RUC Capacity or the Ancillary Service concerned (whether the Ancillary Service is part of the CAISO's auction or is part of a self-provision arrangement), and in the case of Ancillary Services, shall not be permitted to submit a Bid to the CAISO to provide the Ancillary Service concerned (or be part of an Ancillary Service self-provision arrangement) until such time as it has successfully re-passed the approval and certification procedure described in the relevant Part of Appendix K. For any Resource Adequacy Resource failing a compliance test or performance audit during the periods when a warning notice for that resource is in effect, the CAISO will notify the California Public Utilities Commission or the relevant Local Regulatory Authority of the failure and disqualification.

**8.10 Periodic Testing of Units.**

The CAISO shall periodically conduct unannounced tests of resources providing RUC Capacity or Ancillary Services. For RUC Capacity the unannounced tests will confirm the ability of the resource to respond to a Dispatch Instruction, start within the designated time delay, move at the MW/minute capability stated in its Bid, reach the amount of RUC Capacity scheduled for the Settlement Period concerned and sustain operation at this level for a sufficient time to assure availability over the specified period. For Ancillary Services the unannounced tests will confirm the ability of such resources to meet the applicable Ancillary Service standard for performance and control. The CAISO may test Generating Units, System Units, Loads and System Resources in the manner described herein. The frequency of testing shall be within such timeframes as are reasonable under all the circumstances. Scheduling Coordinators shall manage the resulting Energy output if notification of testing permits the Energy to be included in a Bid. If a Generating Unit, System Unit, Load, or System Resource fails to meet requirements in a test under this section, the CAISO shall notify the relevant Participating Generator, owner or operator of Loads, System Units or System Resources, or Scheduling Coordinator of such failure as soon as reasonably practicable after the completion of the test. Failure to meet requirements shall lead to the penalties described in Section 8.10.7.

**8.10.1 Regulation Up and Regulation Down Reserves.**

The CAISO shall continuously monitor the response of a Generating Unit, System Unit, or System Resource to the CAISO's Regulation instructions in order to determine the resource is under direct control of CAISO's Automatic Generation Control system and complies with CAISO's Dispatch Instructions.

**8.10.2 Spinning Reserve.**

The CAISO shall test the Spinning Reserve capability of a Generating Unit, System Unit or System Resource by issuing unannounced Dispatch Instructions requiring the Generating Unit, System Unit or System Resource to ramp up to its ten (10) minute capability. The CAISO shall measure the response of the Generating Unit, System Unit or System Resource to determine compliance with requirements. Such tests may not necessarily occur on the hour. The Scheduling Coordinator for the Generating Unit, System Unit or System Resource shall be paid pursuant to Section 11.5.6.

**8.10.3 Non-Spinning Reserve.**

The CAISO may test the Non-Spinning Reserve capability of a Generating Unit, Load, System Unit or System Resource by issuing unannounced Dispatch Instructions requiring the Generating Unit, Load, System Unit or System Resource to come on line and ramp up or to reduce Demand to its ten (10) minute capability. The CAISO shall measure the response of the Generating Unit, System Unit, System Resource or Load to determine compliance with requirements. The Scheduling Coordinator for the Generating Unit, System Unit, Load or System Resource shall be paid pursuant to Section 11.5.6.

**8.10.4 Voltage Support.**

The CAISO shall monitor a Generating Unit's response to Voltage Support instructions in order to determine compliance with Dispatch Instructions.

**8.10.5 Black Start.**

The CAISO may test the Black Start capability of a Generating Unit by issuing unannounced Dispatch Instructions requiring the Generating Unit to start on a Black Start basis. The CAISO shall measure the response of the Generating Unit to determine compliance with the terms of the Black Start contract. The Scheduling Coordinator or Black Start Generator as stated in Section 11.10.1.5 for the Generating Unit shall be paid the Generating Unit's contract price for the output under the Black Start test.

**8.10.6 RUC Capacity.**

The CAISO may test the capability of a Generating Unit, Load, System Unit or System Resource to provide RUC Capacity by issuing unannounced Dispatch Instructions requiring the Generating Unit, Load, System Unit or System Resource to follow the Dispatch Instruction. The CAISO shall measure the response of the Generating Unit, System Unit or System Resource to determine compliance with requirements. Such tests may not necessarily occur on the hour. The Scheduling Coordinator for the Generating Unit, Participating Load, System Unit or System Resource shall be paid the Energy Bid price of the Generating Unit, Participating Load, System Unit or System Resource for the output under the RUC test.

**8.10.7 Penalties for Failure to Pass Tests.**

A Generating Unit, Participating Load, System Unit or System Resource that fails an availability test, as determined under criteria to be established by the CAISO, shall be deemed not to have been available to provide the RUC Capacity or Ancillary Service concerned or the relevant portion of that service for the entire period the Generating Unit, Participating Load, System Unit or System Resource was committed to provide the service, unless appropriate documentation (i.e., daily test records) confirming the availability of that service during the committed period(s) is presented to the CAISO. The "committed period" is defined as the total of all the hours/days the Generating Unit, Participating Load, System Unit or System Resource was scheduled by the CAISO to provide the RUC Capacity or Ancillary Service beginning from: (i) the last successful availability test; or (ii) the last time the Generating Unit, Participating Load, System Unit or System Resource actually provided Energy or reduced Demand to provide RUC Capacity or provided Energy or reduced Demand as part of the Ancillary Service; whichever results in a shorter committed period. The Scheduling Coordinator for a Generating Unit, Participating Load, System Unit or System Resource that fails an availability test shall not be entitled to a RUC Availability Payment or payment for the Ancillary Service concerned for the committed period and adjustments to reflect this shall

be made in the calculation of payments to the Scheduling Coordinator, provided that any such penalty shall be reduced to reflect any adjustment made over the duration of the committed period under Section 8.10.8 or Section 31.5.7.

System Units providing RUC Capacity or providing Ancillary Services to the CAISO are subject to the same testing, compensation, and penalties as are applied to individual Generating Units providing RUC Capacity or provision of Ancillary Services.

If payments for RUC Capacity or for a particular Ancillary Service in a particular Settlement Period would be rescinded under more than one provision of this Section 8.10.7, the total amount to be rescinded for a particular Ancillary Service in a particular Settlement Period shall not exceed the total payment due in that Settlement Period.

**8.10.8            Rescission of Payments for Undispatchable, Unavailable, and Undelivered Ancillary Service Capacity.**

If Ancillary Services capacity that receives an AS Award or Self-Provided Ancillary Services capacity provided from a Generating Unit, Participating Load, System Unit or System Resource is Undispatchable Capacity, Unavailable Capacity, or Undelivered Capacity during the relevant Settlement Interval, then payments will be rescinded as described in this Section 8.10.8 and settled in accordance with Section 11.10.9. If the CAISO determines that non-compliance of a Participating Load, Generating Unit, System Unit or System Resource, with an operating order or Dispatch Instruction from the CAISO, or with any other applicable technical standard under the CAISO Tariff, causes or exacerbates system conditions for which the WECC imposes a penalty on the CAISO, then the Scheduling Coordinator of such Participating Load, Generating Unit, System Unit or System Resource shall be assigned that portion of the WECC penalty which the CAISO reasonably determines is attributable to such non-compliance, in addition to any other penalties or sanctions applicable under the CAISO Tariff.

**8.10.8.1        Rescission of Payments for Undispatchable Ancillary Service Capacity.**

The CAISO shall calculate the Real-Time ability of each Generating Unit, Participating Load, System Unit or System Resource to deliver Energy from Ancillary Services capacity or Self-Provided Ancillary Services capacity for each Settlement Interval based on its maximum operating capability, actual telemetered output, and Operational Ramp Rate as described in Section 30.10. System Resources that are awarded Ancillary Services capacity or RUC Capacity in the Day-Ahead Market are required to electronically tag (E-Tag as prescribed by the WECC) the Ancillary Services capacity or RUC Capacity. If the amounts of Ancillary Services capacity or RUC Capacity in an electronic tag differ from the amounts of Ancillary Services capacity or RUC Capacity for the System Resource, the Undispatchable Capacity will equal the amount of the difference, and will be settled in accordance with the provisions of Section 11.10.9.1.

**8.10.8.2        Rescission of Payments for Unavailable Ancillary Service Capacity.**

If the CAISO determines that a Scheduling Coordinator has supplied Uninstructed Imbalance Energy to the CAISO during a Settlement Interval from the capacity of a Generating Unit, Participating Load, System Unit or System Resource that is obligated to supply Spinning Reserve or Non-Spinning Reserve to the CAISO, payments to the Scheduling Coordinator for the Ancillary Service capacity used to supply Uninstructed Imbalance Energy shall be eliminated to the extent of the deficiency, in accordance with the provisions of Section 11.10.9.2.

**8.10.8.3        Rescission of Payments for Undelivered Ancillary Service Capacity.**

For each Settlement Interval in which a Generating Unit, Participating Load, System Unit or System Resource fails to supply Energy from Spinning Reserve or Non-Spinning Reserve capacity in accordance with a Dispatch Instruction, or supplies only a portion of the Energy specified in the Dispatch Instruction, the capacity payment will be reduced to the extent of the deficiency, in accordance with the provisions of Section 11.10.9.3.

**8.10.8.4 [NOT USED]**

**8.10.8.5 [NOT USED]**

**8.10.8.6 Rescission of Payments for Regulation Up and Regulation Down Capacity.**

Payment for Regulation Up and Regulation Down Capacity will be rescinded, in accordance with the provisions of Section 11.10.9, if the resource providing Regulation Up and Regulation Down capacity: (i) is off Regulation or off Automatic Generation Control, (ii) is not running, (iii) is not providing sufficient Regulating Range, (iv) is generating outside the Regulating Range, (v) has a Regulating Range that overlaps with its Forbidden Operating Regions, or (vi) has telemetry equipment that is not available.

**8.10.8.7 [NOT USED]**

**8.10.8.8 [NOT USED]**

**8.11 Temporary Changes to Ancillary Services Penalties.**

**8.11.1 Application and Termination.**

The temporary change, respecting Ancillary Services penalties, set out in Section 8.11.2 shall continue in effect until such time as the Chief Executive Officer of the CAISO issues a Notice of Full-Scale Operations, posted on the CAISO Website, at <http://www.CAISO.com>, or such other Internet address as the CAISO may publish from time to time, specifying the date on which this Section 8.11 shall cease to apply, which date shall be not less than seven (7) days after the Notice of Full-Scale Operations is issued.

**8.11.2** For so long as this Section 8.11.2 remains in effect, Scheduling Coordinators shall not be liable for the penalties specified in Sections 8.10.7 and 8.10.8 if, as a result of limitations associated with the CAISO's Congestion Management software, the scheduled output of the resource from which the Scheduling Coordinator has committed to provide an Ancillary Service is adjusted by the CAISO to a level that conflicts with the Scheduling Coordinator's Ancillary Service capacity commitments, thereby resulting in a failed availability test.

**9. OUTAGES.**

**9.1 Coordination and Approval for Outages.**

The CAISO shall have authority to coordinate and approve Outages and returns to service of all facilities comprised in the CAISO Controlled Grid and Reliability Must-Run Units in accordance with Section 9.3.

The CAISO will coordinate and approve Maintenance Outages and coordinate responses to Forced Outages of all transmission facilities in the CAISO Controlled Grid and Reliability Must-Run Units in accordance with this Section 9. Any scheduled Outages that are cancelled by CAISO Real-Time operations due to system requirements must be rescheduled with the CAISO Outage Coordination Office in accordance with Section 9.3.

**9.2 Responsibility for Authorized Work on Facilities.**

The CAISO shall have authority to approve requests by Participating TOs to work on all energized transmission equipment under the Operational Control of the CAISO.

**9.3 Coordination of Outages and Maintenance.**

**9.3.1 CAISO Outage Coordination Office.**

The CAISO Outage Coordination Office shall be established by the CAISO and shall coordinate and approve Maintenance Outages of: (i) all facilities that comprise the CAISO Controlled Grid and (ii) Participating Generators. The CAISO shall additionally coordinate and approve Outages required for new construction and for work on de-energized and live transmission facilities (e.g., relay maintenance or insulator washing) and associated equipment. The CAISO Outage Coordination Office will be operational Monday through Friday, except holidays. The Outage Coordination Office is located in Folsom. Each office and the areas of responsibility of that office are detailed in the most recent version of the applicable CAISO Operating Procedures, which are posted on the CAISO Website.



**9.3.1.1 Coordinating Maintenance Outages of UDC Facilities.**

Each UDC and the Participating TO with which it is interconnected shall coordinate their Outage requirements that will have an effect on their transmission interconnection prior to the submission by that Participating TO of its Maintenance Outage requirements under Section 9.3.

**9.3.1.2 Coordinating Maintenance Outages of CDWR-SWP Participating Generating Units.**

The provisions of Section 9.3 shall apply to CDWR-SWP Participating Generating Units. The submission by CDWR-SWP of an Outage schedule, Outage request, or request to change or cancel an Approved Maintenance Outage, and the CAISO's treatment of Outage schedules and requests relating to CDWR-SWP Participating Generating Units, shall be in accordance with Section 9.3, except as otherwise provided in Section 9.3.1.2.1.

**9.3.1.2.1 Coordinating Maintenance Outages of CDWR-SWP.**

- (a) In each Outage schedule, Outage request, and request to change or cancel an Approved Maintenance Outage that CDWR-SWP submits to the CAISO for a CDWR-SWP Participating Generating Unit, CDWR-SWP will state whether CDWR-SWP has determined that the proposed maintenance work, and/or the timing of the Outage, is necessary in order for CDWR-SWP to:
  - (i) Comply with various federal and state legal and regulatory requirements that govern stream flow, water temperature, water quality and quantity, flood control space, after-bay, reservoir, or lake elevation, and other environmental and wildlife constraints ("CDWR-SWP Statutory Compliance Outage"); or
  - (ii) Maintain reliable operations of critical water infrastructure and not impair its ability to satisfy water delivery or conservation requirements ("CDWR-SWP Water System Reliability Outage").

- (b) CDWR-SWP will identify each CDWR-SWP Statutory Compliance or Water System Reliability Outage by designating the Outage with an appropriate cause code in the Outage schedule, Outage request, or request to change or cancel an Approved Maintenance Outage and will provide a description of the requirement or constraint. If the designation of an Outage changes, or the Outage no longer meets the criteria of Section 9.3.1.2.1(a)(i) or (ii), CDWR-SWP will notify the CAISO about this change in status as soon as practical but no more than one (1) Business Day after it occurs.
- (c) The CAISO will not deny, cancel, or reschedule a CDWR-SWP Statutory Compliance or Water System Reliability Outage that CDWR-SWP submits to the CAISO in an Outage schedule, Outage request, or request to change or cancel an Approved Maintenance Outage, provided that the Outage request is timely, designates the Outage as a CDWR-SWP Statutory Compliance or Water System Reliability Outage by an appropriate cause code and includes a description of the requirement or constraint.
- (d) The CAISO may contact CDWR-SWP to inquire whether the timing of a CDWR-SWP Statutory Compliance or Water System Reliability Outage can be changed. CDWR-SWP may agree to the change or, after making best efforts to accommodate the change, may notify the CAISO that the change is not feasible as determined by CDWR-SWP in its sole discretion due to the described requirement or constraint. In the event that CDWR-SWP determines that changing the timing of the Outage is not feasible due to the described requirement or constraint, the CAISO will not deny, cancel, or reschedule that CDWR-SWP Statutory Compliance or Water System Reliability Outage.

- (e) The CAISO will process any Outage that CDWR-SWP submits in an Outage schedule, Outage request, or request to change or cancel an Approved Maintenance Outage, that is not timely, does not contain a cause code identifying the Outage as a CDWR-SWP Statutory Compliance or Water System Reliability Outage or does not include a description of the requirement or constraint, under the otherwise applicable provisions of Section 9.3 and CAISO Operating Procedures.

### **9.3.2 Requirement for Approval.**

An Operator shall not take: (i) facilities that comprise the CAISO Controlled Grid or (ii) Generating Units of Participating Generators out of service for the purposes of planned maintenance or for new construction or other work except as approved by the CAISO Outage Coordination Office. The information relating to each Maintenance Outage submitted by a Participating Generator in accordance with Section 9.3.5 or by a Participating TO in accordance with Section 9.3.5 constitutes a request for a long-range Maintenance Outage and is not considered an Approved Maintenance Outage until the CAISO has notified the Participating Generator of such approval pursuant to Section 9.3.6 or the Participating TO pursuant to Section 9.3.6.

### **9.3.3 Requests for Outages in Real-Time Operation.**

Requests for Outages of: (i) facilities that comprise the CAISO Controlled Grid or (ii) Generating Units of Participating Generators in Real-Time operation shall be made by the Operator to the CAISO Control Center. The CAISO will not approve any Outage request made within seventy-two (72) hours of the requested Outage start time unless: (i) the requested Outage could not have been reasonably foreseen and scheduled through the Outage coordination process provided in Section 9.3; and (ii) the requested Outage will not compromise CAISO Controlled Grid reliability.

**9.3.4 Single Point of Contact.**

Requests for approvals and coordination of all Maintenance Outages (consistent with Section 9.3.1) will be through a single point of contact between the CAISO Outage Coordination Office and each Operator. The Operator shall provide in its initial request and specify from time to time the identification of the single point of contact along with primary and alternate means of communication pursuant to the detailed procedures referred to in Section 9.3.6.

**9.3.5 Method of Communications.**

The primary method of communication from an Operator to the CAISO with regard to maintenance and Outage planning will be as described in the Operating Procedure on the CAISO Website and in the applicable Business Practice Manual. Emergency capabilities, to be used only as a back-up if the primary communication method is unavailable, will include:

- (a) voice;
- (b) fax; and
- (c) electronic (E-mail, FTP file, etc.).

**9.3.5.1 Confirmation.**

When fax or electronic communication is utilized, confirmation from the CAISO must be received by the Operator to validate the receipt of the request.

**9.3.5.2 Communication of Approval or Rejection.**

The CAISO shall use the same methods in communicating the approval or rejection of an Outage request or approval of a request to change an Approved Maintenance Outage to the relevant Operator.

**9.3.5.2.1** Information regarding planned Outages for resources providing Regulatory Must-Take Generation shall be provided to the CAISO Outage Coordination Office by the Participating TO or UDC having an existing contract with such resource or by a Participating Generator. Information provided will be that obtained by the Participating TO, UDC or a Participating Generator pursuant to the terms of the existing agreement with the Regulatory Must-Take Generation resource or as requested by the CAISO. Scheduling and approvals of Maintenance Outages for resources providing Regulatory Must-Take Generation shall continue to be coordinated as detailed in the applicable contract with the Participating TO or UDC, provided the owner of the Regulatory Must-Take Generation resource has not executed a Participating Generator Agreement or QF PGA. If the owner of a Regulatory Must-Take Generation resource has executed a Participating Generator Agreement or QF PGA, it shall comply with Section 9.3.5 and other provisions applicable to Participating Generators.

**9.3.6 Maintenance Outage Planning.**

Each Operator shall, by not later than October 15 each year, provide the CAISO with a proposed schedule of all Maintenance Outages it wishes to undertake in the following year. The proposed schedule shall include all of the Operator's transmission facilities that comprise the CAISO Controlled Grid and Generating Units subject to a Participating Generator Agreement (including its Reliability Must-Run Units). In the case of a Participating TO's transmission facilities, that proposed schedule shall be developed in consultation with the UDCs interconnected with that Participating TO's system and shall take account of each UDC's planned maintenance requirements. The nature of the information to be provided and the detailed Maintenance Outage planning procedure shall be established by the CAISO. This information shall include:

The following information is required for each Generating Unit of a Participating Generator:

- (a) the Generating Unit name and Location Code;
- (b) the MW capacity unavailable;
- (c) the scheduled start and finish date for each Outage; and
- (d) where there is a possibility of flexibility, the earliest start date and the latest finish date, along with the actual duration of the Outage once it commences.

The following information is required for each transmission facility:

- (a) the identification of the facility and location;
- (b) the nature of the proposed Maintenance Outage;
- (c) the preferred start and finish date for each Maintenance Outage; and
- (d) where there is a possibility of flexibility, the earliest start date and the latest finish date, along with the actual duration of the Outage once it commences.

Either the CAISO, pursuant to Section 9.3.7, or an Operator, subject to Section 9.3.6.11, may at any time request a change to an Approved Maintenance Outage. An Operator may, as provided in Section 9.3.6.3, schedule with the CAISO Outage Coordination Office a Maintenance Outage on its system, subject to the conditions of Sections 9.3.6.4.1, 9.3.6.8, and 9.3.6.9.

#### **9.3.6.1 Quarterly Updates.**

**9.3.6.1.1** Each Participating Generator will provide the CAISO with quarterly updates of its long-range Outage schedule referred to in Section 9.3.6 for Generating Units and System Units by the close of business on the fifteenth (15th) day of each January, April, and July. These updates must identify known changes to any previously planned Generating Unit Outages and any additional Outages anticipated over the next twelve (12) months from the time of this report. In this report, each Participating Generator must include all known planned Outages for the following twelve (12) months.

**9.3.6.1.2** Each Participating TO will provide the CAISO with quarterly updates of the data provided under **Section 9.3.6** by close of business on the fifteenth (15th) day of each January, April, and July. These updates must identify known changes to any previously planned CAISO Controlled Grid facility Maintenance Outages and any additional Outages anticipated over the next twelve **(12)** months from the time of the report. As part of this update, each Participating TO must include all known planned Outages for the following twelve **(12)** months.

**9.3.6.2 90 Day Look Ahead.**

In addition to changes made at quarterly Outage submittals, each Participating Generator shall notify the CAISO in writing of any known changes to a Generating Unit or System Unit Outage scheduled to occur within the next **ninety (90)** days and may submit changes to its planned Maintenance Outage schedule at any time. Participating Generators must obtain the approval of the CAISO Outage Coordination Office in accordance with Section 9. Such approval may be withheld only for reasons of System Reliability or security.

**9.3.6.3 Timeframe for Scheduling Generation and Transmission Outages.**

**9.3.6.3.1 72 Hours Ahead for Generating Units.**

An Operator may, upon seventy-two (72) hours advance notice (or within the notice period in the Operating Procedures posted on the CAISO Website), schedule with the CAISO Outage Coordination Office a Maintenance Outage for a Generating Unit, subject to the conditions of Sections 9.3.6.4.**1**, 9.3.6.**8** and 9.3.6.**9**.

**9.3.6.3.2 For Transmission Facilities.**

Except for Outages that may have a significant effect upon CRR revenue adequacy, an Operator may, upon seventy-two (72) hours advance notice (or within the notice period in the Operating Procedures posted on the CAISO Website), schedule with the CAISO Outage Coordination Office a Maintenance

Outage for transmission facilities on its system, subject to the conditions of Sections 9.3.6.4.1, 9.3.6.8 and 9.3.6.9. For Outages that may have a significant effect upon CRR revenue adequacy, an Operator may, upon thirty (30) days notice in advance of the first day of the month the Outage is proposed to be scheduled (or within the notice period in the Operating Procedures posted on the CAISO Website), schedule with the CAISO Outage Coordination Office a Maintenance Outage for transmission facilities on its system, subject to the conditions of Sections 9.3.6.4.1, 9.3.6.8 and 9.3.6.9.

#### **9.3.6.4 Changes to Planned Maintenance Outages.**

A Participating TO may submit changes to its planned Maintenance Outage information at any time, provided, however, that if the Participating TO cancels an Approved Maintenance Outage after 5:00 a.m. of the day prior to the day upon which the Outage is scheduled to commence and the CAISO determines that the change was not required to preserve System Reliability, the CAISO may disregard the availability of the affected facilities in determining the availability of transmission capacity in the Day-Ahead Market. The CAISO will, however, notify Market Participants and reflect the availability of transmission capacity in the HASP and Real-Time Market as promptly as practicable.

9.3.6.4.1 The CAISO Outage Coordination Office shall evaluate whether the requested Maintenance Outage or change to an Approved Maintenance Outage is likely to have a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid or the facilities of a Connected Entity. The CAISO may request additional information or seek clarification from Participating Generators or Participating TOs of the information submitted in relation to a planned Generating Unit and System Unit Outage or a planned Maintenance Outage. This information may be used to assist the CAISO in prioritizing conflicting requests for Outages.

#### **9.3.6.5 CAISO Analysis of Generating Unit Outage Plans.**



**9.3.6.5.1 Calculation of Aggregate Generating Capacity.**

The CAISO will use the long-range Generating Unit or System Unit Outage schedule referenced in Section 9.3.6 and, as appropriate, additional approved Outage requests scheduled to start within **ninety** (90) days, to calculate the aggregate Generation capacity projected to be available in the following time frames:

- (a) on an annual and quarterly basis, the CAISO will calculate the aggregate weekly peak Generation capacity projected to be available during each week of the following year and quarter, respectively; and
- (b) on a monthly basis, the CAISO will calculate the aggregate daily peak Generation capacity projected to be available during the month.

**9.3.6.6 Withdrawal or Modification of Request.**

The Operator of a Participating Generator or a Participating TO's Operator may withdraw a request at any time prior to actual commencement of the Outage. The Operator of a Participating Generator or Participating TO's Operator may modify a request at any time prior to receipt of any acceptance or rejection notice from the CAISO Outage Coordination Office or pursuant to Sections 9.3.8.1, 9.3.8.2 and 9.3.8.3, but the CAISO Outage Coordination Office shall have the right to reject such modified request for reasons of System Reliability, system security or market impact, because of the complexity of the modifications proposed, or due to insufficient time to assess the impact of such modifications.

**9.3.6.7** Each Participating Generator or Participating TO which has scheduled a planned Maintenance Outage pursuant to Section 9.3.4 must schedule and receive approval of the Outage from the CAISO Outage Coordination Office prior to initiating the Approved Maintenance Outage. The CAISO

Outage Coordination Office will review the Maintenance Outages to determine if any one or a combination of Maintenance Outage requests relating to CAISO Controlled Grid facilities, Generating Units or System Units may cause the CAISO to violate the Applicable Reliability Criteria. This review will take consideration of factors including, but not limited to, the following:

- (a) forecast peak Demand conditions;
- (b) other Maintenance Outages, previously Approved Maintenance Outages, and anticipated Generating Unit Outages;
- (c) potential to cause Congestion;
- (d) impacts on the transfer capability of Interconnections; and
- (e) impacts on the market.

**9.3.6.8** The CAISO Outage Coordination Office shall acknowledge receipt of each request to confirm or approve a Maintenance Outage for a Generating Unit, System Unit, or Physical Scheduling Plant. Where the CAISO Outage Coordination Office reasonably determines that the requested Maintenance Outage or the requested change to an Approved Maintenance Outage, when evaluated together with existing Approved Maintenance Outages, is not likely to have a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid, the CAISO shall authorize the Maintenance Outage or change to the Approved Maintenance Outage, and shall so notify the requesting Operator and other entities who may be directly affected.

**9.3.6.9** Where, in the reasonable opinion of the CAISO Outage Coordination Office, the requested Maintenance Outage or requested change to an Approved Maintenance Outage is likely to have a detrimental effect on the efficient use and reliable operation of the CAISO Controlled Grid, the CAISO Outage Coordination Office may reject the requested Maintenance Outage or requested change to Approved Maintenance Outage. If in the CAISO's determination, any of the Maintenance Outages

would cause the CAISO to violate the Applicable Reliability Criteria, the CAISO will notify the relevant Operator, and the Operator will then revise the proposed Maintenance Outage and inform the CAISO of the proposed changes. The CAISO Outage Coordination Office shall, in a rejection notice, identify the CAISO's reliability, security and market concerns which prompt the rejection and suggest possible remedies or schedule revisions which might mitigate any such concerns. The CAISO Outage Coordination Office may provide each Operator in writing with any suggested amendments to those Maintenance Outage requests rejected by the CAISO Outage Coordination Office. Any such suggested amendments will be considered as a CAISO maintenance request and will be approved in accordance with the process set forth in Section 9.3.7. The determination of the CAISO Outage Coordination Office shall be final and binding on the Operator. If, within fourteen (14) days of having made its determination, the Operator requests the CAISO Outage Coordination Office to provide reasons for its determination, it shall do so as soon as is reasonably practicable. The CAISO will give reasons for informational purposes only and without affecting in any way the finality or validity of the determination.

**9.3.6.10 Failure to Meet Requirements.**

Any request to consider maintenance that does not meet the notification requirements contained in Sections 9.3.8.2 and 9.3.8.3 will be rejected without further consideration, unless Section 9.3.10 applies.

**9.3.6.11 Cancellation of Approved Maintenance Outage.**

In the event an Operator of facilities forming part of the CAISO Controlled Grid cancels an Approved Maintenance Outage after 5:00 a.m. of the day prior to the day upon which the Outage is scheduled to commence and the CAISO determines that the change was not required to preserve System Reliability, the CAISO may disregard the availability of the affected facilities in determining the availability of transmission capacity in the Day-Ahead Market, provided, however, that the CAISO will, as promptly as practicable, notify Market Participants and reflect the availability of the affected facilities in determining the availability of transmission capacity in the HASP and Real-Time Market.

### **9.3.7 Maintenance Outage Requests by the CAISO.**

The CAISO Outage Coordination Office may at any time request a Maintenance Outage or a change to an Approved Maintenance Outage from an Operator if, in the opinion of the CAISO Outage Coordination Office, the requested Maintenance Outage or change is required to secure the efficient use and reliable operation of the CAISO Controlled Grid. In addition, the CAISO Outage Coordination Office may, by providing notice no later than 5:00 a.m. of the day prior to the day upon which the Outage is scheduled to commence, direct the Operator to cancel an Approved Maintenance Outage, when necessary to preserve or maintain System Reliability or, with respect to Reliability Must-Run Units or facilities that form part of the CAISO Controlled Grid, to avoid unduly significant market impacts that would arise if the Outage were to proceed as scheduled. The Operator, acting in accordance with Good Utility Practice, shall comply with the CAISO's direction and the provisions of Sections 9.3.7.1 and 9.3.7.2 shall apply. The CAISO shall give notice of any such direction to Market Participants prior to the deadline for submission of Day-Ahead **Market** Bids for the day on which the Outage was to have commenced. For purposes of this section and Section 9.3.3, an "unduly significant market impact" means an unplanned event or circumstance (e.g., unseasonable weather, a Forced Outage of a facility, or other occurrence) that adversely affects the competitive nature and efficient workings of the CAISO Markets, and is of such severity that a prudent Operator would not have scheduled a Maintenance Outage of its facility if the unplanned event or circumstance could have been anticipated.

**9.3.7.1** The Operator may: (1) refuse the request; (2) agree to the request; or (3) agree to the request subject to specific conditions. The Operator, acting in accordance with Good Utility Practice, shall make every effort to comply with requests by the CAISO Outage Coordination Office. In the event that the Operator refuses the CAISO's request, it shall provide to the CAISO Outage Coordination Office written justification for its position within seventy-two (72) hours.

**9.3.7.2** In response the CAISO Outage Coordination Office may: (1) overrule any refusal of a Maintenance Outage or a change to an Approved Maintenance Outage by an Operator, in which case the CAISO Outage Coordination Office determination shall be final; (2) accept any changes or conditions proposed by the Operator, in which case the Maintenance Outage request or the request to change an Approved Maintenance Outage shall be deemed to be amended accordingly; or (3) reject the change or condition, in which case the CAISO Outage Coordination Office and the Operator shall determine if acceptable alternative conditions or changes can be agreed. If the Operator and the CAISO Outage Coordination Office cannot agree on acceptable alternative conditions or changes to the CAISO Outage Coordination Office's request for a Maintenance Outage or change to an Approved Maintenance Outage, the CAISO Outage Coordination Office determination shall be final. If the Operator and the CAISO Outage Coordination Office cannot agree on acceptable alternative conditions or changes to the CAISO Outage Coordination Office's request for a Maintenance Outage or change to an Approved Maintenance Outage, the CAISO may notify the FERC of the dispute and take any other steps that are within its authority to maintain the reliability of the CAISO Controlled Grid.

**9.3.7.3** The CAISO will compensate the applicable Participating TO or Participating Generator for any direct and verifiable costs that such Participating TO or Participating Generator incurs as a result of the CAISO's cancellation of an Approved Maintenance Outage pursuant to this Section 9.3.7. For purposes of this section, direct costs include verifiable labor and equipment rental costs that have been incurred by the applicable Participating TO or Participating Generator solely as a result of the CAISO's cancellation of the Approved Maintenance Outage. Each Participating TO or Participating Generator must make a reasonable effort to avoid incurring any such direct costs through such measures as, but not limited to, the prompt cancellation of all contractual arrangements with third parties related to the Approved Maintenance Outage.

**9.3.7.4** The amount used to compensate each applicable Participating TO and Participating Generator, as described in Section 9.3.7.3, shall be charged to the Scheduling Coordinators in proportion to their metered Demand (including exports) during the Settlement Period(s) of the originally scheduled Outage.

**9.3.8** The CAISO Outage Coordination Office shall provide notice to the Operator of the approval or disapproval of any requested Maintenance Outage. Additionally, the CAISO Outage Coordination Office shall notify any Connected Entity that may in the reasonable opinion of the CAISO Outage Coordination Office be directly affected by an Approved Maintenance Outage. The content of and procedures for such notice shall be established by the CAISO.

**9.3.8.1 Data Required.**

The Operator of a **Generating Unit** owned or controlled by a Participating Generator shall submit to the CAISO pursuant to Sections 9.3.4 and 9.3.5.2.1 its request to confirm the schedule of a planned Maintenance Outage or to change the schedule of a planned Maintenance Outage. Such request must be made to the CAISO Outage Coordination Office by no later than 11:30 a.m. three (3) working days prior to the starting date of the proposed Outage (or as specified on the CAISO Website). Likewise, all Participating TOs shall submit a formal request to confirm or change an Approved Maintenance Outage with respect to any CAISO Controlled Grid facility to the CAISO Outage Coordination Office in accordance with Sections 9.3.8.2 and 9.3.8.3.

Such schedule confirmation request shall specify the following:

- (a) the Generating Unit or System Unit name and Location Code, or the identification of the transmission system element(s) to be maintained including location;
- (b) the nature of the maintenance to be performed;
- (c) the date and time the Outage is to begin;
- (d) the date and time the Outage is to be completed;

- (e) the time required to terminate the Outage and restore the Generating Unit to normal capacity or the transmission system to normal operation;
- (f) identification of primary and alternate telephone numbers for the Operator's single point of contact; and
- (g) in the case of a request for a change to an Approved Maintenance Outage, the date and time of the original Approved Maintenance Outage.

**9.3.8.2 Three (3) Day Prior Notification.**

Any request to confirm an Approved Maintenance Outage that may affect the transfer capability of any part of the CAISO Controlled Grid must be submitted no later than 11:30 a.m. at least three (3) working days prior to the starting date of the Approved Maintenance Outage (or as posted on the CAISO Website). This Section applies to facilities as described on the CAISO Website and in the applicable Business Practice Manual.

Failure to submit a request for an Outage by the proper time may mean a delay in approval from the CAISO or may cause that Outage to be designated as a Forced Outage based on the nearness of the request to the requested Outage date.

**9.3.8.3 One (1) Day Prior Notification.**

Any request to confirm or change the schedule for an Approved Maintenance Outage requiring only one (1) day notice (as detailed on the CAISO Website) must be submitted no later than 11:30 am at least one (1) day prior to the starting date of the Outage (or as specified on the CAISO Website). Failure to submit a request for an Outage by the proper time may mean a delay in approval from the CAISO or may cause that Outage to be designated as a Forced Outage.

**9.3.8.4 Priority of Outage Requests.**

Outage requests which are listed in the long-range maintenance schedules submitted to and approved by the CAISO will be given a priority in the scheduling and approval of Outage requests over those which have not been listed.

**9.3.8.5 Delay.**

The CAISO Outage Coordination Office may delay its approval of an Approved Maintenance Outage schedule if sufficient or complete information is not received by the CAISO Outage Coordination Office within the time frames provided in Sections 9.3.8.2 and 9.3.8.3.

**9.3.9 Final Approval, Delay and Withholding.**

On the day on which an Approved Maintenance Outage is scheduled to commence, the Operator shall contact the CAISO Control Center for final approval of the Maintenance Outage. No Maintenance Outage shall commence without such final approval (including the time of release, in hours and minutes) being obtained from the CAISO Control Center whose decision shall be final. The CAISO Outage Coordination Office may delay its approval of a scheduled Maintenance Outage for a Participating Generator if sufficient or complete information is not received by the CAISO Outage Coordination Office within the time frames set forth in Section 9.3.8.1. The CAISO Control Center shall have the authority to withhold a Final Approval for an Approved Maintenance Outage for reasons of System Reliability, security or system status of the CAISO Controlled Grid or market impact. The CAISO Control Center shall immediately notify the relevant Operator of its intention to withhold the Final Approval. The Generator Maintenance Outage or CAISO Controlled Grid facility Maintenance Outage will then be rescheduled pursuant to this CAISO Tariff.

**9.3.10 Forced Outages.**

**9.3.10.1** Coordination of all Forced Outages (consistent with Sections 9.3.4 and 9.3.5.2.1) will be through the single point of contact between the Operator and the CAISO Control Center.



**9.3.10.2** Each Participating TO shall report any change or potential change in equipment status of the Participating TO's transmission assets turned over to the control of the CAISO or in equipment that affects transmission assets turned over to the control of the CAISO immediately upon discovery to the CAISO (this will include line and station equipment, line protection, Remedial Action Schemes and communication problems, etc.). Each Participating TO shall also keep the CAISO immediately informed upon discovery as to any change or potential change in the Participating TO's transmission system that could affect the reliability of the CAISO Controlled Grid. This would include, but is not limited to, adverse weather conditions, fires, bomb threats, system failures, etc. **To the extent possible, the CAISO shall reflect all transmission Outages in the Integrated Forward Market, HASP, and Real-Time Market.**

**9.3.10.3** Any Operator, upon identification of a situation likely to result in a Forced Outage within the next twenty-four (24) hours unless immediate corrective action is taken, where such action requires the removing from service or reducing the maximum output capability of a Generating Unit by **ten (10)** MW or more from the value most recently recorded in SLIC, or removing a transmission facility from service, shall communicate directly with the CAISO Control Center. All such notifications of Forced Outages shall be communicated to the CAISO Control Center with as much notice as possible in order that the necessary security analysis and CAISO Controlled Grid assessments may be performed. If prior notice of a Forced Outage cannot be given, the Operator shall notify the CAISO of the Forced Outage within thirty (30) minutes after it occurs. Any Operator, upon identification of a situation likely to result in a Forced Outage but of a nature not requiring a removal from service until some time more than twenty-four (24) hours in the future will be subject to the provisions of Section 9 with respect to any necessary Outage except the requirements imposing time limits for notification will be waived and the request will be expedited by the CAISO provided notice is given as soon as possible.

**9.3.10.3.1** If prior notice of a Forced Outage cannot be given, the Operator of a Generating Unit is required to notify the CAISO within ~~sixty~~ (60) minutes after discovering any change in the maximum output capability of at least ~~ten~~ (10) MW or ~~five percent~~ (5%) of the value registered in the Master File, whichever is greater, from the value registered in SLIC that lasts for ~~fifteen~~ (15) minutes or longer.

**9.3.10.4** The CAISO Control Center shall coordinate any operational changes necessary to accommodate a Forced Outage and Market Participants shall comply with the CAISO's instructions given for that purpose.

**9.3.10.5** All Forced Outages shall be communicated by the CAISO Control Center to Operators likely to be affected by the Outage using the same procedures adopted for Maintenance Outage coordination procedures.

**9.3.10.6** With respect to Forced Outages of Generating Units that result in a reduction in maximum output capability that lasts ~~fifteen~~ (15) minutes or longer of 40 MW or more below the value registered in the Master File and ~~ten percent~~ (10%) of the value registered in the Master File, the Operator shall provide to the CAISO an explanation of the Forced Outage ~~and~~ the estimated return time, within two (2) Business Days *after the Operator initially notifies the CAISO pursuant to Section 9.3.10.2.1 of the change in maximum output capability. The explanation shall include a description of the equipment failure or other cause and a description of all remedial actions taken by the Operator.* Upon request of the CAISO, Operators, and where applicable, Eligible Customers, Scheduling Coordinators, UDCs and MSS ~~Operators~~ promptly shall provide information requested by the CAISO to enable the CAISO to review the changes made to the maximum output capability or to provide further information relative to the explanation of the Forced Outages submitted by the Operator and to prepare reports on Forced Outages. If the CAISO determines that any Forced Outage may have been the result of gaming or other questionable behavior by the Operator, the CAISO shall submit a report describing the basis for its

determination to the FERC. The CAISO shall consider the following factors when evaluating the Forced Outage to determine if the Forced Outage was the result of gaming or other questionable behavior by the Operator: 1) if the Forced Outage coincided with certain market conditions such that the Forced Outage may have influenced market prices or the cost of payments associated with Exceptional Dispatches; 2) if the Forced Outage coincided with a change in the Bids submitted for any units or resources controlled by the Operator or the Operator's Scheduling Coordinator; 3) if the CAISO had recently rejected a request for an Outage for, or to Shut-Down, the Generating Unit experiencing the Forced Outage; 4) if the timing or content of the notice of the Forced Outage provided to the CAISO was inconsistent with subsequent reports of or the actual cause of the Outage; 5) if the Forced Outage or the duration of the Forced Outage was inconsistent with the history or past performance of that Generating Unit or similar Generating Units; 6) if the Forced Outage created or exacerbated Congestion; 7) if the Forced Outage was extended with little or no notice; 8) if the Operator had other alternatives to resolve the problems leading to the Forced Outage; 9) if the Operator took reasonable action to minimize the duration of the Forced Outage; or 10) if the Operator failed to provide the CAISO an explanation of the Forced Outage within two (2) Business Days or failed to provide any additional information or access to the generating facility requested by the CAISO within a reasonable time.

**9.3.10.7 Other *Balancing Authority* Areas.**

The CAISO Outage Coordination Office shall make all reasonable efforts to coordinate Outages involving other *Balancing Authority* Areas or affecting an Intertie, import or export capability not under the Operational Control of the CAISO to the extent that they may affect the reliability of the CAISO Controlled Grid.

**9.4 Outage Coordination For New Facilities.**

#### **9.4.1 Coordination by CAISO.**

The procedure to energize and place in service any new or relocated piece of equipment, connected to the CAISO Controlled Grid, must be set out by the Operator or Connected Entity in a written procedure and coordinated by the CAISO Outage Coordination Office.

#### **9.4.2 Types of Work Requiring Coordination.**

The types of work which the CAISO will coordinate includes any new addition, replacement or modification to the CAISO Controlled Grid, including:

- (a) transmission lines forming part of the CAISO Controlled Grid;
- (b) equipment including circuit breakers, transformers, disconnects, reactive devices, wave traps, forming part of the CAISO Controlled Grid;
- (c) Generating Unit Interconnections; and
- (d) protection and control schemes, including RAS, SCADA, EMS, or AGC.

#### **9.4.3 Uncomplicated Work.**

When line rearrangements and/or station equipment work is uncomplicated and easily understood, the CAISO Outage Coordination Office may determine that the work can be accomplished using Outages approved in accordance with Section 9.3.6. The CAISO Outage Coordination Office will make this determination in coordination with the respective requesting Operator or Connected Entity.

#### **9.4.4 Special Procedures for More Complex Work.**

##### **9.4.4.1 Responsibility for Preparation.**

In cases to which 9.4.3 does not apply, it is the responsibility of the requesting Operator or Connected Entity to prepare a written procedure to enable the CAISO to approve Outages in a manner that enables the necessary work to proceed. The CAISO Outage Coordination Office must approve the procedure.

**9.4.4.2 Information to be Provided to the CAISO.**

The written procedure must be received by the CAISO Outage Coordination Office a minimum of four (4) weeks prior to the start of procedure. Adequate drawings will be attached to the procedure to help clarify the work being performed and the Outages that will be required to complete the work must be specified. The procedure shall include all of the information referred to on the CAISO Website.

**9.4.4.3 Approval of the Procedure.**

Upon receipt of the procedure and drawings referred to in Section 9.4.4.2, the CAISO Outage Coordination Office will review the procedure and notify the Operator or Connected Entity of any required modifications. The CAISO Outage Coordination Office may, at its discretion, require changes to and more detail to be inserted in the procedure. The requesting Operator or Connected Entity will consult with other entities likely to be affected and will revise the procedure, following any necessary or appropriate discussions with the CAISO to reflect the requirements of the CAISO. Following the CAISO approval, an approved copy of the procedure will then be transmitted to the Operator or Connected Entity and the other entities likely to be affected.

**9.4.4.4 Changes to Procedure.**

Once the procedure is approved by the CAISO Outage Coordination Office any modifications to the procedure will require the requesting Operator or Connected Entity to notify the CAISO Outage Coordination Office with as much lead time as possible of the recommended changes. The modified procedure will then have to be approved by the CAISO Outage Coordination Office in accordance with Section 9.4.4.2 and 9.4.4.3.

**9.4.4.5 Approval of Work Requiring Coordination.**

No work can begin pursuant to any approved procedure unless approved by the CAISO Outage Coordination Office.

**9.5                   Records.**

The CAISO and all Operators shall develop procedures to keep a record of Approved Maintenance Outages as they are implemented and to report the completion of Approved Maintenance Outages. Such records are available for inspection by Operators and Connected Entities at the CAISO Outage Coordination Office. Only those records pertaining to the equipment or facilities owned by the relevant Operator or Connected Entity will be made available for inspection at the CAISO Outage Coordination Office, and such records will only be made available provided notice is given in writing to the CAISO fifteen (15) days in advance of the requested inspection date.

**9.6                   Facility Owner.**

The facility owner shall remain solely and directly responsible for the performance of all maintenance work, whether on energized or de-energized facilities, including all activities related to providing a safe working environment.

**10 METERING.**

**10.1 General Provisions.**

**10.1.1 Role of the CAISO.**

The CAISO is responsible for establishing and maintaining the Revenue Meter Data Acquisition and Processing System (RMDAPS) and the Settlement Quality Meter Data Systems (SQMDS). RMDAPS will acquire Revenue Quality Meter Data for use in the CAISO's Settlement and billing process, and SQMDS acquires Scheduling Coordinators' Settlement Quality Meter Data. The CAISO is also responsible for the following for CAISO Metered Entities:

- (a) setting standards and procedures for the registration, certification, auditing, testing and maintenance of revenue quality meters and Meter Data servers; and
- (b) establishing procedures for the collection, security, validation and estimation of Meter Data.

**10.1.2 Meter Data Retention by the CAISO.**

The CAISO will maintain a record of all Revenue Quality Meter Data and Settlement Quality Meter Data provided to it, as well as the Settlement Quality Meter Data it produces, for a period of 18 months on site at the CAISO's facilities and for a period of 10 years in the CAISO's archive storage facilities. The CAISO will, on reasonable notice, provide a Scheduling Coordinator with access to Meter Data or Settlement Quality Meter Data provided that the Scheduling Coordinator requesting access represented the entity for which that data was provided at the time the data was provided to the CAISO.

**10.1.3 Netting.**

**10.1.3.1 Permitted Netting.**

CAISO Metered Entities and Scheduling Coordinators may, when providing Meter Data to the CAISO, net MWh values for Generating Unit output and auxiliary Load equipment electrically connected to that Generating Unit at the same point provided that the Generating Unit is on-line and is producing sufficient output to serve all of that auxiliary Load equipment. For example, where a Generating Unit's auxiliary Load equipment is served via a distribution line that is separate from the switchyard to which the Generating Unit is connected, that Generating Unit and auxiliary Load equipment will not be considered to be electrically connected at the same point.

**10.1.3.2 Prohibited Netting.**

CAISO Metered Entities or Scheduling Coordinators may not net values for Generating Unit output and Load. CAISO Metered Entities or Scheduling Coordinators that serve third party Load connected to a Generating Unit's auxiliary system must add that third party Load to the Generating Unit's output. The CAISO Metered Entity may add that third party Load to the Generating Unit's output either by means of a hard wire local meter connection between the metering systems of the third party Load and the Generating Unit or by requesting the CAISO to use RMDAPS to perform the addition. Scheduling Coordinators representing Scheduling Coordinator Metered Entities that serve third party Load connected to the auxiliary system of a Generating Unit must ensure that those Scheduling Coordinator Metered Entities add the Energy consumed by such third parties to that Generating Unit's output so as to ensure proper settlement of that Generating Unit's gross output. The CAISO Metered Entity or the Scheduling Coordinator must ensure that the third party Load has Metering Facilities that meet the standards referred to in this Section 10 and the Business Practice Manuals.



**10.1.3.3 Permitted Netting for a QF with a QF PGA and Other QF Metering Requirements.**

A Generating Unit that is a QF and that qualifies as Regulatory Must-Take Generation is subject to the revenue metering requirements set forth in the Existing QF Contract for the QF and is not subject to the revenue metering requirements of Section 10. A QF Generating Unit not operating under the terms of an Existing QF Contract is subject to the metering requirements of Section 10 prohibiting the net metering of Generation and Load, except if it is subject to a QF PGA. A Generating Unit that is a QF and that operates under the terms of a QF PGA is eligible for net metering treatment. Notwithstanding Section 10.1.3.2, a Participating Generator with a QF PGA may net the value for the Generation produced by each Net Scheduled QF listed in its QF PGA and the value for the Demand of the Self-provided Load that is (i) served by the Net Scheduled QF and (ii) electrically located on the same side of the Point of Demarcation. The Participating Generator with a QF PGA may satisfy the provisions of Section 10 for the installation of revenue metering by installing Metering Facilities at the Point of Demarcation; provided that the installed Metering Facilities satisfy the technical, functional, and performance requirements for Metering Facilities set forth in Section 10 and the applicable Business Practice Manual.

**10.1.4 Meter Service Agreements.**

A CAISO Metered Entity shall enter into a Meter Service Agreement for CAISO Metered Entities with the CAISO. A Scheduling Coordinator representing a Scheduling Coordinator Metered Entity shall enter into a Meter Service Agreement for Scheduling Coordinators. If a CAISO Metered Entity is also a Scheduling Coordinator, it shall be treated as a CAISO Metered Entity for the purposes of this Section 10 and will be required to enter into a Meter Service Agreement for CAISO Metered Entities. A CAISO Metered Entity will not be required to enter into a Meter Service Agreement for Scheduling Coordinators unless it represents any Scheduling Coordinator Metered Entities. A Meter Service Agreement for Scheduling Coordinators entered into by a CAISO Metered Entity shall only apply to those Scheduling Coordinator Metered Entities that the CAISO Metered Entity represents; the Meter Service Agreement for Scheduling Coordinators shall not apply to the CAISO Metered Entity other than in its capacity as Scheduling Coordinator for those Scheduling Coordinator Metered Entities.

#### **10.1.5 Access to Meter Data.**

The CAISO has complete authority over all rights of access to (and has authority to deny access to) the CAISO's RMDAPS and Settlement Quality Meter Data Systems including servers (where used), interface equipment, and software needed to collect the relevant information for Settlement, billing and related purposes. Each Market Participant acknowledges this CAISO authority as a condition of CAISO Controlled Grid service and participation. For CAISO Metered Entities, authority over the sealing of meters, and all related Metering Facilities, shall reside solely with the CAISO for all CAISO designated Meter Points, regardless of any remote electronic access that a CAISO Metered Entity or its Scheduling Coordinator may have provided to third parties, except as otherwise may be required by law, FERC, any Local Regulatory Authority or other provision of this CAISO Tariff. Meter Data supplied by a CAISO Metered Entity shall be made available by the CAISO to the Scheduling Coordinator representing such CAISO Metered Entity at the time the Meter Data was provided and the other authorized users identified in its Meter Service Agreement for CAISO Metered Entities, but shall not be disclosed to any other third party except as may otherwise be required by law, FERC, any Local Regulatory Authority or other provision of this CAISO Tariff. Meter Data supplied by a Scheduling Coordinator for a Scheduling Coordinator Metered Entity shall be made available by the CAISO to the Scheduling Coordinator representing such Scheduling Coordinator Metered Entity at the time the Meter Data was provided and the other authorized users identified in its Meter Service Agreement for Scheduling Coordinators, but shall not be disclosed to any other third party except as may otherwise be required by law, FERC, any Local Regulatory Authority or other provision of this CAISO Tariff. Access by third parties other than authorized users to Meter Data held by the CAISO shall be coordinated through the Scheduling Coordinator that provided the Meter Data or that is representing the relevant CAISO Metered Entity that supplied the data and shall not be obtained directly from the CAISO on any basis including, without limitation, by accessing the RMDAPS.

**10.1.6 Failure of CAISO Facilities or Systems.**

In the event facility and/or systems failures impact the CAISO's ability to accept, collect, and process Revenue Quality Meter Data or Settlement Quality Meter Data, alternative measures may be required by the CAISO, CAISO Metered Entities, and Scheduling Coordinator Metered Entities. These measures are described in the applicable Business Practice Manual.

**10.2 Metering for CAISO Metered Entities.**

CAISO Metered Entities' revenue quality meters will be directly polled by the CAISO's RMDAPS as specified in this CAISO Tariff and Business Practice Manuals.

**10.2.1 Responsibilities of CAISO Metered Entities.**

**10.2.1.1 Duty to Provide Revenue Quality Meter Data.**

CAISO Metered Entities shall ensure that Revenue Quality Meter Data from their meters directly connected to the CAISO Controlled Grid or at interconnections thereto, including interconnections between utility Service Areas which have separate UFE calculations, is made available to the CAISO RMDAPS in accordance with the requirements of this Section 10 and the Business Practice Manuals.

**10.2.1.2 Format for Data Submission.**

CAISO Metered Entities must ensure that the Meter Data obtained by the CAISO directly from their revenue quality meters is raw, unedited and unaggregated Meter Data in kWh and kVarh values, as specified in the applicable Business Practice Manual. The CAISO will be responsible for the Validation, Estimation and Editing of that Meter Data in order to produce Settlement Quality Meter Data.

**10.2.1.3 Access to Settlement Quality Meter Data.**

Scheduling Coordinators may obtain Settlement Quality Meter Data relating to the CAISO Metered Entities they represent by directly accessing the Settlement Quality Meter Data Systems as specified in the applicable Business Practice Manual. The CAISO will use its best efforts to ensure that such data is made available to Scheduling Coordinators within five (5) Business Days of the relevant Operating Day.

**10.2.2 Duty to Install and Maintain Meters.**

CAISO Metered Entities, at their cost, shall install and maintain, or cause to be installed and maintained, metering equipment and associated communication devices at CAISO-designated Meter Points to meet the requirements of this Section 10 and the applicable Business Practice Manuals. The CAISO may require CAISO Metered Entities to install, at the cost of CAISO Metered Entities, additional meters and relevant metering system components, including Real-Time metering, at CAISO-specified Meter Points or other locations as deemed necessary by the CAISO, in addition to those connected to or existing on the CAISO Controlled Grid at the CAISO Operations Date. In directing the addition of meters and metering system components that would impose increased costs on a CAISO Metered Entity, the CAISO shall give due consideration to whether the expected benefits of such equipment are sufficient to justify such increased costs. Nothing in this Section 10 shall preclude CAISO Metered Entities from installing additional meters, instrument transformers and associated communications facilities not deemed necessary by the CAISO at their own cost. A CAISO Metered Entity may not commence installing such additional Metering Facilities until the CAISO has approved the CAISO Metered Entity's Proposal for Installation. If a CAISO Metered Entity installs such additional metering, such metering must: (i) be installed and maintained at the CAISO Metered Entity's cost and (ii) not unduly interfere with the accuracy of any primary meter and, if that primary meter is directly polled by the CAISO, the CAISO's ability to poll directly that meter.

**10.2.3 Metering Standards.**

Each CAISO Metered Entity shall ensure that each of its meters used to provide Meter Data to the CAISO complies with the meter standards and accuracy requirements for meters set forth in this CAISO Tariff and the applicable Business Practice Manuals.

#### **10.2.4 Certification of Meters.**

Each CAISO Metered Entity that makes Meter Data available to the CAISO shall ensure that Metering Facilities used to produce such Meter Data have been certified by the CAISO as meeting the requirements of Section 10. Certification of the relevant Metering Facilities shall only be provided upon the production of such evidence as the CAISO may reasonably require to demonstrate that the facilities in question have been documented, inspected and successfully tested by the CAISO or a CAISO Authorized Inspector for conformance to the standards and accuracy requirements referred to in the Business Practice Manuals and this Section 10. CAISO certification pursuant to this Section 10.2.4 shall not relieve the CAISO Metered Entity from the obligation to ensure that its Metering Facilities continue to remain in compliance with the requirements of this CAISO Tariff and the applicable Business Practice Manuals.

##### **10.2.4.1 Requesting Certification.**

A CAISO Metered Entity seeking certification of its Metering Facilities shall independently engage a CAISO Authorized Inspector to perform certification of its Metering Facilities. A CAISO Metered Entity may request the CAISO to perform the certification of its Metering Facilities if it would be impractical or impossible for that CAISO Metered Entity to engage a CAISO Authorized Inspector to perform the certification. The CAISO may refuse any such request by a CAISO Metered Entity if it is of the opinion that it is not impractical or impossible for that CAISO Metered Entity to engage a CAISO Authorized Inspector.

##### **10.2.4.2 Certification by the CAISO.**

All requests made to the CAISO to perform the certification of Metering Facilities must be made in accordance with the certification process for Metering Facilities and technical specifications published in the Business Practice Manuals and be accompanied by the documents referred to in the applicable Business Practice Manual. If the CAISO agrees to perform the certification of Metering Facilities, the

CAISO and that CAISO Metered Entity will agree the terms and conditions on which the CAISO will undertake the certification, including the assistance to be provided by the CAISO Metered Entity, the responsibility for costs and the indemnities to be provided.

**10.2.4.3 Criteria for Certification.**

Subject to any exemption granted by the CAISO, the criteria for certifying the Metering Facilities of CAISO Metered Entities pursuant to the CAISO Tariff are the criteria set forth in the Business Practice Manuals.

**10.2.4.4 Certificate of Compliance.**

If the Metering Facilities satisfy the certification criteria as specified in this CAISO Tariff and in the Business Practice Manuals (after taking into account any exemptions to the certification criteria granted by the CAISO), the CAISO will issue a Certificate of Compliance in respect of those Metering Facilities and provide the original Certificate of Compliance to the CAISO Metered Entity that requested the certification of those Metering Facilities.

**10.2.4.5 Obligation to Maintain Certification.**

CAISO Metered Entities must ensure that their Metering Facilities continue to comply with the certification criteria referred to in the CAISO Tariff and the Business Practice Manuals.

**10.2.4.6 Revocation of Certification.**

The CAISO may revoke in full or in part any Certificate of Compliance if:

- (a) it has reasonable grounds to believe that all or some of the Metering Facilities covered by that Certificate of Compliance no longer meet the certification criteria for Metering Facilities contained in the CAISO Tariff and the Business Practice Manuals; and
- (b) it has given written notice to the relevant CAISO Metered Entity stating that it does not believe that the identified Metering Facilities meet the certification criteria (including the reasons for that belief) and that CAISO Metered Entity fails to satisfy the CAISO, within the time period specified in the CAISO's notice, that the Metering Facilities meet the certification criteria.

If the CAISO revokes in full or part a Certificate of Compliance, the relevant CAISO Metered Entity may seek recertification of the relevant Metering Facilities by requesting certification. Such request must indicate that it relates to Metering Facilities in respect of which the CAISO has previously revoked a Certificate of Compliance.

Subject to any exemption granted by the CAISO under this CAISO Tariff, the CAISO will not accept Revenue Quality Meter Data from a CAISO Metered Entity unless that Revenue Quality Meter Data is produced by Metering Facilities that are certified in accordance with this CAISO Tariff and the CAISO Metered Entity has a current Certificate of Compliance.

#### **10.2.4.7 Changes to Certified Metering Facilities.**

The CAISO's approval must be obtained before any modifications or changes are made to any Metering Facilities of a CAISO Metered Entity which have been certified pursuant to the CAISO Tariff. The CAISO may, at its discretion, require those Metering Facilities to be recertified.

#### **10.2.5 CAISO Authorized Inspectors.**

##### **10.2.5.1 Published List of Inspectors.**

The CAISO will publish on the CAISO Website, for informational purposes only, a list of the CAISO Authorized Inspectors and details of the procedure for applying to become a CAISO Authorized Inspector. The CAISO will, on request, provide a copy of that list to entities that do not have access to the CAISO Website.

##### **10.2.5.2 Current Certificates.**

It is the responsibility of the relevant CAISO Metered Entity to ensure that any inspector it engages to undertake the certification of its Metering Facilities holds a current certificate of approval issued by the CAISO which authorizes that inspector to carry out the duties of a CAISO Authorized Inspector.

The CAISO's RMDAPS shall collect and process Revenue Quality Meter Data made available by CAISO Metered Entities pursuant to Meter Service Agreements for CAISO Metered Entities and the applicable Business Practice Manual. Revenue Quality Meter Data for CAISO Metered Entities shall be made available to the CAISO's RMDAPS as specified in the applicable Business Practice Manual either directly by the CAISO Metered Entity or via a central data server which collects Revenue Quality Meter Data for various CAISO Metered Entities provided that the central data server does not aggregate or adjust that data. Revenue Quality Meter Data on the CAISO's RMDAPS may be provided or made accessible to other CAISO systems as deemed necessary by the CAISO, subject to the CAISO being satisfied that such access by such authorized uses and/or systems will not adversely effect the security of the data held by the CAISO. CAISO Metered Entities shall ensure that their Metering Facilities are compatible with the CAISO's RMDAPS for these purposes. The CAISO may, at its discretion, exempt a CAISO Metered Entity from the requirement to make Revenue Quality Meter Data directly available to the CAISO's RMDAPS, for example, where the installation of communication links is unnecessary, impracticable or uneconomic. The CAISO shall maintain the RMDAPS and remedy any faults occurring in such system. Scheduling Coordinators and other authorized users requiring Settlement Quality Meter Data for CAISO Metered Entities on whose behalf they Bid may obtain such data by accessing the CAISO's Settlement Quality Meter Data Systems in accordance with the CAISO Tariff and applicable Business Practice Manuals. Scheduling Coordinators and other authorized users shall not poll the CAISO revenue meters for any other purpose, unless specifically authorized in the Meter Service Agreement for CAISO Metered Entities.

CAISO Metered Entities shall make available to the CAISO's RMDAPS Revenue Quality Meter Data meeting the requirements of this Section 10. The format of Meter Data to be submitted shall be identified by Transmission Owner, Distribution System, PNode, CAISO Controlled Grid interface point and other information reasonably required by the CAISO.



## **10.2.8 Security and Meter Data Validation Procedures.**

The applicable Business Practice Manuals shall specify, in such detail as the CAISO may deem necessary, the Meter Data security and validation procedures that the CAISO shall apply to the **Revenue Quality** Meter Data made available by each CAISO Metered Entity. The CAISO may base the security and validation procedures on historical data or an appropriate alternative data source. The CAISO shall correct or replace or cause to be corrected or replaced inaccurate or missing data. The procedure may include data correction and substitution algorithms which shall estimate, substitute and flag such inaccurate or missing data. Any necessary correction or replacement shall be approved by the CAISO prior to the data being sent to the CAISO for **Settlement** purposes. Security and validation measures for existing Tie Point Meters shall be consistent with existing arrangements with the operators in adjacent **Balancing Authority** Areas. Any additional measures or changes to the existing arrangements shall only be implemented upon mutual agreement of the CAISO and the operator in the adjacent **Balancing Authority** Area.

### **10.2.8.1 Meter Site Security.**

Metering Facilities of CAISO Metered Entities (including communications devices) and secondary devices that could have any impact on the performance of the Metering Facilities must be sealed by the CAISO.

### **10.2.8.2 Third Party Access to Meters.**

#### **10.2.8.2.1 Local Access.**

If a CAISO Metered Entity desires to grant a third party local access to its revenue quality meters, those meters must be equipped with CAISO approved communications capabilities in accordance with the applicable Business Practice Manuals. The CAISO may set the password and any other security requirements for locally accessing the revenue quality meters of CAISO Metered Entities so as to ensure the security of those meters and their **Revenue Quality** Meter Data. The CAISO may alter the password and other requirements for locally accessing those meters from time to time as it determines necessary.

The CAISO must provide CAISO Metered Entities with the current password and other requirements for locally accessing their revenue quality meters. CAISO Metered Entities must not give a third party local access to its revenue quality meters or disclose to that third party the password to its revenue quality meters without the CAISO's prior approval which shall not unreasonably be withheld. CAISO Metered Entities will be responsible for ensuring that a third party approved by the CAISO to access its revenue quality meters only accesses the data it is approved to access and that the data are only accessed for the purposes for which the access was approved.

**10.2.8.2.2 Remote Access.**

The CAISO may set the password and any other security requirements for remotely accessing the revenue quality meters of CAISO Metered Entities so as to ensure the security of those meters and their **Revenue Quality** Meter Data. The CAISO will alter the password and other requirements for remotely accessing those meters from time to time as it determines necessary. The CAISO must provide CAISO Metered Entities with the current password and other requirements for remotely accessing their revenue quality meters.

CAISO Metered Entities must not give a third party remote access to its revenue quality meters or disclose to that third party the password to its revenue quality meters without the CAISO's prior approval which shall not unreasonably be withheld. CAISO Metered Entities will be responsible for ensuring that a third party approved by the CAISO to access its revenue quality meters only accesses the data it is approved to access and that the data are only accessed for the purposes for which the access was approved.

**10.2.8.3 Third Party Access Withdrawn.**

If, in the reasonable opinion of the CAISO, access granted to a third party by a CAISO Metered Entity in any way interferes or impedes with the CAISO's ability to poll any revenue quality meter, the CAISO may require that CAISO Metered Entity to immediately withdraw any access granted to a third party.

**10.2.8.4 RMDAPS Security.**

The CAISO will provide any needed information to entities that are permitted to access RMDAPS. The CAISO must maintain the security and integrity of Revenue Quality Meter Data brought into RMDAPS.

**10.2.9 Validation, Estimation and Editing of Meter Data.**

Subject to any exemption granted by the CAISO, Revenue Quality Meter Data that CAISO Metered Entities provide to the CAISO will be processed using the Validation, Estimation and Editing procedures published in the Business Practice Manuals in order to produce Settlement Quality Meter Data.

**10.2.9.1 Obligation to Assist.**

At the request of the CAISO, CAISO Metered Entities shall assist the CAISO in correcting or replacing defective data and in detecting and correcting underlying causes for such defects. Such assistance shall be rendered in a timely manner so that the Settlement process is not delayed.

**10.2.9.2 Availability of Meter Data.**

Subject to any exemption granted by the CAISO, Meter Data of CAISO Metered Entities must be recorded at 5-minute intervals and will be collected in accordance with the provisions of the applicable Business Practice Manual. The CAISO may also collect Meter Data on demand as provided in the applicable Business Practice Manual.

**10.2.9.3 [NOT USED]**

**10.2.9.4 CAISO Imposed Penalties and Sanctions.**

The CAISO shall have the authority to impose penalties and sanctions, including but not limited to Sanctions set forth in Section 37 and the applicable Business Practice Manual and suspension of trading rights, if a CAISO Metered Entity provides fraudulent metering data to the CAISO. Such penalties shall be approved by FERC.

**10.2.10 Low Voltage Side Metering.**

**10.2.10.1 Requirement for CAISO Approval.**

CAISO Metered Entities may only install revenue quality meters on the low voltage side of step-up transformers if they have obtained the prior approval of the CAISO in accordance with Section 10.2.10.

CAISO Metered Entities that have installed low voltage side metering, whether such installation was before or after the CAISO Operations Date, shall apply the Transformer **and Line** Loss Correction Factor in accordance with Section 10.2.10.4.

**10.2.10.2 Request for Approval.**

If a CAISO Metered Entity wishes to install low voltage side metering, it shall submit a written request to the CAISO. That CAISO Metered Entity must:

- (a) request approval to apply the Transformer and Line Loss Correction Factor to its revenue quality meter or request approval to have the CAISO apply the Transformer and Line Loss Correction Factor;
- (b) provide detailed reasons to support the request for low side metering;
- (c) provide all of the information in relation to the Transformer and Line Loss Correction Factor required by the Business Practice Manuals; and
- (d) any other information reasonably requested by the CAISO.

**10.2.10.3 CAISO's Grounds for Approval.**

The CAISO shall approve a request made under Section 10.2.10.2 only if the CAISO is satisfied that adequate accuracy and security of **Revenue Quality** Meter Data obtained can be assured in accordance with Section 10.2.10. The CAISO's rejection of such a request may be referred to the CAISO ADR Procedures if, after using all reasonable good faith efforts, the CAISO and a CAISO Metered Entity are unable to reach agreement.

**10.2.10.4 Application of Transformer and Line Loss Correction Factor.**

CAISO Metered Entities will apply the Transformer and Line Loss Correction Factor as set forth in the Business Practice Manuals. If the CAISO has approved a request from a CAISO Metered Entity for RMDAPS to apply the Transformer and Line Loss Correction Factor, RMDAPS will apply the Transformer and Line Loss Correction Factor set forth in the Business Practice Manuals. If the CAISO applies the Transformer and Line Loss Correction Factor, the CAISO may require the CAISO Metered Entity to pay the reasonable costs incurred by it in applying the Transformer and Line Loss Correction Factor.

**10.2.11 Audit, Testing Inspection and Certification Requirements.**

CAISO Metered Entities are subject to CAISO audit, testing and certification requirements for their entire metering system(s), including all relevant communication facilities and instrument transformers. The CAISO will have the right to either conduct any audit or test it considers necessary or to witness such audit or test carried out by the CAISO Metered Entity or a CAISO Authorized Inspector engaged by the CAISO Metered Entity or the CAISO to carry out those audits or tests.

**10.2.12 Exemptions.**

The CAISO has the authority to grant exemptions from certain CAISO metering standards for a CAISO Metered Entity, as set forth in Section 10.4. A CAISO Metered Entity with a temporary exemption shall provide site specific Revenue Quality Meter Data to the CAISO in accordance with its Meter Service Agreement for CAISO Metered Entities and the CAISO Tariff. A Generating Unit that provides Regulatory Must-Take Generation connected directly to a UDC Distribution System and that sells its entire output to the UDC in which the Generating Unit is located is not subject to the audit, testing or certification requirements of the CAISO.

**10.2.13 Maintenance of Metering Facilities.**

**10.2.13.1 Duty to Maintain Metering Facilities.**

CAISO Metered Entities must maintain their Metering Facilities so that those Metering Facilities continue to meet the standards prescribed by the CAISO Tariff and the applicable Business Practice Manuals.

**10.2.13.2 Repairs.**

If a revenue quality meter of a CAISO Metered Entity requires repairs to ensure that it operates in accordance with the requirements of the CAISO Tariff and the applicable Business Practice Manuals, the CAISO Metered Entity must immediately notify the CAISO of the need for repairing that meter and must ensure that those repairs are completed in accordance with the applicable Business Practice Manual.

During periods for which no Meter Data is available from a meter which has a current Certificate of Compliance, the CAISO will substitute estimated Meter Data for that CAISO Metered Entity using the estimation procedures referred to in Section 10.2.9. That estimated Meter Data will be used by the CAISO in its Settlement and billing process.

**10.2.14 Installation of Additional Metering Facilities.**

**10.2.14.1 CAISO Requirement to Install Additional Metering.**

If the CAISO determines that there is a need to install additional Metering Facilities on the CAISO Controlled Grid pursuant to Section 10.2.2, it will notify the relevant CAISO Metered Entity of that need and will process the CAISO Metered Entity's Proposal for Installation in accordance with the applicable Business Practice Manual.

**10.2.14.2 CAISO Metered Entities' Election to Install Additional Metering.**

In accordance with Section 10.2.2, a CAISO Metered Entity may choose to install additional metering, including Backup Meters. If a CAISO Metered Entity installs such additional metering, such metering must, unless the CAISO agrees otherwise:

- (a) be installed and maintained at the CAISO Metered Entity's cost;
- (b) be located on the CAISO Metered Entity's side of any primary meter; and
- (c) not interfere with the accuracy of any primary meter and, if that primary meter is directly polled by the CAISO, the CAISO's ability to directly poll that meter.

Any Meter Data produced by any such additional metering may be used by the CAISO for Settlement and billing purposes in the event of the failure, or during tests or repairs of, the primary meter provided that such additional metering has a current Certificate of Compliance, the CAISO Metered Entity gives the CAISO prior verbal notice that such meter will be used and the period for which it will be used and, if the primary meter is directly polled by the CAISO, the additional metering must also be capable of being directly polled by the CAISO.

### **10.3 Metering for Scheduling Coordinator Metered Entities.**

#### **10.3.1 Applicability.**

The requirements set forth in this Section 10.3 shall apply only to Scheduling Coordinators representing Scheduling Coordinator Metered Entities. The requirements in Section 10.1 also apply to Scheduling Coordinators. If a Scheduling Coordinator Metered Entity is also a Scheduling Coordinator, it shall be treated as a Scheduling Coordinator for the purposes of Section 10 and any references to entities that such a Scheduling Coordinator represents shall be deemed to include that Scheduling Coordinator itself.

#### **10.3.2 Responsibilities of Scheduling Coordinators and the CAISO.**

##### **10.3.2.1 Duty to Provide Settlement Quality Meter Data.**

Scheduling Coordinators shall be responsible for: (i) the collection of Meter Data for the Scheduling Coordinator Metered Entities it represents; (ii) the provision of Settlement Quality Meter Data to the CAISO; and (iii) ensuring that the Settlement Quality Meter Data supplied to the CAISO meets the requirements of Section 10. Scheduling Coordinators shall provide the CAISO with Settlement Quality Meter Data for all Scheduling Coordinator Metered Entities served by the Scheduling Coordinator no later

than the day specified in Section 10.3.6. Settlement Quality Meter Data for Scheduling Coordinator Metered Entities shall be either (1) an accurate measure of the actual consumption of Energy by each Scheduling Coordinator Metered Entity in each Settlement Period; (2) for Scheduling Coordinator Metered Entities connected to a UDC Distribution System and meeting that Distribution System's requirement for Load profiling eligibility, a profile of that consumption derived directly from an accurate cumulative measure of the actual consumption of Energy over a known period of time and an allocation of that consumption to Settlement Periods using the applicable Approved Load Profile; or (3) an accurate calculation by the Scheduling Coordinator representing entities operating pursuant to Existing Contracts.

#### **10.3.2.2 Format for Data Submission.**

Scheduling Coordinators shall submit Settlement Quality Meter Data to the Settlement Quality Meter Data System for the Scheduling Coordinator Metered Entities they represent using one of the CAISO's approved Meter Data Exchange Formats. Subject to any exemption granted by the CAISO, Scheduling Coordinators must ensure that Settlement Quality Meter Data submitted to the CAISO is in intervals of five (5) minutes for Loads and Generators providing Ancillary Services and/or Imbalance Energy, and one (1) hour for other Scheduling Coordinator Metered Entities.

Each Scheduling Coordinator shall submit Settlement Quality Meter Data in kWh values for all of the Scheduling Coordinator Metered Entities that it schedules aggregated by:

- (a) LAPs and PNodes, as applicable; and
- (b) the relevant PNode for Generating Units.

#### **10.3.2.3 Format for Data Requests.**

Scheduling Coordinators may obtain Settlement Quality Meter Data relating to the Scheduling Coordinator Metered Entities they represent by requesting extracts from the CAISO's Settlement Quality Meter Data Systems using the Meter Data request formats as published in the Business Practice Manuals. The CAISO will ensure that such data is made available in a timely manner.



Where a Scheduling Coordinator Metered Entity is connected to a UDC's Distribution System, the responsible Scheduling Coordinator shall adjust the Meter Data by an estimated Distribution System loss factor to derive an equivalent CAISO Controlled Grid level measure. Such estimated Distribution System loss factors shall be approved by the relevant Local Regulatory Authority prior to their use.

Scheduling Coordinators shall be responsible for obtaining all necessary authorizations of Approved Load Profiles from Local Regulatory Authorities having jurisdiction over the use of profiled Meter Data and shall use Approved Load Profiles in any Settlement process in which Load profiles are used to allocate consumption to Settlement Periods.

Each Scheduling Coordinator shall submit Settlement Quality Meter Data for Scheduling Coordinator Metered Entities to the CAISO in accordance with Section 11.29.24.1, Section 37.5, and applicable Business Practice Manuals.

Scheduling Coordinators shall submit either hourly time-stamped Settlement Quality Meter Data for Scheduling Coordinator Metered Entities or profiled cumulative Settlement Quality Meter Data to the CAISO for each Settlement Period in an Operating Day according to the timelines established in the CAISO Payments Calendar and as provided in the applicable Business Practice Manual. Scheduling Coordinators must also submit Settlement Quality Meter Data on demand as provided in the applicable Business Practice Manual.

**10.3.7 Meter Standards.**

Each Scheduling Coordinator, in conjunction with the relevant Local Regulatory Authority, shall ensure that each of its Scheduling Coordinator Metered Entities connected to and served from the Distribution System of a UDC shall be metered by a revenue meter complying with any standards of the relevant Local Regulatory Authority or, if no such standards have been set by that Local Regulatory Authority, the metering standards set forth in this CAISO Tariff and as further detailed in the Business Practice Manuals.

**10.3.8 Access to Meter Data.**

The CAISO has complete authority over rights of access to (and has authority to deny access to) its Settlement Quality Meter Data Systems by Scheduling Coordinators and Scheduling Coordinator Metered Entities for Settlement, billing and related purposes. Each Scheduling Coordinator, on behalf of itself and Scheduling Coordinator Metered Entities that it serves or represents, acknowledges this CAISO authority as a condition of access to the CAISO Controlled Grid. Meter Data of a Scheduling Coordinator Metered Entity remains the property of that Scheduling Coordinator Metered Entity and shall be made available to third parties only with its express permission or the permission of its Scheduling Coordinator or as otherwise required by law or provided for in this CAISO Tariff.

**10.3.9 Certification of Meters.**

Scheduling Coordinators shall ensure that revenue meters and related Metering Facilities of those Scheduling Coordinator Metered Entities whom they represent are certified in accordance with any certification criteria prescribed by the relevant Local Regulatory Authority or, if no such criteria have been prescribed by that Local Regulatory Authority, certified in accordance with this Section 10. Scheduling Coordinators shall upon request of the CAISO supply promptly copies of all certificates issued by the relevant Local Regulatory Authority. The End-Use Meter of a Scheduling Coordinator Metered Entity in place as of the CAISO Operations Date is deemed to be certified as in compliance with this CAISO Tariff and Business Practice Manuals. Once certified, meters for Scheduling Coordinator Metered Entities

need not be recertified provided such meters are maintained so as to meet the standards and accuracy requirements prescribed by any relevant Local Regulatory Authority or, if no such standards have been prescribed by that Local Regulatory Authority, such requirements as referred to in the Business Practice Manuals and this Section 10. Recertification is not required by the CAISO upon an election by a Scheduling Coordinator Metered Entity to change its Scheduling Coordinator from which it takes service.

**10.3.10 Requirement for Audit and Testing.**

**10.3.10.1 Audit and Testing by Scheduling Coordinator.**

Each Scheduling Coordinator shall at least annually conduct (or engage an independent, qualified entity to conduct) audits and tests of the Metering Facilities of the Scheduling Coordinator Metered Entities that it represents and the Meter Data provided to the Scheduling Coordinator in order to ensure compliance with all applicable requirements of any relevant Local Regulatory Authority. Scheduling Coordinators shall undertake any other actions that are reasonable necessary to ensure the accuracy and integrity of the Settlement Quality Meter Data provided by them to the CAISO.

**10.3.10.2 Audit and Testing by CAISO.**

Subject to any applicable Local Regulatory Authority requirements, the Metering Facilities and data handling and processing procedures of Scheduling Coordinators and Scheduling Coordinator Metered Entities are subject to audit and testing by the CAISO or a CAISO Authorized Inspector. Subject to any applicable Local Regulatory Authority requirements, the CAISO will have the right to either conduct any audit or test it considers necessary or to witness such audit or test carried out by the Scheduling Coordinator, Scheduling Coordinator Metered Entity or a CAISO Authorized Inspector engaged by the Scheduling Coordinator, Scheduling Coordinator Metered Entity or the CAISO to carry out those audits or tests.

**10.3.11            Scheduling Coordinator to Ensure Certification.**

If the relevant Local Regulatory Authority has not prescribed any certification criteria for the Metering Facilities of a Scheduling Coordinator Metered Entity, the Scheduling Coordinator representing that Scheduling Coordinator Metered Entity must promptly notify the CAISO in writing that no such criteria have been prescribed. That Scheduling Coordinator will then be responsible for ensuring that the Scheduling Coordinator Metered Entities it represents obtain and maintain Certificates of Compliance in respect of all of the Metering Facilities of those Scheduling Coordinator Metered Entities in accordance with Section 10.3.9. Scheduling Coordinators must engage a CAISO Authorized Inspector to perform the certification of any Metering Facilities that are to be certified under the CAISO Tariff.

**10.3.11.1           Confirmation of Certification.**

On the written request of the CAISO, each Scheduling Coordinator must give the CAISO written confirmation that the Metering Facilities of each Scheduling Coordinator Metered Entity that it represents are certified in accordance with either the criteria of the relevant Local Regulatory Authority or the criteria prescribed by the CAISO Tariff and Business Practice Manuals within five (5) Business Days of receiving a request from the CAISO.

**10.3.11.2           Deemed Certification.**

Revenue quality meters of Scheduling Coordinator Metered Entities that are subject to certification and which were installed and operational as of the CAISO Operations Date will be deemed to be certified for the purposes of the CAISO Tariff. Revenue quality meters that have been fully installed as of the CAISO Operations Date but which are not operational as of that date because they were undergoing maintenance or repairs will also be deemed to be certified in accordance with the CAISO Tariff.

**10.3.12            [NOT USED]**

**10.3.13            [NOT USED]**

**10.3.14 Approval by Local Regulatory Authority of Security and Validation Procedures.**

Scheduling Coordinators shall be responsible for obtaining any necessary approval of the relevant Local Regulatory Authority to its proposed security, validation, editing and estimation procedures. The CAISO will not perform any Validation, Estimation and Editing on the Settlement Quality Meter Data it receives from Scheduling Coordinators.

**10.3.14.1 UDC and TO Agreements.**

Each Scheduling Coordinator shall be responsible for obtaining any necessary consent from the UDCs on whose Distribution Systems or the Participating TOs on whose transmission facilities the Scheduling Coordinator has Scheduling Coordinator Metered Entities as is necessary to give effect to the procedures governing Meter Data validation and security and inspection and testing of Metering Facilities.

Scheduling Coordinators must verify with the relevant UDC and/or Participating TO the identity of each Scheduling Coordinator Metered Entity they represent and must notify the UDC and/or Participating TO of any discrepancies of which they become aware.

**10.3.15 [NOT USED]**

**10.3.16 [NOT USED]**

**10.3.17 Meter Identification.**

If a Scheduling Coordinator Metered Entity is required to identify its revenue quality meters by the relevant:

- (a) Local Regulatory Authority; or
- (b) UDC,

then the Scheduling Coordinator representing that Scheduling Coordinator Metered Entity must, at the CAISO's request, provide the CAISO with a copy of that information within five (5) Business Days of a request by the CAISO in a format to be prescribed by the CAISO.

If a Scheduling Coordinator Metered Entity is not required by either the relevant Local Regulatory

Authority or UDC to identify its revenue quality meters, the Scheduling Coordinator representing that Scheduling Coordinator Metered Entity shall maintain an accurate record of the revenue quality meter of each of the Scheduling Coordinator Metered Entities that it represents from time to time. The record maintained by Scheduling Coordinators must include the information set out in the applicable Business Practice Manuals. The Scheduling Coordinator must, at the CAISO's request, provide the CAISO with a copy of any information contained in that record within **five (5)** Business Days of a request by the CAISO in a format to be prescribed by the CAISO.

#### **10.4 Exemptions from Compliance.**

##### **10.4.1 Authority to Grant Exemptions.**

In addition to the specific exemptions granted under the CAISO Tariff, the CAISO has the authority under the CAISO Tariff to grant exemptions from compliance with certain requirements imposed by the CAISO Tariff.

##### **10.4.2 Guidelines for Granting Exemptions.**

The CAISO will use the following guidelines when considering applications for exemptions from compliance with the **provisions of Section 10**.

###### **(a) Publication of Guidelines**

The CAISO will publish **on the CAISO Website** the general guidelines that it may use when considering applications for exemptions so as to achieve consistency in its reasoning and decision making and to give prospective applicants an indication of whether an application will be considered favorably.

###### **(b) Publication of Exemption Applications**

The CAISO will promptly publish on the CAISO Website a description of each application it receives for an exemption.

(c) Publication of Decision

The CAISO will publish on the CAISO Website details of whether the application was approved or rejected by it and, if the CAISO considers it appropriate, the reasons for rejecting the application.

(d) Class Exemptions

In addition to exemptions granted to individual entities, the CAISO may grant exemptions that will apply to a class of entities. The CAISO may grant class exemptions whether or not it has received any application for an exemption. The CAISO will publish details of the class exemptions it has granted on the CAISO Website.

**10.4.3 Procedure for Applying for Exemptions.**

All applications to the CAISO for exemptions from compliance with the requirements of **Section 10** must be made in writing and will be processed by the CAISO in accordance with the provisions of the applicable Business Practice Manual. The CAISO may require the applicant to provide additional information in support of its application. The applicant must provide such additional information to the CAISO within **five (5)** Business Days of receiving the request for additional information or within such other period as the CAISO may notify to the applicant. If the CAISO makes a request for additional information more than **five (5)** Business Days after the date on which it received the application, the CAISO will have an additional **five (5)** Business Days after receiving that additional information in which to consider the application. If the applicant does not provide the additional information requested, the CAISO may refuse the application in which case it will notify the applicant that its application has been rejected for failure to provide the additional information.

**10.4.4 Permitted Exemptions.**

**10.4.4.1 Exemptions from Providing Meter Data Directly to RMDAPS.**

The CAISO has the authority under **Section** 10.2.6 to exempt CAISO Metered Entities from the requirement to make Meter Data directly available to the CAISO via RMDAPS. **The applicable Business Practice Manual sets forth** specific exemptions **available**. **In addition**, the CAISO may, at its discretion, grant such an exemption where it considers the requirement to install communication links (or related facilities) between the CAISO Metered Entity and CAISO's secure communication system to allow the CAISO to directly poll **the meters of** that CAISO Metered Entity would be unnecessary, impractical or uneconomic.

**10.4.4.2 Exemptions from Meter Standards.**

The CAISO has the authority under **Section** 10.2.12 to exempt CAISO Metered Entities from the requirement to comply with the meter standards referred to in the CAISO Tariff. **The applicable Business Practice Manual sets forth specific exemptions available.**



## **11 CAISO SETTLEMENTS AND BILLING.**

### **11.1 Settlement Principles.**

The CAISO shall calculate, account for and settle payments and charges with Business Associates in accordance with the following principles:

- (a) The CAISO shall be responsible for calculating Settlement balances for any penalty or dispute in accordance with the CAISO Tariff, and any transmission Access Charge to UDCs or MSSs and Participating TOs;
- (b) The CAISO shall create and maintain computer back-up systems, including off-site storage of all necessary computer hardware, software, records and data at an alternative location that, in the event of a Settlement system breakdown at the primary location of the day-to-day operations of the CAISO, could serve as an alternative location for day-to-day Settlement operations within a reasonable period of time;
- (c) The CAISO shall retain all Settlement data records for a period which, at least, allows for the re-run of data as required by this CAISO Tariff and any adjustment rules of the Local Regulatory Authority governing the Scheduling Coordinators and their End-Use Customers and FERC;

- (d) The CAISO shall calculate, account for and settle all charges and payments based on the Settlement Quality Meter Data it has received, or, if Settlement Quality Meter Data is not available, based on the best available information or estimate it has received in accordance with the provisions in Section 10 and the applicable Business Practice Manuals; and
- (e) Day-Ahead Schedules, RUC Awards and AS Awards shall be settled at the relevant LMP, RUC Price, and ASMPs, respectively. HASP Intertie Schedules shall be settled at the relevant HASP Intertie LMP at the relevant Scheduling Point. All Dispatch Instructions shall be deemed delivered and settled at relevant Real-Time Market prices. Deviations from Dispatch Instructions shall be settled as Uninstructed Deviations.

**11.1.1 [NOT USED]**

**11.1.2** The CAISO shall settle the following charges in accordance with this CAISO Tariff: (1) Grid Management Charge; (2) Bid Cost Recovery; (3) IFM charges and payments, including Energy and Ancillary Services; (4) RUC charges and payments; (5) Real-Time Market charges and payments, including Energy and Ancillary Services; (6) HASP charges and payments, including Energy and Ancillary Services; (7) High Voltage Access Charges and TAC Transition Charges; (8) Wheeling Access Charges; (9) Voltage Support and Black Start charges; (10) Excess Cost Payments; (11) default interest charges; (12) CRR Charges and Payments, (13) Inter-SC Trades charges and payments; (14) neutrality adjustments; (15) FERC Annual Charges; (16) distribution of excess Marginal Losses; (17) miscellaneous charges and payments; and (18) Participating Intermittent Resource Fees.

**11.1.3 Financial Transaction Conventions and Currency.**

The following conventions have been adopted in defining sums of money to be remitted to or received by the CAISO:

- (a) Where the CAISO is to receive a sum of money in accordance with this CAISO Tariff, this is defined as a "charge."
- (b) Where the CAISO is required to pay a sum of money in accordance with this CAISO Tariff, this is defined as a "payment."
- (c) All financial transactions are denominated in United States dollars and cents.
- (d) All payments by the CAISO to Business Associates shall be made by Fed-Wire.  
All payments to the CAISO by Business Associates shall be made by Fed-Wire

**11.1.4 Calculations of Settlements.**

The CAISO shall calculate, account for and settle, based on the Settlement Quality Meter Data it has received, or, if Settlement Quality Meter Data is not available, based on the best available information or estimate it has received, the following charges in accordance with this CAISO Tariff.

**11.2 Settlement of Day-Ahead Market Transactions.**

All transactions in the IFM and RUC as specified in the Day-Ahead Schedule, AS Awards and RUC Awards, respectively, are financially binding and will be settled based on the Day-Ahead LMP, ASMP or RUC Price for the relevant Location for the specific resource identified in the Bid. The CAISO will settle the costs of Demand, capacity, Energy and Ancillary Services as separate Settlement charges and payments for each Settlement Period of the Day-Ahead Schedule, Day-Ahead AS Award or RUC Award, as appropriate.

**11.2.1 IFM Settlements.**

**11.2.1.1 IFM Payments For Supply of Energy.**

For each Settlement Period for which the CAISO clears Energy transactions in the IFM, the CAISO shall pay the relevant Scheduling Coordinator for the MWh quantity of Supply of Energy from all Generating Units, Participating Loads, and System Resources in an amount equal to the IFM LMP at the applicable PNode multiplied by the MWh quantity specified in the Day-Ahead Schedule for Supply (which consists of the Day-Ahead Scheduled Energy).

**11.2.1.2 IFM Charges for Demand at LAPS.**

For each Settlement Period that the CAISO clears Energy transactions in the IFM, except as specified in Section 30.5.3.2 and except for Participating Loads, which shall be subject to the charges specified in 11.2.1.3, the CAISO shall charge Scheduling Coordinators for the MWh quantity of Demand scheduled at an individual LAP in the Day-Ahead Schedule, in an amount equal to the IFM LMP for the applicable LAP multiplied by the MWh quantity scheduled in the Day-Ahead Schedule at the relevant LAP.

**11.2.1.3 IFM Charges for Demand by Participating Loads, Including Aggregated Participating Load.**

For each Settlement Period that the CAISO clears Energy transactions in the IFM for Demand by Participating Loads, the CAISO shall charge the Scheduling Coordinators an amount equal to the MWh quantity of Demand scheduled in the Day-Ahead Schedule for the relevant Participating Load at the PNode (or Custom LAP, in the case of Aggregated Participating Load), multiplied by the IFM LMP at that PNode (or Custom LAP, in the case of Aggregated Participating Load).

**11.2.1.4 IFM Charges for Energy Exports at Scheduling Points.**

For each Settlement Period that the CAISO clears Energy transactions in the IFM, the CAISO shall charge Scheduling Coordinators for the Energy export MWh quantity at individual Scheduling Points scheduled in the Day-Ahead Schedule, an amount equal to the IFM LMP for the applicable Scheduling Point multiplied by the MWh quantity at the individual Scheduling Point scheduled in the Day-Ahead Schedule.

**11.2.1.5 IFM Congestion Credit for ETCs, TORs, and Converted Rights.**

For all **Points of Receipt and Points of Delivery** pairs associated with a valid and balanced ETC Self-Schedule, TOR Self-Schedule or Converted Rights Self-Schedule, the CAISO shall not impose any charge or make any payment to the Scheduling Coordinator related to the MCC associated with such Self-Schedules. For each Scheduling Coordinator, the CAISO shall determine the applicable IFM Congestion Credit, which can be positive or negative, as the sum of the products of the quantity scheduled in the Day-Ahead Schedule and the MCC at each **eligible Point of Receipt and Point of Delivery** associated with the valid and balanced **portions of that Scheduling Coordinator's** ETC, TOR, and Converted Rights Self-Schedules.

**11.2.1.6 Allocation of IFM Marginal Losses Surplus Credit.**

On each Settlement Statement, the CAISO shall apply the IFM Marginal Losses Surplus Credit to each Scheduling Coordinator for the period of each **Settlement Statement**. For each Settlement Period, the IFM Marginal Losses Surplus Credit shall be the product of the IFM Marginal Losses Surplus rate (\$/MWh) and the MWh of Measured Demand for the relevant Scheduling Coordinator. The IFM Marginal Losses Surplus rate shall be equal to the total IFM Marginal Losses Surplus (\$) divided by the sum of the total MWh of Measured Demand in the CAISO **Balancing Authority** Area for the relevant Settlement Period **net of any Measured Demand associated with a TOR Self-Schedule subject to the IFM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules as provided in Section 11.2.1.7.**

**11.2.1.7 IFM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules.**

For all Points of Receipt and Points of Delivery pairs associated with a valid and balanced TOR Self-Schedules submitted pursuant to an existing agreement between the TOR holder and the CAISO as specified in Section 17.3.3, the CAISO shall not impose any charge or make any payment to the Scheduling Coordinator related to the MCL associated with such TOR Self-Schedules and will instead impose any applicable losses charges as specified in the existing agreement between the the TOR holder and the CAISO applicable to the relevant TOR. For each Scheduling Coordinator, the CAISO shall determine the applicable IFM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules, which can be positive or negative, as the sum of the products of the quantity scheduled in the Day-Ahead Schedule and the MCL at each eligible Point of Receipt and Point of Delivery associated with the valid and balanced portions of that Scheduling Coordinator's TOR Self-Schedules.

**11.2.2 Calculation of Hourly RUC Compensation.**

For each Settlement Period and resource, Scheduling Coordinators shall receive RUC Compensation, which is the sum of the RUC Availability Payment as determined pursuant to Section 11.2.2.1 and the RUC Bid Cost Recovery amount as determined in Section 11.8.3.

**11.2.2.1 Settlement of RUC Availability Payment.**

Scheduling Coordinators shall receive RUC Availability Payments for all eligible capacity awarded in the RUC process. Resource Adequacy Capacity and capacity from RMR Units dispatched under its RMR Contract in the DAM are not eligible for RUC Availability Payments. The RUC Availability Payment shall be calculated for each resource based on the product of the RUC Price and the RUC Availability Quantity for the relevant Settlement Period. The RUC Availability Payment amounts are allocated through the RUC Compensation Costs allocation in Section 11.8.6.5.

### **11.2.2.2      Rescission of RUC Availability Payment.**

Rescission of all or a portion of the RUC Availability Payment for a resource as defined in Section 31.5.7 shall be settled in accordance with this Section 11.2.2.2.

#### **11.2.2.2.1      Undispatchable RUC Capacity.**

If a Scheduling Coordinator has Undispatchable Capacity that it is obligated to supply to the CAISO during a Settlement Interval, the RUC Availability Payment, if applicable for any non-Resource Adequacy Capacity, for the amount of Energy that cannot be delivered from the Generating Unit, Participating Load, System Unit or System Resource for the Settlement Interval shall be rescinded.

If a Partial Resource Adequacy Resource is providing RUC Capacity from both the non-Resource Adequacy Capacity and the Resource Adequacy Capacity the payment rescission will occur for the non-Resource Adequacy Capacity prior to eliminating any capacity for the Resource Adequacy Capacity of the Partial Resource Adequacy Resource.

#### **11.2.2.2.2      Undelivered RUC Capacity.**

For each Settlement Interval in which the total metered output for a Generating Unit, Participating Load, System Unit or System Resource is less than Real-Time Expected Energy by more than the Tolerance Band and less than the RUC Schedule, the RUC Award for that Settlement Interval will be rescinded.

#### **11.2.2.2.3      Allocation of Rescinded RUC Availability Payments Due to Non-Performance.**

RUC Availability Payments rescinded due to non-performance shall be allocated to Scheduling Coordinators in the proportion of their Net Negative Uninstructed Deviations to the total Net Negative CAISO Demand Deviation.

**11.2.3 IFM Energy Charges and Payments for Metered Subsystems.**

**11.2.3.1 Gross Energy Settlement for Metered Subsystems.**

For Scheduling Coordinators that submit Bids for MSS Operators that have selected gross Energy Settlement, CAISO shall settle Energy, the MSS Demand and MSS Supply, in the Day-Ahead Schedules pursuant to Section 11.2.3.1.1 and 11.2.3.1.2.

**11.2.3.1.1 IFM Charges for MSS Demand under Gross Energy Settlement.**

The CAISO shall charge Scheduling Coordinators that submit Bids for MSS Operators that have selected or are subject to gross Energy Settlement an amount equal to the product of the MWh quantity of Demand internal to the MSS in its Day-Ahead Schedule at the price at the Default LAP where the MSS LAP is located.

**11.2.3.1.2 IFM Payments for MSS Supply under Gross Energy Settlement.**

The CAISO shall pay Scheduling Coordinators that submit Bids for MSS Operators that have selected or are subject to gross Energy Settlement an amount equal to the product of the MWh quantity of Supply from the MSS in its Day-Ahead Schedule at the corresponding PNode and the applicable Resource-Specific Settlement Interval LMP at that PNode.

**11.2.3.2 Net Energy Settlement for Metered Subsystems.**

For Scheduling Coordinators that submit Bids for MSS Operators that have selected net Energy Settlement, the CAISO shall settle the net MSS Demand and MSS Supply in the Day-Ahead Schedules pursuant to Section 11.2.3.2.1 and 11.2.3.2.2.



**11.2.3.2.1 IFM Charges for MSS Demand under Net Energy Settlement.**

The CAISO shall charge Scheduling Coordinators that submit Bids for MSS Operators that have selected net Energy Settlement an amount equal to the product of the net MSS Demand in the Day-Ahead Schedule and the IFM MSS Price. The net MSS Demand is the quantity of MSS Demand that exceeds MSS Generation for the applicable MSS.

**11.2.3.2.2 IFM Payments for MSS Supply Under Net Energy Settlement.**

The CAISO shall pay Scheduling Coordinators that submit Bids for MSS Operators that have selected net Energy Settlement an amount equal to the product of the net MSS Supply in the Day-Ahead Schedule and the weighted average price of all IFM LMPs for all applicable PNodes within the relevant MSS. The net MSS Supply is the quantity of MSS Generation that exceeds the MSS Demand for the applicable MSS. The weights used to compute the weighted average LMPs shall be equal to MSS Generation scheduled in the Day-Ahead Schedule.

**11.2.4 CRR Settlements.**

CRR Holders shall be paid or charged for Congestion costs depending on the type of CRRs held by the CRR Holder, the direction of Congestion as measured through the IFM, and the LMP as calculated in the IFM. CRRs shall be funded through the revenues associated with the IFM Congestion Charge, CRR Charges, and the CRR Balancing Account. The CRR Payments and CRR Charges shall be settled first on a daily basis for each Settlement Period of the DAM. The CAISO shall pro-rate CRR Payments and CRR Charges for each Settlement Period, if there is an insufficiency of funds during that Settlement Period from the IFM Congestion Charge pursuant to Section 11.2.4.1. A monthly true up will then be conducted, on both CRR Payments and CRR Charges in the clearing of the CRR Balancing Account pursuant to Section 11.2.4.4.1 and 11.2.4.4.2.

#### **11.2.4.1 Calculation of the IFM Congestion Charge.**

For each Settlement Period of the IFM, the CAISO shall calculate the IFM Congestion Charge as the IFM MCC for **all scheduled** Demand minus the IFM MCC for **all scheduled** Supply where the IFM MCC for **all scheduled** Demand is the sum of the products of the IFM MCC and the MWh of Demand scheduled in the Day-Ahead Schedule at all the applicable PNodes, Scheduling Points and Aggregated Pricing Nodes for the Settlement Period **and** the IFM MCC for **all scheduled** Supply is the sum of the products of the IFM MCC and the MWh of Supply scheduled in the Day-Ahead Schedule at all the applicable PNodes and Scheduling Points for the Settlement Period.

#### **11.2.4.1.2 Calculation of IFM Congestion Fund.**

For each Settlement Period of the IFM, the CAISO shall determine the IFM Congestion Fund, which shall consist of the funds available to pay CRR Holders in any Settlement Period as follows:

- (a) The CAISO shall add to the IFM Congestion Fund the IFM Congestion Charge computed as described in Section 11.2.4.1, minus any IFM Congestion Credits as specified in Section 11.2.1.5;
- (b) The CAISO shall add to the IFM Congestion Fund any **CRR Charges** calculated pursuant to Sections 11.2.4.2.2 and 11.2.4.2.3; **and**
- (c) **The CAISO shall add to the IFM Congestion Fund any IFM Congestion Charges associated with Day-Ahead Ancillary Services Awards as provided in Section 11.10.1.1.1.**

#### **11.2.4.2 Settlement Calculation for the Different CRR Types.**

For the purposes of determining the CRR Payments and CRR Charges based on the various CRR Types, the CAISO shall calculate the Settlement of CRRs as described in this Section 11.2.4.2. When CRR Source or CRR Sink is a LAP, the Load Distribution Factors used in the IFM will be used to calculate the LAP Price at which CRR Payments or CRR Charges will be settled. When CRR Source or CRR Sink is a Trading Hub the weighting factors used in the IFM and the CRR Allocation and CRR Auction processes will also be used to settle CRR Payments and CRR Charges.

##### **11.2.4.2.1 Point-to-Point CRR Options.**

For each CRR Holder, the CAISO shall calculate a CRR Payment for each Point-to-Point CRR Option held by the CRR Holder equal to the product of: 1) the MCC at the CRR Sink minus the MCC at the CRR Source; and 2) the MW quantity of the CRR; if that amount is positive. If the resulting amount is negative, the CAISO shall not assess a charge for the relevant CRR Holder for the negative amount. The full CRR Payment calculated pursuant to this process shall be subject to pro-ration as described in 11.2.4.4.

##### **11.2.4.2.2 Point-to-Point CRR Obligations.**

For each CRR Holder, the CAISO shall calculate a CRR Payment for each CRR Obligation for a Point-to-Point CRR held by the CRR Holder, equal to the product of: 1) the MCC at the CRR Sink minus the MCC at the CRR Source; and 2) the MW quantity of the CRR; if that amount is positive. If the resulting amount is negative, the CAISO shall calculate a CRR Charge for the relevant CRR Holder equal to that negative amount. The full CRR Payment or CRR Charges calculated pursuant to this process shall be subject to pro-ration as described in 11.2.4.4.

#### **11.2.4.2.3 Multi-Point CRR.**

For each CRR Holder, the CAISO shall calculate a CRR Payment for each Multi-Point CRR held by the CRR Holder, equal to the sum of the MCCs at each CRR Sink weighted by their associated MWh quantities as specified by the CRR, minus (2) the sum of the MCCs at each CRR Source weighted by their associated MWh quantities as specified by the CRR. If the calculated amount is positive, the CAISO shall calculate a CRR Payment for the Multi-Point CRR. If the result of this calculated amount is negative, the CAISO will calculate a CRR Charge for the Multi-Point CRR. The full CRR Payment calculated pursuant to this process shall be subject to pro-ration as described in 11.2.4.4.

#### **11.2.4.3 Payments and Charges for Monthly and Annual Auctions.**

The CAISO shall charge CRR Holders for the Market Clearing Price for CRRs obtained through the clearing of the CRR Auction as described in Section 36.13.6. To the extent the CRR Holder purchases a CRR through a CRR Auction that has a negative value, the CAISO shall pay the CRR Holder for taking the applicable CRR. The CAISO shall net all revenue received and payments made through this process and shall add the net remaining seasonal and monthly CRR Auction revenue amounts (either negative or positive amounts) to the CRR Balancing Account for the appropriate month. CRR Auction revenues for each season are allocated uniformly across the three monthly accounts comprising each season.

#### **11.2.4.4 Hourly CRR Settlement.**

For each Settlement Period, the IFM Congestion Funds calculated in Section 11.2.4.1.2 will be used to pay CRR Holders that are owed CRR Payments. If the IFM Congestion Fund is sufficient to make the required CRR Payments for the Settlement Period, all CRR Holders shall be paid and charged fully according to their entitlements. If the IFM Congestion Fund is insufficient to make the required CRR Payments, then CRR Payments and CRR Charges shall be pro-rated by a ratio equal to the total hourly amount of IFM Congestion Funds divided by the net of CRR Payments for that Settlement Period. Any

surplus revenue for the Settlement Period after making all hourly CRR Payments will go to the CRR Balancing Account for use in the end-of-month clearing of the CRR Balancing Account processes pursuant to Section 11.2.4.4.1. Any CRR Payment shortfalls (or amounts not fully paid) and CRR Charge shortfalls (or amounts not fully charged) for the Settlement Period, will be tracked for further Settlement during the end-of-month clearing process as described in Section 11.2.4.4.1. The hourly Settlement of CRRs for each CRR Holder will be based on the type of CRR holdings as described in Section 11.2.4.2. The CRR Holder's hourly CRR Settlement amount, which may be subject to pro-ration if necessary as described in this Section, will be the net of the holder's CRR Payments for CRR Options or CRR Obligations, and the holder's CRR Charges for CRR Obligations out of these holdings.

#### **11.2.4.4.1 Monthly Clearing of the CRR Balancing Account – Full Funding of CRRs.**

At the end of each month, all CRR Payment shortfalls for all CRR Holders shall be paid in full and all CRR Charge shortfalls shall be fully charged through the CRR Balancing Account clearing process. The net of these CRR Charges and CRR Payment shortfalls shall be added to the CRR Balancing Account for the applicable month. Any surplus or shortfall revenue amounts in the CRR Balancing Account will be distributed to Scheduling Coordinators in an amount equal to (a) the CRR Balancing Account surplus or shortfall amounts, times (b) the ratio of each Scheduling Coordinator's Measured Demand (net of the valid and balanced ETC, TOR or Converted Rights Self-Schedule quantities for which IFM Congestion Credits were provided in the same relevant month) divided by the total Measured Demand for all Scheduling Coordinators for the relevant month.

#### **11.2.4.5 CRR Balancing Account.**

The CRR Balancing Account shall accumulate: (1) the seasonal and monthly CRR Auction revenue amounts as described in Section 11.2.4.3 and (2) any surplus revenue or shortfall generated from hourly CRR Settlements as described in Section 11.2.4.4. Interest accruing due to the CRR Balancing Account shall be at the CAISO's received interest rate and shall be credited to the CRR Balancing Account.

**11.2.5 Payment by Out-of **Balancing Authority** Area Load **Serving Entity** to Obtain CRRs Through the CRR Allocation Process.**

**11.2.5.1** Pursuant to Section 36.9, in addition to other requirements specified therein, an **OBAALSE** will be eligible to participate in the CRR Allocation process if such entity has made a prepayment to the CAISO and has met the requirements in Section 36.9. The prepayment amount shall equal the MW of CRR requested times the Wheeling Access Charge associated with the Scheduling Point corresponding to the CRR Sink times the number of hours in the period for each requested CRR MW amount. Except as provided in Section 39.9.2, such prepayment will be made three (3) Business Days in advance of the submission of CRR nominations for Monthly CRRs, Seasonal CRRs and Long Term CRRs to the CRR Allocation. Within thirty (30) days following the completion of the CRR Allocation process for Monthly CRRs, Seasonal CRRs and Long Term CRRs, the CAISO shall reimburse such **OBAALSE** the amount of money pre-paid for any CRRs that were not allocated to the entity.

**11.2.5.2 Annual Prepayment Option.**

For entities that are eligible and elect for the annual prepayment pursuant to Section 36.9.2, the annual prepayment will be due three (3) Business Days in advance of the submission of CRR nominations for Tier LT in the CRR Allocation process. For allocated Long Term CRRs, each of the nine subsequent annual payments must be made at the beginning of the annual CRR Allocation process for the following year.

**11.2.5.3 Monthly Prepayment Option.**

If the **OBAALSE** qualified for the monthly prepayment option as specified in Section 36.9.2, the **OBAALSE** shall make its payments consistent with the monthly prepayment schedule specified in the applicable Business Practice Manual.

**11.2.5.4 Treatment of Prepaid WAC Amounts.**

For the amount of CRRs that were allocated to the entity, the CAISO will exempt the Scheduling Coordinator for such entity from the WAC for any Real-Time Interchange Export Schedules at the Scheduling Point corresponding to the sink of each allocated CRR, on an hourly basis for the period for which the CRR is defined, until the pre-paid funds are exhausted. At the end of the period for which the CRR is defined any remaining balance will be allocated to the Participating TOs in accordance with Section 26.1.4.3. To the extent the pre-paid balance amount is exhausted prior to the end of the duration of the awarded CRR, the Scheduling Coordinator designated by the CRR Holder that has been allocated CRRs pursuant to Section 36.9 will be charged for the WAC in accordance with Section 26.1.4.

**11.3 [NOT USED]**

**11.4 HASP Settlement of Scheduling Points.**

The CAISO shall settle both incremental and decremental Energy at the relevant Scheduling Points including Operational Adjustments for all Non-Dynamic System Resources based on the HASP Intertie LMP in accordance with Section 11.4.1 and 11.4.2. Energy dispatched using HASP Intertie Schedules is accounted as Instructed Imbalance Energy and its costs shall be included in the Real-Time Market Settlements in accordance with Section 11.5.

**11.4.1 HASP Settlement for Exports.**

For each Settlement Period that the CAISO clears Energy transactions at Scheduling Points in HASP, the Settlement for such transactions will be the CAISO HASP Intertie LMP multiplied by the MWh quantity of export scheduled at the individual Scheduling Point in excess of or less than the Day-Ahead Schedule, respectively.

#### **11.4.2 HASP Settlement for Imports.**

For each Settlement Period that the CAISO clears Energy transactions at Scheduling Points for all Non-Dynamic System Resources in HASP, the CAISO shall pay or charge Scheduling Coordinators for each System Resource an amount equal to the HASP Intertie LMP multiplied by the MWh quantity of import scheduled at the individual Scheduling Point in excess of or less than the import at that Scheduling Point scheduled in the Day-Ahead Schedule, respectively.

#### **11.5 Real-Time Market Settlements.**

The CAISO shall calculate and account for Imbalance Energy for each Dispatch Interval and settle Imbalance Energy in the Real-Time Market for each Settlement Interval for each resource within the CAISO **Balancing Authority** Area and all System Resources dispatched in Real-Time. Imbalance Energy consists of IIE and UIE. IIE includes Energy associated with HASP Intertie Schedules. IIE is settled pursuant to Section 11.5.1 and UIE is settled pursuant to Section 11.5.2. In addition, the CAISO shall settle UFE as part of the Real-Time Market Settlements. To the extent that the sum of the Settlements Amounts for IIE and UIE does not equal zero, the CAISO will assess charges or make payments for the resulting differences to all Scheduling Coordinators based on a pro rata share of their Measured Demand for the relevant Settlement Interval. Imbalance Energy due to Exceptional Dispatches, as well as the allocation of related costs, including Excess Costs Payments is settled as described in Section 11.5.6. The CAISO shall reverse **RTM** Congestion Charges for valid and balanced ETC and TOR Self-Schedules as described in Section 11.5.7. The CAISO will settle Energy for emergency assistance as described in Section 11.5.8.



### **11.5.1 Instructed Imbalance Energy Settlements.**

For each Settlement Interval, IIE consists of the following types of Energy: (1) Optimal Energy; (2) HASP Scheduled Energy; (3) Residual Imbalance Energy; (4) Real-Time Minimum Load Energy; (5) Exceptional Dispatch Energy; (6) Regulation Energy; (7) Standard Ramping Energy; (8) Ramping Energy Deviation; (9) Derate Energy; (10) Real-Time Self-Schedule Energy; (11) MSS Load Following Energy; (12) Real-Time Pumping Energy; and (13) Operational Adjustments for the Day-Ahead and Real-Time. Payments and charges for IIE attributable to each resource in each Settlement Interval shall be settled by debiting or crediting, as appropriate, the specific Scheduling Coordinator's IIE Settlement Amount. The IIE Settlement Amounts for the Standard Ramping Energy shall be zero. The IIE Settlement Amounts for Optimal Energy, Real-Time Minimum Load Energy, Regulation Energy, Ramping Energy Deviation, Derate Energy, Real-Time Pumping Energy, and Real-Time Self-Scheduled Energy shall be calculated as the product of the sum of all of these types of Energy and the Resource-Specific Settlement Interval LMP. For MSS Operators that have elected net Settlement, the IIE Settlement Amounts for Energy dispatched through the Real-Time Market optimization, Minimum Load Energy from System Units dispatched in Real-Time, Regulation Energy, Ramping Energy Deviation, Derate Energy, MSS Load Following Energy, Real-Time Pumping Energy, and Real-Time Self-Schedule Energy shall be calculated as the product of the sum of all of these types of Energy and the Real-Time Settlement Interval MSS Price. For MSS Operators that have elected gross Settlement, regardless of whether that entity has elected to follow its Load or to participate in RUC, the IIE for such entities is settled similarly to non-MSS entities as provided in this Section 11.5.1. The remaining IIE Settlement Amounts are determined as follows: (1) IIE Settlement Amounts for the Energy from the HASP Intertie Schedules is settled per Section 11.4; (2) IIE Settlement Amounts for Residual Imbalance Energy are determined pursuant to Section 11.5.5.; and (3) IIE Settlement Amounts for Exceptional Dispatches are settled pursuant to Section 11.5.6.

**11.5.1.1 Total IIE Settlement Amount.**

The total IIE Settlement Amount (\$) per Settlement Interval for each Scheduling Coordinator is the sum of the IIE Settlement Amounts for the Standard Ramping Energy, MSS Load Following Energy, Optimal Energy, Real-Time Minimum Load Energy, HASP Scheduled Energy, Regulation, Ramping Energy Deviation, Derate Energy, Real-Time Self-Schedule Energy, Residual Imbalance Energy, Exceptional Dispatch Energy, Real-Time Pumping Energy and Operational Adjustments for the Day-Ahead and Real-Time.

**11.5.1.2 Total IIE Quantity.**

The total IIE quantity (MWh) per Settlement Interval for each Scheduling Coordinator is the sum of Standard Ramping Energy, MSS Load Following Energy, Optimal Energy, Real-Time Minimum Load Energy, Regulation Energy, Ramping Energy Deviation, Derate Energy, Real-Time Self-Schedule Energy, Residual Imbalance Energy, and Exceptional Dispatch Energy, Real-Time Pumping Energy, and Operational Adjustments for the Day-Ahead and Real-Time.

**11.5.2 Uninstructed Imbalance Energy.**

Scheduling Coordinators shall be paid or charged a UIE Settlement Amount for each LAP, PNode or Scheduling Point for which the CAISO calculates a UIE quantity. UIE quantities are calculated for each resource that has a Day-Ahead Schedule, Dispatch Instruction, Real-Time Interchange Export Schedule or Metered Quantity. For MSS Operators electing gross Settlement, regardless of whether that entity has elected to follow its Load or to participate in RUC, the UIE for such entities is settled similarly to how UIE for non-MSS entities is settled as provided in this Section 11.5.2. The CAISO shall account for UIE in two categories: (1) Tier 1 UIE is accounted as the quantity deviation from the resource's IIE; and (2) Tier 2 UIE is accounted as the quantity deviation from the resource's Day-Ahead Schedule. For Generating

Units, System Units of MSS Operators that have elected gross Settlement, Physical Scheduling Plants, System Resources and all Participating Load, the Tier 1 UIE Settlement Amount is calculated for each Settlement Interval as the product of its Tier 1 UIE quantity and its Resource-Specific Tier 1 UIE Settlement Interval Price as calculated per Section 11.5.2.1, and the Tier 2 UIE Settlement Amount is calculated for each Settlement Interval as the product of its Tier 2 UIE quantity and the simple average of the relevant Dispatch Interval LMPs. For resources within a System Unit of MSS Operators that have elected net Settlement, the Tier 1 UIE Settlement Amount is calculated for each Settlement Interval as the product of its Tier 1 UIE quantity and its Real-Time Settlement Interval MSS Price and the Tier 2 UIE Settlement Amount is calculated for each Settlement Interval as the product of its Tier 2 UIE quantity and the Real-Time Settlement Interval MSS Price. The Tier 2 UIE Settlement Amount for non-Participating Load and MSS Demand under gross Settlement is settled as described in Section 11.5.2.2. For MSS Operators that have elected net Settlement, the Tier 2 UIE Settlement Amount for Demand of a net MSS Demand is calculated for the Trading Hour as the sum of the product of the hourly Tier 2 UIE quantity and the Real-Time Settlement Interval MSS Price.

#### **11.5.2.1 Resource Specific Tier 1 UIE Settlement Interval Price.**

The Resource-Specific Tier 1 UIE Settlement Interval Price is calculated as the resource's total IIE Settlement Amount calculated pursuant to Section 11.5.1.1 for that Settlement Interval divided by its total IIE quantity (MWh) calculated pursuant to Section 11.5.1.2.

### **11.5.2.2      Hourly Real-Time LAP Price.**

The Hourly Real-Time LAP Price will apply to Demand and MSS Demand under net Settlement of Imbalance Energy, except for Demand not settled at the Default LAP as provided in Section 30.5.3.2.

The Hourly Real-Time LAP Price is calculated as the weighted average of the hourly average of the Dispatch Interval LMPs for the LAP, using as weights the Real-Time LAP nodal Loads in the relevant Trading Hour.

### **11.5.2.3      Revenue Neutrality Resulting from Changes in LAP Load Distribution Factors.**

Any resulting revenue from changes in the LAP Load Distribution Factors between the Day-Ahead Market and the Real-Time Market shall be allocated to metered CAISO Demand in the corresponding Default LAP.

### **11.5.3      Unaccounted For Energy (UFE).**

For each Settlement Interval, the CAISO will calculate UFE for each utility Service Area for which the IOU or Local Publicly Owned Electric Utility has requested separate UFE calculation and has met the requirements applicable to a CAISO Metered Entity. The UFE will be settled as Imbalance Energy at the Settlement Interval Locational Marginal Price calculated for each utility Service Area for which UFE is calculated separately. UFE attributable to meter measurement errors, load profile errors, Energy theft, and distribution loss deviations will be allocated to each Scheduling Coordinator based on the ratio of its metered CAISO Demand within the relevant utility Service Area for which UFE is calculated separately to total metered CAISO Demand within that utility Service Area.

#### **11.5.4 Pricing for Imbalance Energy and Allocation of Non-Zero Amounts of the Sum of IIE, UIE and UFE.**

##### **11.5.4.1 Application and Calculation of Dispatch Interval LMPs.**

Payments to Scheduling Coordinators, including Scheduling Coordinators for MSS Operators that have elected gross Settlement, that supply Imbalance Energy will be based on Resource-Specific Settlement Interval LMPs. The Resource-Specific Settlement Interval LMPs are established using Dispatch Interval LMPs. Dispatch Interval LMPs will apply to Generating Units, System Units for MSS Operators that have elected gross Settlement, Physical Scheduling Plants, Dynamic System Resources, and the Demand response portion of a Participating Load for Settlement of Imbalance Energy. The Dispatch Interval LMP will be calculated at each PNode associated with such resource irrespective of whether the resource at that PNode has received Dispatch Instructions. The Dispatch Interval LMPs are then used to calculate a Resource-Specific Settlement Interval LMP and a Resource Specific Tier 1 UIE Settlement Interval Price for each Generating Unit, System Unit or MSS Operator that has elected gross Settlement, Physical Scheduling Plant, Dynamic System Resource, and Participating Load within the CAISO Controlled Grid. Payments to Scheduling Coordinators for MSS Operators that have elected net Settlement that supply Imbalance Energy will be based on the Real-Time Settlement Interval MSS Price.

##### **11.5.4.2 Allocations of Non-Zero Amounts of the Sum of IIE, UIE and UFE.**

The CAISO will first compute (1) the Real-Time Congestion Offset and allocate it to all Scheduling Coordinators, based on Measured Demand, excluding Demand associated with ETC or TOR Self-Schedules for which a HASP and RTM Congestion Credit was provided as specified in Section 11.5.7; and (2) the Real-Time Marginal Cost of Losses Offset and allocate it to all Scheduling Coordinators based on Measured Demand, excluding Demand associated with TOR Self-Schedules for which a RTM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules was provided as specified in Section

11.5.7.2. For Scheduling Coordinators for MSS Operators regardless of whether the MSS Operator has elected gross or net Settlement, the CAISO will allocate the Real-Time Congestion Offset based on the MSS Aggregation Net Total Non-ETC/TOR Measured Demand. To the extent that the sum of the Settlement amounts for IIE, UIE, and UFE, less Real-Time Congestion Offset, does not equal zero, the CAISO will assess charges or make payments for the resulting differences to all Scheduling Coordinators, including Scheduling Coordinators for MSS Operators that are not Load following MSSs and have elected gross Settlement, based on a pro rata share of their Measured Demand for the relevant Settlement Interval. For Scheduling Coordinators for MSS Operators that have elected Load following or net Settlement, or both, the CAISO will assess charges or make payments for the resulting non-zero differences of the sum of the Settlement amounts for IIE, UIE, and UFE, less Real-Time Congestion Offset based on their MSS Aggregation Net Measured Demand.

#### **11.5.5 Settlement Amount for Residual Imbalance Energy.**

For each Settlement Interval, Residual Imbalance Energy Settlement amounts shall be the product of the MWh of Residual Imbalance Energy for that Settlement Interval and the Bid that led to the Residual Imbalance Energy from the relevant Dispatch Interval in which the resource was dispatched. For MSS Operators the Settlement for Residual Imbalance Energy is conducted in the same manner, regardless of any MSS elections (net/gross Settlement, Load following or opt-in/opt-out of RUC).

#### **11.5.6 Settlement Amounts for IIE from Exceptional Dispatch.**

For each Settlement Interval, IIE Settlement Amount from each type of Exceptional Dispatch described in Section 34.9 is calculated as the sum of the products of the relevant IIE quantity for the Dispatch Interval and the relevant Settlement price for the Dispatch Interval for each type of Exceptional Dispatch as further described below. For MSS Operators the settlement for IIE from Exceptional Dispatch is conducted in the same manner, regardless of any MSS elections (net/gross Settlement, Load following or opt-in/opt-out of RUC).

**11.5.6.1 Settlement for IIE from Exceptional Dispatches used for System Emergency Conditions, to Avoid Market Interruption, Overgeneration Conditions or to Prevent or Relieve Imminent System Emergencies.**

The Exceptional Dispatch Settlement price for incremental IIE that is delivered as a result of an Exceptional Dispatch for System Emergency conditions, to avoid a Market Interruption, to mitigate Overgeneration conditions, or to prevent or relieve an imminent System Emergency, including forced Start-Ups and Shut-Downs, is the higher of the (a) Resource-Specific Settlement Interval LMP, (b) the Energy Bid Price, (c) the Default Energy Bid if the resource has been mitigated through the MPM-RRD and for the Energy that does not have an Energy Bid price, or (d) the negotiated price as applicable to System Resources. Costs for incremental Energy for this type of Exceptional Dispatch are settled in two payments: (1) incremental Energy is first settled at the Resource-Specific Settlement Interval LMP and included in the total IIE Settlement Amount described in Section 11.5.1.1; and (2) the incremental Energy Bid Cost in excess of the applicable LMP at the relevant Location is settled pursuant to Section 11.5.6.1.1. The Exceptional Dispatch Settlement price for decremental IIE not associated with an Energy Bid that is delivered as a result of an Exceptional Dispatch instruction to avoid a Market Interruption, or to prevent or relieve a System Emergency is the minimum of the Resource-Specific Settlement Interval LMP, the Energy Bid price, or the negotiated price, if applicable and the Energy that does not have an Energy Bid price. All Energy costs for decremental IIE associated with this type of Exceptional Dispatch are included in the total IIE Settlement Amount described in Section 11.5.1.1.

**11.5.6.1.1 Settlement of Excess Cost Payments for Exceptional Dispatches used for Emergency Conditions, to Avoid Market Interruption, and Avoid an Imminent System Emergency.**

The Excess Cost Payment for incremental Exceptional Dispatches used for emergency conditions, to avoid Market Interruption, or to avoid an imminent System Emergency is calculated for each resource for each Settlement Interval as the cost difference between the Settlement amount calculated pursuant to

Section 11.5.6.1 for the applicable Exceptional Dispatch at the Resource-Specific Settlement Interval LMP and delivered Exceptional Dispatch quantity at one of the following three costs: (1) the resource's Energy Bid Cost, (2) the Default Energy Bid cost, or (3) the Energy cost at the negotiated price, as applicable for System Resources, for the relevant Exceptional Dispatch.

**11.5.6.2 Settlement of IIE from Exceptional Dispatches Caused by Modeling Limitations.**

**11.5.6.2.1 Exceptional Dispatches Not Associated with an Energy Bid for Transmission-Related Modeling Limitations.**

The Exceptional Dispatch Settlement price for IIE not associated with an Energy Bid that is consumed or delivered as a result of an Exceptional Dispatch to mitigate or resolve Congestion as a result of a transmission-related modeling limitation in the FNM as described in Section 34.9.3 is the maximum of the (a) Resource-Specific Settlement Interval LMP, (b) Energy Bid price, (c) the Default Energy Bid price if the resource has been mitigated through the MPM-RRD and for the Energy that does not have an Energy Bid price, or (d) the negotiated price as applicable to System Resources. Costs for incremental Energy for this type of Exceptional Dispatch are settled in two payments: (1) incremental Energy is first settled at the Resource-Specific Settlement Interval LMP and included in the total IIE Settlement Amount described in Section 11.5.1.1; and (2) the incremental Energy Bid costs in excess of the applicable LMP at the relevant Location are settled per Section 11.5.6.2.3. The Exceptional Dispatch Settlement price for decremental IIE for this type of Exceptional Dispatch is the minimum of the (a) Resource-Specific Settlement Interval LMP, (b) Energy Bid price, (c) the Default Energy Bid price if the resource has been mitigated through the MPM-RRD and for the Energy that does not have an Energy Bid price, or (d) the negotiated price as applicable to System Resources. Costs for decremental IIE associated with this type of Exceptional Dispatch are settled in two payments: (1) decremental Energy is first settled at the Resource-Specific Settlement Interval LMP and included in the total IIE Settlement Amount described in Section 11.5.1.1; and (2) the decremental Energy Bid costs in excess of the applicable LMP at the relevant Location are settled per Section 11.5.6.2.3.



**11.5.6.2.2      Exceptional Dispatches Associated with an Energy Bid for Transmission-Related Modeling Limitations.**

The Exceptional Dispatch Settlement price for incremental IIE associated with an Energy Bid that is consumed or delivered as a result of an Exceptional Dispatch to mitigate or resolve Congestion as a result of a transmission-related modeling limitation in the CAISO FNM as described in Section 34.9.3 is the maximum of the Resource-Specific Settlement Interval LMP or the Energy Bid price. Costs for incremental Energy for this type of Exceptional Dispatch are settled in two payments: (1) incremental Energy is first settled at the Resource-Specific Settlement Interval LMP and included in the total IIE Settlement Amount described in Section 11.5.1.1; and (2) the incremental Energy Bid costs in excess of the applicable LMP at the relevant Location are settled per Section 11.5.6.2.3. The Exceptional Dispatch Settlement price for decremental IIE for this type of Exceptional Dispatch is the minimum of the Resource-Specific Settlement Interval LMP or the Energy Bid price. Costs for decremental IIE associated with this type of Exceptional Dispatch are settled in two payments: (1) decremental Energy is first settled at the Resource-Specific Settlement Interval LMP and included in the total IIE Settlement Amount described in Section 11.5.1.1; and (2) the decremental Energy Bid Costs in excess of the applicable LMP at the relevant Location is settled per Section 11.5.6.2.3.

**11.5.6.2.3      Settlement of Excess Cost Payments for Exceptional Dispatches used for Transmission-Related Modeling Limitations.**

The Excess Cost Payment for Exceptional Dispatches used for transmission-related modeling limitations as described in Section 34.9.3 is calculated for each resource for each Settlement Interval as the cost difference between the Settlement amount calculated pursuant to Section 11.5.6.2.1 or 11.5.6.2.2 for the applicable delivered Exceptional Dispatch quantity at the Resource-Specific Settlement Interval LMP and one of the following three costs: (1) the resource's Energy Bid Cost, 2) the Default Energy Bid cost, or 3) the Energy cost at the negotiated price, as applicable for System Resources, for the relevant Exceptional Dispatch.

**11.5.6.2.4 Exceptional Dispatches for Non-Transmission-Related Modeling Limitations.**

The Exceptional Dispatch Settlement price for incremental IIE that is consumed or delivered as a result of an Exceptional Dispatch to mitigate or resolve Congestion that is not a result of a transmission-related modeling limitation in the FNM as described in Section 34.9.3 is the maximum of the (a) Resource-Specific Settlement Interval LMP, (b) Energy Bid price, (c) the Default Energy Bid price if the resource has been mitigated through the MPM-RRD and for the Energy that does not have an Energy Bid price, or (d) the negotiated price as applicable to System Resources. All costs for incremental Energy for this type of Exceptional Dispatch will be included in the total IIE Settlement Amount described in Section 11.5.1.1.

The Exceptional Dispatch Settlement price for decremental IIE for this type of Exceptional Dispatch is the minimum of the (a) Resource-Specific Settlement Interval LMP, (b) Energy Bid Price, (c) or the Default Energy Bid price if the resource has been mitigated through the MPM-RRD and for the Energy that does not have an Energy Bid price, or (d) the negotiated price as applicable to System Resources. All costs for decremental IIE associated with this type of Exceptional Dispatch are included in the total IIE Settlement Amount described in Section 11.5.1.1.

**11.5.6.2.5 Allocation of Exceptional Dispatch Excess Cost Payments.**

**11.5.6.2.5.1 Allocation of Exceptional Dispatch Excess Cost Payments to PTOs.**

The total Excess Cost Payments calculated pursuant to Section 11.5.6.2.3 for the IIE from Exceptional Dispatches instructed as a result of a transmission-related modeling limitation in the FNM as described in Section 34.9.3 in that Settlement Interval shall be charged to the Participating Transmission Owner in whose PTO Service Territory the transmission-related modeling limitation as described in Section 34.9.3 is located. If the modeling limitation affects more than one Participating TO, the Excess Cost Payments shall be allocated pro-rata in proportion to the Participating TOs' Transmission Revenue Requirements. Costs allocated to Participating TOs under this section shall constitute Reliability Services Costs.

**11.5.6.2.5.2 Allocation of Exceptional Dispatch Costs to Scheduling Coordinators.**

Excess Cost Payments for the Exceptional Dispatches used for emergency conditions and to avoid Market Interruption and System Emergencies as determined pursuant to Section 11.5.6.1.1 shall be charged to Scheduling Coordinators as follows in a two-step process. First, each Scheduling Coordinator's charge shall be the lesser of:

- (i) the pro rata share of total Excess Cost Payment based upon the ratio of each Scheduling Coordinator's Net Negative Uninstructed Deviations to the total system Net Negative Uninstructed Deviations; or
- (ii) the amount obtained by multiplying the Scheduling Coordinator's Net Negative Uninstructed Deviation for each Settlement Interval and a weighted average price. The weighted average price is equal to the total Excess Cost Payments to be allocated divided by the MWh of Exceptional Dispatch Energy associated with the Excess Cost Payment.

Second, any remaining unallocated costs shall be allocated to all Scheduling Coordinators pro-rata based on their Measured Demand. For a Scheduling Coordinator of an MSS Operator that has elected to follow Load, allocation of this second category of Excess Cost Payments will be based on net metered MSS Demand. In addition, to the extent the Exceptional Dispatches are made to resolve congestion internal to the MSS, the Scheduling Coordinator for such an MSS will also be subject to these two categories of Excess Cost Payments.

A Scheduling Coordinator shall be exempt from the first category of the Excess Cost Payment allocation for a Settlement Interval if the Scheduling Coordinator has sufficient incremental Energy Bids from physically available resources in the Real-Time Market for Energy to cover its Net Negative Uninstructed Deviation in the given Settlement Interval and the prices of such Energy Bids do not exceed the applicable maximum Bid level as set forth in Section 39.

**11.5.6.3 Settlement for IIE from Exceptional Dispatches for RMR Units.**

**11.5.6.3.1 Pricing for Exceptional Dispatch of RMR Units.**

If the CAISO dispatches an RMR Unit that has selected Condition 2 of its RMR Contract to Start-Up or provide Energy other than a Start-Up or Energy pursuant to the RMR Contract, the CAISO shall pay as follows:

- (a) if the Owner has elected Option A of Schedule G, two times the Start-Up Cost specified in Schedule D to the applicable RMR Contract for any Start-Up incurred, and 1.5 times the rate specified in Equation 1a or 1b below times the amount of Energy delivered in response to the Dispatch Instructions;
- (b) if the Owner has elected Option B of Schedule G, three times the Start-Up Cost specified in Schedule D to the applicable RMR Contract for any Start-Up incurred, and the rate specified in Equation 1a or 1b below times the amount of Energy delivered in response to the Dispatch Instruction.

Equation 1a

$$\text{Energy Price (\$/MWh)} = \frac{(AX^3 + BX^2 + CX + D) * P * E}{X} + \text{Variable O\&M Rate}$$

Equation 1b

$$\text{Energy Price (\$/MWh)} = \frac{A * (B + CX + De^{FX}) * P * E}{X} + \text{Variable O\&M Rate}$$

Where:

- for Equation 1a, A, B, C, D and E are the coefficients given in Table C1-7a of the applicable RMR Contract;
- for Equation 1b, A, B, C, D, E and F are the coefficients given in Table C1-7b of the applicable RMR Contract;
- X is the Unit output level during the applicable settlement period, MWh;
- P is the Hourly Fuel Price as calculated by Equation C1-8 in Schedule C using the Commodity Prices in accordance with the applicable RMR Contract;

Variable O&M Rate (\$/MWh): as shown on Table C1-18 of the applicable RMR Contract.

**11.5.6.3.2 Allocation of Costs from Exceptional Dispatch Calls to Condition 2 RMR Units.**

- (a) All costs associated with Energy provided by a Condition 2 RMR Unit operating other than according to a RMR Dispatch shall be allocated like other Instructed Imbalance Energy in accordance with Section 11.5.4.2.
- (b) Start-Up Costs for Condition 2 RMR Units providing service outside the RMR Contract, and any additional Start-Up Cost associated with a Condition 2 RMR Unit providing service under the RMR Contract when the unit's total service has exceeded an RMR Contract service limit but neither the RMR Contract counted MWh, counted service hours or counted Start-Ups under the RMR Contract have exceeded the applicable RMR Contract service limit, shall be treated similar to costs under Section 11.5.6.2.5.2.

**11.5.6.4 Settlement of IIE from Exceptional Dispatches used for Ancillary Services Testing and Pre-Commercial Operations Testing For Generating Units.**

The Exceptional Dispatch Settlement price for incremental IIE that is consumed or delivered as a result of an Exceptional Dispatch for purposes of Ancillary Services testing or pre-commercial operations testing for Generating Units is the maximum of the Resource-Specific Settlement Interval LMP or the Energy Bid Price, if Energy is associated with an Energy Bid. All Energy costs for these types of Exceptional Dispatch will be included in the IIE Settlement Amount described in Section 11.5.1.1.

**11.5.6.5 Settlement of IIE from Black Start and Voltage Support.**

All IIE Settlement Amounts associated with Black Start and Voltage Support are derived pursuant to Section 11.10.

**11.5.6.6 Settlement of IIE from Exceptional Dispatches for HASP and Real-Time ETC and TOR Self-Schedules.**

The Exceptional Dispatch Settlement price for IIE from HASP and Real-Time ETC and TOR Self-Schedules shall be the Resource-Specific Settlement Interval LMP. The IIE Settlement Amount for this type of Exceptional Dispatch shall be calculated as the product of the sum of all of these types of Energy and the Resource-Specific Settlement Interval LMP. All Energy costs for these types of Exceptional Dispatches will be included in the IIE Settlement Amount described in Section 11.5.1.1.

**11.5.7 HASP and RTM Congestion Credit and Marginal Cost of Losses Credit for Eligible TOR Self-Schedules.**

**11.5.7.1 HASP and RTM Congestion Credit for ETCs and TORs.**

The CAISO shall not apply charges or payments to Scheduling Coordinators related to the MCC associated with all Points of Receipt and Points of Delivery pairs associated with valid and balanced ETC Self-Schedules or TOR Self-Schedules. The balanced portion will be based on the difference between: (1) minimum of the metered CAISO Demand, ETC or TOR Self-Schedule submitted in the HASP, or the Existing Contract maximum capacity as specified in the TRTC Instructions; and (2) the Day-Ahead Schedule. For each Scheduling Coordinator, the CAISO shall determine for each Settlement Interval the

applicable HASP and RTM Congestion Credit for Imbalance Energy, which can be positive or negative, as the sum of the product of the relevant MWh quantity and the MCC at each Point of Receipt and Point of Delivery associated with the valid and balanced portions of that Scheduling Coordinator's ETC or TOR Self-Schedules. For all exports and imports settled in the HASP, the CAISO shall use the MWh quantity specified in the HASP Intertie Schedule. For all Demand settled in the Real-Time Market the CAISO shall use the metered CAISO Demand associated with the applicable ETC or TOR. For all Supply settled in the Real-Time Market the CAISO shall use the quantity specified in the Dispatch Instructions.

**11.5.7.2 RTM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules.**

For all Points of Receipt and Points of Delivery pairs associated with a valid and balanced TOR Self-Schedule submitted to the HASP or RTM pursuant to an existing agreement between the TOR holder and the CAISO as specified in Section 17.3.3, the CAISO shall not impose any charge or make any payment to the Scheduling Coordinator related to the MCL associated with such TOR Self-Schedules and will instead impose any applicable charges for losses as specified in the existing agreement between the TOR holder and the CAISO applicable to the relevant TOR. The balanced portion of the TOR Self-Schedule will be based on the difference between: (1) minimum of the metered CAISO Demand or TOR Self-Schedule submitted in the HASP, or the TOR maximum capacity as specified in the TRTC Instructions; and (2) the Day-Ahead Schedule. For each Scheduling Coordinator, the CAISO shall determine for each Settlement Interval the applicable RTM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules for Imbalance Energy, which can be positive or negative, as the sum of the product of the relevant MWh quantity and the MCL at each eligible Points of Receipt and Points of Delivery associated with the valid and balanced portions of that Scheduling Coordinator's TOR Self-Schedules. For all exports and imports settled in the HASP, the CAISO shall use the MWh quantity specified in the HASP Intertie Schedule. For all Demand settled in the Real-Time Market the CAISO shall use the metered CAISO Demand associated with the applicable TOR. For all Supply settled in the Real-Time Market the CAISO shall use the quantity specified in the Dispatch Instructions.

**11.5.8 Settlement for Emergency Assistance.**

This Section 11.5.8 shall apply to Settlement for emergency assistance provided to or by the CAISO. In any case in which the CAISO has entered into an agreement regarding emergency assistance, which agreement has been accepted by FERC, the provisions of the agreement shall prevail over any conflicting provisions of this Section 11.5.8. Where the provisions of this Section 11.5.8 do not conflict with the provisions of the FERC-accepted agreement, the provisions of this Section 11.5.8 shall apply to the subject emergency assistance.

**11.5.8.1 Settlement for Energy Purchased by the CAISO for System Emergency Conditions, to Avoid Market Interruption, or to Prevent or Relieve Imminent System Emergencies, Other than Exceptional Dispatch Energy.**

The Settlement price for Energy that is delivered to the CAISO from a utility in another **Balancing Authority** Area as a result of a CAISO request pursuant to Section 42.1.5 or any other provision for assistance in System Emergency conditions, to avoid a **Market Interruption**, or to prevent or relieve an imminent System Emergency, other than Energy from an Exceptional Dispatch, shall be either (i) a negotiated price agreed upon by the CAISO and the seller or (ii) a price established by the seller for such emergency assistance in advance, as may be applicable. In the event no Settlement price is established prior to the delivery of the emergency Energy, the default Settlement price shall be the simple average of the relevant Dispatch Interval LMPs at the applicable Scheduling Point, plus all other charges applicable to imports to the CAISO **Balancing Authority** Area, as specified in the CAISO Tariff. If the default Settlement price is determined by the seller not to compensate the seller for the value of the emergency Energy delivered to the CAISO, then the seller shall have the opportunity to provide the CAISO with cost support information demonstrating that a higher price is justified. **The cost support information must be provided in writing to the CAISO within thirty (30) days following the date of the provision of emergency**



**assistance.** The CAISO shall have the discretion to pay that higher price based on the seller's justification of this higher price. **The CAISO will provide notice of its determination whether to pay such a higher price within thirty (30) days after receipt of the cost support information. Any dispute regarding the CAISO's determination whether to pay a higher price for emergency assistance based on cost support information shall be subject to the CAISO ADR Procedures.** Payment by the CAISO for such emergency assistance will be made in accordance with the Settlement process, billing cycle, and payment timeline set forth in the CAISO Tariff. The costs for such emergency assistance, **including the payment of a price based on cost support information,** will be settled in two payments: (1) the costs will first be settled at the simple average of the relevant Dispatch Interval LMPs and included in the total IIE Settlement Amount as described in Section 11.5.1.1; and (2) costs in excess of the simple average of the relevant Dispatch Interval LMPs plus other applicable charges will be settled in accordance with Section 11.5.8.1.1. The allocation of the amounts settled in accordance with Section 11.5.1.1 will be settled according to Section 11.5.4.2.

**11.5.8.1.1 Settlement and Allocation of Excess Costs Payments for Emergency Energy Purchases, Other than Exceptional Dispatch Energy, to Scheduling Coordinators.**

The Excess Cost Payments for emergency Energy purchased in the circumstances specified in Section 11.5.8.1 is calculated for each purchase for each Settlement Interval as the cost difference between the Settlement amount calculated pursuant to Section 11.5.8.1 for the **delivered** purchase **quantity** and the simple average of the relevant Dispatch Interval LMPs at the applicable Scheduling Point. The Excess Cost Payments for emergency Energy purchased in the circumstances specified in Section 11.5.8.1 shall be allocated in the same manner as specified in Section 11.5.6.2.5.2 for the allocation of the Excess Cost Payments portion of payments for Exceptional Dispatches for emergency conditions.

**11.5.8.2 Settlement for Energy Supplied by the CAISO in Response to a Request for Emergency Assistance.**

The Settlement price for emergency Energy that is delivered by the CAISO to a utility in another **Balancing Authority** Area in response to a request for emergency assistance shall be the simple average of the relevant Dispatch Interval LMPs at the applicable Scheduling Point, which shall serve as the effective market price for that Energy, plus all other charges applicable to exports from the CAISO **Balancing Authority** Area, as specified in the CAISO Tariff and will be included in the total IIE Settlement Amount as described in Section 11.5.1.1 and will be allocated according to Section 11.5.4.2. Such price may be estimated prior to delivery and finalized in the Settlement process. The CAISO will establish a Scheduling Coordinator account, if necessary, for the purchaser for the sole purpose of facilitating the Settlement of such emergency assistance. Payment to the CAISO for such emergency assistance shall be made in accordance with the Settlement process, billing cycle, and payment timeline set forth in the CAISO Tariff.

**11.6 [NOT USED]**

**11.7 Additional MSS Settlements Requirements.**

**11.7.1 MSS Load Following Deviation Penalty.**

For MSS Operators that have elected to follow their Load as described in Section 4.9.13.2, the Scheduling Coordinator for a Load following MSS Operator shall pay amounts for: (i) excess MSS Generation supplied to the CAISO Markets and (ii) excess MSS Load relying on CAISO Markets and not served by MSS generating resources. The revenue received from these payments will be used as an off-set to the CAISO's Grid Management Charge. The payments due from a Scheduling Coordinator will be calculated as follows:

**11.7.1.1** If the metered Generation resources and imports into the MSS exceed: (i) the metered Demand and exports from the MSS, and (ii) Energy expected to be delivered by the Scheduling Coordinator for the MSS in response to the CAISO's Dispatch Instructions and/or Regulation Set Point signals issued by the CAISO's AGC by more than the MSS Deviation Band, then the payment for excess Energy outside of the MSS Deviation Band shall be rescinded and Scheduling Coordinator for the MSS Operator will pay the CAISO an amount equal to one hundred percent (100%) of the product of the highest LMP paid to the MSS Operator for its Generation in the Settlement Interval and the amount of the Imbalance Energy that is supplied in excess of the MSS Deviation Band.

**11.7.1.2** If metered Generation resources and imports into the MSS are insufficient to meet: (i) the metered Demand and exports from the MSS, and (ii) Energy expected to be delivered by the Scheduling Coordinator for the MSS in response to the CAISO's Dispatch Instructions and/or Regulation Set Point signals issued by the CAISO's AGC by more than the MSS Deviation Band, then the Scheduling Coordinator for the MSS Operator shall pay the CAISO an amount equal to the product of the Default LAP price for the Settlement Interval and two hundred percent (200%) of the shortfall that is outside of the MSS Deviation Band. The payment in the previous sentence is in addition to the charges for the Imbalance Energy that serves the excess MSS Demand that may be applicable under Section 11.5.

**11.7.2** The CAISO will assess the Scheduling Coordinator for the MSS the neutrality adjustments and Existing Contracts cash neutrality charges pursuant to Section 11.14 (or collect refunds therefrom) based on the net Measured Demand of the MSS.

**11.7.3** If the CAISO is charging Scheduling Coordinators for summer reliability or Demand reduction programs, the MSS Operator may petition the CAISO for an exemption of these charges. If the MSS Operator provides documentation to the CAISO by November 1 of any year demonstrating that the MSS Operator has secured capacity reserves for the following calendar year at least equal to one hundred and fifteen percent (115%), on an annual basis, of the peak Demand responsibility of the MSS Operator, the CAISO shall grant the exemption. Eligible capacity reserves for such a demonstration may

include on-demand rights to Energy, peaking resources, and Demand reduction programs. The peak Demand responsibility of the MSS Operator shall be equal to the annual peak Demand Forecast of the MSS Load plus any firm power sales by the MSS Operator, less interruptible Loads, and less any firm power purchases. Firm power for the purposes of this Section 11.7.3 shall be Energy that is intended to be available to the purchaser without being subject to interruption or curtailment by the supplier except for Uncontrollable Forces or emergency. To the extent that the MSS Operator demonstrates that it has secured capacity reserves in accordance with this Section 11.7.3, the Scheduling Coordinator for the MSS Operator shall not be obligated to bear any share of the CAISO's costs for any summer Demand reduction program or for any summer reliability Generation procurement program pursuant to Section 42.1.8 for the calendar year for which the demonstration is made.

**11.7.4** Unless specified otherwise in the MSS agreement(s), if the CAISO is compensating Generating Units for Emissions Costs, and if an MSS Operator charges the CAISO for the Emissions Costs of the Generating Units serving the Load of the MSS, then the Scheduling Coordinator for the MSS shall bear its proportionate share of the total amount of those costs incurred by the CAISO based on the MSS gross Measured Demand excluding out of state exports and the Generating Units shall be made available to the CAISO through the submittal of Energy Bids. If the MSS Operator chooses not to charge the CAISO for the Emissions Costs of the Generating Units serving the Load of the MSS, then the Scheduling Coordinator for the MSS shall bear its proportionate share of the total amount of those costs incurred by the CAISO based on the MSS's net Measured Demand excluding out-of-state exports. For MSS Operators that have elected to follow their Load, and if an MSS Operator chooses not to charge the CAISO for the Emissions Costs of the Generating Units serving that MSS Operator's Load, then that MSS's Scheduling Coordinator for that Load shall bear its proportionate share of the total amount of those costs incurred by the CAISO based on that MSS's Net Negative Uninstructed Deviations with Load Following Energy included in the netting. The MSS Operator shall make the election whether to charge the CAISO for these costs on an annual basis on November 1 for the following calendar year.

## **11.8 Bid Cost Recovery.**

For purposes of determining the Unrecovered Bid Cost Uplift Payments for each Bid Cost Recovery Eligible Resource as determined in Section 11.8.5 and the allocation of Unrecovered Bid Cost Uplift Payments for each Settlement Interval, the CAISO shall sequentially calculate the Bid Costs, which can be positive (IFM, RUC or RTM Bid Cost Shortfall) or negative (IFM, RUC or RTM Bid Cost Surplus) in the IFM, RUC and the Real-Time Market, as the algebraic difference between the respective IFM, RUC or RTM Bid Cost and the IFM, RUC or RTM Market Revenues, which is netted across the CAISO Markets. In any Settlement Interval a resource is eligible for Bid Cost Recovery payments only if it is On, or in the case of a Participating Load, only if the resource has actually stopped or started consuming pursuant to the Dispatch Instruction. BCR Eligible Resources for different MSS Operators are supply resources listed in the applicable MSS Agreement. All Bid Costs shall be based on mitigated Bids as specified in Section 39.7. In order to be eligible for Bid Cost Recovery, Non-Dynamic Resource-Specific System Resources must provide to the CAISO Revenue Quality Meter Data demonstrating that they have performed in accordance with their CAISO commitments.

### **11.8.1 CAISO Determination of Self-Commitment Periods.**

For the purposes of identifying the periods during which a Bid Cost Recovery Eligible Resource is deemed self-committed and thus ineligible for Start-Up Costs, Minimum Load Costs, IFM Pump Shut-Down Costs and IFM Pumping Costs, the CAISO derives the Self-Commitment Periods as described below. MSS resources designated for Load following are considered to be self-committed if they have been scheduled with non-zero Load following capacity, or are otherwise used to follow Load in the Real-Time. The IFM and RUC Self-Commitment Periods will be available as part of the Day-Ahead Market results provided to the applicable Scheduling Coordinator. The Interim RTM Self-Commitment Periods as reflected in the HASP will be available as part of the HASP results for the relevant Trading Hour as provided to the applicable Scheduling Coordinator. The final RTM Self-Commitment Period is determined ex-post for Settlements purposes. ELS Resources committed through the ELC Process described in

Section 31.7 are considered to have been committed in the IFM Commitment Period for the applicable Trading Day for the purposes of determining BCR settlement in this section 11.8.

**11.8.1.1 IFM Self-Commitment Period.**

An IFM Self-Commitment Period for a Bid Cost Recovery Eligible Resource shall consist of one or more sets of consecutive Trading Hours during which the relevant Bid Cost Recovery Eligible Resource has either a Self-Schedule or, except for Self-Provided Ancillary Services for Non-Spinning Reserve by a Fast Start Unit, has a non-zero amount of Self-Provided Ancillary Services. An IFM Self-Commitment Period for a Bid Cost Recovery Eligible Resource may not be less than the relevant Minimum Run Time (MRT), rounded up to the next hour. Consequently, if a Bid Cost Recovery Eligible Resource first self-commits in hour  $h$  of the Trading Day, the self-commitment will be extended to hour  $h + \text{MRT}$ . Two IFM Self-Commitment Periods for a Bid Cost Recovery Eligible Resource may not be apart by less than the relevant Minimum Down Time (MDT) (rounded up to the next hour). Consequently, if a Bid Cost Recovery Eligible Resource has submitted a Self-Schedule or Submission to Self-Provide an Ancillary Service in hours  $h$  and  $h + n$ , and  $n$  is less than the MDT, the IFM Self-Commitment Period will be extended to the hours in between  $h$  and  $h + n$  inclusive. The number of IFM Self-Commitment Periods for a Bid Cost Recovery Eligible Resource within a Trading Day cannot exceed the relevant Maximum Daily Start-Ups (MDS), or  $\text{MDS} + 1$  if the first IFM Self-Commitment Period is the continuation of an IFM or RUC Commitment Period from the previous Trading Day. Consequently, if a Bid Cost Recovery Eligible Resource has submitted a Self-Schedule or Submission to Self-Provide an Ancillary Service, such that after applying the preceding two rules, the number of disjoint Self Commitment Periods for the Operating Day exceeds the Maximum Daily Start-Ups (MDS), or  $\text{MDS} + 1$  if the first IFM Self-Commitment Period is the continuation of an IFM or RUC Commitment Period from the previous Trading Day, the disjoint Self Commitment Periods with smallest time gap in between will be joined together to bring down the number of disjoint Self Commitment Periods to MDS or  $\text{MDS} + 1$  as relevant.

**11.8.1.2 Real-Time Self-Commitment Period.**

A Real-Time Market Self-Commitment Period for a Bid Cost Recovery Eligible Resource shall consist of all consecutive Dispatch Intervals not in an IFM Commitment Period or a RUC Commitment Period where the Bid Cost Recovery Eligible Resource has a Self-Schedule or, except for Self-Provided Ancillary Services for Non-Spinning Reserve by a Fast Start Unit, has a non-zero amount of Self-Provided Ancillary Services. A Real-Time Market Self-Commitment Period for a Bid Cost Recovery Eligible Resource may not be less than the relevant MUT (rounded up to the next 15-minute Commitment Interval) when considered jointly with any adjacent IFM Self-Commitment Period. Consequently, if a Bid Cost Recovery Eligible Resource self-commits at time  $h$ , the self-commitment will be extended to Commitment Interval  $h + \text{MUT}$ , unless an IFM or RUC Commitment Period exists starting after hour  $h$ , in which case the self-commitment will be extended to Commitment Interval  $h + \min(\text{MUT}, t)$ . A Real-Time Market Self-Commitment Period for a Bid Cost Recovery Eligible Resource may not be apart from an IFM or RUC Commitment Period by less than the relevant MDT (rounded up to the next 15-minute Commitment Interval). Consequently, if a Bid Cost Recovery Eligible Resource self-commits at time  $T_1$  and has a RUC Schedule at time  $T_2 < T_1$ , the Real-Time Market Self-Commitment Period will be extended to the interim Commitment Intervals if  $T_1 - T_2 < \text{MDT}$ . The number of Real-Time Market Self-Commitment Periods for a Bid Cost Recovery Eligible Resource within a Trading Day, when considered jointly with any adjacent IFM Self-Commitment Period, may not exceed the relevant MDS (or  $\text{MDS} + 1$  if the first Real-Time Market Self-Commitment Period is the continuation of a Real-Time Market Commitment Period from the previous Trading Day). Consequently, if a Bid Cost Recovery Eligible Resource self-commits at time  $T_1$  and has a RUC Schedule at time  $T_2 > T_1$ , the Real-Time Market Self-Commitment Period will be extended to the interim Commitment Intervals if an additional Real-Time Market Start-Up at  $T_1$  would violate the MDS constraint.

### **11.8.2 IFM Bid Cost Recovery Amount.**

For purposes of determining the IFM Unrecovered Bid Cost Uplift Payments as determined in Section 11.8.5, and the purposes of allocating Net IFM Bid Cost Uplift as described in Section 11.8.6.4 the CAISO shall calculate the IFM Bid Cost Shortfall or the IFM Bid Cost Surplus as the algebraic difference between the IFM Bid Cost and the IFM Market Revenues for each Settlement Interval. The IFM Bid Costs shall be calculated pursuant to Section 11.8.2.1 and the IFM Market Revenues shall be calculated pursuant to Section 11.8.2.2. The Energy subject to IFM Bid Cost Recovery is the actual Energy delivered in the Real-Time that is within the Day-Ahead Schedule for each eligible resource.

#### **11.8.2.1 IFM Bid Cost Calculation.**

For each Settlement Interval, the CAISO shall calculate IFM Bid Cost for each Bid Cost Recovery Eligible Resource as the algebraic sum of the IFM Start-Up, IFM Minimum Load Cost, IFM Pump Shut-Down Cost, IFM Energy Bid Cost, IFM Pumping Cost, and IFM AS Bid Cost.

##### **11.8.2.1.1 IFM Start-Up Cost.**

The IFM Start-Up Cost for any IFM Commitment Period shall equal to the Start-Up Costs submitted by the Scheduling Coordinator to the CAISO for the IFM divided by the number of Settlement Intervals in the applicable IFM Commitment Period. For each Settlement Interval, only the IFM Start-Up Cost in a CAISO IFM Commitment Period is eligible for Bid Cost Recovery. The following rules shall apply sequentially to qualify the IFM Start-Up Cost in an IFM Commitment Period:

- (a) The IFM Start-Up Cost for an IFM Commitment Period shall be zero if there is an IFM Self-Commitment Period within or overlapping with that IFM Commitment Period.



- (b) The IFM Start-Up Cost for an IFM Commitment Period shall be zero if the Bid Cost Recovery Eligible Resource is manually pre-dispatched under an RMR Contract prior to the Day-Ahead Market or the resource is flagged as an RMR Dispatch in the Day-Ahead Schedule in the Day-Ahead Market anywhere within the applicable IFM Commitment Period.
- (c) The IFM Start-Up Cost for an IFM Commitment Period shall be zero if there is no actual Start-Up at the start of the applicable IFM Commitment Period because the IFM Commitment Period is the continuation of an IFM, RUC, or RTM Commitment Period from the previous Trading Day.
- (d) The IFM Start-Up Cost for an IFM Commitment Period shall be zero if the Start-Up is delayed by the Real-Time Market past the IFM Commitment Period in question or cancelled by the Real-Time Market before the start-up process has started.
- (e) If an IFM Start-Up is terminated in the Real-Time within the applicable IFM Commitment Period through an Exceptional Dispatch Shut-Down Instruction issued while the Bid Cost Recovery Eligible Resource was starting up, the IFM Start-Up Cost for that IFM Commitment Period shall be prorated by the ratio of the Start-Up Time before termination over the total IFM Start-Up Time.
- (f) The IFM Start-Up Cost is qualified if an actual Start-Up occurs within the applicable IFM Commitment Period. An actual Start-Up is detected between two consecutive Settlement Intervals when the relevant metered Energy in the applicable Settlement Intervals increases from below the Minimum Load Energy and reaches or exceeds the relevant Minimum Load Energy. The Minimum Load Energy is the product of the relevant Minimum Load and the duration of the Settlement Interval.

- (g) The IFM Start-Up Cost will be qualified if an actual Start-Up occurs earlier than the start of the IFM Commitment Period if the advance Start-Up is as a result of a Start-Up instruction issued in a RUC or Real-Time Market process subsequent to the IFM, or the advance Start-Up is uninstructed but is still within the same Trading Day and the Bid Cost Recovery Eligible Resource actually stays on until the targeted IFM Start-Up.

#### **11.8.2.1.2 IFM Minimum Load Cost.**

The Minimum Load Cost for the applicable Settlement Interval shall be the Minimum Load Cost submitted to the CAISO in the IFM divided by the number of Settlement Intervals in a Trading Hour. For each Settlement Interval, only the IFM Minimum Load Cost in a CAISO IFM Commitment Period is eligible for Bid Cost Recovery. The IFM Minimum Load Cost for any Settlement Interval is zero if: (1) the Settlement Interval is in an IFM Self Commitment Period for the Bid Cost Recovery Eligible Resource; (2) the Bid Cost Recovery Eligible Resource is manually pre-dispatched under an RMR Contract prior to the Day-Ahead Market or the resource is flagged as an RMR Dispatch in the Day-Ahead Schedule for the applicable Settlement Interval; or (3) the Bid Cost Recovery Eligible Resource is determined not actually On during the applicable Settlement Interval. For the purposes of IFM Minimum Load Cost, a Bid Cost Recovery Eligible Resource is determined to not actually be On if the metered Energy in that Settlement Interval is less than the Tolerance Band referenced by the Minimum Load Energy.

#### **11.8.2.1.3 IFM Pump Shut-Down Cost.**

For Pumped-Storage Hydro Units and Participating Load only, the IFM Pump Shut-Down Costs for each Settlement Interval shall be equal to the relevant Pump Shut-Down Cost submitted to CAISO in the IFM divided by the number of Settlement Intervals in a Trading Hour in which shut down is to occur if the unit is committed by the IFM not to pump and actually does not operate in pumping mode in that Settlement Interval (as detected by Meter Data).

**11.8.2.1.4 IFM Pumping Bid Cost.**

For Pumped-Storage Hydro Units and Participating Load only, the IFM Pumping Bid Cost for the applicable Settlement Interval shall be the Pumping Cost submitted to the CAISO in the IFM divided by the number of Settlement Intervals in a Trading Hour. The Pumping Cost is negative. The Pumping Cost is included in IFM Bid Cost computation for a Pumped-Storage Hydro Unit and Participating Load committed by the IFM to pump or serve Load if it actually operates in pumping mode or serves Load in that Settlement Interval. The IFM Energy Bid Cost for a Participating Load for any Settlement Interval is set to zero for actual Energy consumed in excess of the Day-Ahead Schedule for Demand.

**11.8.2.1.5 IFM Energy Bid Cost.**

For any Settlement Interval, the IFM Energy Bid Cost for Bid Cost Recovery Eligible Resources, except Participating Loads, shall be the integral of the relevant Energy Bid submitted to the IFM, if any, from the higher of the registered Bid Cost Recovery Eligible Resource's Minimum Load and the Day-Ahead Total Self-Schedule up to the relevant MWh scheduled in the Day-Ahead Schedule, divided by the number of Settlement Intervals in a Trading Hour. The IFM Energy Bid Cost for Bid Cost Recovery Eligible Resources, except Participating Loads, for any Settlement Interval is set to zero for any portion of the Day-Ahead Schedule that is not delivered from the otherwise Bid Cost Recovery Eligible Resource that has metered Generation below its Day-Ahead Schedule; any portion of the Day-Ahead Schedule that is actually delivered remains eligible for IFM Energy Bid Cost Recovery.

**11.8.2.1.6 IFM AS Bid Cost.**

For any Settlement Interval, the IFM AS Bid Cost shall be the product of the IFM upward AS Award from each accepted IFM AS Bid and the relevant AS Bid Price, divided by the number of Settlement Intervals in a Trading Hour.

### **11.8.2.2 IFM Market Revenue.**

For any Settlement Interval in a CAISO IFM Commitment Period the IFM Market Revenue for a Bid Cost Recovery Eligible Resource is the algebraic sum of: (1) the product of the MWh, in the relevant Day-Ahead Schedule in that Trading Hour where for Pumped-Storage Hydro Units and Participating Load operating in the pumping mode or serving Load, the MWh is negative, and the relevant IFM LMP, divided by the number of Settlement Intervals in a Trading Hour; and (2) the product of the IFM AS Award from each accepted IFM AS Bid and the relevant Resource-Specific ASMP, divided by the number of Settlement Intervals in a Trading Hour. For any Settlement Interval in a IFM Self-Commitment Period the IFM Market Revenue for a Bid Cost Recovery Eligible Resource is the algebraic sum of: (1) the product of the MWh above the greater of Minimum Load and Self-Scheduled Energy, in the relevant Day-Ahead Schedule in that Trading Hour and the relevant IFM LMP, divided by the number of Settlement Intervals in a Trading Hour; and (2) the product of the IFM AS Award from each accepted IFM AS Bid and the relevant Resource-Specific ASMP, divided by the number of Settlement Intervals in a Trading Hour.

### **11.8.2.3 IFM Bid Cost Recovery Amounts for Metered Subsystems.**

The IFM Bid Cost Recovery for MSS Operators differs based on whether the MSS Operator has elected gross or net Settlement.

#### **11.8.2.3.1 MSS Elected Gross Settlement.**

For an MSS Operator that has elected gross Settlement, regardless of other MSS optional elections (Load following or RUC opt-in or out), the IFM Bid Cost and the IFM Market Revenue are calculated similarly to non-MSS resources on an individual resource basis as described in Sections 11.8.2.1 and 11.8.2.2, respectively.

**11.8.2.3.2 MSS Elected Net Settlement.**

For an MSS Operator that has elected net Settlement, regardless of other MSS optional elections (Load following or RUC opt-in or out), the Energy affected by IFM Bid Cost Recovery is the MSS level net Energy where the MSS Supply exceeds the MSS Demand within the MSS. The IFM Bid Cost Shortfall or Surplus is also settled at the MSS level as opposed to the individual resource level. The IFM Bid Cost as described in Section 11.8.2.1 above and IFM Market Revenue as provided in Section 11.8.2.2 above, of each MSS will be, respectively, the total of the IFM Bid Costs and IFM Market Revenues of all BCR Eligible Resources within the MSS. The IFM Bid Cost Shortfalls and Surpluses for Energy and AS are first calculated separately for the MSS for each Trading Hour of the Trading Day with qualified Start-Up Cost and qualified Minimum Load Cost included in the IFM Bid Cost Shortfalls and Surpluses for Energy calculation. The IFM Bid Cost Shortfall or Surplus of Energy in each Trading Hour is then pro-rated by the MSS's ratio of the net positive MSS Generation Schedule to the gross MSS Generation Schedule of that Trading Hour. If the MSS CAISO Demand is in excess of the MSS Generation in a given Trading Hour in the Day-Ahead Schedule, the CAISO will set the pro-rating ratio for that Trading Hour to zero. The MSS's overall IFM Bid Cost Shortfall or Surplus is then calculated as the algebraic sum of the pro-rated IFM Bid Cost Shortfall or Surplus for Energy and the IFM Bid Cost Shortfall or Surplus for AS for each Trading Hour.

**11.8.3 RUC Bid Cost Recovery Amount.**

For purposes of determining the RUC Unrecovered Bid Cost Uplift Payments as determined in Section 11.8.5 and for the purposes of allocating Net RUC Bid Cost Uplift as described in Section 11.8.6.5, the CAISO shall calculate the RUC Bid Cost Shortfall or the RUC Bid Cost Surplus as the algebraic difference between the RUC Bid Cost and the RUC Market Revenues for each Bid Cost Recovery Eligible Resource for each Settlement Interval. The RUC Bid Costs shall be calculated pursuant to Section 11.8.3.1 and the RUC Market Revenues shall be calculated pursuant to Section 11.8.3.2.

**11.8.3.1 RUC Bid Cost Calculation.**

For each Settlement Interval, the CAISO shall determine the RUC Bid Cost for a Bid Cost Recovery Eligible Resource as the algebraic sum of the RUC Start-Up Cost, RUC Minimum Load Cost and RUC Availability Bid Cost.

**11.8.3.1.1 RUC Start-Up Cost.**

The RUC Start-Up Cost for any Settlement Interval in a RUC Commitment Period shall consist of Start-Up Cost of the Bid Cost Recovery Eligible Resource submitted to the CAISO for the applicable RUC Commitment Period divided by the number of Settlement Intervals in the applicable RUC Commitment Period. For each Settlement Interval, only the RUC Start-Up Cost in a CAISO RUC Commitment Period is eligible for Bid Cost Recovery. The following rules shall be applied in sequence and shall qualify the RUC Start-Up Cost in a RUC Commitment Period:

- (a) The RUC Start-Up Cost for a RUC Commitment Period is zero if there is an IFM Commitment Period within that RUC Commitment Period.
- (b) The RUC Start-Up Cost for a RUC Commitment Period is zero if the Bid Cost Recovery Eligible Resource is manually pre-dispatched under an RMR Contract prior to the Day-Ahead Market or is flagged as an RMR Dispatch in the Day-Ahead Schedule anywhere within that RUC Commitment Period.
- (c) The RUC Start-Up Cost for a RUC Commitment Period is zero if there is no RUC Start-Up at the start of that RUC Commitment Period because the RUC Commitment Period is the continuation of an IFM, RUC, or RTM Commitment Period from the previous Trading Day.

- (d) The RUC Start-Up Cost for a RUC Commitment Period is zero if the Start-Up is delayed beyond the RUC Commitment Period in question or cancelled by the Real-Time Market prior to the Bid Cost Recovery Eligible Resource starting its start-up process.
- (e) If a RUC Start-Up is terminated in the Real-Time within the applicable RUC Commitment Period through an Exceptional Dispatch Shut-Down Instruction issued while the Bid Cost Recovery Eligible Resource is starting up the, RUC Start-Up Cost is prorated by the ratio of the Start-Up Time before termination over the RUC Start-Up Time.
- (f) The RUC Start-Up Cost for a RUC Commitment Period is qualified if an actual Start-Up occurs within that RUC Commitment Period.
- (g) The RUC Start-Up Cost shall be qualified if an actual Start-Up occurs earlier than the start of the RUC Start-Up, if the relevant Start-Up is still within the same Trading Day and the Bid Cost Recovery Eligible Resource actually stays on until the RUC Start-Up, otherwise the Start-Up Cost is zero for the RUC Commitment Period.

**11.8.3.1.2 RUC Minimum Load Cost.**

The Minimum Load Cost for the applicable Settlement Interval shall be the Minimum Load Cost of the Generating Bid Cost Recovery Eligible Resource divided by the number of Settlement Intervals in a Trading Hour. For each Settlement Interval, only the RUC Minimum Load Cost in a CAISO RUC

Commitment Period is eligible for Bid Cost Recovery. The RUC Minimum Load Cost for any Settlement Interval is zero if: (1) the Bid Cost Recovery Eligible Resource is manually pre-dispatched under an RMR Contract or the resource is flagged as an RMR Dispatch in the Day-Ahead Schedule in that Settlement Interval; (2) the Bid Cost Recovery Eligible Resource is not actually On in the applicable Settlement Interval; or (3) the applicable Settlement Interval is included in an IFM Commitment Period. For the purposes of RUC Minimum Load Cost, a Bid Cost Recovery Eligible Resource is determined to not actually be On if the metered Energy in that Settlement Interval is less than the Tolerance Band referenced by the Minimum Load Energy.

#### **11.8.3.1.3 RUC Availability Bid Cost.**

The product of the RUC Award with the relevant RUC Availability Bid price, divided by the number of Settlement Intervals in a Trading Hour. The RUC Availability Bid Cost for a Bid Cost Recovery Eligible Resource for a Settlement Interval is zero if the Bid Cost Recovery Eligible Resource is operating below its RUC Schedule, and also has a negative Uninstructed Imbalance Energy (UIE) magnitude in that Settlement Interval in excess of: (1) five (5) MWh divided by the number of Settlement Intervals in the Trading Hour; or (2) three percent (3%) of its maximum capacity divided by the number of Settlement Intervals in a Trading Hour.

#### **11.8.3.2 RUC Market Revenues.**

For any Settlement Interval, the RUC Market Revenue for a Bid Cost Recovery Eligible Resource is the RUC Availability Payment as specified in Section 11.2.2.1 divided by the number of Settlement Intervals in a Trading Hour. If the RUC Availability Bid Cost of a BCR Eligible Resource is reduced to zero (0) in a Settlement Interval because of Uninstructed Deviation as stated in Section 11.8.3.1.3, then the RUC Market Revenue for that resource for that Settlement Interval shall also be set to zero (0) since the resource is subject to rescission of RUC Availability Payments as specified in Section 31.5.7.



**11.8.3.3 RUC Bid Cost Recovery for Metered Subsystem.**

**11.8.3.3.1 MSS Elected Gross Settlement.**

For an MSS Operator that has elected gross Settlement, regardless of other MSS optional elections (Load following or RUC opt-in or out), the RUC Bid Cost and the RUC Market Revenue are calculated similarly to non-MSS resources on an individual resource basis as described in Sections 11.8.3.1 and 11.8.3.2, respectively.

**11.8.3.3.2 MSS Elected Net Settlement.**

For an MSS Operator that has elected net Settlement, regardless of other MSS optional elections (Load following or RUC opt-in or out), the RUC Bid Costs and RUC Market Revenue are calculated on an MSS level, consistent with the Energy Settlement. The RUC Bid Cost Shortfall or Surplus is also settled at the MSS level as opposed to the individual resource level as is done for MSS Operators that have elected gross Settlement.

**11.8.4 RTM Bid Cost Recovery Amount.**

For purposes of determining the RTM Unrecovered Bid Cost Uplift Payments as determined in Section 11.8.5, and for the purposes of allocation of Net RTM Bid Cost Uplift as described in Section 11.8.6.6 the CAISO shall calculate the RTM Bid Cost Shortfall or the RTM Bid Cost Surplus as the algebraic difference between the RTM Bid Cost and the RTM Market Revenues for each Settlement Interval. The RTM Bid Costs shall be calculated pursuant to Section 11.8.4.1 and the RTM Market Revenues shall be calculated pursuant to Section 11.8.4.2. The Energy subject to RTM Bid Cost Recovery is the actual Energy delivered in the Real-Time associated with Instructed Imbalance Energy described in Section 11.5.1, excluding Standard Ramping Energy, Residual Imbalance Energy, Exceptional Dispatch Energy, Derate Energy, Ramping Energy Deviation, Regulation Energy and MSS Load Following Energy.

#### **11.8.4.1 RTM Bid Cost Calculation.**

For each Settlement Interval, the CAISO shall calculate RTM Bid Cost for each Bid Cost Recovery Eligible Resource, as the algebraic sum of the RTM Start-Up Cost, RTM Minimum Load Cost, RTM Pump Shut-Down Cost, RTM Energy Bid Cost, RTM Pumping Cost and RTM AS Bid Cost.

##### **11.8.4.1.1 RTM Start-Up Cost.**

For each Settlement Interval of the applicable Real-Time Market Commitment Period, the Real-Time Market Start-Up Cost shall consist of the Start-Up Cost of the Generating Bid Cost Recovery Eligible Resource submitted to the CAISO for the Real-Time Market divided by the number of Settlement Intervals in the applicable Real-Time Market Commitment Period. For each Settlement Interval, only the Real-Time Market Start-Up Cost in a CAISO Real-Time Market Commitment Period is eligible for Bid Cost Recovery. The following rules shall be applied in sequence and shall qualify the Real-Time Market Start-Up Cost in a Real-Time Market Commitment Period:

- (a) The Real-Time Market Start-Up Cost is zero if there is a Real-Time Market Self-Commitment Period within the Real-Time Market Commitment Period.
- (b) The Real-Time Market Start-Up Cost is zero if the Bid Cost Recovery Eligible Resource has been manually pre-dispatched under an RMR Contract or the resource is flagged as an RMR Dispatch in the Day-Ahead Schedule or Real-Time Market anywhere within that Real-Time Market Commitment Period.
- (c) The Real-Time Market Start-Up Cost is zero if there is no Real-Time Market Start-Up at the start of that Real-Time Market Commitment Period because the Real-Time Market Commitment Period is the continuation of an IFM or RUC Commitment Period from the previous Trading Day.

- (d) If a Real-Time Market Start-Up is terminated in the Real-Time within the applicable Real-Time Market Commitment Period through an Exceptional Dispatch Shut-Down Instruction issued while the Bid Cost Recovery Eligible Resource is starting up the Real-Time Market Start-Up Cost is prorated by the ratio of the Start-Up Time before termination over the Real-Time Market Start-Up Time.
- (e) The Real-Time Market Start-Up Cost shall be qualified if an actual Start-Up occurs within that Real-Time Market Commitment Period.
- (f) The Real-Time Market Start-Up Cost for a Real-Time Market Commitment Period shall be qualified if an actual Start-Up occurs earlier than the start of the Real-Time Market Start-Up, if the relevant Start-Up is still within the same Trading Day and the Bid Cost Recovery Eligible Resource actually stays on until the Real-Time Market Start-Up, otherwise the Start-Up Cost is zero for the RUC Commitment Period.

**11.8.4.1.2 RTM Minimum Load Cost.**

The **RTM** Minimum Load Cost is the Minimum Load Cost of the Bid Cost Recovery Eligible Resource submitted to the CAISO for the Real-Time Market divided by the number of Settlement Intervals in a Trading Hour. For each Settlement Interval, only the **RTM** Minimum Load Cost in a CAISO **RTM**

Commitment Period is eligible for Bid Cost Recovery. The **RTM Minimum Load** Cost for any Settlement Interval is zero if: (1) the Settlement Interval is included in a **RTM Self-Commitment** Period for Bid Cost Recovery Eligible Resource; (2) the Bid Cost Recovery Eligible Resource has been manually dispatched under an RMR **C**ontract or the resource has been flagged as an RMR Dispatch in the Day-Ahead Schedule or the Real-Time Market in that Settlement Interval; (3) the Bid Cost Recovery Eligible Resource is not actually **O**n in that Settlement Interval; or (4) that Settlement Interval is included in an IFM or RUC Commitment Period. **For the purposes of RTM Minimum Load Cost, a Bid Cost Recovery Eligible Resource is determined to not actually be On if the metered Energy in that Settlement Interval is less than the Tolerance Band referenced by the Minimum Load Energy.**

#### **11.8.4.1.3 RTM Pump Shut-Down Cost.**

The **RTM Pump Shut-Down** Cost is the relevant Pump Shut-Down Cost submitted by the Scheduling Coordinator for Pumped-**S**torage Hydro Units and Participating Load committed by the Real-Time Market to stop pumping and serving Load and actually does not operate in pumping mode or serve Load in that Settlement Interval, divided by the number of Settlement Intervals in a Trading Hour.

#### **11.8.4.1.4 RTM Pumping Bid Cost.**

For Pumped-Storage Hydro Units and Participating Load only, the **RTM** Pumping Bid Cost for the applicable Settlement Interval shall be the Pumping Cost submitted to the CAISO **in the HASP or RTM** divided by the number of Settlement Intervals in a Trading Hour. The Pumping Cost is negative since it represents the amount the entity is willing to pay to pump or serve Load. The Pumping Cost is included in **RTM** Bid Cost computation for a Pumped-Storage Hydro Unit and Participating Load committed by the Real-Time Market to pump or serve Load, if it actually operates in pumping mode or serves Load in that Settlement Interval. The **RTM** Energy Bid Cost for a Participating Load for any Settlement Interval is set to zero for any Energy consumed in excess of instructed Energy.

**11.8.4.1.5 RTM Energy Bid Cost.**

For any Settlement Interval, the RTM Energy Bid Cost for the Bid Cost Recovery Eligible Resource except Participating Loads shall be computed as the sum of the products of each Instructed Imbalance Energy (IIE) portion, except Standard Ramping Energy, Residual Imbalance Energy, Exceptional Dispatch Energy, Derate Energy, MSS Load Following Energy, Ramping Energy Deviation and Regulating Energy, with the relevant Energy Bid prices, if any, for each Dispatch Interval in the Settlement Interval. The RTM Energy Bid Cost for a Bid Cost Recovery Eligible Resource except Participating Loads for a Settlement Interval is set to zero for any undelivered Real-Time Instructed Imbalance Energy by the Bid Cost Recovery Eligible Resource. Any Uninstructed Imbalance Energy in excess of Instructed Imbalance Energy is also not eligible for Bid Cost Recovery.

**11.8.4.1.6 RTM AS Bid Cost.**

For each Settlement Interval, the Real-Time Market AS Bid Cost shall be the product of the average Real-Time Market AS Award from each accepted AS Bid submitted in the Settlement Interval for the Real-Time Market, reduced by any relevant tier-1 No Pay capacity in that Settlement Interval (but not below zero), with the relevant AS Bid price. The average Real-Time Market AS Award for a given AS in a Settlement Interval is the sum of the 15-minute Real-Time Market AS Awards in that Settlement Interval, each divided by the number of 15-minute Commitment Intervals in a Trading Hour and prorated to the duration of the Settlement Interval (10/15 if the Real-Time Market AS Award spans the entire Settlement Interval, or 5/15 if the Real-Time Market AS Award spans half the Settlement Interval).

**11.8.4.2 RTM Market Revenue Calculations.**

**11.8.4.2.1** For each Settlement Interval in a CAISO Real-Time Market Commitment Period, the RTM Market Revenue for a Bid Cost Recovery Eligible Resource is the algebraic sum of the following:

- (a) The sum of the products of the Instructed Imbalance Energy (including Energy from Minimum Load of Bid Cost Recovery Eligible Resources committed in RUC where for Pumped-Storage Hydro Units and Participating Load operating in the pumping mode or serving Load, the MWh is negative), except Standard Ramping Energy, Residual Imbalance Energy, Exceptional Dispatch Energy, Derate Energy, MSS Load following Energy, Ramping Energy Deviation and Regulation Energy, with the relevant Real-Time Market LMP, for each Dispatch Interval in the Settlement Interval;
- (b) The product of the Real-Time Market AS Award from each accepted Real-Time Market AS Bid in the Settlement Interval with the relevant ASMP, divided by the number of fifteen (15)-minute Commitment Intervals in a Trading Hour (4), and prorated to the duration of the Settlement Interval.
- (c) The relevant tier-1 No Pay charges for that Bid Cost Recovery Eligible Resource in that Settlement Interval.

**11.8.4.2.2** For each Settlement Interval in a non-CAISO Real-Time Market Commitment Period, the Real-Time Market Revenue for a Bid Cost Recovery Eligible Resource is the algebraic sum of the following:

- (a) The sum of the products of the Instructed Imbalance Energy (excluding the Energy from Minimum Load of Bid Cost Recovery Eligible Resources committed in RUC), except, HASP Self-Scheduled Energy, Standard Ramping Energy, Residual Imbalance Energy, Exceptional Dispatch Energy, Derate Energy, MSS Load Following Energy, Ramping Energy Deviation and Regulating Energy, with the relevant Real-Time Market LMP, for each Dispatch Interval in the Settlement Interval;
- (b) The product of the Real-Time Market AS Award from each accepted Real-Time Market AS Bid in the Settlement Interval with the relevant ASMP, divided by the number of fifteen (15)-minute Commitment Intervals in a Trading Hour (4), and prorated to the duration of the Settlement Interval.
- (c) The relevant tier-1 No Pay charges for that Bid Cost Recovery Eligible Resource in that Settlement Interval.

#### **11.8.4.3 RTM Bid Cost Recovery for Metered Subsystems.**

In addition to the exclusions to actual Energy delivered as provided in Section 11.8.4, for MSS resources, the Energy subject to RTM Bid Cost Recovery also excludes Minimum Load Energy if the resource is not committed by the CAISO in the Real-Time. As provided below, the RTM Bid Cost Recovery for MSS Operators differs based on whether the MSS Operator has elected gross or net Settlement; except that the calculation of the RTM Bid Costs and RTM Market Revenues for Ancillary Services will be as provided in Sections 11.8.4.1.6 and 11.8.4.2 and does not vary on the basis of the MSS's election of gross or net Settlement.

**11.8.4.3.1 MSS Elected Gross Settlement.**

For an MSS Operator that has elected gross Settlement, regardless of other MSS optional elections (Load following or RUC opt-in or out), the RTM Bid Cost and RTM Market Revenue of the Real-Time delivered Instructed Imbalance Energy subject to Bid Cost Recovery is determined for each resource identically to the non-MSS resource following the general principles in Section 11.8.4. The RTM Bid Cost Shortfall or Surplus for Energy and Ancillary Services in total is determined for each Trading Hour of the RTM over the Trading Day by taking the algebraic difference between the RTM Bid Cost and RTM Market Revenue.

**11.8.4.3.2 MSS Elected Net Settlement.**

For MSS entities that have elected net Settlement regardless of other MSS optional elections (i.e., Load following or not, or RUC opt-in or out), unlike non-MSS resources, the RTM Bid Cost Shortfall or Surplus is treated at the MSS level and not at the resource specific level, and is calculated as the RTM Bid Cost Shortfall or Surplus of all BCR Eligible Resources within the MSS. In calculating the Energy RTM Market Revenue for all the resources within the MSS as provided in Section 11.8.4.2, the CAISO will use the Real-Time Settlement Interval MSS Price. The RTM Bid Cost Shortfall and Surplus for Energy and Ancillary Services are first calculated separately for the MSS for each Settlement Interval of the Trading Day, with qualified Start-Up Cost and qualified Minimum Load Cost included into the RTM Bid Cost Shortfalls and Surpluses of Energy calculation. The RTM Bid Cost Shortfall or Surplus for Energy for each Settlement Interval is pro-rated by the ratio of the net positive metered Generation to the gross metered Generation of the MSS for that interval. If the MSS metered CAISO Demand is in excess of the MSS Generation in a given Settlement Interval, the CAISO will set the pro-rating ratio for that Settlement Interval to zero. The MSS's overall IFM Bid Cost Shortfall or Surplus is then calculated as the algebraic sum of the pro-rated RTM Bid Cost Shortfalls and Surpluses for Energy and the RTM Bid Cost Shortfalls and Surpluses for AS for each Settlement Interval.



### **11.8.5 Unrecovered Bid Cost Uplift Payment.**

Scheduling Coordinators shall receive an Unrecovered Bid Cost Uplift Payment for a Bid Cost Recovery Eligible Resource, including resources for MSS Operators that have elected gross Settlement, if the net of all IFM Bid Cost Shortfalls and Surpluses calculated pursuant to Section 11.8.2, RUC Bid Cost Shortfalls and Surpluses calculated pursuant to Section 11.8.3, and the RTM Bid Cost Shortfalls and Surpluses calculated pursuant to Section 11.8.4 for that Bid Cost Recovery Eligible Resource over a Trading Day is positive. For MSS Operators that have elected net Settlement, the Unrecovered Bid Cost Uplift Payment is at the MSS level. The MSS IFM, RUC, and RTM Bid Cost Shortfall or Surplus for each market for each Trading Hour is the sum of the IFM, RUC, and RTM Bid Cost Shortfalls and Surpluses for all resources in the MSS. Scheduling Coordinators for MSS Operators that have elected net Settlement will receive an Unrecovered Bid Cost Uplift Payment if the net of all IFM, RUC, and RTM Bid Cost Shortfalls and Surpluses for that MSS over a Trading Day is positive.

### **11.8.6 System-wide IFM, RUC and RTM Bid Cost Uplift Allocation.**

#### **11.8.6.1 Determination of IFM, RUC and RTM Bid Cost Uplift.**

For each Settlement Interval, the CAISO shall determine the IFM, RUC and RTM Bid Cost Uplift for purposes of allocating the IFM, RUC and RTM Bid Cost Uplift as described below. In determining the IFM, RUC and RTM Bid Cost Uplifts below, the Unrecovered Bid Cost Uplift Payments for MSS BCR Eligible Resources in Metered Subsystems where the MSS Operator has elected net Settlement will be included on an MSS basis and not on an individual resource basis.

- (i) The IFM Bid Cost Uplift shall be the net of the IFM Bid Cost Shortfalls and IFM Bid Cost Surpluses for a Settlement Interval of all Bid Cost Recovery Eligible Resources with Unrecovered Bid Cost Uplift Payments.

- (ii) The RUC Bid Cost Uplift shall be the net of the RUC Bid Cost Shortfalls and RUC Bid Cost Surpluses for a Settlement Interval of all Bid Cost Recovery Eligible Resources with Unrecovered Bid Cost Uplift Payments.
- (iii) The RTM Bid Cost Uplift shall be the net of the RTM Bid Cost Shortfalls and RTM Bid Cost Surpluses for a Settlement Interval of all Bid Cost Recovery Eligible Resources with Unrecovered Bid Cost Uplift Payments.

#### **11.8.6.2 Sequential Netting of IFM, RUC and RTM Bid Cost Uplift.**

For each Settlement Interval, the Net IFM, RUC or Real-Time Market Bid Cost Uplift is determined for the purposes of allocating Net IFM, RUC or Real-Time Market Bid Cost Uplift by the following netting rules applied sequentially:

- (i) The Net IFM Bid Cost Uplift, if positive, is reduced to the greater of zero or any positive IFM Bid Cost Uplift offset by negative Real-Time Market Bid Cost Uplift first and offset by any negative RUC Bid Cost Uplift.
- (ii) The Net RUC Bid Cost Uplift is equal to the greater of zero or any positive RUC Bid Cost Uplift offset by any remaining negative Real-Time Market Bid Cost Uplift after netting negative Real-Time Market Bid Cost Uplift in (i) and offset by any negative IFM Bid Cost Uplift.
- (iii) The Net Real-Time Market Bid Cost Uplift is equal to the greater of zero or any positive Real-Time Market Bid Cost Uplift offset by any remaining negative RUC Bid Cost Uplift after netting negative RUC Bid Cost Uplift in (i) above and any remaining negative IFM Bid Cost Uplift after netting negative IFM Bid Cost Uplift in (ii).

**11.8.6.3 Determination of Total Positive CAISO Markets Uplifts.**

Any negative IFM, RUC or Real-Time Market Bid Cost Uplifts are set to \$0 and any positive Net IFM Bid Cost Uplifts, RUC Bid Cost Uplifts, or Real-Time Market Bid Cost Uplifts are further reduced by the uplift ratio in 11.8.6.3(iii) to determine the Total CAISO Markets Uplift as follows;

- (i) The Total CAISO Markets Uplift is determined as the sum of the Net IFM Bid Cost Uplift, the Net RUC Bid Cost Uplift, and the Net Real-Time Market Bid Cost Uplift, for all Settlement Intervals in the IFM, RUC and Real-Time Market.
- (ii) The Total Positive CAISO Market Uplift, is determined as the sum of the positive IFM Bid Cost Uplift, positive RUC Bid Cost Uplift and positive Real-Time Market Bid Cost Uplift, for all Settlement Intervals in the IFM, RUC and Real-Time Market.
- (iii) The uplift ratio is equal to the Total CAISO Markets Uplift divided by the Total Positive CAISO Market Uplift.

**11.8.6.4 Allocation of Net IFM Bid Cost Uplift.**

For each Trading Hour of the IFM the hourly Net IFM Bid Cost Uplift is determined as the sum over the Settlement Intervals in that Trading Hour of the product of any positive Net IFM Bid Cost Uplift remaining in the Settlement Interval after the sequential netting in Section 11.8.6.2 and the application of the uplift ratio as determined in 11.8.6.3. The hourly Net IFM Bid Cost Uplift is allocated in two tiers as follows:

- (i) In the first tier, the hourly Net IFM Bid Cost Uplift is allocated to Scheduling Coordinators in proportion to their non-negative IFM Load Uplift Obligation, but with an IFM Bid Cost Uplift rate not exceeding the ratio of the hourly Net IFM Bid Cost Uplift for the Trading Hour divided by the sum of all hourly Generation scheduled in the Day-Ahead Schedule and IFM upward AS Awards for all Scheduling Coordinators from CAISO-committed Bid Cost Recovery Eligible Resources in that Trading Hour. The IFM Load Uplift Obligation for each Scheduling Coordinator, including Scheduling Coordinators for Metered Subsystems regardless of their MSS optional elections (net/gross Settlement, Load following, RUC opt-in/out), is the difference between the total Demand scheduled in the Day-Ahead Schedule of that Scheduling Coordinator and the scheduled Generation from the Self-Schedules in the Day-Ahead Schedule of that Scheduling Coordinator, plus imports scheduled by that Scheduling Coordinator in its Day-Ahead Schedule, adjusted by any applicable Inter-SC Trades of IFM Load Uplift Obligations.
- (ii) In the second tier, Scheduling Coordinators, including Scheduling Coordinators for MSS Operators that have elected both to not follow their Load and gross Settlement, will be charged for an amount equal to any remaining hourly Net IFM Bid Cost Uplift for the Trading Hour in proportion to the Scheduling Coordinator's Measured Demand. Scheduling Coordinators for MSS Operators that have elected to either follow their Load or net Settlement, or both, will be charged for an amount equal to any remaining hourly Net IFM Bid Cost Uplift for the Trading Hour in proportion to their MSS Aggregation Net Measured Demand.

### **11.8.6.5 Allocation of RUC Compensation Costs.**

#### **11.8.6.5.1 Calculation of RUC Compensation Costs.**

For each Trading Hour of the RUC, the CAISO shall calculate the RUC Compensation Costs as the sum of the RUC Availability Payment and the hourly Net RUC Bid Cost Uplift.

#### **11.8.6.5.2 Calculation of the Hourly Net RUC Bid Cost Uplift.**

For each Trading Hour of the RUC, the hourly Net RUC Bid Cost Uplift is determined as the sum over the Settlement Intervals in that Trading Hour of the product of any positive Net RUC Bid Cost Uplift remaining in the Settlement Interval after the sequential netting in Section 11.8.6.2 and the application of the uplift ratio as determined in 11.8.6.3. Consistent with Section 31.5.2.2, Scheduling Coordinators for MSS Operators that have opted out of RUC participation, or opt-out of RUC by default as a result of having elected to Load follow, will not be subject to any RUC Bid Cost Uplift allocation. Scheduling Coordinators for MSS Operators that have opted-into RUC, and consequently also are non-Load following and under gross Settlement, will receive the allocation of hourly Net RUC Bid Cost Uplift like all other Scheduling Coordinators.

#### **11.8.6.5.3 Allocation of the RUC Compensation Costs.**

- (i) In the first tier, the RUC Compensation Costs are allocated to Scheduling Coordinators, based on their Net Negative CAISO Demand Deviation in that Trading Hour. The Scheduling Coordinator shall be charged at a rate which is the lower of (1) the RUC Compensation Costs divided by the Net Negative CAISO Demand Deviation for all Scheduling Coordinators in that Trading Hour; or (2) the RUC Compensation Costs divided by the RUC Capacity, for all Scheduling Coordinators in that Trading Hour. Participating Load shall not be subject to the first tier allocation of RUC Compensation Costs.

- (ii) In the second tier, the Scheduling Coordinator shall be charged an amount equal to any remaining **RUC Compensation Costs** in proportion to the Scheduling Coordinator's metered CAISO Demand in any Trading Hour.

**11.8.6.6 Allocation of Net RTM Bid Cost Uplift.**

The hourly Net **RTM Bid Cost** Uplift is computed for the Trading Hour as the product of the uplift ratio in 11.8.6.3 and the sum over all Settlement Intervals of the Trading Hour of any positive Net **RTM Bid Cost** Uplift after the sequential netting in Section 11.8.6.2. The hourly **RTM Bid Cost** Uplift is allocated to Scheduling Coordinators, including Scheduling Coordinators for MSS Operators that have elected to not follow their Load and gross Settlement, in proportion to their Measured Demand for the Trading Hour. For Scheduling Coordinators for MSS Operators that have elected to either Load follow or net Settlement, or both, the hourly RTM Bid Cost Uplift is allocated in proportion to their MSS Aggregation Net Measured Demand. Accordingly, each Scheduling Coordinator shall be charged an amount equal to its Measured Demand times the **RTM Bid Cost** Uplift rate, where the **RTM Bid Cost** Uplift rate is computed as the Net RTM Bid Cost Uplift amount divided by the sum of Measured Demand across all Scheduling Coordinators for the Trading Hour.

**11.9 Inter-SC Trades.**

**11.9.1 Physical Trades.**

Inter-SC Trades of Energy in the Day-Ahead Market will be settled separately from Inter-SC Trades of Energy in the HASP. Both the Day-Ahead and HASP Inter-SC Trades of Energy will be settled on an hourly basis and the two respective Settlement amounts between the two parties for each market shall net to zero. All MWh quantities of Physical Trades submitted to the CAISO for Settlement in the Day-Ahead Market that are confirmed through the Physical Trade post market confirmation as provided in Section 28.1.6.3 shall be settled at the Day-Ahead LMP at the relevant PNode. All MWh quantities of

Physical Trades that are reduced during the Physical Trade post market confirmation shall be settled at the relevant Existing Zone (EZ) Generation Trading Hub price. All MWh quantities of Physical Trades submitted to the CAISO for Settlement in the HASP that are confirmed through the Physical Trade post market confirmation pursuant to Section 28.6.1.3 shall be settled at the simple average of Dispatch Interval LMP at the relevant Pricing Node. All MWh quantities of Physical Trades submitted for Settlement in HASP that are reduced during the Physical Trade post market confirmation shall be settled at the relevant Real-Time price for the EZ Generation Trading Hub.

#### **11.9.2 Inter-SC Trades at Aggregated Pricing Nodes.**

Inter-SC Trades of Energy at Aggregated Pricing Nodes in the Day-Ahead Market will be settled separately from Inter-SC Trades at Aggregated Pricing Nodes in the HASP. Both the Day-Ahead and HASP Inter-SC Trades at Aggregated Pricing Nodes will be settled on an hourly basis and the two respective Settlement amounts between the two parties for each market shall net to zero. All MWh quantities of Inter-SC Trades at Aggregated Pricing Nodes submitted to the CAISO for Settlement in the Day-Ahead Market shall be settled at the relevant Day-Ahead Aggregated Pricing Node price such as the Existing Zone (EZ) Generation Trading Hub price or LAP price. All MWh quantities of Inter-SC Trades at Aggregated Pricing Nodes submitted to the CAISO for Settlement in the HASP shall be settled at the relevant Real-Time Aggregated Pricing Node price.

#### **11.10 Settlements for Ancillary Services.**

##### **11.10.1 Settlements for Contracted Ancillary Services.**

The CAISO shall operate a daily Settlement function for Ancillary Services it contracts for with Scheduling Coordinators. The Scheduling Coordinators supplying Ancillary Services will be paid based on the prices and quantities determined in accordance with this Section 11.10.

#### **11.10.1.1 Ancillary Services in DAM.**

The IFM calculates hourly Day-Ahead Ancillary Service Awards and establishes Ancillary Service Marginal Prices (ASMPs) for the accepted Regulation Up, Regulation Down, Spinning Reserve and Non-Spinning Reserve Bids. The IFM co-optimizes Energy and Ancillary Services subject to resource, network and regional constraints, and awards Ancillary Services resources in economic merit order subject to those constraints. For each service, the economic merit order is determined as the sum of the Ancillary Service capacity Bid price of the resource and the foregone opportunity cost of Energy in the IFM for that resource. Payments to Scheduling Coordinators shall be equal to the ASMP for the each Ancillary Service multiplied by the quantity of the capacity awarded for the Ancillary Service. The ASMP is marginal cost of providing an Ancillary Service in the relevant resource location (\$/MW/hr). The ASMPs determined by the IFM optimization process at each resource location where an Ancillary Service Bid is accepted will be no lower than the sum of (i) the Ancillary Service capacity Bid price submitted for that resource, and (ii) the foregone opportunity cost of Energy in the IFM for that resource. The foregone opportunity cost of Energy is measured as the positive difference between the IFM LMP at the resource's Pricing Node and the resource's Energy Bid price (e.g., if the resource's Energy Bid price is higher than the LMP, the opportunity cost is \$0). If a resource has submitted an Ancillary Service Bid but no Energy Bid and is under an obligation to offer Energy in the DAM (e.g. a non-hydro Resource Adequacy Resource), its Default Energy Bid will be used, and its opportunity cost calculated accordingly. If a resource has submitted an Ancillary Service Bid but no Energy Bid and is not under an obligation to offer Energy in the DAM, its Energy opportunity cost is \$0 (since it cannot be dispatched for Energy even if the LMP at its Location goes to the Bid cap). Suppliers with Self-Provided Ancillary Services are not eligible to receive ASMPs; Self-Provided Ancillary Services are priced at the user rate for the service being self-provided.



**11.10.1.1.1 Congestion Charges for Day-Ahead Intertie Ancillary Service Awards**

Suppliers of Day-Ahead Ancillary Services Awards over the Interties also are charged for Congestion if the Ancillary Service Award is at a congested Scheduling Point. The charge shall be equal to the Shadow Price of the applicable congested Scheduling Point multiplied by the quantity of the Ancillary Service Award for the Settlement Period.

**11.10.1.2 Ancillary Services Provided in HASP.**

For Ancillary Services provided from System Resources in the HASP, hourly pre-dispatch schedules, awards, and prices are established in HASP optimization. Suppliers of Ancillary Services from System Resources are paid an amount equal to the product of the simple average of the ASMPs computed four 15-minute intervals of HASP for the each Ancillary Service times the quantity of the capacity awarded for the Ancillary Service for the Settlement Period. Scheduling Coordinators for resources that receive an Ancillary Service Award in the Day-Ahead Market that are unable to satisfy their Ancillary Services Obligation due to an Outage or derate, may use the HASP to substitute another resource to provide the awarded Ancillary Service. The Scheduling Coordinator for the substituting resource must: (a) submit an Outage notification to the CAISO indicating that the awarded resource is not available, and (b) provide another resource to fulfill the awarded Ancillary Service. The substitution must clear the co-optimization in HASP (including Ancillary Service Regional Limits) and the substitution will be exposed to a price difference between the ASMPs, or if self provided, between the ASMP and the user rate, if any. Scheduling Coordinators that receive an Ancillary Service Award at the Scheduling Point in HASP are charged the simple average of the 15-minute MCC using the relevant Shadow Price of the applicable congested Scheduling Point.

**11.10.1.2.1 Congestion Charges for HASP Intertie Ancillary Service Awards.**

Suppliers of HASP Ancillary Services Awards at Scheduling Points are also charged for Congestion if the Ancillary Service Award is at a congested Scheduling Point. The charge shall be equal to the simple average of the 15 minute Shadow Price of the applicable congested Scheduling Point multiplied by the quantity of the Ancillary Service Award for the Settlement Period.

**11.10.1.3 Ancillary Services Provided in Real-Time.**

For Ancillary Services provided from resources internal to the CAISO Balancing Authority Area in the Real-Time Market, the RTUC process that is performed every fifteen (15) minutes establishes fifteen (15) minute Ancillary Service Schedules, awards, and prices for the upcoming quarter of the Operating Hour. Suppliers of Ancillary Services from resources internal to the CAISO Balancing Authority Area are paid a price equal to  $\frac{1}{4}$  of the fifteen (15) minute ASMP (in \$/MW/h) in each fifteen (15) minute interval for the each Ancillary Service times the amount of the capacity awarded (MW) for the Ancillary Service in the relevant Ancillary Services Region. Suppliers with Ancillary Service Awards receive the ASMP at the resource's location. Suppliers that self-provide Ancillary Services in the Real-Time Market are not eligible to receive ASMP; rather to the extent the self-provision is qualified it will be valued at the user rate for the relevant service (*i.e.*, will either reduce the Ancillary Services Obligation or receive the user rate if it exceeds the Scheduling Coordinator's Ancillary Service Obligation).

**11.10.1.3.1 Congestion Charges for Real-Time Intertie Ancillary Service Awards from Dynamic System Resources.**

Suppliers of Real-Time Ancillary Services Awards at Scheduling Points for Dynamic System Resources are also charged for Congestion if the award is at a congested Scheduling Point. The charge shall be equal to the simple average of the fifteen (15) minute Shadow Price of the applicable congested Scheduling Point multiplied by the quantity of the Ancillary Service Award for the Settlement Period.

**11.10.1.4 Voltage Support.**

The total payments for each Scheduling Coordinator for Voltage Support shall be the sum of the short-term procurement payments, based on opportunity cost, as described in Section 8.3.8, and the payments under long-term contracts.

**11.10.1.5 Black Start.**

**Quantities.** The following quantities shall be used in the Settlement process for Black Start:

$EnQBS_{ijt}$  = Energy output from Black Start made by Generating Unit i from Scheduling Coordinator j (or Black Start Generator j, as the case may be) for Settlement Period t, pursuant to the CAISO's order to produce.

**Prices.** The prices used in the Settlement process for Black Start are those described in the contracts referred to in Section 8.3.9.

$Adjustment$  = penalty described in Section 8.10.7.

**Payments.** Scheduling Coordinators for owners of Reliability Must-Run Units (or Black Start Generators, as the case may be) shall receive the following payments for Energy output from Black Start facilities:

$$BSEN_{ijt} = (EnQBS_{ijt} * EnBid_{ijt}) + BSSUP_{ijt-Adjustment}$$

where  $BSSUP_{ijt}$  is the start-up payment for a Black Start successfully made by Generating Unit i of Scheduling Coordinator j (or Black Start Generator j) in Trading Interval t calculated in accordance with the applicable Reliability Must-Run Contract (or the Interim Black Start Agreement as the case may be).

**11.10.1.6 Inadvertent Interchange between *Balancing Authority* Areas.**

The CAISO shall calculate imbalances between scheduled, instructed and actual quantities of Energy provided based upon Meter Data obtained pursuant to Section 10. Schedules between *Balancing Authority* Areas shall be deemed as being delivered in accordance with Good Utility Practice. Dynamic Schedules shall be integrated over time through the Operating Hour and the MWh quantity obtained by such integration shall be deemed to be the associated scheduled Interchange for that Operating Hour. The difference between actual and scheduled Interchange shall then be addressed in accordance with the WECC and NERC inadvertent Interchange practices and procedures. Following this practice, all Dynamic Schedules for Ancillary Services provided to the CAISO from Dynamic System Resources in other *Balancing Authority* Areas shall be deemed delivered to the CAISO. The difference between the Energy requested by the CAISO and that actually delivered by the other *Balancing Authority* Area shall then be accounted for and addressed through the WECC and NERC inadvertent Interchange practices and procedures.

**11.10.2 Settlement for User Charges for Ancillary Services.**

The CAISO shall determine a separate hourly user rate for Regulation Down Reserve, Regulation Up Reserve, Spinning Reserve, and Non-Spinning Reserve purchased for each Settlement Period. The hourly user rates for Regulation Down, Regulation Up, Spinning Reserve, and Non-Spinning Reserve include the cost incurred by the CAISO across the DAM, HASP, and the Real-Time Market to procure this service. In computing the user rate for each service the quantity (MW) and costs of any substituting Ancillary Service will be treated as if they are costs and MW associated with the Ancillary Service need they are being used to fulfill. Each rate will be charged to Scheduling Coordinators on a volumetric basis applied to each Scheduling Coordinator's obligation for the specific Ancillary Service concerned which it has not self-provided, as adjusted by any Inter-SC Trades of Ancillary Services.

Each Scheduling Coordinator's obligation for Regulation Down Reserve, Regulation Up Reserve, Spinning Reserve, and Non-Spinning Reserve shall be calculated in accordance with this Section 11.10.2, notwithstanding any adjustment to the quantities of each Ancillary Service purchased by the CAISO in accordance with Section 8.2.3.5. The cost of Voltage Support and Black Start shall be allocated to Scheduling Coordinators as described in Sections 11.10.7 and 11.10.8.

Ancillary Services Obligations for an individual Scheduling Coordinator (before taking into account Self-Provided Ancillary Services) or Inter-SC Trades of Ancillary Services) may be negative. Credits for such negative obligations will be in accordance with the rates calculated in this Section 11.10.2, except that a Scheduling Coordinator's credit shall be reduced pro rata to the extent the sum of the negative obligations of all Scheduling Coordinators with the negative Ancillary Services Obligation (before self-provision or Inter-SC Trade) exceeds the obligation of all Scheduling Coordinators with positive obligation net of Self-Provided Ancillary Services, as specified in Section 11.10.5 in any Settlement Period, the net procurement quantity of Regulation Up, Regulation Down, Spinning Reserve, or Non-Spinning Reserve purchased by the CAISO in the DAM, HASP, and the Real-Time Market due to the operation of Section 8.2.3.5 is zero, then the user rate for that Ancillary Service type will be zero.

With respect to each Settlement Period, in addition to the user rates determined in accordance with this Section 11.10.2, each Scheduling Coordinator shall be charged an additional amount equal to its proportionate share, based on total purchases by Scheduling Coordinators of Regulation Down, Regulation Up, Spinning Reserve, and Non-Spinning Reserve of the amount, if any, by which (i) the total payments to Scheduling Coordinators pursuant to this Section 11.10.2 for the DAM, HASP, and the Real-Time Market, exceed (ii) the total amounts charged to Scheduling Coordinators pursuant to this Section 11.10.2, for the DAM, HASP, and the Real-Time Market. If total amounts charged to Scheduling Coordinators exceed the total payments to Scheduling Coordinators, each Scheduling Coordinator will be refunded its proportionate share, based on total purchases by Scheduling Coordinators of Regulation Down, Regulation Up, Spinning Reserve, and Non-Spinning Reserve.

With respect to each Settlement Period, in addition to Ancillary Service charges at the applicable user rates determined in accordance with this Section 11.10.2, each Scheduling Coordinator shall be charged additional neutrality adjustment amounts for each Ancillary Service type pursuant to Sections 11.10.2.4, 11.10.2.2.3, 11.10.3.3, and 11.10.4.3 and a neutrality adjustment amount for upward Ancillary Service types pursuant to Section 11.14.

**11.10.2.1 Regulation Service.**

Regulation Up Reserve and Regulation Down Reserve charges shall be calculated separately.

**11.10.2.1.1 Regulation Down Reserve.**

The charges a Scheduling Coordinator must pay for Regulation Down Reserve for each Settlement Period of the Trading Day are based upon the product of Scheduling Coordinator's hourly obligation for Regulation Down Reserve (MW) and the hourly user rate for Regulation Down Reserve (\$/MW).

**11.10.2.1.2 Hourly User Rate for Regulation Down Reserve.**

The hourly user rate for Regulation Down is the total Regulation Down Reserve Cost (\$) for each Settlement Period divided by the total Net Procurement of Regulation Down by the CAISO (MW) for each Settlement Period. The CAISO's Regulation Down Reserve Cost is equal to: (i) the revenues paid to the suppliers of the total awarded Regulation Down Reserve capacity in the DAM, HASP, and Real-Time Market for the Settlement Period, minus, (ii) the payments rescinded in the Settlement Period due to the unavailability of the Regulation Down under any of the provisions of Section 8.10.8. The Net Procurement of Regulation Down Reserves is equal to: (i) the amount (MW) of total awarded Regulation Down Reserve capacity in the Day-Ahead Market, HASP, and Real-Time Market for the Settlement Period, minus, (ii) the Regulation Down Reserve capacity associated with payments rescinded for the Settlement Period pursuant to any of the provisions of Section 8.10.8.

### **11.10.2.1.3      Hourly Net Obligation for Regulation Down Reserve.**

Each Scheduling Coordinator's hourly net obligation for Regulation Down is determined as follows: the Scheduling Coordinator's metered CAISO Demand multiplied by the Scheduling Coordinator's Ancillary Services Obligation percentage for Regulation Down, reduced by accepted Self-Provided Ancillary Services specified as Regulation Down, plus or minus any Regulation Down Reserve obligations for the hour acquired or sold through Inter-SC Trades of Ancillary Services. The Scheduling Coordinator's Ancillary Services Obligation percentage is the total hourly Real-Time Regulation Down required divided by the hourly metered CAISO Demand.

### **11.10.2.1.4      Regulation Down Neutrality Adjustment.**

For each Settlement Period, the difference between the Regulation Down Reserve Cost determined in Section 11.10.2.1.2 and the total revenue collected from all Scheduling Coordinators in the Regulation Down charge pursuant to Section 11.10.2.1.3 shall be allocated to all Scheduling Coordinators in proportion to their Regulation Down obligation quantity.

### **11.10.2.2          Regulation Up.**

The charges a Scheduling Coordinator must pay for Regulation Up for each Settlement Period of the Trading Day are based upon the product of the Scheduling Coordinator's hourly obligation for Regulation Up (MW) and the hourly user rate for Regulation Up (\$/MW).

#### **11.10.2.2.1      Hourly User Rate for Regulation Up.**

The hourly user rate for Regulation Up is the total Regulation Up cost (\$) for each Settlement Period divided by the total Net Procurement of Regulation Up by the CAISO (MW) for each Settlement Period.

The CAISO's Regulation Up cost is equal to: (i) the revenues paid to the suppliers of the total awarded Regulation Up capacity in the Day-Ahead Market, HASP, and Real-Time Market for the Settlement Period, minus, (ii) the payments rescinded in the Settlement Period due to the unavailability of the Regulation Up under any of the provisions of Section 8.10.8. The Net Procurement of Regulation Up is equal to: (i) the amount (MWs) of total awarded Regulation Up capacity in the Day-Ahead Market, HASP, and Real-Time Market for the Settlement Period, minus, (ii) the Regulation Up capacity associated with payments rescinded for the Settlement Period, pursuant to any of the provisions of Section 8.10.8.

#### **11.10.2.2.2 Hourly Net Obligation for Regulation Up.**

Each Scheduling Coordinator's hourly net obligation for Regulation Up is determined as follows: (a) the Scheduling Coordinator's metered CAISO Demand multiplied by the Scheduling Coordinator's Ancillary Services Obligation percentage for Regulation Up, reduced by accepted Self-Provided Ancillary Services specified as Regulation Up, plus or minus any Regulation Up Reserve Obligations for the hour acquired or sold through Inter-SC Trades of Ancillary Services. The Scheduling Coordinator's Ancillary Services Obligation percentage for Regulation Up is the total hourly Real-Time Regulation Up divided by the hourly metered CAISO Demand.

#### **11.10.2.2.3 Regulation Up Neutrality Adjustment.**

For each Settlement Period, the difference between the Regulation Up net requirement at the hourly Regulation Up user rate determined in Section 11.10.2.2.2 and the total revenue collected from all Scheduling Coordinators in the Regulation Up charge pursuant to Section 11.10.2.2.1 shall be allocated to all Scheduling Coordinators in proportion to their Regulation Up Reserve Obligation quantity. The Regulation Up net requirement is the Real-Time Regulation Up requirement net of the sum of effective qualified Regulation Up self-provision over all resources.



### **11.10.3 Spinning Reserves.**

The charges a Scheduling Coordinator must pay for Spinning Reserves for each Settlement Period of the Trading Day are based upon the product of the Scheduling Coordinator's hourly obligation for Spinning Reserves (MW) and the hourly user rate for Spinning Reserves (\$/MW).

If the Scheduling Coordinator's Operating Reserve Obligation (before self provision or Inter-SC Trade of Spinning Reserve or Non-Spinning Reserve) is negative, the SC may be entitled to a credit rather than a charge. In that case, the quantity of the SC's negative Operating Reserve Obligation (before self provision and Inter-SC Trade) shall be multiplied by the Negative Operating Reserve Obligation Credit Adjustment Factor (NOROCFAF) computed for the Trading Hour as specified in Section 11.10.5.

#### **11.10.3.1 Hourly User Rate for Spinning Reserves.**

The hourly user rate for Spinning Reserves is the ratio of: 1) sum of the portion of Spinning Reserve Cost used to meet the spin requirement and the portion of Regulation Up cost that can substitute for Spinning Reserve and 2) the Net Procurement quantity of Spinning Reserves by the CAISO (\$/MW). The cost of Regulation Up substituting for Spinning Reserve is the user rate for Regulation Up multiplied by the quantity of Regulation Up used to satisfy the Spinning Reserve requirement.

The CAISO's Spinning Reserve Cost is equal to: (i) the revenues paid to the suppliers of the total awarded Spinning Reserve capacity in the Day-Ahead Market, HASP, and Real-Time Market, minus, (ii) the payments rescinded due to either the failure to conform to Dispatch Instructions or the unavailability of the Spinning Reserves under Section 8.10.8. The Net Procurement of Spinning Reserves is equal to: (i) the amount (MWs) of total awarded Spinning Reserve capacity in the Day-Ahead Market, HASP, and Real-Time Market, minus, (ii) the Spinning Reserve capacity associated with payments rescinded pursuant to any of the provisions of Section 8.10.8. The amount (MW) of awarded Spinning Reserve capacity includes the amounts (MW) associated with any Regulation Up Reserve capacity used as Spinning Reserve under Section 8.2.3.5.

### **11.10.3.2      Hourly Net Obligation for Spinning Reserves.**

Each Scheduling Coordinator's hourly net obligation for Spinning Reserves is determined as follows: the Scheduling Coordinator's total Ancillary Services Obligation for Operating Reserve for the hour multiplied by the ratio of the CAISO's total Ancillary Services Obligation for Spinning Reserves in the hour to the CAISO's total Operating Reserve Obligations in the hour (and if negative, multiplied by NOROCAP), reduced by the accepted Self-Provided Ancillary Services for Spinning Reserves, plus or minus any Spinning Reserve Obligations for the hour acquired or sold through Inter-SC Trades of Ancillary Services. The Scheduling Coordinator's total Operating Reserve Obligation for the hour is the sum of five percent (5%) of its Real-Time Demand (except the Demand covered by firm purchases from outside the CAISO Balancing Authority Area) met by Generation from hydroelectric resources plus seven percent (7%) of its Demand (except the Demand covered by firm purchases from outside the CAISO Balancing Authority Area) met by Generation from non-hydroelectric resources, plus one hundred percent (100%) of any Interruptible Imports, which can only be submitted as a Self-Schedule in the Day-Ahead Market, and on-demand obligations which it schedules.

### **11.10.3.3      Spinning Reserve Neutrality Adjustment.**

For each Settlement Period, the difference between the Spinning Reserve net requirement at the hourly Spinning Reserve user rate determined in Section 11.10.3.1 and the total revenue collected from all Scheduling Coordinators in the Spinning Reserve charge pursuant to Section 11.10.3.2 shall be allocated to all Scheduling Coordinators in proportion to their Spinning Reserve obligation quantity. The Spinning Reserve net requirement is the Real-Time Spinning Reserve requirement net of the sum of effective qualified Spinning Reserve self-provision over all resources.

#### **11.10.4 Non-Spinning Reserves.**

The charges an SC must pay for Non-Spinning Reserves for each Settlement Period of the Trading Day are based upon the product of SC's hourly obligation for Non-Spinning Reserves (MWs) and the hourly user rate for Non-Spinning Reserves (\$/MW).

If the Scheduling Coordinator's Operating Reserve Obligation (before self provision or Inter-SC Trade of Spinning Reserve or Non-Spinning Reserve) is negative, the Scheduling Coordinator may be entitled to a credit rather than a charge. In that case, the quantity of the Scheduling Coordinator's negative Non-Spinning Reserve Obligation (before self provision and Inter-SC Trade) shall be multiplied by the Negative Operating Reserve Obligation Credit Adjustment Factor (NOROCAP) computed for the Trading Hour as specified in Section 11.10.5.

##### **11.10.4.1 Hourly User Rate for Non-Spinning Reserves.**

The hourly user rate for Non-Spinning Reserves is calculated as the ratio of: i) the sum of the portion of the Non-Spinning Reserve Cost used to meet the Non-Spinning requirement and a portion of the Regulation Up and Spinning Reserve costs that can substitute for Non-Spinning Reserve and ii) the Net Procurement quantity of Non-Spinning Reserves by the CAISO (\$/MW). The CAISO's Non-Spinning Reserve Cost includes the costs associated with any Regulation Up Reserve or Spinning Reserve capacity used as Non-Spinning Reserve under Section 8.2.3.5.

The CAISO's Non-Spinning Reserve Cost is equal to: (i) the revenues paid to the suppliers of the total awarded Non-Spinning Reserve capacity in the Day-Ahead Market, HASP, and Real-Time Market, minus, (ii) the payments rescinded due to either the failure to conform to CAISO Dispatch Instructions or the unavailability of the Non-Spinning Reserves under Section 8.10.8. The Net Procurement of Non-Spinning Reserves is equal to: (i) the amount (MWs) of total awarded Non-Spinning Reserve capacity in the Day-Ahead Market, HASP, and Real-Time Market, minus, (ii) the Non-Spinning Reserve capacity associated with payments rescinded pursuant to any of the provisions of Section 8.10.8. The amount (MW) of

awarded Spinning Reserve capacity includes the amounts (MW) associated with any Regulation Up Reserve or Spinning Reserve capacity used as Non-Spinning Reserve under Section 8.2.3.5.

#### **11.10.4.2 Hourly Net Obligation for Non-Spinning Reserves.**

Each Scheduling Coordinator's hourly net obligation for Non-Spinning Reserves is determined as follows: the product of the Scheduling Coordinator's total Ancillary Services Obligation for Operating Reserve for the hour (and if negative, multiplied by NOROCAP) multiplied by the ratio of the CAISO's total Ancillary Services Obligation for Non-Spinning Reserves in the hour to the CAISO's total Operating Reserve obligations in the hour, reduced by the accepted Self-Provided Ancillary Services for Non-Spinning Reserves, plus or minus any Non-Spinning Reserve Obligations for the hour acquired or sold through Inter-SC Trades of Ancillary Services. The Scheduling Coordinator's total Operating Reserve Obligation for the hour is the sum of **five percent (5%)** of its Real-Time Demand (except the Demand covered by firm purchases from outside the CAISO **Balancing Authority** Area) met by Generation from hydroelectric resources plus **seven percent (7%)** of its Demand (except the Demand covered by firm purchases from outside the CAISO **Balancing Authority** Area) met by Generation from non-hydroelectric resources, plus **one hundred percent (100%)** of any Interruptible Imports, **which can only be submitted as a Self-Schedule in the Day-Ahead Market**, plus **five percent (5%)** (if hydro) or **seven percent (7%)** (if thermal) of any unit-contingent or dynamic imports which it schedules.

#### **11.10.4.3 Non-Spinning Reserve Neutrality Adjustment.**

For each Settlement Period, the difference between the Non-Spinning Reserve **net** requirement at the hourly Non-Spinning Reserve user rate determined in Section 11.10.4.1 and the total revenue collected from all Scheduling Coordinators in the Non-Spinning Reserve **charge** pursuant to Section 11.10.4.2 shall be allocated to all Scheduling Coordinators in proportion to their Non-Spinning Reserve Obligation quantity. The Non-Spinning Reserve **net** requirement is the Real-Time Non-Spinning Reserve **requirement net of the sum of effective qualified Non-Spinning Reserve self-provision over all resources.**

#### **11.10.5 Negative Operating Reserve Obligation Credit Adjustment Factor (NOROCAF).**

In exceptional cases, it may happen that the net total quantity of Operating Reserve Obligations of all Scheduling Coordinators in a Trading Hour after accounting for qualified self provision is negative. In this case the net negative Operating Reserve Obligation is not usable by the CAISO, since Self-Provided Ancillary Service is qualified before IFM based on CAISO's estimate of firm imports. In such a case, the negative Operating Reserve Obligations of all Scheduling Coordinators with negative Operating Reserve Obligation is reduced pro rata. This is done by computing the Negative Operating Reserve Obligation Credit Adjustment Factor (NOROCAF) as the lower of one (1) or the ratio of (a) net total quantity of Operating Reserve Obligations of all Scheduling Coordinators with positive Operating Reserve Obligation net of qualified self provision of Operating Reserves, but before any Inter-SC Trades of Ancillary Services, and (b) the sum of negative Operating Reserve Obligations of all Scheduling Coordinators with negative Operating Reserve Obligation before considering any Self-Provided Ancillary Services or Inter-SC Trade of AS.

#### **11.10.6 Upward Ancillary Services Neutrality Adjustment.**

For each Settlement Period the difference between the upwards Ancillary Service cost and the product of the total Ancillary Service net requirements at the relevant Ancillary Service user rate will be allocated to all Scheduling Coordinators in proportion to their upward Ancillary Service Obligation net of Inter-SC Trades of Ancillary Services. The upwards Ancillary Service cost is the sum of the Regulation Up, Spinning Reserve and Non-Spinning Reserve cost described in Sections 11.10.2.2.1, 11.10.3.1 and 11.10.4.1. The Ancillary Service net requirement is the sum of the Real-Time Regulation Up net requirement in Section 11.10.2.2.3, Spinning Reserve net requirement in Section 11.10.3.3 and Non-Spinning Reserve net requirement in Section 11.10.4.3.

**11.10.7 Voltage Support.**

The short-term market Voltage Support user rate for Settlement Period t for Zone x shall be calculated as follows:

$$VSSTRate_{xt} = \frac{\sum_{i,j} VSST_{xijt}}{\sum_j QChargeVS_{xjt}}$$

$VSST_{xijt}$  = Voltage Support payment to Scheduling Coordinator j in respect of Generating Unit i in Zone x in the short-term market applicable to Settlement Period t.

$QChargeVS_{xjt}$  = charging quantity for Voltage Support for Scheduling Coordinator j for Settlement Period t in Zone x equal to the total metered Demand in Zone x (including exports to neighboring Control Areas and excluding metered Demand inside an MSS) by Scheduling Coordinator j for Settlement Period t.

The monthly long-term Voltage Support contract user rate for Settlement Period t for Zone x shall be calculated as follows:

$$VSLTRate_{xm} = \frac{\sum_{i,j} VSLT_{xijm}}{\sum_{jm} QChargeVS_{xjt}}$$

where:

$VSLT_{xijm}$  = long-term Voltage Support contract payment to Scheduling Coordinator j for owner of Reliability Must-Run Unit i in Zone x for month m.

The short-term market Voltage Support charges for Settlement Period t payable by Scheduling Coordinator j will be calculated as follows:

$$VSSTCharge_{jt} = VSSTRate_t * QChargeVS_{jt}$$

where  $VSSTCharge_{jt}$  is the amount payable by Scheduling Coordinator j for short-term market Voltage Support for Settlement Period t.

$VSSTRate_t$  is the short-term market Voltage Support user rate for Settlement Period t. The monthly long-term Voltage Support contract charge for month m payable by Scheduling Coordinator j will be calculated as follows:

$$VSLTCharge_m = VSLTRate_m * \sum_m QChargeVS_{jt}$$

where  $VSLTCharge_m$  is the amount payable by Scheduling Coordinator j for long-term Voltage Support for month m.

$VSLTRate_m$  is the monthly long-term Voltage Support contract user rate charged by the CAISO to Scheduling Coordinators for month m.

#### **11.10.8 Black Start.**

$QChargeBlackstart_{jt}$  = charging quantity for Black Start for Scheduling Coordinator j for Settlement Period t equal to the total metered Demand (excluding exports to neighboring **Balancing Authority** Areas and metered Demand of a MSS) by Scheduling Coordinator j for Settlement Period t.

The Black Start Energy payment user rate for Settlement Period t will be calculated as follows:

$$BSRate_t = \frac{\sum_{i,j} BSE_{ijt}}{\sum_j QChargeBlackstart_{jt}}$$

where  $BSE_{ijt}$  is the CAISO payment to Scheduling Coordinator j for owner of Reliability Must-Run Unit (or to Black Start Generator j, as the case may be) for Generating Unit i providing Black Start Energy in Settlement Period t.

The Black Start Energy user charge for Settlement Period t for Scheduling Coordinator j will be calculated as follows:

$$BSCharge_{jt} = BSRate_t * QChargeBlackStart_{jt}$$

**11.10.9 Settlements of Rescission of Payments for Ancillary Services Capacity that is Undispatchable, Unavailable, and Undelivered Capacity.**

The rescission of payments for Ancillary Services for Undispatchable, Unavailable, and Undelivered Capacity applies to Ancillary Services that are awarded in the Day-Ahead Market, HASP or Real-Time Market and the rescission will be the weighted average of the Ancillary Service Marginal Prices (ASMPs) and Ancillary Services Award amounts for a resource across the Day-Ahead Market, HASP and Real-Time Market. For Self-Provided Ancillary Service capacity that becomes Undispatchable Capacity, Unavailable Capacity, or Undelivered Capacity, the rescission of Ancillary Services self-provision in the Day-Ahead Market, HASP and Real-Time Market reduces the relevant Scheduling Coordinator's effective Ancillary Services self-provision in the Ancillary Services cost allocation, effectively resulting in a charge back at the relevant Ancillary Services rate. The rescission of payments in this Section 11.10.9 shall not apply to a capacity payment for any particular Ancillary Service if the Ancillary Service Marginal Price (ASMP) is less than or equal to zero.



**11.10.9.1      Rescission of Payments for Undispatchable Ancillary Service Capacity.**

If a Scheduling Coordinator has Undispatchable Capacity that it is obligated to supply to the CAISO during a Settlement Interval, the Ancillary Service capacity payment for the amount of Energy that cannot be delivered from the Generating Unit, Participating Load, System Unit or System Resource for the Settlement Interval shall be rescinded; provided, however, that to the extent an Ancillary Service procured in the IFM from a System Resource becomes Undispatchable Capacity due to an Intertie transmission derate before the Operating Hour for which it was procured, in rescinding the Ancillary Service capacity payment, the CAISO shall credit back to the Scheduling Coordinator any Congestion Charge assessed pursuant to Section 11.10.1.1.1, but at the lower of the Day-Ahead and HASP Shadow Price on the corresponding Intertie.

**11.10.9.2      Rescission of Payments for Unavailable Ancillary Service Capacity.**

Payments to the Scheduling Coordinator representing the Generating Unit, Participating Load, System Unit or System Resource for the Ancillary Service capacity used to supply Uninstructed Imbalance Energy shall not be eliminated to the extent of the deficiency if: (i) the deficiency in the availability of Ancillary Service capacity from the Generating Unit, Participating Load, System Unit or System Resource is attributable to control exercised by the CAISO in that Settlement Interval through AGC operation, an RMR Dispatch Notice, or an Exceptional Dispatch; or (ii) a penalty is imposed under Section 8.10.7 with respect to the deficiency.

In calculating the amount of the payment to be rescinded under Section 8.10.8.2, the CAISO shall reduce the payment for Ancillary Service capacity otherwise payable for the Settlement Interval by the product of the applicable prices and the amount of Ancillary Service capacity from which the Generating Unit, Participating Load, System Unit or System Resource has supplied Uninstructed Imbalance Energy in that Settlement Interval.

### **11.10.9.3      Rescission of Payments for Undelivered Ancillary Service Capacity.**

If the total metered output of a Generating Unit, Participating Load, System Unit or System Resource is insufficient to supply the amount of Instructed Imbalance Energy associated with a Dispatch Instruction issued in accordance with awarded or self-provided Spinning Reserves or awarded or self-provided Non-Spinning Reserves in any Settlement Interval, then the capacity payment associated with the difference between the scheduled amount of each Ancillary Service for which insufficient Energy was delivered and the actual output attributed to the response to the Dispatch Instruction shall be rescinded. However, no capacity payment shall be rescinded if the shortfall in the metered output of the Generating Unit, Participating Load, System Unit, or System Resource is less than a deadband amount published by CAISO on the CAISO Website at least twenty-four hours prior to the Settlement Interval. For any Settlement Interval with respect to which no deadband amount has been published by the CAISO, the deadband amount shall be zero MWh.

### **11.10.9.4      Allocation of Rescinded Ancillary Services Capacity Payments.**

Payments rescinded pursuant to Sections 8.10.8 and 11.10.9 shall be allocated to Scheduling Coordinators in proportion to CAISO *Balancing Authority* Area Measured Demand for the same Trading Day. Regulation capacity payments rescinded pursuant to Section 8.10.8.6 shall be allocated to Scheduling Coordinators in proportion to CAISO *Balancing Authority* Area metered CAISO Demand for the same Trading Day.

## **11.11      High Voltage Access Charges and Transition Charges, and Wheeling Through and Wheeling Out Transactions.**

### **11.11.1      High Voltage Access Charges and Transition Charges.**

High Voltage Access Charges and Transition Charges will be levied in accordance with Section 26.1 and Appendix F, Schedule 3.

**11.11.2 Wheeling Through and Wheeling Out Transactions.**

The CAISO shall calculate, account for and settle charges and payments for Wheeling Through and Wheeling Out transactions in accordance with Section 26.1.4 and Appendix F, Schedule 3, Section 14.

**11.12 Participating Intermittent Resources.**

**11.12.1 Uninstructed Energy by Participating Intermittent Resources.**

Uninstructed Imbalance Energy associated with deviations by a Participating Intermittent Resource shall be settled as provided in this Section 11.12.1 for every Settlement Period in which such Participating Intermittent Resource meets the scheduling requirements established in the Eligible Intermittent Resources Protocol in Appendix Q. The net Uninstructed Imbalance Energy in each Settlement Interval shall be assigned to a deviation account specific to each Participating Intermittent Resource. The net balance in each deviation account at the end of each calendar month shall be paid (or charged) to the Scheduling Coordinator for the associated Participating Intermittent Resource at the average price specified in Section 34.19.2.5. If the above-referenced scheduling requirements for Participating Intermittent Resources are not met, then charges (payments) for Uninstructed Imbalance Energy during such Settlement Periods shall be determined in accordance with Section 11.5.2.

**11.12.2 Allocation of Costs From Participating Intermittent Resources.**

The charges (payments) for Uninstructed Imbalance Energy that would have been calculated if the Settlement Interval deviations by each Participating Intermittent Resource were priced at the appropriate Resource-Specific Settlement Interval LMP shall be assigned to a monthly balancing account for all Participating Intermittent Resources in the CAISO **Balancing Authority** Area. The balance in such

account at the end of each month shall be netted against the aggregate payments (charges) by Scheduling Coordinators on behalf of Participating Intermittent Resources. The resulting balance shall be assigned to each Scheduling Coordinator in the same proportion that such Scheduling Coordinator's aggregate Net Negative Uninstructed Deviations in that month bears to the aggregate Net Negative Uninstructed Deviations for all Scheduling Coordinators in the CAISO **Balancing Authority** Area in that month.

**11.12.3 Payment of Participating Intermittent Resource Fees.**

**11.12.3.1 Forecasting Fee.**

A fee to defray the costs of the implementation of the forecasting service for Participating Intermittent Resources shall be assessed to Scheduling Coordinators for Participating Intermittent Resources as specified in Schedule 4 of Appendix F.

**11.12.3.2 Process Fee.**

A fee to defray the costs of processing the Participating Intermittent Resource Export Fee will be levied as specified in Schedule 4 of Appendix F.

**11.12.3.3 Participating Intermittent Resource Export Fee.**

A Participating Intermittent Resource Export Fee will be levied in accordance with Section 5.3 of Appendix Q and Schedule 4 of Appendix F.

**11.12.4 Price for Uninstructed Deviations for Participating Intermittent Resources.**

Uninstructed Deviations associated with each Participating Intermittent Resource in a Scheduling Coordinator's portfolio shall be settled as provided in Section 34.19.2.5 at the monthly weighted average Dispatch Interval LMP, where the weights are the metered Generation quantities associated with each Dispatch Interval LMP.

**11.13 Settlements and Billing of Reliability Must-Run Charges and Payments.**

**11.13.1 Objectives.**

The objective of this Section 11.13 is to inform RMR Owners which are responsible for preparation of Invoices, and Responsible Utilities, which are responsible for payment of Reliability Must-Run Charges pursuant to Section 41.7, of the manner in which the RMR Charges referred to in Section 41.6 shall be verified and settled and of the procedures regarding the billing, invoicing and payment of these RMR Charges.

**11.13.2 Accounts.**

**11.13.2.1 Facility Trust Account.**

The CAISO shall establish a Facility Trust Account for each RMR Contract. Each Facility Trust Account shall consist of two segregated commercial bank accounts: (1) an RMR Owner Facility Trust Account, which will be held in trust for the RMR Owner, and (2) a Responsible Utility Facility Trust Account, which will be held in trust for the Responsible Utility. RMR Charges paid by the Responsible Utility to the CAISO in connection with the RMR Contract will be deposited into the RMR Owner Facility Trust Account and RMR Payments from the CAISO to the RMR Owner will be withdrawn from such account, all in accordance with this Section 11.13, Section 41.6, and the RMR Contract. RMR Refunds received by the CAISO from the RMR Owner in accordance with the RMR Contract will be deposited into the Responsible Utility Facility Trust Account and such RMR Refunds will be withdrawn from such account and paid to the Responsible Utility in accordance with this Section 11.13, Section 41.6, and the RMR Contract. The RMR Owner Facility Trust Account and the Responsible Utility Facility Trust Account shall have no other funds commingled in them at any time.

**11.13.2.2 RMR Owner's Settlement Accounts.**

Each RMR Owner shall establish and maintain a Settlement Account at a commercial bank located in the United States and reasonably acceptable to the CAISO which can effect money transfers via Fed-Wire where payments to and from the Facility Trust Accounts shall be made in accordance with this Section 11.13. Each RMR Owner shall notify the CAISO of its Settlement Account details upon entering into its RMR Contract with the CAISO and may notify the CAISO from time to time of any changes by giving at least fifteen (15) days notice before the new account becomes operational.

**11.13.3 RMR Payments Calendar.**

The CAISO shall issue an RMR Payments Calendar for the purposes of this Section 11.13 which shall contain those dates set forth in Section 9.1 (b) of the RMR Contract and the following information:

- (a) the date on which RMR Owners are required to issue to the CAISO, with a copy to the Responsible Utility, their Estimated RMR Invoice pursuant to their RMR Contract;
- (b) the date on which the CAISO is required to initiate proposed adjustments to the Estimated RMR Invoice to the Responsible Utility and to the RMR Owner;
- (c) the date by which the RMR Owners are required to issue their Revised Estimated RMR Invoice reflecting appropriate revisions to the original Estimated RMR Invoice agreed upon by the Responsible Utility and the RMR Owner (In the event no revisions are required, the RMR Owner shall submit an e-mail to the CAISO and Responsible Utility stating there are no revisions and the Estimated RMR Invoice should be deemed as the Revised Estimated RMR Invoice.);

- (d) the date on which the CAISO is required to issue to the Responsible Utility or RMR Owner the CAISO Invoice based on the Revised Estimated RMR Invoice;
- (e) the date on which RMR Owners are required to issue to the CAISO, with a copy to the Responsible Utility, their Adjusted RMR Invoice pursuant to their RMR Contract;
- (f) the date on which the CAISO is required to initiate proposed adjustments to the Adjusted RMR Invoice to the Responsible Utility and the RMR Owner;
- (g) the date by which the RMR Owners are required to issue their Revised Adjusted RMR Invoice reflecting appropriate revisions to the original Adjusted RMR Invoice agreed upon by the Responsible Utility and the RMR Owner. (In the event no revisions are required, the RMR Owner shall submit an e-mail to the CAISO and Responsible Utility stating there are no revisions and the Adjusted RMR Invoice should be deemed as the Revised Adjusted RMR Invoice.);
- (h) the date on which the CAISO is required to issue to the Responsible Utility or the RMR Owner the CAISO Invoice based on the Revised Adjusted RMR Invoice;
- (i) the dates by which the Responsible Utility and RMR Owner must have notified the CAISO of any dispute in relation to the CAISO Invoice, Estimated RMR Invoice or Adjusted RMR Invoice (including the Revised Estimated RMR Invoice and Revised Adjusted RMR Invoice) or the CAISO's proposed adjustments;
- (j) the date and time by which Responsible Utilities or RMR Owners are required to have made payments into the RMR Owner Facility Trust Account or Responsible Utility Facility Trust Account in payment of the CAISO Invoices relating to each Revised Estimated RMR Invoice and each Revised Adjusted RMR Invoice; and

- (k) the date and time by which the CAISO is required to have made payments into the RMR Owners' Facility Trust Accounts or Responsible Utilities' Facility Trust Accounts in payment of the Revised Estimated RMR Invoice and the Revised Adjusted RMR Invoice pursuant to their RMR Contract.

If the day on which any CAISO Invoice, any RMR Invoice, or any payment is due is not a Business Day, such statement or invoice shall be issued or payment shall be due on the next succeeding Business Day. Information relating to charges for Energy or Ancillary Services which are payable by the CAISO pursuant to Sections 8 and 11 to the Scheduling Coordinators representing the RMR Owners will be contained in the RMR Payments Calendar.

**11.13.4 Information Provided by RMR Owners to the CAISO.**

Each RMR Invoice and any Prior Period Change Worksheet shall include, or be accompanied by, information about RMR Payments and RMR Refunds in sufficient detail to enable the CAISO to verify all RMR Charges and all RMR Refunds, and such information shall be copied to the Responsible Utility. Each RMR Invoice shall separately show the amounts due for services from each Reliability Must-Run Unit.

This information shall be provided in an electronic form in accordance with the RMR Invoice template developed jointly and agreed to by the CAISO, Responsible Utilities and RMR Owners in accordance with the RMR Contracts and the principles in Schedule O to those RMR Contracts, and maintained on the CAISO Website.



**11.13.5 Validation of RMR Charges and RMR Refunds.**

The CAISO shall validate, based on information provided by each RMR Owner pursuant to paragraph 4, the amount due from the relevant Responsible Utility for RMR Charges and the amount due to the relevant Responsible Utility for RMR Refunds applicable to the Reliability Must-Run Generation and Ancillary Services of that RMR Owner, but shall not represent or warrant the accuracy or completeness of the information provided by the RMR Owner. The CAISO shall provide copies of its exception report and information to the relevant Responsible Utility and RMR Owner.

The CAISO shall not be obligated to pay the Responsible Utility any RMR Refunds unless and until the CAISO has received corresponding RMR Refunds into the Responsible Utility Facility Trust Account from the RMR Owner.

**11.13.6 Description of the Billing Process.**

**11.13.6.1 Issuance of RMR Invoices by the RMR Owner.**

Each RMR Owner shall provide any RMR Invoice to the CAISO in the electronic form, mutually agreed by the parties, which may be updated by agreement with the CAISO, Responsible Utilities and RMR Owners from time to time in accordance with the requirements of Schedule O of the RMR Contract, on each of the days specified in the RMR Payments Calendar, and shall send to the relevant Responsible Utility a copy of that invoice on the day of issue.

**11.13.6.2 Review of the RMR Invoice by the CAISO.**

The CAISO shall review each RMR Invoice within the period specified in the RMR Payments Calendar and is required to initiate proposed adjustments to that invoice to the RMR Owner and the relevant Responsible Utility. Once the CAISO initiates proposed adjustments, the RMR Owner shall issue a Revised Estimated RMR Invoice or Revised Adjusted RMR Invoice.

**11.13.6.3 Issuance of CAISO Invoices by the CAISO.**

The CAISO shall provide to the Responsible Utility and the RMR Owner on the dates specified in the RMR Payments Calendar CAISO Invoices showing:

- (a) the amounts which, on the basis of the Revised Estimated RMR Invoice or the Revised Adjusted RMR Invoice, as the case may be, and pursuant to Section 11.13, are to be paid by or to the relevant Responsible Utility and RMR Owner;
- (b) the Payment Date, being the date on which such amounts are to be paid and the time for such payment;
- (c) details (including the account number, bank name and Fed-Wire transfer instructions) of the RMR Owner Facility Trust Account to which any amounts owed by the Responsible Utility are to be paid, or of the RMR Responsible Utility Facility Trust Account to which any amounts owed by the RMR Owner are to be paid.

**11.13.6.4 Resolving Disputes Relating to Invoices.**

**11.13.6.4.1 Review of the Invoices by the Responsible Utility.**

Each Responsible Utility shall have the review period specified in the RMR Payments Calendar to review RMR Invoices and CAISO Invoices, validate and propose adjustments to such invoices, and notify the CAISO of any dispute. Notwithstanding the above, each Responsible Utility shall have the review time specified in Section 41.6 to dispute such invoice.

**11.13.6.4.2      Dispute Notice.**

If a Responsible Utility disputes any item or calculation relating to any revised RMR Invoice, or any CAISO Invoice, it shall provide the CAISO, with a copy to the RMR Owner, via email or such other communication mode as the parties may mutually agree upon, a notice of dispute at any time from the receipt of the copy of such invoice from the RMR Owner or the CAISO to the expiration of the period for review set out in Section 11.13. The CAISO shall initiate a corresponding dispute with the RMR Owner under the RMR Contract.

**11.13.6.4.3      Contents of Dispute Notice.**

The notice of dispute shall state clearly the Revised Estimated RMR Invoice, Revised Adjusted RMR Invoice, or CAISO Invoice in dispute, the item disputed (identifying specific Reliability Must-Run Units and time periods), the reasons for the dispute, and the proposed amendment (if appropriate) and shall be accompanied by all available evidence reasonably required to support the claim.

**11.13.6.4.4      Prior Period Change Agreed to by the RMR Owner.**

Subject to Sections 11.13.6.4.5 or 11.13.6.4.6, if the RMR Owner agrees with the proposed change, the change shall be shown in a Prior Period Change Worksheet and included in the next appropriate May or December Estimated RMR Invoice as specified in Article 9.1 of the RMR Contract.

**11.13.6.4.5      Dispute Involving the RMR Owner.**

If the dispute relates to an item originating in any RMR Invoice, the applicable provisions of the RMR Contract and Section 41.6.1 shall apply.

**11.13.6.4.6      Dispute Involving an Alleged Error or Breach or Default of the CAISO's Obligations Under Section 41.6.**

If the dispute relates to an alleged error or breach or default of the CAISO's obligations under Section 41.6, the applicable provisions of the RMR Contract and Section 41.6.1 shall apply.

**11.13.6.4.7 Payment Pending Dispute.**

Subject to Section 41.6, if there is any dispute relating to an item originating in an RMR Invoice that is not resolved prior to the Payment Date, the Responsible Utility shall be obligated to pay any amounts shown in the relevant CAISO Invoice on the Payment Date irrespective of whether any such dispute has been resolved or is still pending. The Responsible Utility may notify the CAISO that the payment is made under protest, in which case the CAISO shall notify the RMR Owner that payment is made under protest. In accordance with Section 9.6 of the RMR Contract, if such dispute is subsequently resolved in favor of the Responsible Utility that made the payment under protest, then any amount agreed or determined to be owed by the RMR Owner to the CAISO shall be repaid by the RMR Owner to the CAISO, with interest at the interest rate specified in the RMR Contract from the date of payment by the CAISO to the RMR Owner of the disputed amount to the date of repayment by the RMR Owner, as specified in Section 11.13.6.4.4. If an RMR Owner does not agree to make the change pursuant to Section 11.13.6.4.4, then such repayment shall be made by CAISO's deduction of such amount from the next CAISO Invoices until extinguished, or if the RMR Contract has terminated, by paying a RMR Refund in such amount to the Responsible Utility Facility Trust Account, subject to the limitation of Section 41.6.2.

**11.13.7 Payment Procedures.**

**11.13.7.1 Payment Date.**

The Payment Date for RMR Payments to and RMR Refunds from RMR Owners shall be the due date specified in the RMR Contract and in the RMR Payments Calendar and the same shall be the Payment Date for the CAISO and Responsible Utilities in relation to RMR Charges, provided that the RMR Owner has furnished the Responsible Utility and the CAISO with the Revised Estimated RMR Invoice or the Revised Adjusted RMR Invoice no less than nine (9) calendar days before the due date. The Payment Date shall be stated on the CAISO Invoice.

**11.13.7.2 Payment Method.**

All payments and refunds by the CAISO to RMR Owners and Responsible Utilities shall be made via Fed-Wire. However, if the RMR Owner is also the Responsible Utility, at the discretion of the RMR Owner, payments and refunds may be made by memorandum account instead of wire transfer.

**11.13.7.3 Payment by RMR Owners and Responsible Utilities.**

Each RMR Owner shall remit to the Responsible Utility Facility Trust Account the amount shown on the relevant CAISO Invoice as payable by that RMR Owner not later than 10:00 am on the Payment Date.

Subject to Section 41.6, each Responsible Utility shall remit to the RMR Owner Facility Trust Account the amount shown on the relevant CAISO Invoice not later than 10:00 am on the Payment Date.

**11.13.7.4 Payment by the CAISO.**

The CAISO shall verify the amounts available for distribution to Responsible Utilities and/or RMR Owners on the Payment Date and shall give instructions to the CAISO Bank to remit from the relevant Facility Trust Account to the relevant settlement account maintained by each Responsible Utility or RMR Owner the amounts determined by the CAISO to be available for payment to each Responsible Utility or RMR Owner.

**11.13.7.5 Payment Default by RMR Owner or Responsible Utility.**

If by 10:00 am on a Payment Date the CAISO, in its reasonable opinion, believes the RMR Default Amount will not be or has not been remitted, the CAISO shall immediately notify the RMR Owner and the Responsible Utility. Where the RMR Default Amount was due from the Responsible Utility, the CAISO and RMR Owner shall proceed as set forth in Section 41.6 and the applicable provision of the RMR Contract. Where the RMR Default Amount was due from the RMR Owner, the CAISO and the Responsible Utility shall proceed as set forth in the applicable provision of the RMR Contract.

**11.13.7.5.1 Default Relating to Market Payments.**

For the avoidance of doubt, non payment to RMR Owners, or their respective Scheduling Coordinators, of charges for Energy or Ancillary Services which are payable by the CAISO to Scheduling Coordinators representing such RMR Owners shall be dealt with pursuant to Sections 11.3 to 11.30 (inclusive).

**11.13.7.6 Set-off.**

**11.13.7.6.1 Set-off in the Case of a Defaulting Responsible Utility.**

The CAISO is authorized to apply any amount to which any defaulting Responsible Utility is or will be entitled from the Responsible Utility Facility Trust Account in or towards the satisfaction of any amount owed by that Responsible Utility to the RMR Owner Facility Trust Account arising under the settlement and billing process set out in this Section 11.13.

For the avoidance of doubt, neither the CAISO nor any Responsible Utility will be authorized to set off any amounts owed by that Responsible Utility in respect of one Facility Trust Account against amounts owed to that Responsible Utility in respect of another Facility Trust Account or any amounts owed by that Responsible Utility under this Section 11.13 against amounts owed to that Responsible Utility except as provided by Section 41.6.

**11.13.7.6.2 Set-off in the Case of a Defaulting RMR Owner.**

The CAISO is authorized to apply any amount to which any defaulting RMR Owner is or will be entitled from the RMR Owner Facility Trust Account in or towards the satisfaction of any amount owed by that RMR Owner to the Responsible Utility Facility Trust Account in accordance with Article 9 of the RMR Contract and Sections 41.6 and 11.10.2.

For the avoidance of doubt, neither the CAISO nor any RMR Owner will be authorized to set off any amounts owed by that RMR Owner in respect of one Facility Trust Account against amounts owed to that RMR Owner in respect of another Facility Trust Account or any amounts owed by that RMR Owner under this Section 11.13 against amounts owed to that RMR Owner under the RMR Contract.

**11.13.7.7 Default Interest.**

Responsible Utilities shall pay interest on RMR Default Amounts to the CAISO at the interest rate specified in the RMR Contract for the period from the relevant Payment Date to the date on which the payment is received by the CAISO.

RMR Owners shall pay interest to the CAISO on RMR Default Amounts at the interest rate specified in the RMR Contract for the period from the date on which payment was due to the date on which the payment is received by the CAISO.

The CAISO shall pay interest to RMR Owners at the interest rate specified in the RMR Contract for the period from the date on which payment is due under the RMR Contract to the date on which the payment is received by the RMR Owner.

The CAISO shall pay interest to Responsible Utilities at the interest rate specified in the relevant RMR Contract for the period from the date following the date it received an RMR Refund from the relevant RMR Owner to the date in which the payment is received by the relevant Responsible Utility.

Where payment of an RMR Default Amount is made by exercise of a right of set-off or deduction, payments shall be deemed received when payment of the sum which takes that set-off or deduction into account is made.

**11.13.8 Overpayments.**

The provisions of Sections 11.29.19.3 and 11.29.19.4 shall apply to RMR Owners and Responsible Utilities which have been overpaid by the CAISO and references to CAISO Creditors in these sections and in the relevant Sections of the CAISO Tariff shall be read, for the purposes of this Section 11.13, to mean RMR Owners and Responsible Utilities as applicable. Disputed amounts shall not be considered to be overpayments until and unless the dispute is resolved.

**11.13.9 Communications.**

**11.13.9.1 Method of Communication.**

CAISO Invoices will be issued by the CAISO via the CAISO's secure communication system. RMR Invoices and Prior Period Change Worksheets will be issued by the RMR Owner in an electronic form mutually agreed by the parties and maintained on the CAISO Website. The CAISO shall also post Prior Period Change examples and Prior Period Change guidelines as specified in Article 9.1 of the RMR Contract.

**11.13.9.2 Emergency Procedures.**

**11.13.9.2.1 Emergency Affecting the CAISO.**

In the event of an emergency or a failure of any of the CAISO software or business systems, the CAISO may deem any Estimated RMR Invoice or any Adjusted RMR Invoice to be correct without thorough verification and may implement any temporary variation of the timing requirements relating to the settlement and billing process contained in this Section 11.13.



**11.13.9.2.2 Emergency Affecting the RMR Owner.**

In the event of an emergency or a failure of any of the RMR Owner's systems, the RMR Owner may use Estimated RMR Invoices as provided in the applicable section of the RMR Contract or may implement any temporary variation of the timing requirements relating to the settlement and billing process contained in this Section 11.13 and its RMR Contract. Details of the variation will be published on the CAISO Website. Communications of an emergency nature on a due date or a Payment Date relating to payments shall be made by the fastest practical means including by telephone.

**11.13.10 Confidentiality.**

The provisions of Sections 11.29, 10.1 and 20.5 shall apply to this Section 11.13 between and among the RMR Owners, the CAISO and Responsible Utilities. Except as may otherwise be required by applicable law, all confidential information and data provided by RMR Owner or the CAISO to the Responsible Utility pursuant to the RMR Contract, Section 41.6 or this Section 11.13 shall be treated as confidential and proprietary to the providing party to the extent required by Section 12.5 and Schedule N of the RMR Contract and will be used by the receiving party only as permitted by such Section 12.5 and Schedule N.

**11.14 Neutrality Adjustments.**

The CAISO shall be authorized to levy additional charges or make additional payments as special adjustments in regard to:

- (a) amounts required to reach an accounting trial balance of zero in the course of the Settlement process in the event that the charges calculated as due from CAISO Debtors are lower than payments calculated as due to the CAISO Creditors for the same Trading Day. These charges will be allocated amongst the Scheduling Coordinators who traded on that Trading Day pro rata to their Measured Demand in MWh of Energy for that Trading Day on a monthly basis. In the event that the

charges due from CAISO Debtors are higher than the payments due to CAISO Creditors, the CAISO shall allocate a payment to the Scheduling Coordinators who traded on that Trading Day pro rata to their **Measured** Demand in MWh of Energy for that Trading Day **on a monthly basis**; and

- (b) awards payable by or to the CAISO pursuant to good faith negotiations or CAISO ADR Procedures that the CAISO is not able to allocate to or to collect from a Market Participant or Market Participants in accordance with Section 13.5.3. These charges will be allocated among Scheduling Coordinators over an interval determined by the CAISO and pro rata based on **Measured** Demand during that interval.

#### **11.15            Payments Under Section 42.1 Contracts.**

The CAISO shall calculate and levy charges for the recovery of costs incurred under contracts entered into by the CAISO under the authority granted in Section 42.1 in accordance with Section 42.1.8 or any other contract approved by FERC.

#### **11.16            Additional Ancillary Services and RUC Capacity Obligation Rescission of Payments Requirements.**

The following provisions apply to the Settlement of rescission of payments for Ancillary Services and RUC Capacity in addition to the provisions of Sections 8.10.8 and 11.10.9 for Ancillary Services and Sections 31.5.7 and 11.2.2.2 for RUC Capacity.

**11.16.1 Order of Payment Rescission for Resources with More Than One Capacity Obligation in a Settlement Interval.**

If the Generating Unit, Participating Load, System Unit or System Resource is scheduled to provide more than one capacity obligation in a Settlement Interval, the order in which the non-compliant Ancillary Service and RUC Capacity will be apportioned to the various services under Section 8.10.8 is as follows. For Undispatchable Capacity the non-compliant capacity is first apportioned to RUC Capacity and then to any Non-Spinning Reserves. If the amount of Undispatchable Capacity exceeds the amount of Non-Spinning Reserves, then the payment shall be eliminated for Spinning Reserves. For Unavailable Capacity or Undelivered Capacity the non-compliant capacity is first apportioned to any Non-Spinning Reserves. If the amount of non-compliant Ancillary Service capacity exceeds the amount of Non-Spinning Reserves, then the payment shall be eliminated for Spinning Reserves. If the same Ancillary Service is scheduled in the Day-Ahead Market, HASP or Real-Time Market, then the payments shall be rescinded in proportion to the amount of each Ancillary Service scheduled in each market. If the same Ancillary Service is self-provided and Bid, the order of rescission will be first the amount of Ancillary Service amounts submitted in Bids and then the Self-Provided Ancillary Service.

**11.16.2 Load Following Metered Subsystems with an Obligation to Provide Ancillary Service Capacity or RUC Capacity in a Settlement Interval.**

If a Load following MSS Operator is scheduled to provide Ancillary Service capacity, RUC Capacity, or some combination thereof in a Settlement Interval and if the scheduled capacity or a portion thereof is unavailable for some reason during the Settlement Interval, the non-compliant Ancillary Services and RUC Capacity (i.e., Undispatchable, Unavailable, or Undelivered Capacity) will be not be apportioned to the capacity designated by the MSS Operator as Load following up capacity and Load following down capacity. In determining which of the MSS Operator's capacity obligations were not available in Real-Time, the capacity designated by the MSS Operator as Load following up capacity and Load following down capacity shall be preserved or take precedence over the other capacity obligations.

**11.17 CAISO Operating and Capital Reserves Account.**

Revenues collected to fund the CAISO financial operating reserves shall be deposited in **the CAISO** Operating and Capital Reserves Account until such account reaches a level specified by the CAISO Governing Board. The **CAISO** Operating and Capital Reserves Account shall be calculated separately for each GMC service category. The allocation factors, reassignments and reallocations specified in **Appendix F**, Schedule 1, Parts E and F, will be accounted for in the development of the **CAISO** Operating and Capital Reserves Account for each component. If the **CAISO** Operating and Capital Reserves Account as calculated for such service category is fully funded, surplus funds will be considered an offset to the **CAISO's** revenue requirement of the next fiscal year.

**11.18 Emissions Costs.**

**11.18.1 Obligation to Pay Emissions Cost Charges.**

Each Scheduling Coordinator shall be obligated to pay a charge in accordance with this Section 11.18, which will be used to pay the verified Emissions Costs incurred by an **Emissions Eligible** Generator during a CAISO Commitment Period. The CAISO shall levy this administrative charge (the Emissions Cost charge) each month, against all Scheduling Coordinators based upon each Scheduling Coordinator's **Balancing Authority** Area Gross Load and Demand within California outside of the CAISO **Balancing Authority** Area that is served by exports from the CAISO **Balancing Authority** Area. Scheduling Coordinators shall make payment for all Emissions Cost charges in accordance with the CAISO Payments Calendar.

**11.18.2 CAISO Emissions Cost Trust Account.**

All Emissions Cost charges received by the CAISO shall be deposited in the CAISO Emissions Cost Trust Account. The CAISO Emissions Cost Trust Account shall be an interest-bearing account separate from all other accounts maintained by the CAISO, and no other funds shall be commingled in it at any time.

**11.18.3 Rate for the Emissions Cost Charge.**

The rate at which the CAISO will assess the Emissions Cost charge shall be at the projected annual total of all Emissions Costs incurred by Emissions Eligible Generators during CAISO Commitment Period, adjusted for interest projected to be earned on the monies in the CAISO Emissions Cost Trust Account, divided by the sum of the Balancing Authority Area Gross Load and the projected Demand within California outside of the CAISO Balancing Authority Area that is served by exports from the CAISO Balancing Authority Area of all Scheduling Coordinators for the applicable year ("Emissions Cost Demand"). The initial rate for the Emissions Cost charge, and all subsequent rates for the Emissions Cost charge, shall be posted on the CAISO Website.

**11.18.4 Adjustment of the Rate for the Emissions Cost Charge.**

The CAISO may adjust the rate at which the CAISO will assess the Emissions Cost charge on a monthly basis, as necessary, to reflect the net effect of the following:

- (a) the difference, if any, between actual Emissions Cost Demand and projected Emissions Cost Demand;
- (b) the difference, if any, between the projections of the Emissions Costs incurred by Emissions Eligible Generators during a CAISO Commitment Period and the actual Emissions Costs incurred by Emissions Eligible Generators during a CAISO Commitment Period as invoiced to the CAISO and verified in accordance with this Section 11.18; and

- (c) the difference, if any, between actual and projected interest earned on funds in the CAISO Emissions Cost Trust Account.

The adjusted rate at which the CAISO will assess the Emissions Cost charge shall take effect on a prospective basis on the first day of the next calendar month. The CAISO shall publish all data and calculations used by the CAISO as a basis for such an adjustment on the CAISO Website at least five (5) days in advance of the date on which the new rate shall go into effect.

**11.18.5 Credits and Debits of Emissions Cost Charges Collected from Scheduling Coordinators.**

In addition to the surcharges or credits permitted under Section 11.29.7.3, the CAISO may credit or debit, as appropriate, the account of a Scheduling Coordinator for any over- or under-assessment of Emissions Cost charges that the CAISO determines occurred due to the error, omission, or miscalculation by the CAISO or the Scheduling Coordinator.

**11.18.6 Submission of Emissions Cost Invoices.**

Scheduling Coordinators for Generators eligible for Bid Cost Recovery that incur Emissions Costs during a CAISO Commitment Period may submit to the CAISO an invoice in the form specified on the CAISO Website (the Emissions Cost Invoice) for the recovery of such Emissions Costs. Emissions Cost Invoices shall not include any Emissions Costs specified in an RMR Contract for a unit. All Emissions Cost Invoices must include a copy of all final invoice statements from air quality districts demonstrating the Emissions Costs incurred by the applicable Generating Unit, and such other information as the CAISO may reasonably require to verify the Emissions Costs incurred during a CAISO Commitment Period.

**11.18.7 Payment of Emissions Cost Invoices.**

The CAISO shall pay Scheduling Coordinators for all Emissions Costs submitted in an Emissions Cost Invoice and demonstrated to be during a CAISO Commitment Period. If the Emissions Costs indicated in the applicable air quality districts' final invoice statements include emissions produced by operation not during a CAISO Commitment Period, the CAISO shall pay an amount equal to Emissions Costs multiplied by the ratio of the MWh associated with the CAISO Commitment Period to the total MWh associated with such Emissions Costs. The CAISO shall pay Emissions Cost Invoices each month in accordance with the CAISO Payments Calendar from the funds available in the CAISO Emissions Cost Trust Account. To the extent there are insufficient funds available in the CAISO Emissions Cost Trust Account in any month to pay all Emissions Costs submitted in an Emissions Cost Invoice and demonstrated to be during a CAISO Commitment Period, the CAISO shall make pro rata payment of such Emissions Costs and shall adjust the rate at which the CAISO will assess the Emissions Cost charge in accordance with Section 11.18.4. Any outstanding Emissions Costs owed from previous months will be paid in the order of the month in which such costs were invoiced to the CAISO. The CAISO's obligation to pay Emissions Costs is limited to the obligation to pay Emissions Cost charges received. All disputes concerning payment of Emissions Cost Invoices shall be subject to CAISO ADR Procedures, in accordance with Section 13.

**11.19 FERC Annual Charges.**

**11.19.1 FERC Annual Charge Recovery Rate.**

**11.19.1.1 Obligation for FERC Annual Charges.**

Each Scheduling Coordinator shall be obligated to pay for the FERC Annual Charges for its use of the CAISO Controlled Grid to transmit electricity, including any use of the CAISO Controlled Grid through Existing Contracts scheduled by the Scheduling Coordinator. Any FERC Annual Charges to be assessed by FERC against the CAISO for such use of the CAISO Controlled Grid shall be assessed against Scheduling Coordinators at the FERC Annual Charge Recovery Rate, as determined in accordance with

Section 11.19.1. Such assessment shall be levied monthly against all Scheduling Coordinators based upon each Scheduling Coordinator's metered Demand and exports.

**11.19.1.2 Annual Charges Assessment.**

Scheduling Coordinators shall pay FERC Annual Charges assessed against them by the CAISO on a monthly or annual basis. Scheduling Coordinators that pay FERC Annual Charges on a monthly basis shall make the payment for such charges within five (5) Business Days after issuance of the market Invoice or Payment Advice containing the charges. Scheduling Coordinators that must pay FERC Annual Charges on an annual basis shall make the payment for such charges within five (5) Business Days from the Payment Date stated on the Invoice for FERC Annual Charges. The FERC Annual Charges for a given Trading Month that are due monthly will be issued to Scheduling Coordinators twice a month in accordance with the CAISO Payments Calendar in the same Invoice and Payment Advice that contains the market Settlement and Grid Management Charge. The FERC Annual Charges for a given trading month that are due annually will be issued to Scheduling Coordinators twice a month on the same day as the market Invoice and Payment Advice but in a separate Invoice as indicated in Section 11.29.10. Once the final FERC Annual Charge Recovery Rate is received from FERC in the spring or summer of the following year, revised FERC Annual Charges will be calculated and included on a supplemental Invoice or Payment Advice. All Scheduling Coordinators shall make payment for such charges within five (5) Business Days after the CAISO issues such supplemental Invoice.

**11.19.2 FERC Annual Charge Trust Account.**

All funds collected by the CAISO for FERC Annual Charges shall be deposited in the FERC Annual Charge Trust Account. The FERC Annual Charge Trust Account shall be an interest-bearing account separate from all other accounts maintained by the CAISO, and no other funds shall be commingled in it at any time. The CAISO shall disburse funds from the FERC Annual Charge Trust Account in order to pay the FERC any and all FERC Annual Charges assessed against the CAISO.



**11.19.3 Determination of the FERC Annual Charge Recovery Rate.**

**11.19.3.1 Annual Charge Obligation.**

The FERC Annual Charge Recovery Rate shall be set at the projected total FERC Annual Charge Obligation with regard to transactions on the CAISO Controlled Grid during the year in which the FERC Annual Charge Recovery Rate is collected, adjusted for interest projected to be earned on the monies in the FERC Annual Charge Trust Account ("Annual Charge Obligation"), divided by the projected Demand and exports during that year for all entities subject to assessment of FERC Annual Charges by the CAISO ("Annual Charge Demand"). The FERC Annual Charge Recovery Rate for the period from January 1, 2001 until the first adjustment of the FERC Annual Charge Recovery Rate goes into effect shall be posted on the CAISO Website at least fifteen (15) days in advance of the date on which the initial rate will go into effect.

**11.19.3.2 Adjustments to FERC Annual Charge Recovery Rate.**

The CAISO may adjust the FERC Annual Charge Recovery Rate on a quarterly basis, as necessary, to reflect the net effect of the following:

- (a) the difference, if any, between actual Annual Charge Demand and projected Annual Charge Demand during the year-to-date;
- (b) the difference, if any, between the projections of the Annual Charge Obligation and the Annual Charge Demand upon which the charge for the year is based and the CAISO's most current projections of those values, provided that the projection of the Annual Charge Obligation may only be adjusted on an annual basis for changes in the Federal Energy Regulatory Commission's budget for its electric regulatory program or changes in the projected total transmission volumes subject to assessment of FERC Annual Charges;

- (c) the difference, if any, between actual and projected interest earned on funds in the FERC Annual Charge Trust Account; and
- (d) any positive or negative balances of funds collected for FERC Annual Charges in a previous year after all invoices for FERC Annual Charges for that year have been paid by the CAISO, other than those that are addressed through the mechanism described in Section 11.19.3.4.

**11.19.3.3 Effectiveness of FERC Annual Charge Recovery Rate.**

The adjusted FERC Annual Charge Recovery Rate shall take effect on the first day of the calendar quarter. The CAISO shall publish all data and calculations used by the CAISO as a basis for such an adjustment on the CAISO Website at least fifteen (15) days in advance of the date on which the new rate shall go into effect.

**11.19.3.4 Under- or Over-Recovery of FERC Annual Charge Recovery Rate.**

If the FERC Annual Charges assessed by FERC against the CAISO for transactions on the CAISO Controlled Grid during any year exceed or fall short of funds collected by the CAISO for FERC Annual Charges with respect to that year by a range of **ten percent (10%)** or less, the CAISO shall take such under- or over-recovery into account through an adjustment to the FERC Annual Charge Recovery Rate in accordance with this Section. Any deficiency of available funds necessary to pay for any assessment of FERC Annual Charges payable by the CAISO may be covered by an advance of funds from the CAISO's Grid Management Charge, provided any such advanced funds will be repaid. If the CAISO's collection of funds for FERC Annual Charges with respect to any year results in an under- or over-recovery of greater than **ten percent (10%)**, the CAISO shall either assess a surcharge against all active Scheduling Coordinators for the amount under-recovered or shall issue a credit to all active Scheduling Coordinators for the amount over-recovered. Such surcharge or credit shall be allocated among all active Scheduling Coordinators based on the percentage of each active Scheduling Coordinators metered

Demand and exports during the relevant year. For purposes of this section, an “active Scheduling Coordinator” shall be a Scheduling Coordinator certified by the CAISO in accordance with this CAISO Tariff at the time the CAISO issues a surcharge or credit under this section. The CAISO will issue any surcharges or credits under this section within 60 days of receiving a FERC Annual Charge assessment from the FERC.

**11.19.4 Credits and Debits of FERC Annual Charges Collected from Scheduling Coordinators.**

In addition to the surcharges or credits permitted under this CAISO Tariff, the CAISO shall credit or debit, as appropriate, the account of a Scheduling Coordinator for any over- or under-assessment of FERC Annual Charges that the CAISO determines occurred due to the error, omission, or miscalculation by the CAISO or the Scheduling Coordinator.

**11.20 NERC/WECC Charges.**

**11.20.1 Responsibility for NERC/WECC Charges.**

- (a) The CAISO shall invoice Scheduling Coordinators for all of the NERC/WECC Charges that are invoiced to the CAISO by the WECC on behalf of itself, NERC, and/or regional advisory bodies. Each Scheduling Coordinator shall be obligated to pay the CAISO all of the NERC/WECC Charges it is invoiced by the CAISO in accordance with this Section 11.20. Each Scheduling Coordinator’s responsibility for NERC/WECC Charges is based on the Scheduling Coordinator’s NERC/WECC Metered Demand.
- (b) The CAISO’s calculation of collateral requirements and other credit requirements under the CAISO Tariff will not include any adjustment for a Scheduling Coordinator’s NERC/WECC Charges.

**11.20.2 Process for Invoicing NERC/WECC Charges Assessed for 2007.**

With regard to the NERC/WECC Charges assessed by the WECC for 2007, the following process shall apply:

- (a) The CAISO will issue a Market Notice that will include the following: (i) the total NERC/WECC Charges for 2007 that were invoiced to the CAISO by the WECC and (ii) the total of all Scheduling Coordinators' NERC/WECC Metered Demand for 2005. On or after the date on which the CAISO issues this Market Notice, the CAISO will notify each Scheduling Coordinator in writing of the Scheduling Coordinator's NERC/WECC Metered Demand for 2005. Each Scheduling Coordinator shall have sixty (60) calendar days from the date the CAISO provides it with this notification in writing to raise any disputes concerning the CAISO's calculation of the Scheduling Coordinator's NERC/WECC Metered Demand for 2005.
- (b) The CAISO will issue a Market Notice setting forth the Final NERC/WECC Charge Rate for the 2007 WECC assessment. The Final NERC/WECC Charge Rate for the 2007 WECC assessment shall be based on (i) the total NERC/WECC Charges for 2007 that were invoiced to the CAISO by the WECC divided by (ii) the total of all Scheduling Coordinators' NERC/WECC Metered Demand for 2005, including any adjustments to the calculation of NERC/WECC Metered Demand for 2005 made by the CAISO in response to disputes raised by Scheduling Coordinators pursuant to Section 11.20.2(a).

- (c) Within thirty (30) calendar days after the CAISO issues the Market Notice in Section 11.20.2 (b), the CAISO will issue Final NERC/WECC Charge Invoices that allocate NERC/WECC Charges for 2007 to Scheduling Coordinators based on (i) each Scheduling Coordinator's NERC/WECC Metered Demand for 2005 multiplied by (ii) the Final NERC/WECC Charge Rate for the 2007 WECC assessment. The CAISO shall deduct from the Final NERC/WECC Charge Invoices for the 2007 WECC assessment any amounts that Scheduling Coordinators have already paid directly to the WECC for NERC/WECC Charges for 2007 as reported to the CAISO by the WECC.

**11.20.3 Process for Invoicing NERC/WECC Charges Assessed for 2008.**

With regard to the NERC/WECC Charges to be assessed by the WECC for 2008, the following process shall apply:

- (a) The CAISO will issue a Market Notice that will include the total of all Scheduling Coordinators' NERC/WECC Metered Demand for 2006. On or after the date on which the CAISO issues this Market Notice, the CAISO will notify each Scheduling Coordinator in writing of the Scheduling Coordinator's NERC/WECC Metered Demand for 2006. Each Scheduling Coordinator shall have sixty (60) calendar days from the date the CAISO provides it with this notification in writing to raise any disputes concerning the CAISO's calculation of the Scheduling Coordinator's NERC/WECC Metered Demand for 2006.

- (b) The CAISO will report to the WECC the total of all Scheduling Coordinators' NERC/WECC Metered Demand for 2006, including any adjustments to the calculation of NERC/WECC Metered Demand for 2006 made by the CAISO in response to disputes raised by Scheduling Coordinators pursuant to Section 11.20.3(a). This report shall facilitate the WECC calculation of actual NERC/WECC Charges to be invoiced to the CAISO for 2008.
- (c) Within five (5) Business Days after receipt of the WECC invoice to the CAISO setting forth the assessment for NERC/WECC Charges for 2008, the CAISO shall issue a Market Notice setting forth the Final NERC/WECC Charge Rate for 2008. The Final NERC/WECC Charge Rate for 2008 shall be based on (i) the total NERC/WECC Charges for 2008 that were invoiced to the CAISO by the WECC, divided by (ii) the total of all Scheduling Coordinators' NERC/WECC Metered Demand for 2006, as reported to the WECC.
- (d) Within fifteen (15) Business Days after receipt of the WECC invoice to the CAISO setting forth the assessment for NERC/WECC Charges for 2008, the CAISO will issue Final NERC/WECC Charge Invoices that allocate NERC/WECC Charges for 2008 to Scheduling Coordinators based on (i) each Scheduling Coordinator's NERC/WECC Metered Demand for 2006, multiplied by (ii) the Final NERC/WECC Charge Rate for 2008.

#### **11.20.4 Process for Invoicing NERC/WECC Charges Assessed for Years After 2008.**

With regard to the NERC/WECC Charges to be assessed by the WECC for each NERC/WECC Charge Assessment Year after 2008, the following processes shall apply:

- (a) The CAISO will issue a Market Notice that will include the total of all Scheduling Coordinators' NERC/WECC Metered Demand for the calendar year two years prior to the NERC/WECC Charge Assessment Year. On or after the date on which the CAISO issues this Market Notice, the CAISO will notify each Scheduling Coordinator in writing of the Scheduling Coordinator's NERC/WECC Metered Demand for the calendar year two years prior to the NERC/WECC Charge Assessment Year. Each Scheduling Coordinator shall have sixty (60) calendar days from the date the CAISO provides it with this notification in writing to raise any disputes concerning the CAISO's calculation of the Scheduling Coordinator's NERC/WECC Metered Demand for the calendar year two years prior to the NERC/WECC Charge Assessment Year.
- (b) The CAISO will report to the WECC the total of all Scheduling Coordinators' NERC/WECC Metered Demand for the calendar year two years prior to the NERC/WECC Charge Assessment Year, including any adjustments to the calculation of NERC/WECC Metered Demand for that year made by the CAISO in response to disputes raised by Scheduling Coordinators pursuant to Section 11.20.4(a). The report will also include any adjustments to the calculation of NERC/WECC Metered Demand, based on decisions by the WECC to permit such adjustments, that the CAISO has time to reflect in the report and that the WECC provides to the CAISO in a written statement in accordance with the CAISO-WECC Billing Services Agreement. This report shall facilitate the WECC's calculation of actual NERC/WECC Charges to be invoiced to the CAISO for the NERC/WECC Charge Assessment Year.

- (c) The CAISO will issue a Market Notice setting forth the Preliminary NERC/WECC Charge Rate for the NERC/WECC Charge Assessment Year.
- (d) By August 31 of the year preceding the NERC/WECC Charge Assessment Year, the CAISO will issue Preliminary NERC/WECC Charge Invoices for the NERC/WECC Charge Assessment Year.
- (e) Within five (5) Business Days after receipt of the WECC's invoice to the CAISO setting forth the assessment of NERC/WECC Charges for the NERC/WECC Charge Assessment Year, the CAISO shall issue a Market Notice setting forth the Final NERC/WECC Charge Rate for the NERC/WECC Charge Assessment Year. The Final NERC/WECC Charge Rate for the NERC/WECC Charge Assessment Year shall be based on (i) the total NERC/WECC Charges for the NERC/WECC Charge Assessment Year that were invoiced to the CAISO by the WECC, divided by (ii) the total of all Scheduling Coordinators' NERC/WECC Metered Demand including any adjustments to the calculation of NERC/WECC Metered Demand as reported to the WECC pursuant to Section 11.20.4(b), and including any additional adjustments to the calculation of NERC/WECC Metered Demand, based on decisions by the WECC to permit such adjustments, that the WECC provides to the CAISO in a written statement in accordance with the CAISO-WECC Billing Services Agreement.



- (f) Within fifteen (15) Business Days after receipt of the WECC invoice to the CAISO setting forth the assessment for NERC/WECC Charges for the NERC/WECC Charge Assessment Year, the CAISO will issue Final NERC/WECC Charge Invoices that allocate NERC/WECC Charges for the NERC/WECC Charge Assessment Year to Scheduling Coordinators based on (i) each Scheduling Coordinator's NERC/WECC Metered Demand as adjusted pursuant to Sections 11.20.(b) and 11.20.4(e) and pursuant to any additional adjustments that the WECC provides to the CAISO in a written statement in accordance with the CAISO-WECC Billing Services Agreement, multiplied by (ii) the Final NERC/WECC Charge Rate for the NERC/WECC Charge Assessment Year. If and to the extent that a Scheduling Coordinator has not already paid all of the NERC/WECC Charges for the NERC/WECC Charge Assessment Year that it is required to pay, the Scheduling Coordinator's Final NERC/WECC Charge Invoice will show the amount the Scheduling Coordinator is still required to pay. If and to the extent that a Scheduling Coordinator has already paid in excess of the NERC/WECC Charges for the NERC/WECC Charge Assessment Year that the Scheduling Coordinator is required to pay, the Scheduling Coordinator's Final NERC/WECC Charge Invoice will show the amount the Scheduling Coordinator will be credited.

**11.20.5 Timely Payments.**

Scheduling Coordinators shall make timely payments to the ISO pursuant to Preliminary NERC/WECC Charge Invoices within thirty (30) calendar days of issuance of such invoices. Scheduling Coordinators shall make timely payments to the CAISO pursuant to Final NERC/WECC Charge Invoices within fifteen (15) Business Days of issuance of such invoices.

**11.20.6 NERC/WECC Charge Trust Account.**

The CAISO shall deposit all payments received pursuant to Preliminary NERC/WECC Charge Invoices and Final NERC/WECC Charge Invoices in the NERC/WECC Charge Trust Account. The NERC/WECC Charge Trust Account shall be separate from all other accounts maintained by the CAISO, and no other funds shall be commingled in it at any time. The CAISO shall disburse funds from the NERC/WECC Charge Trust Account in order to pay the WECC any and all NERC/WECC Charges invoiced to the CAISO.

**11.20.7 Preliminary NERC/WECC Charge Invoices and Final NERC/WECC Charge Invoices.**

The CAISO shall invoice NERC/WECC Charges to Scheduling Coordinators by issuing Preliminary NERC/WECC Charge Invoices and Final NERC/WECC Charge Invoices. The Preliminary NERC/WECC Charge Invoices and Final NERC/WECC Charge Invoices shall be issued in accordance with the schedules set forth in this Section 11.20, provided that the CAISO may issue a Market Notice informing Scheduling Coordinators that the CAISO will implement a temporary modification to that schedule and setting forth the reasons for such modification, in which case the modified schedule described in that Market Notice shall govern.

**11.20.7.1 Confirmation.**

It is the responsibility of each Scheduling Coordinator to notify the CAISO if the Scheduling Coordinator fails to receive a Preliminary NERC/WECC Charge Invoice or a Final NERC/WECC Charge Invoice in accordance with the applicable schedule. Each Scheduling Coordinator shall be deemed to have received its Preliminary NERC/WECC Charge Invoice or a Final NERC/WECC Charge Invoice on the date specified in the applicable schedule, unless the Scheduling Coordinator notifies the CAISO to the contrary.

**11.20.7.2 Validation.**

Each Scheduling Coordinator shall have the opportunity to review the terms of the Preliminary NERC/WECC Charges Invoices and the Final NERC/WECC Charge Invoices that it receives. The Scheduling Coordinator shall be deemed to have validated each Preliminary NERC/WECC Charge Invoice or Final NERC/WECC Charge Invoice unless it has raised a dispute within ten (10) calendar days from the date of issuance. Once validated, a Preliminary NERC/WECC Charge Invoice or Final NERC/WECC Charge Invoice shall be binding on the Scheduling Coordinator to which it relates.

**11.20.7.3 Disputes and Disput-Related Corrections.**

Scheduling Coordinators shall be prohibited from disputing any Preliminary NERC/WECC Charge Invoice or Final NERC/WECC Charge Invoice, except on grounds that an error in a Preliminary NERC/WECC Charge Invoice or Final NERC/WECC Charge Invoice is due to a mere typographical or other ministerial error by the CAISO. A Scheduling Coordinator that wishes to dispute a NERC/WECC Charge Invoice on such grounds shall give the CAISO notice of dispute in writing within ten (10) calendar days of issuance. The notice of dispute shall state clearly the issue date of the Preliminary NERC/WECC Charge Invoice or Final NERC/WECC Charge Invoice, the item or calculation disputed, and the reasons for the dispute, and shall be accompanied by all available evidence reasonably required to support the claim. If the Scheduling Coordinator is correct that the Preliminary NERC/WECC Charge Invoice or Final NERC/WECC Charge Invoice contains a typographical or other ministerial error and the resolution of the dispute makes correction necessary, the CAISO shall issue a corrected Preliminary NERC/WECC Charge Invoice or a corrected Final NERC/WECC Charge Invoice within fifteen (15) calendar days of issuance of the invoice that is being corrected.

Each Scheduling Coordinator that receives a Preliminary NERC/WECC Charge Invoice or a Final NERC/WECC Charge Invoice shall pay any net debit and shall be entitled to receive any net credit in a Preliminary NERC/WECC Charge Invoice or a Final NERC/WECC Charge Invoice on the Payment Date, regardless of whether there is any dispute regarding the amount of the debit or credit. The CAISO will issue corrected Preliminary NERC/WECC Charge Invoices or corrected Final NERC/WECC Charge Invoices if the resolution of a dispute concerning a Preliminary NERC/WECC Charge Invoice or a Final NERC/WECC Charge Invoice, brought pursuant to this Section 11.20, makes such a correction necessary.

**11.20.8 Provision of Payments and Information to the WECC.**

- (a) With regard to NERC/WECC Charges assessed for 2007, the CAISO will forward to the WECC, within five (5) Business Days after the deadline for timely payments of Final NERC/WECC Charge Invoices pursuant to Section 11.20.2 has expired, (i) the amounts collected pursuant to Final NERC/WECC Charge Invoices for 2007 and (ii) a list of all Scheduling Coordinators that have failed to make full payment pursuant to their Final NERC/WECC Charge Invoices and the amounts that are unpaid.
- (b) With regard to NERC/WECC Charges assessed for years after 2007, the CAISO will forward to the WECC, at least three (3) Business Days prior to January 2 of each NERC/WECC Charge Assessment Year, (i) the amounts collected pursuant to Final NERC/WECC Charge Invoices for the NERC/WECC Charge Assessment Year and (ii) a list of all Scheduling Coordinators that have failed to make full payment pursuant to their NERC/WECC Charge Invoices and the amounts that are unpaid.

- (c) Under no circumstances shall the CAISO be obligated to pay to the WECC, NERC or any regional advisory body, or to their successors or assignees, any NERC/WECC Charges or any interest charges related to NERC/WECC Charges except for those NERC/WECC Charges actually paid to the CAISO by Scheduling Coordinators. The CAISO shall have no obligations whatsoever to pursue collections of NERC/WECC Charges other than the obligation to invoice Scheduling Coordinators and to provide information to the WECC or NERC as provided for in the CAISO Tariff. Notwithstanding the foregoing, the CAISO shall have the right, at its sole discretion, to recoup, set off and apply any amount to which a Scheduling Coordinator is or will be entitled, in or towards the satisfaction of any of that Scheduling Coordinator's past-due NERC/WECC Charges in accordance with Section 11.29.13.7.
- (d) The CAISO shall, on request, certify in writing the NERC/WECC Charges owed by a Scheduling Coordinator that remain unpaid and shall provide certified copies of the relevant Preliminary NERC/WECC Charge Invoices, Final NERC/WECC Charge Invoices, and other documentation on which the CAISO's certificate was based to the WECC, NERC, and the applicable Scheduling Coordinators. A CAISO certificate given under this Section 11.20.7(d) may be used as prima facie evidence of the amount due in any legal proceedings.

**11.21 [NOT USED]**

**11.22            Grid Management Charge.**

**11.22.1           CAISO's Obligations.**

**11.22.1.1        FERC's Uniform System of Accounts.**

The CAISO shall maintain a set of financial statements and records in accordance with the FERC's Uniform System of Accounts.

**11.22.1.2        [NOT USED]**

**11.22.2           Costs Included in the Grid Management Charge.**

*The Grid Management Charge shall include the following costs incurred by the CAISO, as described in more detail in Appendix F, Schedule 1:*

*(1)       CAISO Operating Costs;*

*(2)       CAISO Other Costs and Revenues;*

*(3)       CAISO Financing Costs; and*

*(4)       CAISO Operating and Capital Reserves Costs.*

**11.22.2.1        [NOT USED]**

**11.22.2.2        [NOT USED]**

**11.22.2.3        [NOT USED]**

**11.22.2.4 [NOT USED]**

**11.22.2.5 Allocation of the Grid Management Charge Among Scheduling Coordinators.**

The costs recovered through the Grid Management Charge shall be allocated to the service charges that comprise the Grid Management Charge. If the CAISO's revenue requirement for any service charge changes from the most recent FERC-approved revenue requirement for that service charge, the costs recovered through that service charge shall be delineated in a filing to be made at FERC as set forth in Section 11.22.2.6. The service charges *as described in more detail in Appendix F, Schedule 1, Parts A and F* are as follows:

- (1) Core Reliability Services – Demand Charge
- (2) Core Reliability Services – Energy Exports Charge
- (3) Energy Transmission Services – Net Energy Charge
- (4) Energy Transmission Services – Uninstructed Deviations Charge
- (5) *Core Reliability Services/Energy Transmission Services – Transmission Ownership Rights Charge*
- (6) Forward Scheduling Charge
- (7) Market Usage Charge and
- (8) Settlements, Metering, and Client Relations Charge.

The charges shall be levied separately monthly in arrears on all Scheduling Coordinators based on the billing determinants specified below for each charge in accordance with formulae set out in Appendix F, Schedule 1, Part A, subject to the requirements set out in Appendix F, Schedule 1, Part F.

**11.22.2.5.1 Core Reliability Services – Demand Charge.**

The Core Reliability Services – Demand Charge for a Scheduling Coordinator's Load that is not associated with Energy Exports is calculated *d a* according to the formula in Appendix F, Schedule 1, Part A, *subject to the requirements set out in Appendix F, Schedule 1, Part F.*

**11.22.2.5.2 Core Reliability Services – Energy Exports Charge.**

The Core Reliability Services – Energy Exports Charge for the load associated with a Scheduling Coordinator's Energy Exports is calculated *d a* according to the formula in Appendix F, Schedule 1, Part A, *subject to the requirements set out in Appendix F, Schedule 1, Part F.*



**11.22.2.5.3 Energy Transmission Services – Net Energy Charge.**

The Energy Transmission Services – Net Energy Charge for each Scheduling Coordinator is calculated according to the formula in Appendix F, Schedule 1, Part A, *subject to the requirements set out in Appendix F, Schedule 1, Part F.*

**11.22.2.5.4 Energy Transmission Services – Uninstructed Deviations Charge.**

The Energy Transmission Services – Uninstructed Deviations Charge for each Scheduling Coordinator is calculated using that Scheduling Coordinator's net Uninstructed *Imbalance Energy* by Settlement Interval, according to the formula in Appendix F, Schedule 1, Part A, *subject to the requirements set out in Appendix F, Schedule 1, Part F.*

**11.22.2.5.5 Core Reliability Services/Energy Transmission Services – Transmission Ownership Rights Charge.**

*The Core Reliability Services/Energy Transmission Services – Transmission Ownership Rights Charge for each Scheduling Coordinator is calculated according to the formula in Appendix F, Schedule 1, Part A, subject to the requirements set out in Appendix F, Schedule 1, Part F.*

**11.22.2.5.6 Forward Scheduling Charge.**

The Forward Scheduling Charge for each Scheduling Coordinator is calculated

according to the formula in Appendix F, Schedule 1, Part A, *subject to the requirements set out in Appendix F, Schedule 1, Part F.*

**11.22.2.5.7 Market Usage Charge.**

The Market Usage Charge for each Scheduling Coordinator is calculated according to the formula in Appendix F, Schedule 1, Part A, *subject to the requirements set out in Appendix F, Schedule 1, Part F.*

**11.22.2.5.8 Settlements, Metering, and Client Relations Charge.**

The Settlements, Metering, and Client Relations Charge for each Scheduling Coordinator is fixed at \$1000.00 per month, per Scheduling Coordinator ID with an invoice value other than \$0.00 in the current Trading Month, as indicated in Appendix F, Schedule 1, Part A, *subject to the requirements set out in Appendix F, Schedule 1, Part F.* Excess GMC costs related to the provision of these services that are not recovered through this charge are allocated to the other GMC service categories as specified in Appendix F, Schedule 1, Part E.

**11.22.2.6 Calculation and Adjustment of the Grid Management Charge.**

The charges set forth in Section 11.22.2.5 that comprise the Grid Management Charge shall be calculated through the formula set forth in Appendix F, Schedule 1, Part A. The formula set forth in Appendix F, Schedule 1, Part C sums the CAISO Operating Costs (less any available expense recoveries), CAISO Other Costs and Revenues, CAISO Financing Costs, and CAISO Operating and Capital Reserves Costs associated with each of the CAISO service charges to obtain a total revenue requirement. This revenue requirement is allocated among the charges of the GMC through the application of the factors specified in Appendix F, Schedule 1, Part E.

The revenue requirement for each service then shall be divided by the forecast annual or periodic billing determinant volume to obtain a rate for each service, which will be payable by Scheduling Coordinators as set forth in Section 11.22.2.5. The rates so established will be adjusted annually, through the operation of the formula set forth in Appendix F, Schedule 1, Part A. The CAISO shall post on the CAISO Website each year, before the adjusted rates go into effect, as described in Appendix F, Schedule 1, Part D, data showing the rates adjusted to reflect any change in the annual revenue requirement, variance between forecast and actual costs for the previous year or period, or any surplus revenues from the previous year or period (as defined in Section 11.17), or the inability to recover from a Scheduling Coordinator its share of the Grid Management Charge, or any under-achievement of a forecast of the billing determinant volumes used to establish the rates. The circumstances under which the CAISO is permitted to put the adjusted rates into effect without submitting a filing to the FERC are described in Appendix F, Schedule 1, Part D. Appendix F, Schedule 1, Part B sets forth the conditions under which a quarterly adjustment to the Grid Management Charge will be made.

**11.22.2.6.1 Credits and Debits of the Grid Management Charge.**

In addition to the adjustments permitted under Section 11.29.7.3.3, the CAISO shall credit or debit, as appropriate, the account of a Scheduling Coordinator for any overpayment or underpayment of the Grid Management Charge that the CAISO determines occurred due to error, omission, or miscalculation by the CAISO or the Scheduling Coordinator.

**11.22.3 MSS GMC Charges.**

If the CAISO is charging Grid Management Charges for Uninstructed *Imbalance Energy*, and the Scheduling Coordinator for a Load-following MSS has Uninstructed *Imbalance Energy* associated with the MSS's resources, then the CAISO will net the Generation and imports into the MSS to match the Demand and exports out of the MSS, and will not assess *the Grid Management Charge* associated with Uninstructed *Imbalance Energy* for such portion of Energy that is used to match MSS Demand and net exports.

**11.22.3.1** If Generation, above the amount to cover Demand and exports, was sold into the CAISO's Real-Time Market, then the Scheduling Coordinator for the MSS will be charged *the Grid Management Charge* associated with Uninstructed *Imbalance Energy* for this quantity.

**11.22.3.2** If insufficient Generation and imports was available to cover Demand and exports, and the Scheduling Coordinator for the MSS purchased *Uninstructed Imbalance Energy* from the CAISO Markets, then such Scheduling Coordinator will be charged *the Grid Management Charge* associated with Uninstructed *Imbalance Energy* for this quantity.

**11.22.3.3** *Grid Management Charges* associated with *Uninstructed Imbalance Energy* (the *Energy Transmission Services – Uninstructed Deviations and Market Usage Charges*) will be treated on a net basis *by Settlement interval. The Core Reliability Services – Demand Charge, Core Reliability Services – Energy Exports Charge, and Energy Transmission Services – Net Energy Charge* will be charged based on *Metered Balancing Authority Area Load, including* exports out of the MSS. Ancillary Service Bids accepted by the CAISO and Instructed Imbalance Energy will be assessed the *applicable Market Usage Charges*.

**11.23 Penalties for Uninstructed Imbalance Energy.**

Effective December 1, 2004, the CAISO shall not charge any Uninstructed Deviation Penalties pursuant to this Section 11.23 until FERC issues an order authorizing the CAISO to charge Uninstructed Deviation Penalties pursuant to this section. Beginning with Settlement Statements for the first Trading Day for which FERC authorizes the CAISO to charge Uninstructed Deviation Penalties pursuant to this section, the CAISO shall charge Scheduling Coordinators Uninstructed Deviation Penalties for Uninstructed Imbalance Energy resulting from resource deviations outside a Tolerance Band from their Dispatch Operating Point, for dispatched resources, or their Day-Ahead Schedule otherwise. The Uninstructed Deviation Penalty will be applied as follows:

- (a) The Uninstructed Deviation Penalty for negative Uninstructed Imbalance Energy will be calculated and assessed in each Settlement Interval. The Uninstructed Deviation Penalty for positive Uninstructed Imbalance Energy will be calculated and assessed in each Settlement Interval in which the CAISO has not declared a staged System Emergency;
- (b) The Uninstructed Deviation Penalty will apply to pre-Dispatched Bids from Non-Dynamic System Resources identified, when such a pre-Dispatch Instruction is issued more than forty (40) minutes prior to the relevant Operating Hour, subject to the following conditions: i) the Uninstructed Deviation Penalty will only apply to the pre-Dispatched amount of the Bid that is declined or not delivered, ii) the Uninstructed Deviation Penalty will not apply to a portion of a pre-Dispatched Bid that is subsequently not delivered at the direction of a **Balancing Authority**,

including the CAISO, due to a curtailment of transmission capability or to prevent curtailment of native firm load occurring subsequent to issuing the pre-Dispatch Instruction, iii) the Uninstructed Deviation Penalty will not apply to Uninstructed Imbalance Energy resulting from declining subsequent intra-hour Dispatch Instructions. Dynamically scheduled Dynamic System Resources, to the extent they deviate from their Day-Ahead Schedule plus any Dispatch Instructions, will be subject to the Uninstructed Deviation Penalty.

- (c) The Uninstructed Deviation Penalty will not apply to Load or Curtailable Demand.
- (d) **[NOT USED]**
- (e) The Uninstructed Deviation Penalty will not apply to Regulatory Must-Run Generation or Participating Intermittent Resources that meet the scheduling obligations established in the Eligible Intermittent Resources Protocol in Appendix Q. No other applicable charges will be affected by this exemption. The Uninstructed Deviation Penalty also will not apply to Qualifying Facilities (QFs), including those that are dynamically scheduled, that have not executed and are not required pursuant to this CAISO Tariff to execute a Participating Generator Agreement (PGA) or Qualifying Facility Participating Generator Agreement.
- (f) All MSS resources designated as Load-following resources pursuant to Section 4.9.13.2 (regardless of gross or net settlement election) are exempt from Uninstructed Deviation Penalties in this Section 11.23. All MSS resources not designated as Load-following resources pursuant to Section 4.9.13.2 (regardless of gross or net Settlement election) are subject to Uninstructed Deviation Penalties in this Section 11.23.

- (g) The Uninstructed Deviation Penalty will apply to Generating Units providing Regulation and dynamically scheduled Dynamic System Resources providing Regulation to the extent that Uninstructed Deviations from such resources exceed each resource's actual Regulation range plus the applicable Tolerance Band. Resources providing Regulation and generating within their relevant Regulating range (or outside their relevant Regulating range as a direct result of CAISO control or instruction) will be deemed to have zero (0) deviations for purposes of the Uninstructed Deviation Penalty.
- (h) The Uninstructed Deviation Penalty will be calculated and assessed for each resource individually, except as specified in Appendix R, which specifies when Uninstructed Deviations from individual resources may be aggregated.
- (i) The Uninstructed Deviation Penalty shall not apply to any Uninstructed Imbalance Energy resulting from compliance with a directive by the CAISO or the Reliability Coordinator.
- (j) **[NOT USED]**
- (k) The Uninstructed Deviation Penalty will not apply when the applicable LMP is negative or zero.
- (l) The Uninstructed Deviation Penalty for positive Uninstructed Imbalance Energy will be the amount of the Uninstructed Imbalance Energy in excess of the Tolerance Band multiplied by a price equal to one hundred percent (100%) of the corresponding LMP. The relevant LMP will be calculated for each UDP Location as the ten-minute weighted average price of two five-minute Dispatch Interval LMPs and the two five-minute optimal Instructed Imbalance Energy quantities. The net effect of the Uninstructed Deviation Penalty and the Settlement for positive Uninstructed Imbalance Energy beyond the Tolerance Band will be that the CAISO will not pay for such Energy.

- (m) The Uninstructed Deviation Penalty for negative Uninstructed Imbalance Energy will be the amount of the Uninstructed Imbalance Energy in excess of the Tolerance Band multiplied by a price equal to fifty percent (50%) of the corresponding Resource-Specific Settlement Interval LMP or, in the case of aggregated resources, the Settlement Interval Penalty Location Real-Time LMP.
- (n) The Uninstructed Deviation Penalty will not apply to deviations from Energy delivered as part of a scheduled test so long as the test has been scheduled by the Scheduling Coordinator with the CAISO or the CAISO has initiated the test for the purposes of validating unit performance.
- (o) The Uninstructed Deviation Penalty shall not apply to any excess Energy delivered from or any shortfall of Energy not delivered from an Exceptional Dispatch, involving a Generating Unit or a System Unit unless the CAISO and the supplier have agreed upon the time of, duration of, and amount of Energy to be delivered in the out-of-market transaction and the CAISO reflects the out-of-market transaction in its Real-Time Expected Energy calculations. The Uninstructed Deviation Penalty shall apply to Energy outside the Tolerance Band from out-of-market transactions with dynamically scheduled Dynamic System Resources to the extent the agreed-to Energy is not delivered or over-delivered, and to any Energy from Non-Dynamic System Resources to the extent the agreed-to Energy is not delivered if that over- or under-delivery was due to action taken by or not taken by the System Resource and not the result of action taken by a **Balancing Authority** due to a curtailment of firm transmission capability or to prevent curtailment of native firm load occurring subsequent to the out-of-market transaction.



- (p) The Uninstructed Deviation Penalty shall not apply to Generating Units and dynamically scheduled Dynamic System Resources with Uninstructed Imbalance Energy if the Generating Unit or dynamically scheduled Dynamic System Resource was physically incapable of delivering the expected Energy or if systems malfunctions prevent receipt of Dispatch Instructions, provided that the Generating Unit or dynamically scheduled Dynamic System Resource had notified the CAISO within thirty (30) minutes of the onset of an event that prevents the resource from performing its obligations. A Generating Unit or dynamically scheduled Dynamic System Resource must notify CAISO operations staff of its reasons for failing to deliver the Expected Energy in accordance with Section 9.3.10.6 and must provide information to the CAISO that verifies the reason the resource failed to comply with the Dispatch Instruction within forty-eight (48) hours of the Operating Hour in which the instruction is issued.
- (q) Adjustments to any Generating Unit, Curtailable Demand and System Resource Day-Ahead Schedules or HASP Intertie Schedules made in accordance with the terms of TRTC Instructions for Existing Contracts or TORs shall not be subject to Uninstructed Deviation Penalties. Valid changes to ETC Self-Schedules or TOR Self-Schedules submitted after the close of the HASP or the RTM shall not be subject to Uninstructed Deviation Penalties.
- (r) Any changes made to Schedules prior to the CAISO issuing HASP Intertie Schedules shall not be subject to Uninstructed Deviation Penalties.
- (s) Uninstructed Deviation Penalties shall not be charged to any deviation from a Dispatch Instruction that does not comply with the requirements set forth in this CAISO Tariff.

- (t) Amounts collected as Uninstructed Deviation Penalties shall first be assigned to reduce the portion of above-LMP costs that would otherwise be assigned pro rata to all Scheduling Coordinators in that Settlement Interval. Any remaining portion of amounts collected as Uninstructed Deviation Penalties after satisfying these sequential commitments shall be treated in accordance with Section 11.29.9.6.3.
- (u) Condition 2 RMR Units shall be exempt from Uninstructed Deviation Penalties.
- (v) The Uninstructed Deviation Penalty shall not apply to positive Uninstructed Imbalance Energy attributable to operation below the Generating Unit's Minimum Operating Limit from the time the Generating Unit synchronizes to the grid to the earlier of (1) the Settlement Interval in which the Generating Unit produces a quantity of Energy that represents an average rate of delivery over such Settlement Interval in excess of the Generating Unit's Minimum Operating Limit plus the applicable Tolerance Band, or (2) the first Settlement Interval after the expiration of a period of time that begins at the end of the Settlement Interval in which the Generating Unit synchronizes to the grid and ends after the Generating Unit's maximum Start-Up Time as specified in the Master File. The Uninstructed Deviation Penalty shall not apply to any positive Uninstructed Imbalance Energy attributable to operation below the Generating Unit's Minimum Operating Limit for a duration equal to the minimum of two Settlement Intervals or the time specified in the Master File for the Generating Unit to disconnect from the grid after reaching its Minimum Operating Limit following either (1) the last Settlement Interval of an hour in which the Generating Unit had a non-zero Day-Ahead Schedule or (2) the Settlement Interval in which the Generating Unit is expected to reach its Minimum Operating Limit based on the applicable Ramp Rate when the CAISO instructed the Generating Unit to Shut-Down. The amount of

Uninstructed Imbalance Energy exempted from the Uninstructed Deviation

Penalty shall not exceed the amount of the Generating Unit's Minimum Operating Limit plus the applicable Tolerance Band. This exception from the application of the Uninstructed Deviation Penalty does not apply to Dynamic System Resources.

- (w) UDP shall not apply to deviations by a Generating Unit that are attributable to any automatic response to a system disturbance, including a response to correct frequency decay, in accordance with Applicable Reliability Criteria for the duration of the system disturbance, and for an additional five (5) minutes when a Generating Unit's deviation is in the same direction as the mitigating frequency response.
- (x) The Uninstructed Deviation Penalty shall not apply in the event that a malfunction in a CAISO system application causes an infeasible Dispatch Instruction to be communicated or prevents timely communication of a Dispatch Instruction or a SLIC malfunction prevents a resource from reporting an event that affects the resource's ability to deliver Energy.
- (y) The Uninstructed Deviation Penalty shall not apply to a failure to comply with a manual Dispatch Instruction that is not confirmed by a Dispatch Instruction transmitted through the CAISO's Automated Dispatch System.
- (z) The Uninstructed Deviation Penalty shall not apply if a Dispatch Instruction is validated after the start time of the instruction from the Settlement Interval in which the Dispatch Instruction was first effective to the earliest Settlement Interval, inclusive, in which the resource is able to respond to the Dispatch Instruction.

**11.24 Interim Scheduling Report, Charge and Allocation.**

**11.24.1 Interim Scheduling Report.**

The CAISO will provide to each Scheduling Coordinator on a weekly basis a report of the difference between a Scheduling Coordinator's metered CAISO Demand and the total CAISO Demand scheduled by the Scheduling Coordinator in its Day-Ahead Schedule, based on available Meter Data. The CAISO shall treat such reports as confidential in accordance with Section 20. Such reports shall be prepared as provided in the applicable Business Practice Manual.

**11.24.2 Interim Scheduling Charge.**

In the event that a Scheduling Coordinator's Net Negative CAISO Demand Deviation in its applicable LAP exceeds fifteen percent (15%) of the Scheduling Coordinator's cleared total CAISO Demand as represented in its Day-Ahead Schedule in its applicable LAP for five percent (5%) or more of the total Trading Hours in any given month, the Scheduling Coordinator shall pay through the end of the applicable calendar month the monthly Interim Scheduling Charge as follows:

- (a) For any given Trading Hour in which the Scheduling Coordinator's Net Negative CAISO Demand Deviation in its applicable LAP is greater than fifteen percent (15%) and less than twenty percent (20%) of the Scheduling Coordinator's cleared total CAISO Demand as represented in its Day-Ahead Schedule in its applicable LAP, the Scheduling Coordinator shall pay \$150/MWh for its Net Negative CAISO Demand Deviation that is greater than fifteen percent (15%) and less than twenty percent (20%) of its cleared total CAISO Demand as represented in its Day-Ahead Schedule in the applicable LAP in that Trading Hour.

- (b) For any given Trading Hour in which the Scheduling Coordinator's Net Negative CAISO Demand Deviation in its applicable LAP is greater than or equal to twenty percent (20%) of the Scheduling Coordinator's cleared total CAISO Demand as represented in its Day-Ahead Schedule in its applicable LAP, the Scheduling Coordinator shall pay \$250/MWh for its Net Negative CAISO Demand Deviation greater than or equal to twenty percent (20%) of its cleared total CAISO Demand as represented in its Day-Ahead Schedule in the applicable LAP in that Trading Hour.

**11.24.3 Exemptions from the Interim Scheduling Charge.**

The Interim Scheduling Charge shall not apply to the following circumstances:

- (a) For any given Trading Day for Scheduling Coordinators in each applicable LAP in which the CAISO's daily Day-Ahead peak CAISO Forecast of CAISO Demand is ninety-five percent (95%) or less than daily actual metered CAISO Demand in the respective northern and southern regions of the CAISO *Balancing Authority* Area as further described in the Business Practice Manuals.
- (b) For any given Trading Hour when a Scheduling Coordinator's peak metered CAISO Demand is less than or equal to 500 MW in a particular LAP, that Scheduling Coordinator shall not be subject to the Interim Scheduling Charge.
- (c) For metered CAISO Demand by Participating Loads.
- (d) For metered CAISO Demand that is MSS Load following Demand.
- (e) For any given Trading Hour when the Hourly Real-Time LAP Price is less than the Day-Ahead LAP Price for the same Trading Hour in the applicable LAP.
- (f) *For metered CAISO Demand of Station Power Loads.*

**11.24.4 Allocation of Revenue Collected Under the Interim Scheduling Charge.**

Any revenues collected with the assessment of the Interim Scheduling Charge shall be treated as "Other Revenues" as described in Part C of Schedule 1 of Appendix F. The Interim Scheduling Charge revenues will be used to offset the revenue requirement associated with the Market Usage Charge.

**11.25 [NOT USED]**

**11.26 [NOT USED]**

**11.27 Voltage Support and Black Start Charges.**

The CAISO shall calculate, account for and settle charges and payments for Voltage Support and Black Start as set out in Sections 11.10.1.4, 11.10.1.5, 11.10.7, 11.10.8, and the applicable Business Practice Manual.

**11.28** The CAISO shall calculate, charge and disburse all collected default Interest in accordance with the CAISO Tariff.

**11.29 Billing and Payment Process.**

The CAISO will calculate for each charge the amounts payable by the relevant Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for each Settlement Period of the Trading Day, and the amounts payable to that Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for each charge for each Settlement Period of that Trading Day and shall arrive at a net amount payable for each charge by or to that Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for each charge for that Trading Day. Each of these amounts will appear in the Initial Settlement Statement T+38BD, Initial Settlement Statement Reissue, Recalculation Settlement Statement and the Recalculation Settlement Statement T+76BD that the CAISO will provide to the relevant Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO.

The components of the Grid Management Charge will be included in the Initial Settlement Statement T+38BD, Initial Settlement Statement Reissue, Recalculation Settlement Statement and the Recalculation Settlement Statement T+76BD with the other types of charges referred to in Section 11, but a separate Invoice for the Grid Management Charge, stating the rate, billing determinant volume, and total charge for each of its components, will be issued by the CAISO to the Scheduling Coordinator.

**11.29.1** The billing and payment process shall be based on the issuance of Initial Settlement Statement T+38BD, Initial Settlement Statement Reissue, Recalculation Settlement Statement and the Recalculation Settlement Statement T+76BD for each Settlement Period in each Trading Day.

**11.29.2** Payment for the charges referred to in Section 11.1.2 (except for the charges payable under long-term contracts) for each Trading Day in each calendar month shall be made five (5) Business Days after issuance of the Initial Settlement Statement T+38BD for the last day of the relevant calendar month. Payment for adjustments will be made five (5) Business Days after issuance of the Initial Settlement Statement Reissue or Recalculation Settlement Statement for the last day of the relevant month. Payments for FERC Annual Charges will be made in accordance with Section 11.19.

**11.29.3 Prepayments.**

- (a) A Scheduling Coordinator or CRR Holder may choose to pay at an earlier date than the Payment Date specified in the CAISO Payments Calendar by way of prepayment provided it notifies the CAISO by electronic means before submitting its prepayment.
- (b) Prepayment notifications must specify the dollar amount prepaid.
- (c) Prepayments must be made by Scheduling Coordinators or CRR Holder via Fed-Wire into their CAISO prepayment account designated by the CAISO. The relevant Scheduling Coordinator or CRR Holder shall grant the CAISO a security interest on all funds in its CAISO prepayment account.

- (d) On any Payment Date the CAISO shall be entitled to cause funds from the relevant Scheduling Coordinator's or CRR Holder's CAISO prepayment account to be transferred to the CAISO Clearing Account in such amounts as may be necessary to discharge in full that Scheduling Coordinator's or CRR Holder's payment obligation arising in relation to that Payment Date by way of set-off or recoupment.
- (e) Any funds held in the relevant Scheduling Coordinator's or CRR Holder's CAISO prepayment account shall be treated as part of that Scheduling Coordinator's or CRR Holder's Financial Security.
- (f) Interest (or other income) accruing on the relevant Scheduling Coordinator's or CRR Holder's CAISO prepayment account shall inure to the benefit of that Scheduling Coordinator or CRR Holder and shall be added to the balance of its CAISO prepayment account on a monthly basis.
- (g) Funds held in a CAISO prepayment account by a Scheduling Coordinator or CRR Holder may be recouped, offset or applied by the CAISO to any outstanding financial obligations of that Scheduling Coordinator or CRR Holder to the CAISO or to other Scheduling Coordinators or CRR Holders under this CAISO Tariff.

**11.29.4 System Failure.**

**11.29.4.1 At CAISO Debtor's Bank.**

If any CAISO Debtor becomes aware that a payment will not, or is unlikely to be, remitted to the CAISO Bank by 10:00 am on the relevant Payment Date for any reason (including failure of the Fed-Wire or any computer system), it shall immediately notify the CAISO, giving full details of the payment delay (including the reasons for the payment delay). The CAISO Debtor shall make all reasonable efforts to remit payment as soon as possible, by an alternative method if necessary, to ensure that funds are received for value no later than 10:00 am on the Payment Date, or as soon as possible thereafter.



**11.29.4.2 At the CAISO's Bank.**

In the event of failure of any electronic transfer system affecting the CAISO Bank, the CAISO shall use reasonable efforts to establish alternative methods of remitting funds to the CAISO Creditors' Settlement Accounts by close of banking business on that Payment Date, or as soon as possible thereafter. The CAISO shall notify the CAISO Debtors and the CAISO Creditors of occurrence of the system failure and the alternative methods and anticipated time of payment.

**11.29.5 General Principles for Production of Settlement Statements.**

**11.29.5.1 Basis of Settlement.**

The basis of each Settlement Statement shall be the debiting or crediting of an account in the name of the relevant Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO in the general ledger set up by the CAISO to reflect all transactions, charges or payments settled by the CAISO.

**11.29.5.2 Right to Dispute.**

All Scheduling Coordinators, CRR Holders, Black Start Generators or Participating TOs shall have the right to dispute any item or calculation set forth in any Initial Settlement Statement in accordance with this CAISO Tariff.

**11.29.5.3 Data Files.**

Settlement Statements relating to each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO shall be accompanied by data files of supporting information that includes the following for each Settlement Period of the Trading Day:

- (a) the aggregate quantity (in MWh) of Energy supplied or withdrawn by the Scheduling Coordinator Metered Entities represented by the Scheduling Coordinator;

- (b) the aggregate quantity (in MW) and type of Ancillary Services capacity provided or purchased;
- (c) the relevant prices that the CAISO has applied in its calculations;
- (d) details of the scheduled quantities of Energy and Ancillary Services accepted by the CAISO in the Day-Ahead Market and the Hour-Ahead Market;
- (e) details of Imbalance Energy and penalty payments;
- (f) details of the CRR Payments or CRR Charges, and any payments or charges associated with the CRR Auctions; and
- (g) detailed calculations of all fees, charges and payments allocated among Scheduling Coordinators and each Scheduling Coordinator's share.

**11.29.5.4 Settlement Software.**

The CAISO Settlement software shall be audited by an independent firm of auditors competent to carry out audits of such software to determine its consistency with the CAISO Tariff. In any dispute regarding Settlement calculations, a certificate of such firm of auditors that the CAISO software is consistent with the CAISO Tariff shall be prima facie proof that the charges shown in a Settlement Statement have been calculated in a method consistent with the CAISO Tariff. Nothing in this section will be deemed to establish the burden of proof with respect to Settlement calculations in any proceeding.

**11.29.6 Calculation in the Event of Lack of Meter Data for the Balancing of Market Accounts.**

Settlements shall not be cleared for final processing until the accounting trial balance is zero. In order to publish a Settlement Statement, the CAISO may use estimated, disputed or calculated Meter Data.

When actual verified Meter Data is available and all of the disputes raised by Scheduling Coordinators, CRR Holders, Black Start Generators, and Participating TOs during the validation process described in Section 11.29.8 have been determined, the CAISO shall recalculate the amounts payable and receivable by the affected Scheduling Coordinators, CRR Holders, Black Start Generators, and Participating TOs or by all Scheduling Coordinators, CRR Holders, Black Start Generators, and Participating TOs, if applicable, as soon as reasonably practical and shall show any required adjustments as a debit or credit in the next Settlement Statement.

**11.29.7 Settlements Cycle.**

**11.29.7.1 Timing of the Settlements Process.**

**11.29.7.1.1 Initial Settlement Statement T+38BD.**

The CAISO shall provide to each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for validation an Initial Settlement Statement for each Trading Day within thirty-eight (38) Business Days of the relevant Trading Day, covering all Settlement Periods in that Trading Day. Each Initial Settlement Statement will include a statement of:

- (a) the amount payable or receivable by the Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for each charge referred to in Section 11 for each Settlement Period in the relevant Trading Day;
- (b) the total amount payable or receivable by that Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for each charge for all Settlement Periods in that Trading Day after the amounts payable and the amounts receivable under (a) have been netted off pursuant to Section 11.29; and
- (c) the components of each charge in each Settlement Period except for information contained in the Imbalance Energy report referred to in this Section 11.29.7.1.1.

Each **Initial** Settlement Statement shall also be accompanied by a breakdown of the components of the Imbalance Energy Charge (the Imbalance Energy report).

**11.29.7.1.2** Each Scheduling Coordinator, **CRR Holder**, Black Start Generator or Participating TO shall have a period of eight (8) Business Days from the issuance of an **Initial** Settlement Statement during which it may review the **Initial** Settlement Statement **T+38BD** and notify the CAISO of any errors. No later than fifty-one (51) Business Days after the Trading Day to which it relates, the CAISO shall issue an **Initial Settlement Statement Reissue or a Recalculation** Settlement Statement to each Scheduling Coordinator or **CRR Holder** for that Trading Day.

**11.29.7.1.3 Initial Settlement Statement Reissues and Recalculation Settlement Statements.**

The CAISO shall provide to each Scheduling Coordinator, **CRR Holder**, Black Start Generator or Participating TO an **Initial Settlement Statement Reissue or a Recalculation** Settlement Statement in accordance with the CAISO Tariff and the CAISO Payments Calendar. The **Initial Settlement Statement Reissue or Recalculation** Settlement Statement shall be in a format similar to that of the **Initial** Settlement Statement and shall include the same granularity of information provided in the **Initial** Settlement Statement as amended following the validation procedure.

**11.29.7.1.4** Each Scheduling Coordinator, **CRR Holder**, Black Start Generator or Participating TO shall have a period of ten (10) Business Days from the issuance of the **Initial Settlement Statement Reissue or Recalculation** Settlement Statement during which it may review the Incremental Changes on the **Initial Settlement Statement Reissue or Recalculation** Settlement Statement and notify the CAISO of any errors. No later than twenty-five (25) Business Days from the date of issuance of the **Initial Settlement Statement Reissue or Recalculation** Settlement Statement, the CAISO shall **issue the 76<sup>th</sup> Day Recalculation Settlement Statement** and shall incorporate any required corrections in a subsequent **Initial** Settlement Statement.

**11.29.7.2 Basis for Billing and Payment.**

The Initial Settlement Statement T+38BD, Initial Settlement Statement Reissue, Recalculation Settlement Statement and the Recalculation Settlement Statement T+76BD shall constitute the basis for billing and associated automatic funds transfers in accordance with this CAISO Tariff. The Initial Settlement Statement T+38BD shall constitute the basis for billing and associated automatic funds transfers for all charges in the first instance. The Initial Settlement Statement Reissue and Recalculation Settlement Statement shall constitute the basis for billing and associated automatic funds transfers for adjustments to charges set forth in the Initial Settlement Statement T+38BD. Each Scheduling Coordinator, CRR Holder, Black Start Generator, and Participating TO shall pay any net debit and shall be entitled to receive any net credit shown in an Invoice or Payment Advice on the Payment Date, whether or not there is any dispute regarding the amount of the debit or credit.

**11.29.7.2.1 Elimination of Invoices under \$10.00.**

Preliminary and final Invoices and Payment Advices due to or from any Market Participant for amounts less than \$10.00 will be adjusted to \$0.00 and no amount will be due to or from that Market Participant for that Invoice or Payment Advice.

**11.29.7.3 Settlement Statement Re-runs and Post Final Adjustments.**

The CAISO is authorized to perform Settlement Statement Re-runs following approval of the CAISO Governing Board. A request to perform a Settlement Statement Re-run may be made at any time by a Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO by notice in writing to the CAISO Governing Board. The CAISO Governing Board shall, in considering whether to approve a request for a Settlement Statement Re-run, determine in its reasonable discretion whether there is good cause to justify the performance of a Settlement Statement Re-run.

**11.29.7.3.1** If a Settlement Statement Re-run is ordered by the CAISO Governing Board, the CAISO shall arrange to have the Settlement Statement Re-run carried out as soon as is reasonably practicable following the CAISO Governing Board's order, subject to the availability of staff and computer time, compatible software, appropriate data and other resources.

**11.29.7.3.2** The cost of a Settlement Statement Re-run shall be borne by the Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO requesting it, unless the Settlement Statement Re-run was needed due to a clerical oversight or error on the part of the CAISO staff.

**11.29.7.3.3** Where a Settlement Statement Re-run indicates that the accounts of Scheduling Coordinators, CRR Holders, Black Start Generators, or Participating TOs should be debited or credited to reflect alterations to Settlements previously made under this CAISO Tariff, for those Scheduling Coordinators, CRR Holders, Black Start Generators, or Participating TOs affected by the statement re-run, the CAISO shall reflect the amounts to be debited or credited in the next subsequent Recalculation Settlement Statement that it issues following the Settlement Statement Re-run to which the provisions of this Section 11 apply.

**11.29.7.3.4** Reruns, post closing adjustments and the financial outcomes of CAISO ADR Procedures and any other dispute resolution may be invoiced separately from monthly market activities. The CAISO shall provide a Market Notice at least thirty (30) days prior to such invoicing identifying the components of such Invoice or Payment Advice.

## **11.29.8 Confirmation and Validation.**

### **11.29.8.1 Confirmation.**

It is the responsibility of each Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO to notify the CAISO if it fails to receive a Settlement Statement on the date specified for the publication of such Settlement Statement in the CAISO Payments Calendar. Each Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO shall be deemed to have received its Settlement Statement on the dates specified, unless it notifies the CAISO to the contrary.

**11.29.8.2 Validation.**

Each Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO shall have the opportunity to review the terms of the Initial Settlement Statement T+38BD that it receives. The Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO shall be deemed to have validated each Initial Settlement Statement unless it has raised a dispute or reported an exception within eight (8) Business Days from the date of issuance. Once validated, an Initial Settlement Statement shall be binding on the Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO to which it relates, unless the CAISO performs a Settlement Statement Re-run pursuant to Section 11.29.7.3.

The notice of dispute, if any, shall state clearly the Trading Day, the issue date of the Initial Settlement Statement, the item disputed, the reasons for the dispute, the amount claimed (if appropriate) and shall be accompanied with all available evidence reasonably required to support the claim.

**11.29.8.3 Validation of Initial Settlement Statement Reissue and Recalculation Settlement Statements.**

Each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO shall have the opportunity to review the Incremental Changes that appear on the Initial Settlement Statement Reissue and Recalculation Settlement Statement that it receives. The Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO shall be deemed to have validated the Incremental Changes on each Initial Settlement Statement Reissue and Recalculation Settlement Statement unless it has raised a dispute or reported an exception regarding those Incremental Changes within ten (10) Business Days from the date of issuance. Once validated, the Incremental Changes on the Initial Settlement Statement Reissue and Recalculation Settlement Statement shall be binding on the Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO to which it relates, unless the CAISO performs a Settlement Statement Re-run pursuant to Section 11.29.7.3.

The notice of dispute shall state clearly the Trading Day, the issue date of the Initial Settlement Statement Reissue and Recalculation Settlement Statement, the item disputed, the reasons for the dispute, the amount claimed (if appropriate) and shall be accompanied with all available evidence reasonably required to support the claim. The only Recalculation Settlement Statement that cannot be disputed is the one issued on T+59BD.

#### **11.29.8.4      Recurring Disputes or Exceptions.**

A Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO may request the CAISO to treat as recurring a dispute or exception raised in accordance with Sections 11.29.8.1 and 11.29.8.2 above, if a dispute or exception would apply to subsequent Initial and the Initial Settlement Statement Reissue and Recalculation Settlement Statements. A request for recurring treatment may be made for any valid reason provided that subsequent Initial Settlement Statements T+38BD, Initial Settlement Statement Reissue and Recalculation Settlement Statements would be affected, including but not limited to, that the disputed calculation will recur, or that a disagreement as to policy will affect calculations in subsequent Initial Settlement Statement T+38BD, the Initial Settlement Statement Reissue and Recalculation Settlement Statements. If a Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO wishes to request that the CAISO treat a dispute as recurring, it shall, in the notice, clearly indicate that it requests such treatment and set forth in detail the reasons that support such treatment. To the extent possible, the Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO shall state the types of charges and dates to which the dispute will apply, and provide estimates of the amounts that will likely be claimed on each date.



The CAISO shall make a determination on such a request within five (5) Business Days of receipt. To preserve its right to dispute an item, a Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO must continue to raise a dispute or report an exception until it is notified by the CAISO that the CAISO agrees to treat the dispute or exception as recurring. If the CAISO grants a request to treat a dispute or exception as recurring, the dispute raised or exception reported by the Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO shall be deemed to apply to every subsequent Initial Settlement Statement T+38BD, the Initial Settlement Statement Reissue and Recalculation Settlement Statement provided to the Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO from the date that the CAISO grants the request for recurrent treatment until: a) ninety (90) days have elapsed, unless the CAISO indicates a different expiration date on its response to the request, in which case the expiration date shall be as stated by the CAISO in its response or b) the dispute or exception is resolved, whichever is shorter. The CAISO may deny a request that the CAISO treat a dispute as recurring for any valid reason, including because the request is not adequately specific as to the basis for recurring treatment or the subsequent calculations that will be affected.

**11.29.8.5 Amendment.**

Regarding a dispute related to an Initial Settlement Statement, if the CAISO agrees with the amount claimed, it shall incorporate the relevant data into the Initial Settlement Statement Reissue or Recalculation Settlement Statement. Regarding a dispute related to an Incremental Change in an Initial Settlement Statement Reissue or Recalculation Settlement Statement, the CAISO shall make a determination on the dispute no later than twenty-five (25) Business Days from the issuance of the Initial Settlement Statement Reissue or Recalculation Settlement Statement, and, if the CAISO agrees with the amount claimed, shall incorporate the relevant data into the next Recalculation Settlement Statement issued on T+76BD.

**11.29.8.6 CAISO Contact.**

If the CAISO does not agree with the amount claimed or if it requires additional information, it shall make reasonable efforts (taking into account the time it received the notice of dispute and the complexity of the issue involved) to contact the relevant Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO to resolve the issue before issuing the Initial Settlement Statement Reissue or Recalculation Settlement Statement. If it is not possible to contact the relevant party, the CAISO shall issue the Initial Settlement Statement Reissue or Recalculation Settlement Statement without taking into account the dispute notice.

**11.29.8.7 Payment Pending Dispute.**

Each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO which receives an Invoice or Payment Advice shall pay any net debit and shall be entitled to receive any net credit shown in the Invoice or Payment Advice on the Payment Date, whether or not there is any dispute regarding the amount of the debit or credit. The provisions of Section 13 shall apply to the disputed amount.

**11.29.9 Payment Procedures.**

**11.29.9.1 All Payments to Be Made Through the CAISO.**

All Scheduling Coordinators, CRR Holders, Black Start Generators, and Participating TOs shall discharge their obligations to pay the amounts owed by them and shall receive payments of all amounts owed to them under this CAISO Tariff only through the CAISO.

**11.29.9.2 CAISO Accounts to be Established.**

The CAISO is authorized to establish and maintain bank accounts held in trust for Market Participants and obtain lines of credit and other banking facilities (not exceeding an aggregate amount set by the CAISO Governing Board) necessary for the operation of its Settlement and billing procedures. Unless

otherwise specified in this CAISO Tariff the CAISO will recover all costs incurred in connection with these CAISO banking facilities through the appropriate component of the Grid Management Charge. The CAISO shall establish and operate the following accounts:

**11.29.9.2.1** A CAISO Clearing Account to and from which all payments are made;

**11.29.9.2.2** A CAISO Reserve Account from which any debit balances on the CAISO Clearing Account at the close of banking business on each Business Day shall be settled or reduced in accordance with this CAISO Tariff. The CAISO shall use the Financial Security provided by a Scheduling Coordinator, CRR Holder, or Candidate CRR Holder pursuant to Section 12, if necessary, to clear any debit balances on the CAISO Reserve Account that may arise as a result of that Scheduling Coordinator's or CRR Holder's failure to pay an amount due under this CAISO Tariff;

**11.29.9.2.3** A CAISO Surplus Account; and

**11.29.9.2.4** Such other accounts as the CAISO deems necessary or convenient for the purpose of efficiently implementing the funds transfer system under this CAISO Tariff. The CAISO shall notify Market Participants of the establishment of such accounts through the CAISO Website and by issuance of a Market Notice.

**11.29.9.3 Accounts of the Scheduling Coordinators, CRR Holders, Black Start Generators, and Participating TOs.**

Each Scheduling Coordinator, CRR Holder, Black Start Generator, and Participating TO shall establish and maintain a Settlement Account at a commercial bank located in the United States and reasonably acceptable to the CAISO which can effect money transfers via Fed-Wire where payments to and from the CAISO Clearing Account shall be made in accordance with this CAISO Tariff. Scheduling Coordinators, CRR Holders, and Black Start Generators may, but will not be required to, maintain separate accounts for

receipts and payments. Each Scheduling Coordinator, CRR Holder, and Black Start Generator shall notify the CAISO of its account details and of any changes to those details in accordance with the provisions of its Scheduling Coordinator Agreement, CRR Entity Agreement, or Interim Black Start Agreement. Participating TOs will notify the CAISO of their Settlement Account details in accordance with Section 2.2.1 of their Transmission Control Agreement and may notify the CAISO from time to time of any changes by giving at least seven (7) days written notice before the new account becomes operational.

**11.29.9.4 Declaration of Trust.**

All CAISO Accounts established pursuant to Section 11.29.9.2 shall be opened and operated by the CAISO on trust for Market Participants, in accordance with this CAISO Tariff. Each such account shall be maintained at a bank or other financial institution in California and shall bear a name indicating that it is a trust account.

**11.29.9.5 No Co-Mingling.**

The CAISO shall not co-mingle any funds standing to the credit of a CAISO Account with its other funds and shall promptly withdraw any amounts paid into a CAISO Account representing amounts paid for the account of the CAISO.

**11.29.9.6 Use of Accounts.**

**11.29.9.6.1 Clearing Account.**

- (a) Subject to Section 11.29.3 each CAISO Debtor shall remit to the CAISO Clearing Account the amount shown on the Invoice as payable by that CAISO Debtor for value not later than 10:00 a.m. on the Payment Date.
- (b) On the Payment Date the CAISO shall be entitled to cause the transfer of such amounts held in a Scheduling Coordinator's or CRR Holder's CAISO prepayment account to the CAISO Clearing Account as provided in Section 11.29.3.

The CAISO shall calculate the amounts available for distribution to CAISO Creditors on the Payment Date and shall give irrevocable instructions to the CAISO Bank to remit from the CAISO Clearing Account to the relevant Settlement Accounts maintained by the CAISO Creditors, the aggregate amounts determined by the CAISO to be available for payment to CAISO Creditors for value by close of business on the Payment Date if no CAISO Debtors are in default. If a CAISO Debtor is in default and until all defaulting amounts have been collected, the CAISO shall make payments as soon as practical within five (5) Business Days of the collection date posted in the CAISO Payments Calendar. If required, the CAISO shall instruct the CAISO Bank to transfer amounts from the CAISO Reserve Account to enable the CAISO Clearing Account to clear.

The CAISO is authorized to instruct the CAISO Bank to debit the CAISO Clearing Account and transfer to the relevant CAISO Account sufficient funds to pay in full the Grid Management Charge and FERC Annual Charges falling due on any Payment Date with priority over any other payments to be made on that or on subsequent days out of the CAISO Clearing Account.

**11.29.9.6.2 Reserve Account.**

The CAISO Reserve Account shall be available to the CAISO for the purpose of providing funds to clear the CAISO Clearing Account in the event that there are insufficient funds in the CAISO Clearing Account to pay CAISO Creditors. If there are insufficient funds in the CAISO Clearing Account to pay CAISO Creditors and clear the account on any Payment Date, due to payment default by one or more CAISO Debtors, the CAISO shall transfer funds from the CAISO Reserve Account to the CAISO Clearing Account to clear it by close of banking business on that Payment Date pursuant to Section 11.29.13.4.

If the CAISO Reserve Account is drawn upon, the CAISO shall as soon as possible thereafter take any necessary steps against the defaulting Scheduling Coordinator or CRR Holder, including making any calculations or taking any other appropriate action, to replenish the CAISO Reserve Account including drawing on any credit support or other Financial Security provided by the defaulting Scheduling Coordinator, Candidate CRR Holder or CRR Holder pursuant to Section 12 or serving demands on any defaulting Scheduling Coordinator, Candidate CRR Holder or CRR Holder if Financial Security has been exhausted or if no Financial Security is available due to establishment of an Unsecured Credit Limit.

The proceeds of drawings under any line of credit, other credit facility, or other Financial Security of the CAISO Reserve Account shall be held on trust for CAISO Creditors. If the CAISO Reserve Account is replenished as provided for in this Section 11.29.9.6.2, any credits shall be held on trust for all CAISO Creditors.

**11.29.9.6.2.1 Replenishing the CAISO Reserve Account Following Payment Default.**

If the CAISO has debited the CAISO Reserve Account then:

- (a) If, after the CAISO has debited the CAISO Reserve Account on a Payment Date, the CAISO Bank receives a remittance from a CAISO Debtor which has not been (but should have been, if it had been received on a timely basis) credited to the CAISO Clearing Account by 10:00 am on the Payment Date and which required the debiting of the CAISO Reserve Account, such remittance shall be credited to the CAISO Reserve Account.
- (b) The proceeds of any enforcement of Financial Security and/or amounts recovered under proceedings shall be credited to the CAISO Reserve Account.

- (c) If after taking reasonable action the CAISO determines that the default amount (or any part) and/or Interest cannot be recovered, such amounts shall be deemed to be owing by those Market Participants who were CAISO Creditors on the relevant Payment Date pro rata to the net payments they received on that Payment Date and shall be accounted for by way of a charge in the next Settlement Statements of those CAISO Creditors. Such charge shall be credited to the CAISO Reserve Account.

#### **11.29.9.6.3 Surplus Account.**

The CAISO shall establish and maintain a bank account denominated the CAISO Surplus Account. The CAISO Surplus Account shall include the following:

- (a) Any amounts paid to the CAISO in respect of penalties or Sanctions referred to in Section 11.14 shall be credited to the CAISO Surplus Account, subject, however, to Section 11.29.9.6.1(b).
- (b) The funds referred to in Section 11.29.9.6.1(a) pertaining to penalties or Sanctions as provided in Section 11.14 shall first be applied towards any expenses, loss or costs incurred by the CAISO except for that portion of those amounts collected pursuant to 37.9.4. Any excess after such application will be credited to the CAISO Surplus Account pursuant to 11.29.9.6.1(a).
- (c) The funds referred to in Section 11.29.9.6.1(a) pertaining to default Interest referred to in Section 11.29.13.1 shall first be applied towards any unpaid CAISO Creditor balances for the Trading Month in which the default Interest was assessed and second to any other unpaid CAISO Creditor balances. Only after all unpaid CAISO Creditor balances are satisfied in full will any excess funds pertaining to default Interest be credited to the CAISO Surplus Account pursuant to Section 11.29.9.6.1(a).

In the event that there are funds in the CAISO Surplus Account in excess of an amount to be determined by the CAISO Governing Board and identified in a Market Notice by the CAISO to Market Participants, the amount of such excess will be distributed to Scheduling Coordinators using the same method of apportioning the refund as the method employed in apportioning the liability for the Grid Management Charge.

**11.29.10 Billing and Payment.**

The CAISO shall prepare and send to each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO two Invoices or Payment Advices for each calendar month. The first Invoice or Payment Advice will be based on the Initial Settlement Statement T+38BD and the second Invoice or Payment Advice will be based on the Initial Settlement Statement Reissue or Recalculation Settlement Statement(s). Each Invoice or Payment Advice will show amounts which are to be paid by or to each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO, the Payment Date, being the date on which such amounts are to be paid or received and details of the CAISO Clearing Account to which any amounts owed by Scheduling Coordinators, CRR Holder, Black Start Generator or Participating TO are to be paid.

The Invoices or Payment Advices will also include the total charges for each component of the Grid Management Charge, the total charges associated with any Interest for each relevant Trading Month, the FERC Annual Charges due monthly, as well as any disbursements associated with a shortfall receipt distribution.

A separate Invoice for the FERC Annual Charges due annually will be issued by the CAISO to the Scheduling Coordinator in accordance with Section 11.19.1.2. The CAISO will issue separate Invoices for NERC/WECC Charges as described in Section 11.20.

A separate Invoice for a shortfall allocation will be issued by the CAISO to Scheduling Coordinators in the event of a payment default in accordance with Section 11.29.17.1.



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Procedures and any other dispute resolution may be invoiced separately from monthly market activities.

The CAISO shall provide a Market Notice at least thirty (30) days prior to such invoicing identifying the components of such Invoice or Payment Advice.

**11.29.10.1 Emergency Procedures.**

**11.29.10.2 Use of Estimated Data.**

In the event of an emergency or a failure of any of the CAISO software or business systems, the CAISO may use estimated Settlement Statements and Invoices and Payment Advices and may implement any temporary variation of the timing requirements relating to the Settlement and billing process contained in the CAISO Tariff. Details of the variation and the method chosen to produce estimated data, Settlement Statements and Invoices and Payment Advices will be published on the CAISO Website.

**11.29.10.3 Payment of Estimated Statements and Invoices.**

When estimated Settlement Statements and Invoices or Payment Advices are issued by the CAISO, payments between the CAISO and Market Participants shall be made on an estimated basis and the necessary corrections shall be made by the CAISO as soon as practicable. The corrections will be reflected as soon as practicable in later Settlement Statements and Invoices and Payment Advices issued by the CAISO. Failure to make such estimated payments shall result in the same consequences as a failure to make actual payments.

**11.29.10.4 Validation and Correction of Estimated Statements and Invoices.**

The CAISO shall use its best efforts to verify the estimated data and to make the necessary corrections as soon as practicable. The corrections will be reflected as soon as practicable in later Settlement Statements and Invoices and Payment Advices issued by the CAISO.

**11.29.10.5 Estimated Statements to be Final.**

In the event that the CAISO is of the opinion that, despite its best efforts, it is not possible for it to verify the estimated data because actual data is not reasonably expected to become available to the CAISO in the foreseeable future, the CAISO shall consult with the Market Participants in order to develop the most appropriate substitute data including using data provided by Market Participants. Following such determination of substitute data, the CAISO shall send to the relevant Market Participants revised Settlement Statements and Invoices and Payment Advices. The provisions of Section 11.29.8.6 shall apply to payment of revised Invoices issued in accordance with these emergency procedures. Failure to make payments of such revised Invoices shall result in the same consequences as a failure to make actual payments.

**11.29.11 Instructions for Payment.**

Each Scheduling Coordinator or CRR Holder shall remit to the CAISO Clearing Account the amount shown on the Invoice as payable by that Scheduling Coordinator or CRR Holder for value not later than 10:00 a.m. on the Payment Date.

**11.29.12 CAISO's Responsibilities.**

On the due date for payment of amounts shown in an Invoice, the CAISO shall ascertain whether all amounts required to be remitted to the CAISO Clearing Account have been credited to it. If any such amount has not been so credited, it shall ascertain which Scheduling Coordinators or CRR Holder have failed to pay the amount owed by them and it may take steps to recover any overdue amount.

**11.29.13 Non-payment by a Scheduling Coordinator or CRR Holder.**

**11.29.13.1 Notification and Interest.**

If a Scheduling Coordinator or CRR Holder becomes aware that a payment for which it is responsible will not be remitted to the CAISO Clearing Account on time, it shall immediately notify the CAISO of the fact

and the reason for the non-payment. If the Scheduling Coordinator or CRR Holder fails to pay any sum to the CAISO when due and after and the CAISO draws upon any and all available Financial Security provided by the defaulting Scheduling Coordinator or CRR Holder, the Scheduling Coordinator or CRR Holder shall pay Interest on the overdue amount for the period from the Payment Date to the date on which the payment is remitted to the CAISO Clearing Account, together with any related transaction costs incurred by the CAISO. The CAISO shall apply all such Interest payments on the default amount on a pro rata basis to CAISO Creditors in relation to amounts past due in the order of the creation of such debts.

**11.29.13.2 Payment Default.**

Subject to Section 11.29.13.6, if by 10:00 am on a Payment Date the CAISO, in its reasonable opinion, believes that all or any part of any amount due to be remitted to the CAISO Clearing Account by any Scheduling Coordinator or CRR Holder will not or has not been remitted and there are insufficient funds in the relevant Scheduling Coordinator's or CRR Holder's CAISO prepayment account (the amount of insufficiency being referred to as the "default amount"), the CAISO shall take the following actions to enable the CAISO Clearing Account to clear not later than the close of banking business on the relevant Payment Date.

**11.29.13.3 Enforcing the Financial Security of a Defaulting Scheduling Coordinator or CRR Holder.**

Subject to Section 11.29.13.6, the CAISO shall make reasonable endeavors to enforce the defaulting Scheduling Coordinator's or CRR Holder's Financial Security (if any) to the extent necessary to pay the default amount. If it is not practicable to obtain clear funds in time to effect payment to CAISO Creditors on the same day the CAISO shall proceed in accordance with Sections 11.29.13.4 or 11.29.17.1 as applicable.

**11.29.13.4 Use of CAISO Reserve Account.**

If there are funds standing to the credit of the CAISO Reserve Account (including the proceeds of drawings under banking facilities described in Section 11.29.9.6.2) the CAISO shall debit the CAISO Reserve Account with the default amount in order to clear the CAISO Clearing Account and effect payment to the CAISO Creditors.

**11.29.13.5 Action against a Defaulting Scheduling Coordinator or CRR Holder.**

The CAISO shall as soon as possible after taking action under 11.29.13.4 take any steps it deems appropriate against the defaulting Scheduling Coordinator [need to add "or CRR Holder"] to recover the default amount (and any Interest as set out in Section 11.29.13.3) including enforcing any Financial Security, exercising its rights of recoupment or set-off and/or bringing proceedings against the defaulting Scheduling Coordinator or CRR Holder pursuant to Section 11.29.21.1.

**11.29.13.6 Default to be Remedied Promptly.**

In the event that the CAISO reasonably believes that an outstanding amount which has not been paid by 10:00 am on the relevant Payment Date, is likely to be paid no later than close of banking business on the next Business Day then the CAISO may, but shall not be obliged to, delay enforcing that CAISO Debtor's Financial Security or taking other measures to recover payment until after the close of banking business on the next Business Day but Interest shall nonetheless accrue pursuant to Section 11.29.13.1.

**11.29.13.7 Set-Off.**

The CAISO is authorized to recoup, set off and apply any amount to which any defaulting CAISO Debtor is or will be entitled, in or towards the satisfaction of any of that CAISO Debtor's debts arising under the CAISO Settlement and billing process. Each CAISO Creditor and each CAISO Debtor expressly acknowledges the following application of funds: first to the current month's Grid Management Charge, and then as described in 11.29.13.8 unless otherwise specified in accordance with Section 11.29.17.

**11.29.13.8 Order of Payments.**

Unless otherwise specified in accordance with Section 11.29.17, the CAISO shall apply payments received in respect of amounts owing to CAISO Creditors to repay the relevant debts in the order of the creation of such debts.

**11.29.13.9 Interest Accruing while Enforcing the Financial Security.**

If the CAISO has debited the CAISO Reserve Account and it subsequently succeeds in enforcing the Financial Security provided by the defaulting Scheduling Coordinator or CRR Holder, the CAISO shall be entitled to withdraw from such Financial Security in addition to the default amount, all costs incurred and Interest accrued to the CAISO as a result of debiting the CAISO Reserve Account from the date of such debit to the date of enforcement of the said Financial Security.

**11.29.13.10 Application of Funds Received.**

Amounts credited to the CAISO Clearing Account in payment of a default amount (as set out in Section 11.29.9.6.2.1) or as a result of enforcing the defaulting CAISO Debtor's Financial Security shall be applied to the CAISO Reserve Account pursuant to Section 11.29.9.6.2.1 to reduce amounts outstanding under any CAISO banking facilities used to fund the CAISO Reserve Account on the relevant Payment Date and the balance (if any) shall be applied to reimburse pro rata any CAISO Creditors whose payments were reduced pursuant to Section 11.29.17.1.

**11.29.14 [NOT USED]**

**11.29.15 [NOT USED]**

**11.29.16 Prohibition on Transfers.**

The CAISO shall at no time instruct the CAISO Bank to transfer any sum from a CAISO Account to another account (not being a CAISO Account) unless that account is a Settlement Account or the amount is owed to the CAISO under this CAISO Tariff.

**11.29.17 Alternative Payment Procedures.**

**11.29.17.1 Pro Rata Reduction to Payments.**

If it is not possible to clear the CAISO Clearing Account on a Payment Date because of an insufficiency of funds available in the CAISO Reserve Account or by enforcing any Financial Security provided by a defaulting Scheduling Coordinator or CRR Holder, the CAISO shall (1) first pay in full every CAISO Creditor whose net amounts receivable on the relevant Payment Date is less than \$5,000; and (2) second, reduce payments to all remaining CAISO Creditors proportionately to the net amounts payable to them on the relevant Payment Date to the extent necessary to clear the CAISO Clearing Account through a shortfall allocation. The CAISO shall account for such reduction in the CAISO ledger accounts as amounts due and owing by the non-paying CAISO Debtor to each CAISO Creditor whose payment was so reduced. The provisions of this section shall not apply to non-payment of any penalty amount that a Scheduling Coordinator or CRR Holder has disputed and FERC has specifically authorized the Scheduling Coordinator or CRR Holder to net its payment to the CAISO by the amount of the penalty in question in accordance with Section 37.9.3, in which case the non-payment amount will be allocated exclusively to the CAISO penalty trust account and not allocated to CAISO Creditors.

**11.29.17.2 Payment of Defaulted Receivables.**

Collections of defaulted receivables (other than Interest) will be distributed pro rata to CAISO Creditors for the month of default.

- (1) If the total collected in that closing related to the past due Trading Month is less than \$5,000, then the funds shall accumulate in an interest-bearing account until either: (a) the account exceeds \$5,000, (b) there have been no distributions from the account for six months, or (c) all defaults for that month have been collected exclusive of any bankruptcy defaults.

- (2) If all CAISO Creditors for that Trading Month have been paid, then the proceeds will be paid pro rata to the CAISO Creditors in the oldest unpaid Trading Month.
- (3) This provision is also applicable to the amounts netted against CAISO Creditor balances related to prior defaulted receivables.
- (4) All defaulted receivables disbursed under this Section shall be disbursed in accordance with the timeframes set forth in Section 11.29.9.6.1.

**11.29.18 [NOT USED]**

**11.29.19 Payment Errors.**

**11.29.19.1 Overpayments.**

If for any reason, including the negligence of the CAISO Bank or the CAISO, a CAISO Creditor receives an overpayment on any Payment Date, the CAISO Creditor shall within two (2) Business Days from the date of receipt of the funds into its Scheduling Coordinator or CRR Holder Settlement Account, notify the CAISO of the amount of the overpayment and shall forthwith pay the overpayment into a CAISO Account specified by the CAISO.

**11.29.19.2 Repayment of Overpayment.**

If prior to a CAISO Creditor notifying the CAISO of the overpayment, the CAISO receives notice (from the CAISO Bank or otherwise) of the overpayment, the CAISO shall within two (2) Business Days notify the recipient of the overpayment. The CAISO shall be responsible for payment to those entitled to the sum which has been overpaid.

**11.29.19.3 Overpayment Held In Trust.**

Until a CAISO Creditor refunds the overpayment to the CAISO, the CAISO Creditor shall be deemed to hold the amount of such overpayment on trust for any CAISO Creditor which may have been underpaid in consequence of such overpayment, pro rata to the amount of the underpayment.

**11.29.19.4 Interest on Overpayment.**

- (a) If an overpayment is repaid by a CAISO Creditor in accordance with Section 11.29.19.1, the CAISO shall be entitled to interest on the amount of the overpayment at the prime rate of the bank where the Settlement Account of the overpaid CAISO Creditor is located from the date the overpayment was received to the time that the repayment is credited to the relevant CAISO Account.
- (b) If the overpayment (or any part of it) is not repaid by a CAISO Creditor in accordance with Section 11.29.19.1, the CAISO shall be entitled to Interest on the amount of the overpayment from the end of the two day period referred to in that section until the repayment is credited to the relevant CAISO Account and the CAISO will be entitled to treat the overpayment (and any Interest accruing thereon) as a default amount to which Section 11.29.13.2 will apply.

**11.29.19.5 Treatment of Amounts Outstanding as a Result of an Overpayment.**

The CAISO shall apply the amount of any overpayment repaid (including interest received) to credit any underpaid CAISO Creditors pro rata to the amounts of their underpayments on the same day of receipt, or if not practicable, on the following Business Day.

**11.29.19.6 Underpayments.**

If for any reason, including the negligence of the CAISO Bank or the CAISO, a CAISO Creditor receives on the relevant Payment Date an underpayment, the CAISO Creditor shall within two (2) Business Days from receipt into its Settlement Account, notify the CAISO of the amount of the underpayment, and the CAISO after consultation with the CAISO Bank, shall use all reasonable endeavors to identify such entity as shall have received any corresponding overpayment and promptly correct the underpayment. If, by



reason of negligence, the CAISO holds or has under its control after five (5) Business Days from receipt in the CAISO Clearing Account amounts which it ought properly to have paid to CAISO Creditors, such CAISO Creditors shall be entitled to interest on such amounts, for such period as the CAISO improperly holds or has such amounts under its control.

**11.29.20 Defaults.**

Each CAISO Creditor shall give notice to the CAISO before instituting any action or proceedings in any court against a CAISO Debtor to enforce payments due to it.

**11.29.21 Proceedings to Recover Overdue Amounts.**

**11.29.21.1 Proceedings Brought by the CAISO.**

Without prejudice to the right of any Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO to bring such proceedings as it sees fit in connection with matters related to the recovery of amounts owed to it, the CAISO may bring proceedings against any Scheduling Coordinator or CRR Holder on behalf of those Scheduling Coordinators, CRR Holders, Black Start Generators, or Participating TOs who have indicated to the CAISO their willingness for the CAISO first so to act, for the recovery of any amounts due by that Scheduling Coordinator or CRR Holder, if the CAISO has first reached agreement with the Scheduling Coordinators, CRR Holders, Black Start Generators, or Participating TOs as to the appropriate remuneration, is indemnified to its reasonable satisfaction, and receives such Financial Security as it may reasonably request against all costs, claims, expenses (including legal fees) and liabilities which it will or may sustain or incur in complying with such instructions.

**11.29.21.2 Evidence of Unpaid Amount.**

The CAISO shall, on request, certify in writing the amounts owed by a CAISO Debtor that remain unpaid and the CAISO Creditors to whom such amounts are owed and shall provide certified copies of the

relevant Initial Settlement Statement T+38BD and the Initial Settlement Statement Reissue and Recalculation Settlement Statements, Invoices, Payment Advices, and other documentation on which the CAISO's certificate was based to the CAISO Debtor and the relevant CAISO Creditors. A CAISO certificate given under this Section 11.29.21.2 may be used as prima facie evidence of the amount due by a CAISO Debtor to CAISO Creditors in any legal proceedings.

**11.29.22 Data Gathering and Storage.**

**11.29.22.1 Required Capabilities.**

The CAISO shall ensure that the Settlement process shall contain, at a minimum, the following data gathering and storage capabilities:

- (a) the accurate, time-sequenced, end-to-end traceability of the Settlements process so that Scheduling Coordinators, CRR Holders and Participating TOs can fully verify their Settlement Statements;
- (b) the ability to specify and accept data that is specifically needed for audit trail requirements; and
- (c) the archiving of Meter Data, Settlement runs and other information used to prepare Settlement Statements to be consistent with the time frame required to re-run the Settlement process by state laws and the rules of the Local Regulatory Authority.

**11.29.22.2 Data Dissemination.**

Data shall not be disseminated by the CAISO except as permitted in this CAISO Tariff.

**11.29.23        Communications.**

The Initial Settlement Statement T+38BD, any Initial Settlement Statement Reissue, the Recalculation Settlement Statements and Invoices, and Payment Advices will be considered issued to CAISO Creditors or CAISO Debtors when released by the CAISO's secure communication system. Communications on a Payment Date relating to payment shall be made by the fastest practical means including by telephone. If there is a failure of a communication system and it is not possible to communicate by electronic means, then the CAISO or CAISO Creditor or CAISO Debtor, as the case may be, shall communicate by facsimile but only if the recipient is first advised by telephone to expect the facsimile. Methods of communication between the CAISO and Market Participants may be varied by the CAISO giving not less than ten (10) days notice to Market Participants on the CAISO's secure communication system.

**11.29.24        CAISO Payments Calendar.**

**11.29.24.1      Preparation.**

In September of each year, the CAISO will prepare a draft CAISO Payments Calendar for the following calendar year showing for each Trading Day:

- (a)     The date by which Scheduling Coordinators are required to provide Settlement Quality Meter Data for all their Scheduling Coordinator Metered Entities for each Settlement Period in the Trading Day;
- (b)     The date on which the CAISO will issue Initial Settlement Statements and Invoices and Payment Advices to Scheduling Coordinators or CRR Holders, Black Start Generators and Participating TOs for that Trading Day;
- (c)     The date by which Scheduling Coordinators, CRR Holders, Black Start Generators and Participating TOs are required to notify the CAISO of any disputes in relation to their Initial Settlement Statements pursuant to Section 11.29.8.2;

- (d) The date on which the CAISO will issue the Initial Settlement Statement Reissue and Recalculation Settlement Statements for T+51BD, T+59BD and T+76BD, and Invoices and Payment Advices to Scheduling Coordinators, CRR Holders, Black Start Generators and Participating TOs for that Trading Day;
- (e) The date and time by which CAISO Debtors are required to have made payments into the CAISO Clearing Account in payment of Invoices for that Trading Day;
- (f) The dates and times on which CAISO Creditors will receive payments from the CAISO Clearing Account of amounts owing to them for that Trading Day; and
- (g) In relation to Reliability Must-Run Charges and RMR Payments, the details set out in paragraph 3 of Appendix N, Part J.

The CAISO will make a draft of the CAISO Payments Calendar available on the CAISO Website to Scheduling Coordinators, CRR Holders, Black Start Generators, Participating TOs and RMR Owners any of which may submit comments and objections to the CAISO within two weeks of the date of posting of the draft on the CAISO Website. No later than October 31<sup>st</sup> in each year, the CAISO will publish the final CAISO Payments Calendar for the following calendar year, after considering the comments and objections received from Scheduling Coordinators, CRR Holders, Black Start Generators, Participating TOs and RMR Owners. The final CAISO Payments Calendar will be posted on the CAISO Website, and will show for the period from 1 January to 31 December in the next succeeding year (both dates inclusive), the dates on which Settlement Statements shall be published by the CAISO and the Payment Dates on which the CAISO will pay the Participating TOs the Wheeling revenues allocated to them pursuant to Section 26.1.4.3.

**11.29.24.2      Distribution.**

Any CAISO Payments Calendar prepared pursuant to this Section 11.29.24 shall be distributed promptly to each Scheduling Coordinator, each Participating TO, the CAISO Bank, the CAISO Audit Committee and the CAISO Governing Board and shall be published on the CAISO Website.

**11.29.24.3      Final Calendar Binding.**

The final CAISO Payments Calendar shall be binding on the CAISO and on Scheduling Coordinators, CRR Holders, Black Start Generators, Participating TOs and RMR Owners.

**11.29.24.4      Calendar Content and Format.**

The CAISO may change the content or format of the CAISO Payments Calendar. The CAISO may also produce a summary outline of the Settlement and billing cycles.

**11.29.24.5      Update the Final Payments Calendar.**

If, as a result of an amendment to the CAISO Tariff approved by FERC, the final CAISO Payments Calendar developed in accordance with Section 11.29.24 is rendered inconsistent with the timing set forth in this CAISO Tariff, the CAISO shall update the final CAISO Payments Calendar to make it consistent with the CAISO Tariff as approved by FERC on the date on which the CAISO Tariff amendment goes into effect. The CAISO shall simultaneously send out a Market Notice to Market Participants that the final CAISO Payments Calendar has been revised.

**11.30      Auditing.**

All of the data, information, and estimates the CAISO uses to calculate Settlement amounts shall be subject to the auditing requirements of Section 22.1. The CAISO shall calculate these amounts using the software referred to in Section 11.29.5.4 except in cases of system breakdown when it shall apply the procedures set out in 11.29.10.1 (Emergency Procedures).

### **11.31 HASP Intertie Schedules Decline Charges.**

The Decline Potential Charge – Imports shall apply to any HASP Intertie Schedule for an Energy import when the HASP Intertie Schedule is not delivered for any reason (with no exceptions based on the circumstances of a particular failure to deliver). The Decline Potential Charge – Exports shall apply to any HASP Intertie Schedule for an Energy export when the HASP Intertie Schedule is not delivered for any reason (with no exceptions based on the circumstances of a particular failure to deliver). For any Settlement Interval, the Decline Potential Charge – Imports or Decline Potential Charge – Exports, as the case may be, shall equal the MWh quantity of the import or export not delivered multiplied by the greater of \$10/MWh or fifty percent (50%) of the HASP Intertie LMP. The Decline Potential Charge – Imports and Decline Potential Charge – Exports will be calculated for each HASP Intertie Schedule that is not delivered, provided that only the Decline Monthly Charge – Imports and Decline Monthly Charge – Exports shall be payable by the Scheduling Coordinator as described in Section 11.31.1.

#### **11.31.1 Decline Monthly Charge – Imports.**

The Decline Monthly Charge – Imports shall be applied to each Scheduling Coordinator on the Settlement Statements issued for the last Trading Day of each Trading Month, and shall be the sum of the Scheduling Coordinator's Decline Potential Charges – Imports for each Settlement Interval during that Trading Month multiplied by a ratio. The ratio will represent the portion of the Scheduling Coordinator's declined HASP Intertie Schedules for Energy imports that exceed the applicable exemption threshold during the Trading Month.

- (a) The ratio will be calculated as follows:
  - (i) the Scheduling Coordinator's total MWh quantity of HASP Intertie Schedules for Energy imports that were not delivered during that Trading Month minus the applicable exemption threshold, divided by
  - (ii) the Scheduling Coordinator's total MWh quantity of HASP Intertie Schedules for Energy imports that were not delivered during the Trading Month.

- (b) The applicable exemption threshold is the greater of the following:
  - i) the Decline Threshold Quantity – Imports/Exports; or
  - ii) the total MWh quantity of HASP Intertie Schedules for Energy imports during the Trading Month multiplied by the Scheduling Coordinator's Decline Threshold Percentage – Imports/Exports.

Notwithstanding the foregoing, the Decline Monthly Charge – Imports shall equal zero if either:

- a) The percentage of the MWh quantity of HASP Intertie Schedules for Energy imports that the Scheduling Coordinator did not deliver during the Trading Month is less than the Decline Threshold Percentage – Imports/Exports; or
- b) The total MWh quantity of HASP Intertie Schedules for Energy imports that the Scheduling Coordinator did not deliver in the applicable Trading Month is less than the Decline Threshold Quantity – Imports/Exports.

#### **11.31.2 Decline Monthly Charge – Exports.**

The Decline Monthly Charge – Exports shall be applied to each Scheduling Coordinator on the Settlement Statements issued for the last Trading Day of each Trading Month, and shall be the sum of the Scheduling Coordinator's Decline Potential Charges – Exports for each Settlement Interval during that Trading Month multiplied by a ratio. The ratio will represent the portion of the Scheduling Coordinator's declined HASP Intertie Schedules for Energy exports that exceed the applicable exemption threshold during the Trading Month.

- (a) The ratio will be calculated as follows:
  - (i) the Scheduling Coordinator's total MWh quantity of HASP Intertie Schedules for Energy exports that were not delivered during that Trading Month minus the applicable exemption threshold, divided by
  - (ii) the Scheduling Coordinator's total MWh quantity of HASP Intertie Schedules for Energy exports that were not delivered during the Trading Month.
- (b) The applicable exemption threshold is the greater of the following:
  - (i) the Decline Threshold Quantity – Imports/Exports; or
  - (ii) the total MWh quantity of HASP Intertie Schedules for Energy exports during the Trading Month multiplied by the Scheduling Coordinator's Decline Threshold Percentage – Imports/Exports.

Notwithstanding the foregoing, the Decline Monthly Charge – Exports shall equal zero if either:

- a) The percentage of the MWh quantity of HASP Intertie Schedules for Energy exports that the Scheduling Coordinator did not deliver during the Trading Month is less than the Decline Threshold Percentage – Imports/Exports; or
- b) The total MWh quantity of HASP Intertie Schedules for Energy exports that the Scheduling Coordinator did not deliver in the applicable Trading Month is less than the Decline Threshold Quantity – Imports/Exports.



**11.31.3 Allocation of Import/Export Decline Monthly Charges Collected.**

On the Settlement Statements issued for the last Trading Day of the applicable Trading Month, each Scheduling Coordinator shall receive a credit for its share of the total of all Decline Monthly Charges – Imports and Decline Monthly Charges – Exports assessed to Scheduling Coordinators for the applicable Trading Month. The credits shall be allocated according to the proportion of each Scheduling Coordinator's Measured CAISO Demand to total Measured CAISO Demand for the CAISO Balancing Authority Area during the Trading Month.

## **12 CREDITWORTHINESS.**

### **12.1 Credit Requirements.**

The creditworthiness requirements in this section apply to the CAISO's acceptance of, **any** transaction in a CAISO Market, to the payment of charges pursuant to the **CAISO** Tariff (including the Grid Management Charge), and to establish credit limits for participation in any **CAISO** auction of CRRs and to CRR Holders for the holding of CRRs. Each Market Participant (including each Scheduling Coordinator, UDC, MSS, CRR Holder, or Candidate CRR Holder) shall secure its financial transactions with the CAISO (including its participation in any auction of CRRs and for the holding of CRRs) by maintaining an Unsecured Credit Limit and/or by posting Financial Security, the level of which constitutes the Market Participant's Financial Security Amount. For each Market Participant, the sum of its Unsecured Credit Limit and its Financial Security Amount shall represent its Aggregate Credit Limit. Each Market Participant shall have the responsibility to maintain an Aggregate Credit Limit that is at least equal to its Estimated Aggregate Liability.

#### **12.1.1 Unsecured Credit Limit.**

Each Market Participant requesting an Unsecured Credit Limit shall submit an application to the **CAISO** in the form specified on the **CAISO Website**. The **CAISO** shall determine the Unsecured Credit Limit for each Market Participant in accordance with the procedures set forth in the **applicable Business Practice Manual**. The maximum Unsecured Credit Limit for any Market Participant shall be \$250 million. In accordance with the procedures described in the **applicable Business Practice Manual**, each Market Participant requesting or maintaining an Unsecured Credit Limit is required to submit to the **CAISO** or its agent financial statements and other information related to its overall financial health as directed by the **CAISO**. Each Market Participant is responsible for the timely submission of its latest financial statements as well as other information that may be reasonably necessary for the **CAISO** to conduct its evaluation. The **CAISO** shall determine the Unsecured Credit Limit for each Market Participant as described in Sections 12.1.1.1, 12.1.1.1.1, and 12.1.1.1.2.

As a result of the CAISO's credit evaluation, a Market Participant may be given an Unsecured Credit Limit by the CAISO or denied an Unsecured Credit Limit with the CAISO. Following the initial application and the establishment of an Unsecured Credit limit, the CAISO will review each Market Participant's Unsecured Credit Limit on a quarterly basis, unless that entity does not prepare quarterly statements, in which case the review will occur on an annual basis, and no entity shall be required to submit a new application. In addition, the CAISO may review the Unsecured Credit Limit for any Market Participant whenever the CAISO becomes aware of information that could indicate a Material Change in Financial Condition. In the event the CAISO determines that the Unsecured Credit Limit of a Market Participant must be reduced as a result of a subsequent review, the CAISO shall notify the Market Participant of the reduction, and shall, upon request, also provide the Market Participant with a written explanation of why the reduction was made.

#### **12.1.1.1 Unsecured Credit Limit Calculation.**

An Unsecured Credit Limit (UCL) for each Market Participant that is a Rated or Unrated Public/Private Corporation, a Rated or Unrated Governmental Entity, or a Local Publicly Owned Electric Utility and that requests an Unsecured Credit Limit is calculated as follows:

1. For each Rated Public/Private Corporation, the Unsecured Credit Limit is the lesser of \$250 million or an amount equal to the Market Participant's Tangible Net Worth (TNW) multiplied by a calculated percentage of TNW. The TNW percentage is comprised of fifty percent (50%) of the Market Participant's Credit Rating Default Probability (CRDP) and fifty percent (50%) of the MKMV Default Probability, *if reasonably applicable*.

2. For each Unrated Public/Private Corporation, the Unsecured Credit Limit is the lesser of \$250 million or an amount equal to the Market Participant's TNW multiplied by a calculated percentage of TNW. The TNW percentage is comprised of one hundred percent (100%) of the MKMV Default Probability.
3. For each Rated Governmental Entity, the Unsecured Credit Limit is the lesser of \$250 million or an amount equal to the Market Participant's Net Assets (NA) multiplied by a calculated percentage of NA. The NA percentage is comprised of one hundred percent (100%) of the Market Participant's Credit Rating Default Probability.
4. (a) For each Unrated Governmental Entity other than one that receives appropriations from the federal government or a state government, the Unsecured Credit Limit is the lesser of \$250 million or an amount equal to a specified percentage of the Market Participant's Net Assets if the Market Participant has a minimum of \$25 million in Net Assets and its Times Interest Earned, Debt Service Coverage and Equity to Assets ratios (as those ratios are defined in the applicable Business Practice Manual) meet or exceed minimums specified in the applicable Business Practice Manual.  
  
(b) For each Unrated Governmental Entity that receives appropriations from the federal government or a state government, the Unsecured Credit Limit is the lesser of \$250 million or the amount appropriated by the federal or relevant state government for the purpose of procuring Energy and Energy-related products and services for the applicable fiscal year. The Unrated Governmental Entity seeking to establish an Unsecured Credit Limit pursuant to this section shall provide documentation establishing its annual appropriations.

5. A Local Publicly Owned Electric Utility with a governing body having ratemaking authority that has submitted an application for an Unsecured Credit Limit shall be entitled to an Unsecured Credit Limit of \$1 million without regard to its Net Assets. Such Local Publicly Owned Electric Utility shall be entitled to request an Unsecured Credit Limit based on Net Assets as provided in Section 12.1.1.1(3) or 12.1.1.1(4) in order to establish an Unsecured Credit Limit as the greater of \$1 million or the amount determined as provided in this Section 12.1.1.1(5). A public entity that is not a Local Publicly Owned Electric Utility is not entitled to an Unsecured Credit Limit of \$1 million under this Section 12.1.1.1(5) but may seek to establish an Unsecured Credit Limit as provided in any other provision of the CAISO Tariff that may apply.

Public entities, including Local Publicly Owned Electric Utilities, that operate through a Joint Powers Agreement, or a similar agreement acceptable to the CAISO with the same legal force and effect, shall be entitled to aggregate or assign their Unsecured Credit Limits subject to the following limitations and requirements. A public entity that is a party to a Joint Powers Agreement or similar agreement and that is also participating independently in the CAISO Markets with an established Unsecured Credit Limit shall not be entitled to assign or aggregate any portion of its Unsecured Credit Limit that the public entity is using to support financial liabilities associated with its individual participation in the CAISO Markets. A Local Publicly Owned Electric Utility that operates through a Joint Powers Agreement or similar agreement that desires to aggregate a portion of its Unsecured Credit Limit that is equal to or less than \$1

million with one or more other Local Publicly Owned Electric Utilities that operate through that Joint Powers Agreement or similar agreement or to assign a portion of its Unsecured Credit Limit that is equal to or less than \$1 million to the Joint Powers Authority shall be entitled to do so. A Local Publicly Owned Electric Utility that operates through a Joint Powers Agreement or similar agreement that desires to aggregate its Unsecured Credit Limit with one or more other Local Publicly Owned Electric Utilities that operate through that Joint Powers Agreement or similar agreement or to assign a portion of its Unsecured Credit Limit to the Joint Powers Authority that exceeds \$1 million, and any public entity that is not a Local Publicly Owned Electric Utility that operates through a Joint Powers Agreement or similar agreement that desires to aggregate its Unsecured Credit Limit with one or more other Local Publicly Owned Electric Utilities that operate through that Joint Powers Agreement or similar agreement or to assign any portion of its Unsecured Credit Limit to the Joint Powers Authority, shall provide documentation that is acceptable to the CAISO and that demonstrates the Local Publicly Owned Electric Utility or public entity will assume responsibility for the financial liabilities of the Joint Powers Agency associated with the assigned or aggregated portion of the Unsecured Credit Limit. Such documentation may include a guaranty or similar instrument acceptable to the CAISO.

Unsecured Credit Limits established pursuant to this Section 12.1.1.1 shall be subject to the CAISO's consideration of the same qualitative factors that apply to all Market Participants as set forth in Section 12.1.1.2 and, accordingly, the CAISO may adjust their Unsecured Credit Limits pursuant to Section 12.1.1. The \$250 million hard cap on Unsecured Credit Limits specified in Section 12.1.1 has been set

with respect to the length of the current CAISO Payments Calendar, i.e., a maximum of ninety-five (95) Trading Days of charges outstanding. Upon implementation of payment acceleration (scheduled for 2008), the CAISO expects to recommend a reduction in the \$250 million hard cap. Any changes to the \$250 million cap will require FERC approval of an amendment to the applicable provisions of the CAISO Tariff.

#### **12.1.1.1.1 Maximum Percentage of Tangible Net Worth and Net Assets.**

For Rated and Unrated Public/Private Corporations or Rated Governmental Entities, the maximum percentage of TNW or NA is 7.5 percent (7.5%) if the Market Participant's combined default probability (CDP) is less than or equal to 0.06 percent (0.06%).

The maximum allowable percentage of 7.5% is for the highest quality firms; that is, those Market Participants with a CDP of 0.06 percent or less. The Tangible Net Worth percentage (TNWP) or Net Assets percentage (NAP) that a Market Participant qualifies for will be reduced as its credit risk increases.

For Unrated Governmental Entities, the CAISO may provide an Unsecured Credit Limit of up to five percent (5%) of NA.

With respect to either of these potential maximum percentages, a lesser amount of unsecured credit may be granted if the CAISO becomes aware of information related to a Material Change in Financial Condition or other significant information that presents a significant risk to the creditworthiness of the entity.

#### **12.1.1.1.2 Unsecured Credit Limit Calculation Steps.**

An eight-step process is used to determine Unsecured Credit Limits for Market Participants that are Rated Public/Private Corporations, Unrated Public/Private Corporations, and Rated Governmental Entities.

Step 1 – If the Market Participant has a credit rating(s) from one or more of the

"Nationally Recognized Statistical Rating Organizations" (NRSRO), verify the rating(s) with the appropriate NRSRO.

Step 2 - Calculate the Market Participant's Average Rating Default Probability (ARDP).

- (a) ARDP is the sum of Credit Rating Default Probabilities divided by the total number of Credit Rating Default Probabilities used.
- (b) The median default probability calculated by Moody's KMV (i.e., MKMV) for Standard & Poor's and Moody's long-term credit rating classes is provided on the CAISO Website at <http://www.caiso.com/1bd8/1bd8b09916e50.html>. Default probabilities are available from each NRSRO.
- (c) Issuer ratings without the benefit of credit enhancement would be used in this assessment. Such ratings are also known as "counterparty" or "underlying" ratings.

Step 3 – Using Moody's KMV's CreditEdge or RiskCalc software, obtain the Market Participant's MKMV Default Probability (MKDP).

- (a) Since Moody's KMV calculates default probabilities directly, the MKMV Default Probability will be used without any mapping.

Step 4 – Calculate a combined default probability (CDP) based on one of the following methodologies:

- (a)  $CDP \text{ for Rated Public/Private Corporations} = (ARDP * 50\%) + (MKDP * 50\%)$  or  $(ARDP * 100\%)$  if a MKDP is not reasonably applicable.
- (b)  $CDP \text{ for Unrated Public/Private Corporations} = MKDP * 100\%$
- (c)  $CDP \text{ for Rated Governmentally Owned Utilities} = ARDP * 100\%$



Step 5 – Calculate the Market Participant's Tangible Net Worth percentage (TNWP) or Net Assets percentage (NAP).

(a)  $TNWP = MAP * BDP / CDP$  for Rated/Unrated Public/Private Corporations

(b)  $NAP = MAP * BDP / CDP$  for Rated Governmental Entities

Where:

MAP = maximum allowable percentage;

BDP = base default probability;

CDP = see Step 4 above; and

If the SC's CDP > 0.5%, the TNWP or NAP equals 0%

Step 6 – Calculate the Market Participant's Tangible Net Worth or Net Assets.

(a)  $TNW \text{ for Rated/Unrated Public/Private Corporations} = \text{Assets minus Intangibles (e.g., Good Will) minus Liabilities}$

(b)  $NA \text{ for Rated Governmental Entities} = \text{Total Assets minus Total Liabilities}$

Step 7 – Calculate the Market Participant's Unsecured Credit Limit.

(a)  $UCL = TNW * TNWP$  for Rated/Unrated Public/Private Corporations

(b)  $UCL = NA * NAP$  for Rated Governmental Entities

Step 8 – Adjust Unsecured Credit Limit downward, if warranted based on the CAISO's review of factors in Section 12.1.1.1.

(a)  $\text{Final UCL} = UCL \text{ from Step 7} * (0 - 100\%)$

**12.1.1.2 Qualitative and Quantitative Credit Strength Indicators.**

In determining a Market Participant's Unsecured Credit Limit, the CAISO may rely on information gathered from financial reporting agencies, the general/financial/energy press, and provided by the Market Participant to assess its overall financial health and its ability to meet its financial obligations.

Information considered by the CAISO in this process may include the following qualitative factors:

- (a) Applicant's history;
- (b) Nature of organization and operating environment;
- (c) Management;
- (d) Contractual obligations;
- (e) Governance policies;
- (f) Financial and accounting policies;
- (g) Risk management and credit policies;
- (h) Market risk including price exposures, credit exposures and operational exposures;
- (i) Event risk;
- (j) The state or local regulatory environment; *and*
- (k) *Affiliate disclosure information provided pursuant to Section 39.9.*

Material negative information in these areas may result in a reduction of up to one hundred percent (100%) in the Unsecured Credit Limit that would otherwise be granted based on the eight-step process described in Section 12.1.1.1. A Market Participant, upon request, will be provided a written analysis as to how the provisions in Section 12.1.1.1 and this section were applied in setting its Unsecured Credit Limit.

**12.1.1.3 Financial Statements.**

Market Participants requesting unsecured credit are required to provide financial statements so that a credit review can be completed. Based on availability, the Market Participant must submit a financial statement for the most recent financial quarter, as well as audited financial statements for the most recent three fiscal years, or the period of existence of the Market Participant, if shorter, to the CAISO or the CAISO's designee. If audited financial statements are not available, financial statements, as described below, should be submitted, signed and attested to by an officer of the Market Participant as a fair representation of the financial condition of the Market Participant in accordance with generally accepted accounting principles. The information should include, but is not limited to, the following:

- (a) If publicly traded:
  - (i) Annual and quarterly reports on Form 10-K and Form 10-Q, respectively
  - (ii) Form 8-K reports, if any
- (b) If privately held or governmentally owned:
  - (i) Management's discussion & analysis (if available)
  - (ii) Report of independent accountants (if available)
  - (iii) Financial statements, including:
    - Balance sheet
    - Income statement
    - Statement of cash flows
    - Statement of stockholder's equity
  - (iv) Notes to financial statements

If the above information is available electronically on the Internet, the Market Participant may indicate in written or electronic communication where such statements are located for retrieval by the CAISO or the CAISO's designee.

**12.1.1.4 Determination of Unsecured Credit Limits for Affiliates.**

If any Market Participant requesting or maintaining an Unsecured Credit Limit is affiliated with one or more other entities subject to the credit requirements of this Section 12, the CAISO may consider the overall creditworthiness and financial condition of such Affiliates when determining the applicable Unsecured Credit Limit. The CAISO may determine that the maximum Unsecured Credit Limit specified in Section 12.1.1 applies to the combined activity of such Affiliates. In the event the CAISO determines that the maximum Unsecured Credit Limit applies to the combined activity of the Affiliates and the Market Participant, the CAISO shall inform the Market Participant in writing.

**12.1.1.5 Notification of Material Change in Financial Condition.**

Each Market Participant shall notify the CAISO in writing of a Material Change in Financial Condition, within five (5) Business Days of when the Material Change in Financial Condition is known or reasonably should be known by the Market Participant. The provision to the CAISO of a copy of a Form 10-K, Form 10-Q, or Form 8-K filed with the U.S. Securities and Exchange Commission shall satisfy the requirement of notifying the CAISO of such Material Change in Financial Condition. Alternatively, the Market Participant may direct the CAISO to the location of the information on their company website or the website of the U.S. Securities & Exchange Commission.

**12.1.2 Financial Security and Financial Security Amount.**

A Market Participant that does not have an Unsecured Credit Limit, or that has an Unsecured Credit Limit that is less than its Estimated Aggregate Liability, shall post Financial Security that is acceptable to the CAISO and that is sufficient to ensure that its Aggregate Credit Limit (i.e., the sum of its Unsecured Credit Limit and Financial Security Amount) is equal to or greater than its Estimated Aggregate Liability. The Financial Security posted by a Market Participant may be any combination of the following types of Financial Security provided in favor of the CAISO and notified to the CAISO under Section 12.3:

- (a) an irrevocable and unconditional letter of credit issued by a bank or financial institution that is reasonably acceptable to the CAISO;
- (b) an irrevocable and unconditional surety bond issued by an insurance company that is reasonably acceptable to the CAISO;
- (c) an unconditional and irrevocable guaranty issued by a company that is reasonably acceptable to the CAISO;
- (d) a cash deposit standing to the credit of the CAISO in an interest-bearing escrow account maintained at a bank or financial institution that is reasonably acceptable to the CAISO;
- (e) a certificate of deposit in the name of the CAISO issued by a bank or financial institution that is reasonably acceptable to the CAISO;
- (f) a payment bond certificate in the name of the CAISO issued by a bank or financial institution that is reasonably acceptable to the CAISO; or
- (g) a prepayment to the CAISO.

Financial Security instruments as listed above shall be in such form as the CAISO may reasonably require from time to time by notice to Market Participants , or in such other form as has been evaluated and approved as reasonably acceptable by the CAISO. The CAISO shall publish and maintain standardized forms related to the types of Financial Security listed above on the CAISO Website. The CAISO shall require the use of standardized forms of Financial Security to the greatest extent possible.

**12.1.2.1 Additional Procedures Regarding Certain Types of Financial Security.**

- (a) Unconditional and irrevocable guaranties: In those cases where a Market Participant is a subsidiary or Affiliate of another entity and would like to utilize the consolidated financial statements and other relevant information of that entity for obtaining credit, a signed corporate guaranty is required. A guarantor would be considered reasonably acceptable and a corresponding Financial Security Amount would be set based on the guarantor's credit evaluation according to the same procedures that apply to the credit evaluation of a Market Participant.
- (b) Cash deposits standing to the credit of the CAISO in interest-bearing escrow accounts: Interest on a cash deposit standing to the credit of the CAISO in an interest-bearing escrow account will accrue to the Market Participant's benefit and will be added to the Market Participant's prepayment account on a monthly basis. Should a Market Participant become delinquent in payments, the Market Participant's outstanding account balance will be satisfied using deposited funds. The Market Participant must take care to replenish used funds to ensure that its Aggregate Credit Limit continues to exceed its Estimated Aggregate Liability.

- (c) Prepayments to the CAISO: Prepayments to the CAISO will be held in an interest-bearing account or another investment acceptable to the Market Participant and the CAISO, and interest on the investment will accrue at the rate as provided for in the investment. Interest will accrue to the Market Participant's benefit and will be added to the Market Participant's prepayment account on a monthly basis. Due to the additional administrative effort involved in tracking and posting interest on such prepayments, the use of this option is not encouraged.

**12.1.2.2 Process for Evaluating Requests to Use Non-Standardized Forms of Financial Security.**

A Market Participant that seeks permission to use a form for Financial Security other than one or more of the standardized forms posted on the CAISO Home Page shall seek such permission in a written request to the CAISO that explains the basis for the use of such non-standardized form. The CAISO shall have ten (10) Business Days from receipt of such request to evaluate it and determine whether it will be approved as reasonably acceptable. If the CAISO does not respond to such request within the ten (10) Business Day period, the request shall be deemed to have been denied. Until and unless the CAISO approves the use of a non-standardized form for Financial Security, the Market Participant that submitted such request shall be required to use one of the standardized forms for Financial Security described in this Section 12.1.2.

**12.1.2.3 Expiration of Financial Security.**

Each Market Participant shall ensure that the financial instruments it uses for the purpose of providing Financial Security will not expire and thereby cause the Market Participant's Aggregate Credit Limit to fall below the Market Participant's Estimated Aggregate Liability. The CAISO will treat a financial instrument that does not have an automatic renewal provision and that is not renewed or replaced within seven (7)

days of its date of expiration as being out of compliance with the standards for Financial Security contained in this Section 12 and will deem the value of such financial instrument to be zero, and will draw upon such Financial Security prior to its stated expiration if deemed necessary by the CAISO.

**12.1.2.4 Risk of Loss of Financial Security Amounts Held and Invested by the CAISO.**

In accordance with the CAISO's investment policy, the CAISO will invest each Financial Security Amount of a Market Participant only in bank accounts, high-quality money market accounts, and/or U.S. Treasury/Agency securities unless a specific written request is received from the Market Participant for a different type of investment and the CAISO provides its written consent to such alternative investment. A Market Participant that provides a Financial Security Amount that is held and invested by the CAISO on behalf of the Market Participant will bear all risks that such Financial Security Amount will incur a loss of principal and/or interest as a result of the CAISO's investment of such Financial Security Amount.

**12.1.3 Estimated Aggregate Liability.**

The CAISO will periodically calculate the Estimated Aggregate Liability of each Market Participant, based on all charges and settlement amounts for which such Market Participant is liable or reasonably anticipated by the CAISO to be liable for pursuant to the CAISO Tariff. The Estimated Aggregate Liability for each Market Participant shall be determined and applied by the CAISO consistent with the procedures set forth in the applicable Business Practice Manual. The CAISO shall upon request provide each Market Participant with information concerning the basis for the CAISO's determination of its Estimated Aggregate Liability, and the CAISO's determination may be disputed in accordance with the procedures set forth in the applicable Business Practice Manual. The CAISO shall compare each Market Participant's Estimated Aggregate Liability against its Aggregate Credit Limit on a periodic basis.

**12.1.3.1 Calculation of Estimated Aggregate Liability.**



**12.1.3.1.1 Calculation of the Estimated *Aggregate Liability Amount*.**

Except as described in Section 12.1.3.1.2, the CAISO shall use the method described in this Section 12.1.3.1.1 to calculate each Market Participant's Estimated Aggregate Liability. The Estimated Aggregate Liability represents the amount owed to the CAISO for all unpaid obligations, specifically, the obligations for the number of Trading Days outstanding at a given time based on the CAISO's Payments Calendar plus seven (7) Trading Days based on the allowable period for Market Participants to respond to CAISO requests for additional collateral (five (5) Business Days), and other liabilities including the value of a Market Participant's CRR portfolio, if negative. The charges the CAISO shall use to calculate Estimated Aggregate Liability shall be charges described or referenced in the CAISO Tariff. The CAISO shall calculate the Estimated Aggregate Liability for each Market Participant by aggregating the following obligations:

- Invoiced amounts, i.e., any published but unpaid amounts on Invoices;
- published amounts, i.e., amounts for Trading Days for which Settlement Statements have been issued;
- estimated amounts, i.e., amounts based on estimated Settlement amounts calculated by the Settlement system using estimated meter data, and other available operational data;
- extrapolated amounts, i.e., amounts calculated for Trading Days for which neither actual nor estimated Settlement Statements have been issued;
- CRR portfolio value, i.e., the prospective value of the CRR portfolio, if negative, as described in Section 12.6.3;
- CRR Auction limit, i.e., the maximum credit limit for participation in a CRR Auction;

- CRR Auction awards (prior to invoicing), i.e., amounts to cover winning offers at the completion of the CRR Auction but prior to invoicing;
- past-due amounts, i.e., any unpaid or past due amounts on Invoices;
- Annual FERC Fees, i.e., FERC fees for a Market Participant that has elected to pay such amounts on an annual basis that are owed and outstanding and not already captured in any other component of Estimated Aggregate Liability;
- WAC Charges, i.e., WAC amounts for the current year or future years as specified in Section 36.9.2;
- Estimated Aggregate Liability adjustments, i.e., adjustments that may be necessary as a result of analysis performed as a result of Section 12.4.2; and
- extraordinary adjustments, i.e., adjustments to Settlement amounts related to FERC proceedings, if known and estimated by the CAISO, as described in Section 12.1.3.1.3.

For a Market Participant that maintains multiple BAID numbers, the Estimated Aggregate Liability of the Market Participant as a legal entity shall be calculated by summing the Estimated Aggregate Liabilities for all such BAID numbers and comparing the sum of the Estimated Aggregate Liabilities to the Aggregate Credit Limit of the Market Participant. Market Participants may recommend changes to the liability estimates produced by the CAISO's Estimated Aggregate Liability calculation through the dispute procedures described in Section 12.4.2.

### **12.1.3.1.2 Calculation Methodology Applicable to New Market Participants.**

Each new Market Participant (and each Market Participant that has previously been inactive) is required to have an initial Aggregate Credit Limit that is sufficient to cover a minimum of forty-five (45) Trading Days of estimated obligations. This initial credit requirement is based on anticipated transactions in the CAISO Markets, and shall be considered to be equal to the Market Participant's Estimated Aggregate Liability *until the CAISO obtains sufficient data from its automated calculation of Estimated Aggregate Liability as described in Section 12.1.3.1.1 to begin relying on that calculation.*

### **12.1.3.1.3 Special Circumstances**

#### **12.1.3.1.3.1 Daily Adjustments and Disputes.**

Charges associated with daily adjustments and disputes that are regularly calculated by the CAISO Settlement system will be included in the CAISO's determinations of Estimated Aggregate Liability as the charges are calculated.

#### **12.1.3.1.3.2 FERC Refund Orders.**

The CAISO will assess its ability to reasonably calculate the charges associated with a refund before the CAISO's Settlement system is re-run. If the CAISO can reasonably apportion the refund charges to specific Market Participants, it will include the amounts in its calculation of Estimated Aggregate Liability for those Market Participants and will request Financial Security from them accordingly. If the CAISO determines that complexities of a FERC refund order preclude the CAISO from reasonably being able to include refunds in its calculation of Estimated Aggregate Liability, the CAISO will not request Financial Security associated with the required refunds until the refunds are processed through the CAISO Settlement system. However, if feasible, the CAISO will make available to Market Participants, for informational purposes only, an aggregate forecast of the effect that providing the refunds will have on the CAISO's calculation of Estimated Aggregate Liability.

**12.1.3.1.3.3 CAISO ADR Procedures.**

The CAISO will handle transactions associated with the CAISO ADR Procedures in the same manner as transactions associated with refunds provided pursuant to Section 12.1.3.1.3.2.

**12.2 Review of Creditworthiness.**

The CAISO may review the creditworthiness of any Market Participant that delays or defaults in making payments due under the CAISO Tariff and, as a consequence of that review, may require such Market Participant, whether or not it has an Unsecured Credit Limit, to provide credit support in the form of any of the following types of Financial Security:

- (a) an irrevocable and unconditional letter of credit by a bank or financial institution reasonably acceptable to the CAISO;
- (b) a cash deposit standing to the credit of an interest-bearing escrow account maintained at a bank or financial institution reasonably acceptable to the CAISO;
- (c) an irrevocable and unconditional surety bond posted by an insurance company reasonably acceptable to the CAISO;
- (d) a payment bond certificate in the name of the CAISO from a financial institution reasonably acceptable to the CAISO; or
- (e) a prepayment to the CAISO.

The CAISO may require the Market Participant to maintain such Financial Security for at least one (1) year from the date of such delay or default.

### **12.3 Posting and Releases of Financial Security.**

Each Market Participant required to provide a Financial Security Amount under Section 12.1.2 shall notify the CAISO of the initial Financial Security Amount that it wishes to provide at least fifteen (15) days in advance and shall ensure that the CAISO has received such Financial Security Amount prior to the date the Market Participant commences activity through the CAISO, or the date the CRR Holder or Candidate CRR Holder participates in the applicable auction of CRRs. A Market Participant may at any time increase its Financial Security Amount by providing additional Financial Security in accordance with Section 12.1.2. A Market Participant may request that its Financial Security Amount be reduced or released by making its request not fewer than fifteen (15) days prior to the date on which the reduction or release is requested to occur. The CAISO shall evaluate the request and inform the Market Participant within ten (10) Business Days either that a reduction or release of the Financial Security Amount is permissible, that a reduction or release of the Financial Security Amount is impermissible, or that the CAISO requires more information from the Market Participant in order to make its determination. The CAISO may decline to reduce or release a Financial Security Amount or may release a lesser amount for any of the following reasons:

- (a) The Estimated Aggregate Liability for the Market Participant cannot be accurately determined due to a lack of supporting Settlement charge information.
- (b) The most recent liabilities of the Market Participant are volatile to a significant degree and a reduction or release of the Financial Security Amount would present a high likelihood that, after the Financial Security Amount was reduced or released, the Estimated Aggregate Liability for the Market Participant, as calculated by the CAISO, would exceed its Aggregate Credit Limit.

- (c) The Market Participant has provided notice or otherwise demonstrated that it is terminating or significantly reducing its participation in the CAISO Markets. The CAISO may retain a portion of the Financial Security Amount to ensure that the Market Participant is adequately secured with respect to pending liabilities that relate to Settlement re-runs or other liabilities for which the Market Participant may be responsible under this CAISO Tariff.

#### **12.3.1 Self-Supply of UDC Demand.**

Notwithstanding anything to the contrary in the CAISO Tariff, a Scheduling Coordinator or UDC that is an Original Participating Transmission Owner or is a Scheduling Coordinator for an Original Participating Transmission Owner shall not be precluded by Section 12.3 from scheduling transactions that serve a UDC's Demand from

- (1) a resource that the UDC owns; and
- (2) a resource that the UDC has under contract to serve its Demand.

#### **12.4 Calculation of Ongoing Financial Security Requirements.**

Following the date on which a Market Participant commences trading, if the Market Participant's Estimated Aggregate Liability, as calculated by the CAISO, at any time exceeds its Aggregate Credit Limit, the CAISO shall direct the Market Participant to post an additional Financial Security Amount within five (5) Business Days that is sufficient to ensure that the Market Participant's Aggregate Credit Limit is at least equal to its Estimated Aggregate Liability. The CAISO shall also notify a Market Participant if at any time its Estimated Aggregate Liability exceeds ninety percent (90%) of its Aggregate Credit Limit. For the purposes of calculating the Market Participant's Estimated Aggregate Liability, the CAISO shall include (1) outstanding charges for Trading Days for which Settlement data is available, and (2) an estimate of charges for Trading Days for which Settlement data is not yet available. To estimate charges

for Trading Days for which Settlement data is not yet available, the CAISO will consider available historical Settlement data, and other available operational and market data as described in the applicable Business Practice Manual.

#### **12.4.1 Resolution of a CAISO Request for an Additional Financial Security Amount.**

A Market Participant has five (5) Business Days to resolve a CAISO request for additional Financial Security. Within the five (5) Business Days, the Market Participant must either demonstrate to the CAISO's satisfaction that the CAISO's Financial Security request is entirely or partially unnecessary, or post the required Financial Security Amount calculated by the CAISO. If the CAISO and the Market Participant are unable to agree on the appropriate level of Financial Security during the five (5) Business Day review period, the Market Participant must post the additional Financial Security and may continue with the dispute process described in Section 12.4.2. Any excess Financial Security Amounts will be returned to the Market Participant if the dispute process finds in favor of the Market Participant.

#### **12.4.2 Dispute Process Regarding a CAISO Request for an Additional Security Amount.**

Market Participants may dispute the Estimated Aggregate Liability calculated by the CAISO and, as a result, the CAISO may reduce or cancel a requested Financial Security adjustment. The following steps are required for a Market Participant to dispute a Financial Security request resulting from the CAISO's calculation of Estimated Aggregate Liability:

- (1) Request by the Market Participant to review the CAISO calculation.
- (2) A reasonable and compelling situation presented, as determined by the Market Participant's CAISO client representative.
- (3) Documentation of facts and circumstances that evidence that the CAISO's calculation of Estimated Aggregate Liability results in an excessive and unwarranted Financial Security posting requirement.
- (4) Approval by the CAISO Manager and/or Director of Customer Services and Industry Affairs and approval by the CAISO Treasurer.

- (5) The CAISO may decline to adjust the initial Estimated Aggregate Liability, as calculated by the CAISO, if the Market Participant has had Financial Security shortfalls in the past twelve (12) months (i.e., it has been shown that the Market Participant's Aggregate Credit Limit at times during the preceding twelve (12) months has been insufficient to cover the Market Participant's Estimated Aggregate Liability).

In no such case shall a CAISO request for increased Financial Security remain outstanding for more than five (5) Business Days. Either the above process is to be completed within five (5) Business Days from the date of the CAISO request for additional Financial Security, or the Market Participant is to post additional Financial Security within the five (5) Business Days and continue this process, which may result in a return of posted Financial Security back to the Market Participant if the results of the dispute process are found to favor the Market Participant.

Factors for consideration in the event this dispute process is utilized include: weighing the risk of using the lower figure to the potential detriment of market creditors if the Market Participant is under-secured and defaults, against the desire not to impose additional potentially unwarranted costs on a Market Participant; equity and consistency of treatment of Market Participants in the dispute process; and the evidentiary value of the information provided by the Market Participant in the dispute process.

#### **12.5 CAISO Enforcement Actions Regarding Under-Secured Market Participants.**

If a Market Participant's Estimated Aggregate Liability, as calculated by the CAISO, at any time exceeds its Aggregate Credit Limit, the CAISO may take any or all of the following actions:

- (a) The CAISO may withhold a pending payment distribution.



- (b) The CAISO may limit trading, which may include rejection of Bids, including Self-Schedules, and/or limiting other CAISO Market activity, including limiting eligibility to participate in a CRR Allocation or CRR Auction. In such case, the CAISO shall notify the Market Participant of its action and the Market Participant shall not be entitled to participate in the CAISO Markets or CRR Auctions or submit further Bids, including Self-Schedules, or otherwise participate in the CAISO Markets until the Market Participant posts an additional Financial Security Amount that is sufficient to ensure that the Market Participant's Aggregate Credit Limit is at least equal to its Estimated Aggregate Liability.
- (c) The CAISO may require the Market Participant to post an additional Financial Security Amount in lieu of an Unsecured Credit Limit for a period of time.
- (d) The CAISO may restrict, suspend, or terminate the Market Participant's CRR Entity Agreement or any other service agreement.
- (e) The CAISO may resell the CRR Holder's CRRs in whole or in part, including any Long Term CRRs, in a subsequent CRR Auction or bilateral transaction, as appropriate.
- (f) The CAISO will not implement the transfer of a CRR if the transferee or transferor has an Estimated Aggregate Liability in excess of its Aggregate Credit Limit.

In addition, the CAISO may restrict or suspend a Market Participant's right to submit further Bids, including Self-Schedules, or require the Market Participant to increase its Financial Security Amount if at any time such Market Participant's potential additional liability for Imbalance Energy and other CAISO charges is determined by the CAISO to be excessive by comparison with the likely cost of the amount of Energy reflected in Bids or Self-Schedules submitted by the Market Participant.

## **12.6 Credit Obligations Applicable to CRRs.**

### **12.6.1 Credit Requirements for CRR Allocations.**

Subject to applicable requirements of Section 36.9.2 concerning the prepayment of Wheeling Access Charges, Load Serving Entities eligible to participate in any CRR Allocation are not required to provide additional Financial Security in advance of a CRR Allocation.

### **12.6.2 Credit Requirements for CRR Auctions.**

To establish available credit for participating in any CRR Auction, each CRR Holder or Candidate CRR Holder must have an Unsecured Credit Limit or have provided Financial Security in a form consistent with Section 12.1.2. Each CRR Holder or Candidate CRR Holder may choose to designate a portion of its Unsecured Credit Limit and/or posted Financial Security specifically for the CRR Auction by notifying the CAISO of the CRR Holder's or Candidate CRR Holder's intent. Alternatively, the CRR Holder or Candidate CRR Holder may choose to post additional Financial Security to cover its participation in the CRR Auction, and shall by notify the CAISO of the portion of its total Financial Security to be assigned as its CRR Auction bidding limit. Each CRR Holder or Candidate CRR Holder that participates in a CRR Auction shall ensure that its Aggregate Credit Limit in excess of its Estimated Aggregate Liability is the greater of \$500,000 or the sum equal to the sum of the absolute values of all of its bids for CRRs submitted in the relevant CRR Auction plus the sum of the Credit Margins for all of the CRRs for which the Candidate CRR Holder submits bids in the relevant CRR Auction. A CRR Holder or Candidate CRR Holder that fails to satisfy this requirement shall not be permitted to participate in the relevant CRR Auction, or shall have bids exceeding its Available Credit Limit for participation in the CRR Auction, in accordance with the above formula, rejected by the CAISO on a last-in, first-out basis.

### **12.6.3 Credit Requirements for the Holding of CRRs.**

**12.6.3.1 Credit Requirements Generally.**

- (a) Each CRR Holder, whether it obtains CRRs through a CRR Allocation or a CRR Auction, must maintain an Aggregate Credit Limit in excess of its Estimated Aggregate Liability including the credit requirement of the CRR portfolio determined as described in this Section 12.6.3. CRR Holders obtaining CRRs in the initial CRR Allocation will be required to comply with the credit requirements associated with such CRRs as determined by the CAISO after completion of the initial CRR Auction. The CAISO shall issue a Market Notice after completion of the initial CRR Auction to announce that CRR Holders obtaining CRRs in the initial CRR Allocation must comply with such credit requirements.

- (b) Each CRR Holder shall be required to ensure that its Aggregate Credit Limit is sufficient to satisfy the credit requirements described in this Section 12.6.3. *Except as provided in this paragraph,* CRRs are evaluated on a portfolio basis as follows. If a CRR Holder owns more than one CRR, such CRR Holder shall be subject to an overall credit requirement that is equal to the sum of the individual credit requirements applicable to each of the CRRs held by such CRR Holder, *which is calculated after the MW associated with any Offsetting CRRs are netted out.* If this sum is positive, the amount will be added to the CRR Holder's Estimated Aggregate Liability. However, if the sum is negative, the CRR Holder's Estimated Aggregate Liability shall not be reduced. *If a CRR Holder holds one or more CRRs obtained through a CRR Allocation and also holds one or more CRRs obtained through a CRR Auction, the individual credit requirements applicable to any of the CRRs obtained through a CRR Allocation may not be netted against the individual credit requirements applicable to any of the CRRs obtained through a CRR Auction in determining such CRR Holder's Estimated Aggregate Liability.*

- (c) The CAISO shall reevaluate the credit requirements for holding CRRs, and shall adjust the credit requirements accordingly, not less than monthly. The CAISO may adjust the credit requirements for holding CRRs with terms of one year or less at the CAISO's discretion to account for changes in the monthly auction prices for CRRs *and changes in the Historical Expected Values for CRRs, or more frequently than monthly if necessary if the CAISO finds that actual or anticipated market conditions indicate that CRR credit requirements may be inadequate to cover the financial risk of the CRRs.* The CAISO may also adjust the credit requirements for holding Long Term CRRs annually to reflect the changes in auction prices of one-year CRRs in annual auctions, and to reflect updates to Credit Margins based on actual Locational Marginal Price data derived from market operations.
- (d) In cases where the ownership of a CRR is to be transferred through either the Secondary Registration System or through Load Migration, the CAISO shall evaluate and adjust the credit requirements for both the current owner of the CRR and the prospective owner of the CRR as appropriate prior to the transfer. If additional Financial Security is required from either the current or prospective owner, the transfer will not be completed until such Financial Security has been provided to and accepted by the CAISO. *CRRs transferred through the Secondary Registration System will be treated like auctioned CRRs for the purpose of calculating the credit requirements for holding the CRRs, regardless of whether the CRRs were originally allocated or purchased at auction or acquired through the Secondary Registration System. CRRs assigned to Load-gaining or Load-losing Load Serving Entities as a result of Load Migration will be treated like allocated CRRs for the purpose of calculating the credit requirements for holding the CRRs.*

**12.6.3.2 Calculation of the Credit Amount Required to Hold a CRR With a Term of One Year or Less.**

Each CRR Holder that holds a CRR with a term of one year or less shall be subject to a credit requirement (\$/MW) equal to the negative of the most recent CRR Auction Price of such CRR **or the Historical Expected Value of such CRR, whichever is lower,** plus the Credit Margin for such CRR. **The CRR Auction Price will be used until twelve (12) months of historical market operations data are available.**

### **12.6.3.3 Calculation of the Credit Amount Required to Hold a Long Term CRR.**

Each CRR Holder that holds a Long Term CRR shall be subject to a credit requirement (\$/MW) equal to (i) the negative of the most recent CRR Auction Price of a CRR with the same CRR Source and CRR Sink as the Long Term CRR but with only a one-year term, plus (ii) the Credit Margin calculated for the one-year CRR. If there is less than one year remaining in the term of a Long Term CRR, the credit requirement shall be determined pursuant to Section 12.6.3.2.

### **12.6.3.4 Calculation of Credit Margin.**

The Credit Margin (\$/MW) for a CRR is equal to (i) the Expected Congestion Revenue minus (ii) the Fifth Percentile Congestion Revenue of such CRR. Both values will be based on the probability distribution of Congestion revenue of such CRR calculated using historical Locational Marginal Price data, when available, and proxy values, including data taken from Locational Marginal Price studies conducted by the CAISO, until such time as historical Locational Marginal Price data is available, with the details of such calculation published in a Business Practice Manual. The CAISO may reassess its determinations regarding the Credit Margin determination at any time and shall require additional Financial Security if the reassessment results in an increase in a CRR Holder's Estimated Aggregate Liability that is not covered by a CRR Holder's Aggregate Credit Limit (consisting of the CRR Holder's Unsecured Credit Limit and/or Financial Security).

### **12.6.4 Credit Requirements for Sales of Allocated CRRs.**

*Each Load Serving Entity that sells a CRR obtained through a CRR Allocation shall, as a prerequisite to the sale of any such CRR, have an Aggregate Credit Limit with a sufficient margin to cover the credit requirement for holding the Offsetting CRR that the Load Serving Entity would be responsible for assuming in the event of Load Migration from the Load Serving Entity to another Load Serving Entity pursuant to Section 36.8.5.3. The credit requirement for holding the Offsetting CRR will be included in the Estimated Aggregate Liability of the Load Serving Entity upon the transfer of the allocated CRR.*

**12.7 Credit Obligation for New Responsible Utilities for RMR Costs.**

If a Responsible Utility first executed the TCA after April 1, 1998 (a New Responsible Utility) and if:

- (i) the senior unsecured debt of the New Responsible Utility is rated or becomes rated at less than A- from Standard & Poor's ("S&P") or A3 from Moody's Investment Services ("Moody's"), and
- (ii) Such ratings do not improve to A- or better from S&P or A3 or better from Moody's within 60 days,

the New Responsible Utility shall issue and confirm to the CAISO an irrevocable and unconditional letter of credit in an amount equal to three times the highest monthly payment invoiced by the CAISO to the New Responsible Utility (or the prior Responsible Utility) in connection with services under Reliability Must-Run Contracts in the last 3 months for which invoices have been issued. The letter of credit must be issued by a bank or other financial institution whose senior unsecured debt rating is not less than A from S&P and A2 from Moody's. The letter of credit shall be in such form as the CAISO may reasonably require from time to time by notice to the New Responsible Utility and shall authorize the CAISO or the RMR Owner to draw on the letter of credit for deposit solely into the RMR Owner Facility Trust Account in an amount equal to any amount due and not paid by the Responsible Utility under the CAISO Invoice. The security provided by the New Responsible Utility pursuant to this Section is intended to cover the New Responsible Utility's outstanding liability for payments it is liable to make to the CAISO under this Section, including monthly payments, any reimbursement for capital improvement, termination fees and any other payments to which the CAISO is liable under Reliability Must-Run Contracts.



**13 DISPUTE RESOLUTION.**

**13.1 Applicability.**

**13.1.1 General Applicability.**

Except as limited below or otherwise as limited by law (including the rights of any party to file a complaint with FERC under the relevant provisions of the FPA), the CAISO ADR Procedures shall apply to all disputes between parties which arise under the CAISO Documents except where the decision of the CAISO is stated in the provisions of this CAISO Tariff to be final. The CAISO ADR Procedures shall not apply to:

- (1) Disputes arising under contracts which pre-date the CAISO Operations Date, except as the disputing parties may otherwise agree;
- (2) Disputes as to whether rates and charges set forth in this CAISO Tariff are just and reasonable under the FPA.

**13.1.2 Disputes Involving Government Agencies.**

If a party to a dispute is a government agency the procedures herein that provide for the resolution of claims and arbitration of disputes are subject to any limitations imposed on the agency by law, including but not limited to the authority of the agency to effect a remedy. If the governmental agency is a federal entity, the procedures herein shall not apply to disputes involving issues arising under the United States Constitution.

**13.1.3 Injunctive and Declaratory Relief.**

Where the court having jurisdiction so determines, use of the CAISO ADR Procedures shall not be a condition precedent to a court action for injunctive relief nor shall the provisions of California Code of Civil Procedure sections 1281 et seq. apply to such court actions.

**13.2                   Negotiation and Mediation.**

**13.2.1               Negotiation.**

The CAISO and Market Participants (party or parties) shall make good-faith efforts to negotiate and resolve any dispute between them arising under CAISO Documents prior to invoking the CAISO ADR Procedures outlined herein. Each party shall designate an individual with authority to negotiate the matter in dispute to participate in such negotiations.

**13.2.2               Statement of Claim.**

In the event a dispute is not resolved through such good-faith negotiations, any one of the parties may submit a statement of claim, in writing, to each other disputing party, the CAISO ADR Committee, and the CAISO Governing Board, which submission shall commence the CAISO ADR Procedures. The statement of claim shall set forth in reasonable detail (i) each claim, (ii) the relief sought, including the proposed award, if applicable, (iii) a summary of the grounds for such relief and the basis for each claim, (iv) the parties to the dispute, and (v) the individuals having knowledge of each claim. The other parties to the dispute shall similarly submit their respective statements of claim within fourteen (14) days of the date of the initial statement of claim or such longer period as the chair of the CAISO ADR Committee may permit following an application by the responding party. If any responding party wishes to submit a counterclaim in response to the statement of claim, it shall be included in such party's responsive statement of claim. A summary of the statements of claim shall be published by the CAISO on the CAISO's secure communication system, and any other method adopted by the CAISO ADR Committee. No Market Participant shall be considered as having received notice of a claim decided or relief granted by a decision made under these procedures unless the summary of the statements of claim published by the CAISO includes such claim or relief.

**13.2.3 Selection of Mediator.**

After submission of the statements of claim, the parties may request mediation, if at least **seventy-five percent (75%)** of the disputing parties so agree, except that where a dispute involves three parties, at least two of the parties must agree to mediation. If the parties agree to mediate, the chair of the CAISO ADR Committee shall distribute to the parties by facsimile or other electronic means a list containing the names of at least seven prospective mediators with mediation experience, or with technical or business experience in the electric power industry, or both, as he or she shall deem appropriate to the dispute. The parties shall either agree upon a mediator from the list provided or from any alternative source, or alternate in striking names from the list with the last name on the list becoming the mediator. The first party to strike off a name from the list shall be determined by lot. The parties shall have seven days from the date of receipt of the CAISO ADR Committee chair's list of prospective mediators to complete the mediator selection process and appoint the mediator, unless the time is extended by mutual agreement. The mediator shall comply with the requirements of Section 13.3.2.

**13.2.4 Mediation.**

The mediator and representatives of the disputing parties, with authority to settle the dispute, shall within fourteen (14) days after the mediator's date of appointment schedule a date to mediate the dispute. Matters discussed during the mediation shall be confidential and shall not be referred to in any subsequent proceeding. With the consent of all disputing parties, a resolution may include referring the dispute directly to a technical body (such as a WECC technical advisory panel) for resolution or an advisory opinion, or referring the dispute directly to FERC. The CAISO shall publish notice of the referral of the dispute on the CAISO's secure communication system, and any other method adopted by the CAISO ADR Committee.

**13.2.5 Demand for Arbitration.**

If the disputing parties have not succeeded in negotiating a resolution of the dispute within thirty (30) days of the initial statement of claim or, if within that period the parties agreed to mediate, within thirty (30) days of the parties first meeting with the mediator, such parties shall be deemed to be at impasse and any such disputing party may then commence the arbitration process, unless the parties by mutual agreement agree to extend the time. A party seeking arbitration shall provide notice of its demand for arbitration to the other disputing parties, the CAISO ADR Committee and the CAISO Governing Board, which shall publish notice of such demand in the CAISO newsletter or electronic bulletin board, and any other method adopted by the CAISO ADR Committee.

**13.3 Arbitration.**

**13.3.1 Selection of Arbitrator.**

**13.3.1.1 Disputes Under \$1,000,000.**

Where the total amount of claims and counterclaims in controversy is less than \$1,000,000 (exclusive of costs and interest), the disputing parties shall select an arbitrator from a list containing the names of at least ten (10) qualified individuals supplied by the CAISO ADR Committee, or if the CAISO is a party to the dispute, the names of at least ten (10) qualified individuals supplied by the American Arbitration Association within fourteen (14) days following submission of the demand for arbitration. If the parties cannot agree upon an arbitrator within fourteen (the) stated time, they shall take turns striking names from the list of proposed arbitrators. The first party to strike-off a name shall be determined by lot. This process shall be repeated until one name remains on the list, and that individual shall be the designated arbitrator.

**13.3.1.2 Disputes of \$1,000,000 or Over.**

Where the total amount of claims and counterclaims in controversy is \$1,000,000 or more (exclusive of interest and costs), the disputing parties may agree on any person to serve as a single arbitrator, or shall endeavor in good faith to agree on a single arbitrator from a list of ten (10) qualified individuals provided by the CAISO ADR Committee, or if the CAISO is a party to the dispute, the names of at least ten (10) qualified individuals supplied by the American Arbitration Association within fourteen (14) days following submission of the demand for arbitration. If the parties are unable to agree on a single arbitrator within the stated time, the party or parties demanding arbitration, and the party or parties responding to the demand for arbitration, shall each designate an arbitrator. Each designation shall be from the CAISO ADR Committee list of arbitrators no later than the tenth (10th) day thereafter. The two arbitrators so chosen shall then choose a third arbitrator.

**13.3.2 Disclosures Required of Arbitrators.**

The designated arbitrator(s) shall be required to disclose to the parties any circumstances which might preclude him or her from rendering an objective and impartial determination. Each designated arbitrator shall disclose:

- (a) Any direct financial or personal interest in the outcome of the arbitration;
- (b) Any information required to be disclosed by California Code of Civil Procedure Section 1281.9.; and
- (c) Any existing or past financial, business, professional, or personal interest that are likely to affect impartiality or might reasonably create an appearance of partiality or bias.

The designated arbitrator shall disclose any such relationships that he or she personally has with any party or its counsel, or with any individual whom he or she has been told will be a witness. Designated arbitrators should also disclose any such relationship involving members of their families or their current

employers, partners, or business associates. All designated arbitrators shall make a reasonable effort to inform themselves of any interests or relationships described above. The obligation to disclose interests, relationships, or circumstances that might preclude an arbitrator from rendering an objective and impartial determination is a continuing duty that requires the arbitrator to disclose, at any stage of the arbitration, any such interests, relationships, or circumstances that arise, or are recalled or discovered. If, as a result of the continuing disclosure duty, an arbitrator makes a disclosure which is likely to affect his or her partiality, or might reasonably create an appearance of partiality or bias or if a party independently discovers the existence of such circumstances, a party wishing to object to the continuing use of the arbitrator must provide written notice of its objection to the other parties within ten (10) days of receipt of the arbitrator's disclosure or the date of a party's discovery of the circumstances giving rise to that party's objection. Failure to provide such notice shall be deemed a waiver of such objection. If a party timely provides a notice of objection to the continuing use of the arbitrator the parties shall attempt to agree whether the arbitrator should be dismissed and replaced in the manner described in Section 13.3.1. If within ten (10) days of a party's objection notice the parties have not agreed how to proceed the matter shall be referred to the CAISO ADR Committee for resolution.

### **13.3.3 Arbitration Procedures.**

The CAISO ADR Committee shall compile and make available to the arbitrator and the parties standard procedures for the arbitration of disputes, which procedures (i) shall include provision, upon good cause shown, for intervention or other participation in the proceeding by any party whose interests may be affected by its outcome, (ii) shall conform to the requirements specified herein, and (iii) may be modified or adopted for use in a particular proceeding as the arbitrator deems appropriate, in accordance with Section 13.3.4. The procedures adopted by the CAISO ADR Committee shall be based on the latest edition of the American Arbitration Association Commercial Arbitration Rules, to the extent such rules are not inconsistent with this Section 13. Except as provided herein, all parties shall be bound by such procedures.

**13.3.4 Modification of Arbitration Procedures.**

In determining whether to modify the standard procedures for use in the pending matter, the arbitrator shall consider (i) the complexity of the dispute, (ii) the extent to which facts are disputed, (iii) the extent to which the credibility of witnesses is relevant to a resolution, (iv) the amount in controversy, and (v) any representations made by the parties. Alternatively, the parties may, by mutual agreement, modify the standard procedures. In the event of a disagreement between the arbitrator and the agreement of the parties regarding arbitration procedures to be utilized, the parties' agreement shall prevail.

**13.3.5 Remedies.**

**13.3.5.1 Arbitrator's Discretion.**

The arbitrator shall have the discretion to grant the relief sought by a party, or determine such other remedy as is appropriate, unless the parties agree to conduct the arbitration "baseball" style. Unless otherwise expressly limited herein, the arbitrator shall have the authority to award any remedy or relief available from FERC, or any other court of competent jurisdiction. Where any CAISO Document leaves any matter to be agreed between the parties at some future time and provides that in default of agreement the matter shall be referred to the CAISO ADR Procedures, the arbitrator shall have authority to decide upon the terms of the agreement which, in the arbitrator's opinion, it is reasonable that the parties should reach, having regard to the other terms of the CAISO Document concerned and the arbitrator's opinion as to what is fair and reasonable in all the circumstances.

**13.3.5.2 "Baseball" Arbitration.**

If the parties agree to conduct the arbitration "baseball" style, the parties shall submit to the arbitrator and exchange with each other their last best offers in the form of the award they consider the arbitrator should make, not less than seven (7) days in advance of the date fixed for the hearing, or such other date as the arbitrator may decide. If a party fails to submit its last best offer in accordance with this Section, that party shall be deemed to have accepted the offer proposed by the other party. The arbitrator shall be limited to awarding only one of the proposed offers, and may not determine an alternative or compromise remedy.

**13.3.6 Summary Disposition.**

The procedures for arbitration of a dispute shall provide a means for summary disposition of a demand for arbitration, or a response to a demand for arbitration, that in the reasoned opinion of the arbitrator does not have a good faith basis in either law or fact. If the arbitrator determines that a demand for arbitration or response to a demand for arbitration does not have a good faith basis in either law or fact, the arbitrator shall have discretion to award the costs of the time, expenses, and other charges of the arbitrator to the prevailing party. A determination made under this Section is subject to appeal pursuant to Section 13.4.

**13.3.7 Discovery Procedures.**

The procedures for the arbitration of a dispute shall include adequate provision for the discovery of relevant facts, including the taking of testimony under oath, production of documents and other things, the presentation of evidence, the taking of samples, conducting of tests, and inspection of land and tangible items. The nature and extent of such discovery shall be determined as provided herein and shall take into account (i) the complexity of the dispute, (ii) the extent to which facts are disputed, (iii) the extent to which the credibility of witnesses is relevant to a resolution, and (iv) the amount in controversy. The forms and methods for taking such discovery shall be as described in the Federal Rules of Civil Procedure, except as modified pursuant to Section 13.3.4.

**13.3.8 Evidentiary Hearing.**

The arbitration procedures shall provide for an evidentiary hearing, with provision for the cross-examination of witnesses, unless all parties consent to the resolution of the matter on the basis of a written record. The forms and methods for taking evidence shall be determined by the arbitrator(s) and modified pursuant to Section 13.3.4. The arbitrator may require such written or other submissions from the parties as he or she may deem appropriate, including submission of direct and rebuttal testimony of



witnesses in written form. The arbitrator may exclude any evidence that is irrelevant, immaterial, unduly repetitious or prejudicial, or privileged. The arbitrator shall compile a complete evidentiary record of the arbitration which shall be available to the parties on its completion upon request.

**13.3.9 Confidentiality.**

Subject to the other provisions of this CAISO Tariff, any party may claim that information contained in a document otherwise subject to discovery is "Confidential" if such information would be so characterized under the Federal Rules of Evidence. The party making such claim shall provide to the arbitrator in writing the basis for its assertion. If the claim of confidentiality is confirmed by the arbitrator, he or she shall establish requirements for the protection of such documents or other information designated as "Confidential" as may be reasonable and necessary to protect the confidentiality and commercial value of such information. Any party disclosing information in violation of these provisions or requirements established by the arbitrator, unless such disclosure is required by federal or state law or by a court order, shall thereby waive any right to introduce or otherwise use such information in any judicial, regulatory, or other legal or dispute resolution proceeding, including the proceeding in which the information was obtained.

**13.3.10 Timetable.**

Promptly after the appointment of the arbitrator, the arbitrator shall set a date for the issuance of the arbitration decision, which shall be no later than **six (6)** months (or such date as the parties and the arbitrator may agree) from the date of the appointment of the arbitrator, with other dates, including the dates for an evidentiary hearing or other final submissions of evidence, set in light of this date. The date for the evidentiary hearing or other final submission of evidence shall not be changed, absent extraordinary circumstances. The arbitrator shall have the power to impose sanctions, including dismissal of the proceeding, for dilatory tactics or undue delay in completing the arbitration proceedings.

**13.3.11 Decision.**

**13.3.11.1** Except as provided below with respect to "baseball" style arbitration, the arbitrator shall issue a written decision granting the relief requested by one of the parties, or such other remedy as is appropriate, if any, and shall include findings of fact and law. The arbitration decision shall be based on (i) the evidence in the record, (ii) the terms of the relevant CAISO Documents, (iii) applicable United States federal law, including the FPA and any applicable FERC regulations and decisions, and international treaties or agreements as applicable, and (iv) applicable state law. Additionally, the arbitrator may consider relevant decisions in previous arbitration proceedings. A summary of the disputed matter and the arbitrator's decision shall be published in a CAISO newsletter or electronic bulletin board and any other method adopted by the CAISO ADR Committee, and maintained by the CAISO ADR Committee.

**13.3.11.2** In arbitration conducted "baseball" style, the arbitrator shall issue a written decision adopting one of the awards proposed by the parties, and shall include findings of fact and law. The arbitration decision shall be based on (i) the evidence in the record, (ii) the terms of the relevant CAISO Documents, (iii) applicable United States federal law, including the FPA and any applicable FERC regulations and decisions, and international treaties or agreements as applicable, and (iv) applicable state law. If the arbitrator concludes that no proposed award is consistent with the factors enumerated in (i) through (iv) above, or addresses all of the issues in dispute, the arbitrator shall specify how each proposed award is deficient and direct that the parties submit new proposed awards that cure the identified deficiencies. A summary of the disputed matter and the arbitrator's decision shall be published in a CAISO newsletter or electronic bulletin board, and any other method adopted by the CAISO ADR Committee. An award shall not be deemed to be precedential.

**13.3.11.3** Where a panel of arbitrators is appointed pursuant to Section 13.3.1.2, a majority of the arbitrators must agree on the decision.

**13.3.12 Compliance.**

Unless the arbitrator's decision is appealed under Section 13.4, the disputing parties shall, upon receipt of the decision, immediately take whatever action is required to comply with the award to the extent the award does not require regulatory action. An award that is not appealed shall be deemed to have the same force and effect as an order entered by the FERC or any court of competent jurisdiction.

**13.3.13 Enforcement.**

Following the expiration of the time for appeal of an award pursuant to Section 13.4.3, any party may apply to FERC or any court of competent jurisdiction for entry and enforcement of judgment based on the award.

**13.3.14 Costs.**

The costs of the time, expenses, and other charges of the arbitrator shall be borne by the parties to the dispute, with each side on an arbitrated issue bearing its pro-rata share of such costs, and each party to an arbitration proceeding bearing its own costs and fees. If the arbitrator determines that a demand for arbitration or response to a demand for arbitration was made in bad faith, the arbitrator shall have discretion to award the costs of the time, expenses, and other charges of the arbitrator to the prevailing party. Notwithstanding the above, at the discretion of the arbitrator, the winning party in any dispute which has resulted in the enforcement of an important right affecting the public interest shall not be required to pay any of the costs of the arbitrator and may recover such of its own reasonable attorney fees, expert witness fees and other reasonable costs from the losing party to the dispute if (a) a significant benefit, whether pecuniary or non-pecuniary, has been conferred on the general public, (b) the necessity and financial burden of private enforcement are such as to make the award appropriate, and (c) such fees should not, in the interest of justice, be paid out of the recovery.

**13.4 Appeal of Award.**

**13.4.1 Basis for Appeal.**

A party may apply to the FERC or any court of competent jurisdiction to hear an appeal of an arbitration award only upon the grounds that the award is contrary to or beyond the scope of the relevant CAISO Documents, United States federal law, including, without limitation, the FPA, and any FERC regulations and decisions, or state law. Appeals shall, unless otherwise ordered by FERC or the court of competent jurisdiction, conform to the procedural limitations set forth in this Section 13.4.

**13.4.2 Appellate Record.**

The parties intend that FERC or the court of competent jurisdiction should afford substantial deference to the factual findings of the arbitrator. No party shall seek to expand the record before the FERC or court of competent jurisdiction beyond that assembled by the arbitrator, except (i) by making reference to legal authority which did not exist at the time of the arbitrator's decision, or (ii) if such party contends the decision was based upon or affected by fraud, collusion, corruption, misconduct or misrepresentation.

**13.4.3 Procedures for Appeals.**

**13.4.3.1** If a party to an arbitration desires to appeal an award, it shall provide a notice of appeal to the CAISO Governing Board, all parties and the arbitrator within **fourteen (14)** days following the date of the award. The appealing party must likewise provide notice to the CAISO ADR Committee, which shall publish notice of the appeal on the CAISO's secure communication system, and any other method adopted by the CAISO ADR Committee.

Within ten (10) days of the filing of the notice of appeal, the appealing party must file an appropriate application, petition or motion with the FERC to trigger review under the FPA or with a court of competent jurisdiction. Such filing shall state that the subject matter has been the subject of an arbitration pursuant to the relevant CAISO Document.

**13.4.3.2** Within **thirty (30)** days of filing the notice of appeal (or such period as FERC or the court of competent jurisdiction may specify) the appellant shall file the complete evidentiary record of the

arbitration and a copy of the award with FERC or with the court of competent jurisdiction. The appellant shall serve copies of a description of all materials included in the submitted evidentiary record.

**13.4.4 Award Implementation.**

Implementation of the award shall be deemed stayed pending an appeal unless and until, at the request of a party, the FERC or the court of competent jurisdiction to which an appeal has been filed, issues an order dissolving, shortening, or extending such stay. However, a summary of each appeal shall be published in a CAISO newsletter or electronic bulletin board, and any other method adopted by the CAISO ADR Committee.

**13.4.5 Judicial Review of FERC Orders.**

FERC orders resulting from appeals shall be subject to judicial review pursuant to the FPA.

**13.5 Allocation of Awards Payable by or to the CAISO.**

**13.5.1 Allocation of an Award.**

If the CAISO must pay an award to a party pursuant to good faith negotiations or the CAISO ADR Procedures, the CAISO will recover the amount of the award from Market Participants and Scheduling Coordinators. If the CAISO receives an award from a party pursuant to good faith negotiations or the CAISO ADR Procedures, the CAISO will flow back the amount of the award to Market Participants and Scheduling Coordinators.

**13.5.2 Timing of Adjustments.**

Upon determination that an award is payable by or to the CAISO pursuant to good faith negotiations or the CAISO ADR Procedures, the CAISO shall calculate the amounts payable to and receivable from the party, Market Participants, and Scheduling Coordinators, as soon as reasonably practical, and shall show any required adjustments as a debit or a credit in a subsequent **Initial** Settlement Statement **T+38BD** or, in the case of an amount payable by the CAISO to a party, as soon as the CAISO and that party may agree.

**13.5.3 Method of Allocation.**

**13.5.3.1 Allocation to Market Participants.**

The CAISO will use best efforts to determine which Market Participant(s) is or are responsible for and/or benefit from payment of an award by or to the CAISO and to allocate receipt of or payment for the award equitably to such Market Participant(s). In undertaking the allocation, the CAISO shall consider the extent of a Market Participant's participation in affected markets and the CAISO Tariff in effect on the applicable Trading Day(s), and may consider any other relevant factor, including but not limited to, applicable contracts.

**13.5.3.2 Residual Amounts.**

Any awards for which the CAISO is unable to identify Market Participants in accordance with 13.5.3.1 and any award amounts that the CAISO is unable to collect that are not covered by Section 11.29.17.1 will be allocated to all Scheduling Coordinators through neutrality adjustments.

**14 FORCE MAJEURE INDEMNIFICATION AND LIMITATIONS ON LIABILITY.**

**14.1 Uncontrollable Forces.**

Neither the CAISO nor a Market Participant will be considered in default of any obligation under this CAISO Tariff if prevented from fulfilling that obligation due to the occurrence of an Uncontrollable Force.

**14.2 Responsibilities of Affected Entity.**

In the event of the occurrence of an Uncontrollable Force, which prevents the CAISO or a Market Participant from performing any of its obligations under this CAISO Tariff, the affected entity shall (i) if it is the CAISO, immediately notify the Market Participants in writing of the occurrence of such Uncontrollable Force and, if it is a Market Participant, immediately notify the CAISO in writing of the occurrence of such Uncontrollable Force, (ii) not be entitled to suspend performance of its obligations under this CAISO Tariff in any greater scope or for any longer duration than is required by the Uncontrollable Force, (iii) use its best efforts to mitigate the effects of such Uncontrollable Force, remedy its inability to perform and resume full performance of its obligations hereunder, (iv) in the case of the CAISO, keep the Market Participants apprised of such efforts, and in the case of the Market Participants, keep the CAISO apprised of such efforts, in each case on a continual basis and (v) provide written notice of the resumption of its performance of its obligations hereunder.

**14.3 Strikes, Lockouts or Labor Disputes.**

Notwithstanding any of the foregoing, the settlement of any strike, lockout or labor dispute constituting an Uncontrollable Force shall be within the sole discretion of the entity involved in such strike, lockout or labor dispute and the requirement that an entity must use its best efforts to mitigate the effects of the Uncontrollable Force and/or remedy its inability to perform and resume full performance of its obligations hereunder shall not apply to strikes, lockouts, or labor disputes.

**14.4 Market Participant's Indemnity.**

Each Market Participant, to the extent permitted by law, shall indemnify the CAISO and hold it harmless against all losses, damages, claims, liabilities, costs or expenses (including legal expenses) arising from any act or omission of the Market Participant except to the extent that they result from the CAISO's default under this CAISO Tariff or gross negligence or intentional wrongdoing on the part of the CAISO or of its officers, directors or employees.

**14.5 Limitation on Liability.**

**14.5.1 Liability for Damages.**

Except as provided for in Section 13.3.14, the CAISO shall not be liable in damages to any Market Participant for any losses, damages, claims, liability, costs or expenses (including legal expenses) arising from the performance or non-performance of its obligations under this CAISO Tariff, including but not limited to any adjustments made by the CAISO in Inter-SC Trades, except to the extent that they result from gross negligence or intentional wrongdoing on the part of the CAISO.

**14.5.2 Exclusion of Certain Types of Loss.**

The CAISO shall not be liable to any Market Participant under any circumstances for any consequential or indirect financial loss including but not limited to loss of profit, loss of earnings or revenue, loss of use, loss of contract or loss of goodwill except to the extent that it results from except to the gross negligence or intentional wrongdoing on the part of the CAISO.

**14.6 Potomac Economics, Ltd. Limitation Of Liability.**

Potomac Economics, Ltd. shall not be liable in damages to any Market Participant for any losses, damages, claims, liability, costs or expenses (including legal expenses) arising from its calculation of reference levels under its Consultant Agreement with the CAISO dated as of September 3, 2002, except to the extent that they result from gross negligence or intentional wrongdoing of Potomac Economics, Ltd.



**15 REGULATORY FILINGS.**

Any amendment or other modification of any provision of this CAISO Tariff must be in writing and approved by the CAISO Governing Board in accordance with the bylaws of the CAISO. Any such amendment or modification shall be effective upon the date it is permitted to become effective by FERC. Nothing contained herein shall be construed as affecting, in any way, the right of the CAISO to furnish its services in accordance with this CAISO Tariff, or any tariff, rate schedule or Scheduling Coordinator Agreement which results from or incorporates this CAISO Tariff, ☐ or unilaterally to make an application to FERC for a change in rates, terms, conditions, charges, classifications of service, Scheduling Coordinator Agreement, rule or regulation under FPA Section 205 and pursuant to the FERC's rules and regulations promulgated thereunder. Nothing contained in this CAISO Tariff or any Scheduling Coordinator Agreement shall be construed as affecting the ability of any Market Participant receiving service under this CAISO Tariff to exercise its rights under Section 206 of the FPA and FERC's rules and regulations thereunder.

**16                    EXISTING CONTRACTS.**

**16.1                Continuation of Rights and Obligations of Non-Participating TOs Under Existing Contracts.**

The transmission service rights and obligations of Non-Participating TOs under Existing Contracts, including all terms, conditions and rates of the Existing Contracts, as they may change from time to time under the terms of the Existing Contracts, will continue to be honored by the parties to those contracts, for the duration of those contracts.

**16.1.1            Participating TO Obligation.**

If a Participating TO is a party to an Existing Contract under which Existing Rights are provided, the Participating TO shall attempt to negotiate changes to the Existing Contract to align the contract's scheduling and operating provisions with the CAISO's scheduling and operational procedures, rules and protocols, to align operations under the contract with CAISO operations, and to minimize the contract parties' costs of administering the contract while preserving their financial rights and obligations.

In addition, the Participating TO shall attempt to negotiate changes to provisions in the Existing Contract to ensure that whenever transmission services under the Existing Contract are used to deliver power to a Market Participant that is subject to Access Charges under this CAISO Tariff, no duplicative charge for access to the CAISO Controlled Grid will be charged under the Existing Contract. For purposes of such negotiations, there shall be a presumption that any charges in an Existing Contract that were designed to recover the embedded cost of transmission facilities within the CAISO Controlled Grid will be fully recovered through the Access Charges established under Section 26.1.

**16.1.2 Right to Use and Ownership of Facilities.**

If a Non-Participating TO has an Existing Contract with a Participating TO under which the Non-Participating TO's transmission facilities, or a portion thereof, are subject to use by the Participating TO, the Non-Participating TO's rights to the use and ownership of its facilities shall remain unchanged, regardless of the Participating TO's act of turning over the Participating TO's Entitlement to use the Non-Participating TO's facilities to the extent possible to the Operational Control of the CAISO. The CAISO will accept valid ETC Self-Schedules from a Participating TO that is the Scheduling Coordinator for the holder of Existing Rights, or from holders of Existing Rights that are Scheduling Coordinators, or that are represented by a Scheduling Coordinator other than the Participating TO. ETC Self-Schedules submitted by Scheduling Coordinators to the CAISO, which include the use of Existing Rights, must be submitted in accordance with Section 16.1 and Section 30. The CAISO may refuse to accept ETC Self-Schedules submitted pursuant to Existing Contracts that do not meet the requirements of the principles, protocols and rules referred to in this Section 16.1.

**16.1.3 Existing Contract Dispute Resolution.**

The CAISO will, if requested, advise parties to Existing Contracts regarding the operational aspects of any Existing Contract renegotiations that they undertake.

If the parties to an Existing Contract are unable to reach agreement on the changes needed to meet the requirements of this CAISO Tariff, any disputes related thereto shall be addressed using the dispute resolution provisions of the Existing Contract, including any remedies as are provided by law. The rights of the parties to seek changes or to challenge such changes, under the FPA or as otherwise provided by law, are preserved consistent with the terms of the Existing Contract. Unless and until the necessary changes to the Existing Contract are made, all terms and conditions of the Existing Contracts will continue to be honored by the parties to the Existing Contracts.

**16.1.4 Conversion of Participating TOs' Rights and Obligations Under Existing Contracts.**

Parties who are entitled to transmission service rights under Existing Contracts and who choose to become Participating TOs must, at the time of becoming a Participating TO convert those rights to Converted Rights in accordance with Section 4.3.1.6.

**16.2 [NOT USED]**

**16.3 [NOT USED]**

**16.4 Transmission Rights and Transmission Curtailment Instructions.**

**16.4.1 Responsibility to Create TRTC Instructions.**

Each Participating TO and Existing Rights holder will work with the CAISO to develop the Transmission Rights and Transmission Curtailment (TRTC) Instructions that allow Existing Contracts to be exercised in a way that: (i) maintains the existing scheduling and curtailment priorities under the Existing Contract; (ii) is minimally burdensome to the CAISO (i.e., creates the least impact on the CAISO's preferred operational policies and procedures); (iii) to the extent possible, imposes no additional financial burden on either the Participating TO or the holder of Existing Rights (beyond that in the Existing Contract); (iv) consistent with the terms of the Existing Contracts, makes as much transmission capacity not otherwise utilized by the holder of Existing Rights available as possible to the CAISO for allocation to Market Participants; (v) is minimally burdensome to the Participating TO and the Existing Rights holder from an operational point of view; and (vi) does not require the CAISO to interpret or underwrite the economics of the Existing Contract. The parties to Existing Contracts will attempt to jointly develop and agree on any TRTC Instructions that will be submitted to the CAISO. The parties to an Existing Contract shall also be responsible to submit to the CAISO any other necessary operating instructions based on their contract interpretations needed by the CAISO to enable the CAISO to perform its duties.

**16.4.2 Responsible PTO for Multiple Participating TO Parties to an Existing Contract.**

To the extent there is more than one Participating TO providing transmission service under an Existing Contract or there is a set of Existing Contracts which are interdependent from the point of view of submitting instructions to the CAISO involving more than one Participating TO, the relevant Participating TOs will designate a single Participating TO as the responsible PTO and will notify the CAISO accordingly. If no such responsible PTO is designated by the relevant Participating TOs or the CAISO is not notified of such designation, the CAISO shall designate one of them as the responsible PTO and notify the relevant Participating TOs accordingly. The responsible PTO designated pursuant to this section shall have the same responsibility as the Participating TO under this Section 16.4.

**16.4.3 Scheduling Coordinator Responsibilities.**

The Scheduling Coordinator designated by the parties to an Existing Contract as the responsible entity for submitting ETC Self-Schedules for the relevant Existing Contract shall submit ETC Self-Schedules consistent with the terms and conditions specified in the TRTC Instructions.

**16.4.4 Submission of TRTC Instructions.**

For each Existing Contract, the Participating TO providing transmission service under the Existing Contract (or the Responsible PTO identified in Section 16.4.2) shall be obligated to submit the TRTC Instructions to the CAISO electronically on behalf of the holders of Existing Rights, unless the parties to the Existing Contract agree otherwise. The Participating TO shall notify the CAISO in writing the identity of the responsible party for submission of the TRTC Instructions as decided by the parties to the Existing Contract and the term of such agreement between the parties to the Existing Contract. The Participating TO shall undertake all obligations with respect to the submission of the TRTC Instructions to the CAISO and any subsequent obligations that follow with respect to the creation, management and updates to the TRTC Instructions. The CAISO is responsible for implementing only one set of TRTC Instructions for each Existing Contract and only those TRTC Instructions that have been received and accepted by the

CAISO. The Participating TO shall submit the TRTC Instructions to the CAISO associated with Existing Contracts or sets of interdependent Existing Contracts thirty (30) days prior to the date on which the scheduling or curtailment of the use of the Existing Rights is to change or commence.

**16.4.5 TRTC Instructions Content.**

TRTC Instructions will include the following information at a minimum and such other information as the CAISO may reasonably require the Participating TO to provide to enable the CAISO to carry out its functions under the CAISO Tariff, Operating Procedures and Business Practice Manuals:

- (1) A unique Contract Reference Number for each source and sink combination applicable to the Existing Contract (i.e., the CRN that will be assigned by the CAISO and communicated to the Participating TO that references a single Existing Contract or a set of interdependent Existing Contracts for each source and sink combination);
- (2) Whether the instruction can be exercised independent of the CAISO's day-to-day involvement ("Yes/No");
- (3) Name of an operational single point of contact for instructions and a 24-hour a day telephone number for the Participating TO contact for Existing Contract issues or the agreed upon party;
- (4) Name(s) and number(s) of Existing Contract(s) that are represented by the unique CRN;
- (5) The following information as stored in the Master File: (a) the applicable Point(s) of Receipt and Point(s) of Delivery); (b) for each Point of Receipt, the resource names for the physical resources as the eligible sources (eligible physical sources include Generating Units and System Resources), and for each Point of Delivery, the resource names for the physical resources as the eligible sinks

(eligible physical sinks include Load PNodes, Custom Load Aggregation Points and System Resources); (c) for each physical source or sink, the maximum Existing Rights capacity (MW) that can be scheduled as an Existing Right under the Existing Contract; and (d) for each physical source and sink, the Scheduling Coordinator(s) and their Business Associate Identification (BAID) that is(are) eligible to submit ETC Self-Schedules utilizing these sources and sinks;

- (6) Names of the party(ies) to the Existing Contract(s);
- (7) The Scheduling Coordinator BAID that is entitled to the Settlement of reversal of Congestion Charges;
- (8) Type(s) of service rights by the holder of the Existing Rights, by type of service (firm, conditional firm, or non-firm), with priorities for firm and conditional firm transmission services and maximum amounts of service rights in MW;
- (9) Instructions for the allowable timeframes at which the ETC Self-Schedules and ETC Self-Schedule changes may be submitted to the CAISO, which include whether the Scheduling Coordinator may submit ETC Self-Schedules or ETC Self-Schedule changes: (a) into the DAM; (b) into the HASP and the RTM; (c) after the close of submitting Bids into the HASP and the RTM, but before twenty (20) minutes before the applicable Trading Hour of the Trading Day; and (d) at or after twenty (20) minutes before the applicable Trading Hour of the Trading Day; in addition, the TRTC Instructions may also include any additional comments and restrictions on the submission time of ETC Self-Schedules and ETC Self-Schedule changes;
- (10) Term or service period(s) of the Existing Contract(s);

- (11) Any special procedures that would require the CAISO to implement curtailments in any manner different from pro rata reduction of the transfer capability of the transmission line; any such TRTC Instructions submitted to the CAISO must be clear, unambiguous, and not require the CAISO to make any judgments or interpretations as to the meaning intent, results, or purpose of the curtailment procedures or the Existing Contract and the section of the Existing Contract that provides this right for reference, otherwise, they will not be accepted by the CAISO;
- (12) The forecasted usage patterns for each Existing Contract for the upcoming annual period of the annual CRR release processes as well as for the upcoming monthly period of the monthly CRR release processes, which will consist of hourly MWh data over the whole year for those resources that will use the Existing Contract; this information will be considered by the CAISO in managing its accounting for usage of Existing Rights in the release of CRRs; this information shall not be used by the CAISO to validate ETC Self-Schedules when submitted by Scheduling Coordinators and therefore shall not affect the Existing Rights holder's ability to utilize its rights under the Existing Contract;
- (13) Whether or not the Existing Contract provides for the right to self-provide Ancillary Services; and
- (14) Specification of any contract requirements in the ETC that warrants special consideration in the implementation of the physical rights under the ETC.

#### **16.4.6 Changes and Updates to TRTC Instructions.**

Updates or changes to the TRTC Instructions must be submitted to the CAISO through a revised set of TRTC Instructions by the Participating TO, on an as needed or as required basis determined by the parties to the Existing Contracts. The CAISO will implement the updated or changed TRTC Instructions as soon as practicable but no later than seven (7) days after receiving clear and unambiguous details of



the updated or changed instructions under normal conditions. If the CAISO finds the TRTC Instructions to be inconsistent with the CAISO Tariff, the CAISO will notify the Participating TO within forty-eight (48) hours after receipt of the updated or changed TRTC Instructions indicating the nature of the problem and allowing the Participating TO to resubmit the TRTC Instructions as if they were new, updated or changed TRTC Instructions. If the CAISO finds the updated or changed TRTC Instructions to be acceptable, the CAISO will time-stamp the updated TRTC Instructions as received, confirm such receipt to the Participating TO, and indicate the time at which the updated TRTC Instructions take effect if prior to the seven (7) day deadline referred to above. In the event of a System Emergency, the CAISO will implement such submitted changes to the TRTC Instructions as soon as practical.

**16.4.7 Treatment of TRTC Instructions.**

**16.4.7.1 TRTC Instructions Can Be Exercised Independently.**

To the extent that the TRTC Instructions can be exercised independently of the CAISO by the parties to the Existing Contract and the results forwarded to the CAISO, the TRTC Instructions shall be exercised by the Participating TOs, and the outcomes shall be forwarded to the CAISO. The determination of whether the TRTC Instructions can be “exercised independently of the CAISO by the parties to the Existing Contract” shall be made using the same procedures described in Section 16.4.8.

**16.4.7.2 TRTC Instructions Cannot Be Exercised Independently.**

To the extent that the TRTC Instructions cannot be exercised independently of the CAISO and the results forwarded to the CAISO (because, for example, they require iteration with the CAISO’s Bid submission and scheduling process, would unduly interfere with the CAISO’s management of the Real-Time Market, including curtailments, or would unduly interfere with the ability of the holder of rights to exercise its rights), the TRTC Instructions will be provided to the CAISO for day-to-day implementation. The TRTC Instructions will be provided by the Participating TO to the CAISO for implementation unless the parties to

the Existing Contracts otherwise agree that the holder of the Existing Rights will do so. For these TRTC Instructions, the Scheduling Coordinators representing the holders of Existing Rights will submit their Bids to the CAISO for implementation in accordance with the TRTC Instructions. In this case, the CAISO shall act as the scheduling agent for the Participating TO with regard to Existing Rights.

#### **16.4.8 CAISO Role in Existing Contracts.**

The CAISO will have no role in interpreting Existing Contracts. The parties to an Existing Contract will, in the first instance, attempt jointly to agree on any TRTC Instructions that will be submitted to the CAISO. In the event that the parties to the Existing Contract cannot agree upon the TRTC Instructions submitted by the parties to the Existing Contract, the dispute resolution provisions of the Existing Contract, if applicable, shall be used to resolve the dispute; provided that, until the dispute is resolved, and unless the Existing Contract specifies otherwise, the CAISO shall implement the Participating TO's TRTC Instructions. If both parties to an Existing Contract are Participating TOs and the parties cannot agree to the TRTC Instructions submitted by the parties, until the dispute is resolved, and unless the Existing Contract specifies otherwise, the CAISO shall implement the TRTC Instructions of the first Participating TO for which the Existing Contract is an Encumbrance. The CAISO shall not be responsible for resolution of any disputes that arise over the accuracy of the TRTC Instructions consistent with its obligations in Section 16.4.5.

#### **16.4.9 Implementation of TRTC Instructions.**

The CAISO shall determine, based on the information provided by the Participating TOs under TRTC Instructions, the transmission capacities that (i) must be reserved for firm Existing Rights at Scheduling Points, (ii) may be allocated for use as CAISO transmission service (i.e., new firm uses), (iii) must be reserved by the CAISO for conditional firm Existing Rights, and (iv) remain for any non-firm Existing Rights for which a Participating TO has no discretion over whether or not to provide such non-firm service.

The CAISO shall coordinate the scheduling of Existing Rights with the scheduling of CAISO transmission service, using the CAISO's Bid submission rules. In doing so, the CAISO shall create an automated day-to-day verification process based on parameters provided by the Participating TO for the Existing Contract to serve as the basis for ETC Self-Schedule validation. The Participating TO will be responsible for: (1) the accuracy of the data files against which the CAISO will validate the ETC Self-Schedule; and (2) providing the data file to the holder of Existing Rights as well as the CAISO.

The CAISO shall recognize that the obligations, terms or conditions of Existing Contracts may not be changed without the voluntary consent of all parties to the contract (unless such contract may be changed pursuant to any applicable dispute resolution provisions in the contract or pursuant to Section 205 or Section 206 of the FPA and the FERC's Rules and Regulations or as otherwise provided by law).

The parties to Existing Contracts shall remain liable for their performance under the Existing Contracts. The CAISO shall be liable in accordance with the provisions of this CAISO Tariff for any damage or injury caused by its non-compliance with the TRTC Instructions submitted to it pursuant to this Section 16.4.

Unless specified otherwise, in the event that the dispute resolution mechanisms prescribed in an Existing Contract, including all recourses legally available under the contract, cannot, in the first instance, result in a resolution of such a dispute, the CAISO ADR Procedures will be used to resolve any disputes between the CAISO and the Participating TO regarding any aspects of the implementation of this Section 16.4, including the reasonableness of a Participating TO's TRTC Instructions or any other decision rules which the Participating TO may submit to the CAISO as part of the TRTC Instructions. The holders of Existing Rights under the Existing Contract shall have standing to participate in the CAISO ADR Procedures.

#### **16.5 Treatment of Existing Contracts for Transmission Service.**

The CAISO will accommodate Existing Rights, so that the holders of Existing Rights will receive the same priorities (in scheduling, curtailment, assignment and other aspects of transmission system usage) to which they are entitled under their Existing Contracts.

In addition, scheduling deadlines and operational procedures associated with Existing Rights will be honored by the CAISO, provided such information is explicitly included in the TRTC Instructions. The CAISO will accommodate and honor Existing Rights as follows:

- (1) For Existing Rights that permit Interchange Schedule changes over Scheduling Points with other Balancing Authority Areas, the CAISO will reserve transmission capacity equal to the Existing Rights transmission capacity and make a corresponding adjustment in its determination of ATC. For Existing Rights that permit Interchange Schedule changes after the Market Close of the Day-Ahead Market, the CAISO will reserve transmission capacity equal to the unscheduled ETC amount of transmission capacity for that Scheduling Point.
- (2) For Existing Rights within the CAISO Balancing Authority Area, the CAISO will only set-aside capacity associated with the Existing Rights to the extent that the Scheduling Coordinator submits a valid ETC Self-Schedule in the Day-Ahead Market.
- (3) In the HASP, the CAISO will give valid ETC Self-Schedules priority over other non-ETC Day-Ahead Schedules and HASP Bids. In the event of a reduction in capacity on the transmission path associated with the Existing Right, the CAISO will honor the Existing Rights priority in accordance with this Section 16.
- (4) When the Existing Contract permits, the CAISO will allow the holder of Existing Rights to make changes to the scheduled amounts of Supply after the submission of HASP ETC Self-Schedules in accordance with the TRTC Instructions established for such changes. The CAISO will, as necessary, redispatch non-ETC resources to accommodate valid ETC Self-Schedule changes in Real-Time.

- (5) All contractual provisions that have been communicated to the CAISO in writing in accordance with this Section 16 by the parties to the Existing Contracts, shall be honored by the CAISO and the parties to the Existing Contracts and shall be implemented by the CAISO in accordance with the terms and conditions of the relevant Existing Contracts so notified.

#### **16.5.1 System Emergency Exceptions.**

As set forth in Section 4.2.1, all Market Participants, including Scheduling Coordinators, Utility Distribution Companies, Participating TOs, Participating Generators, Participating Loads, **Balancing Authorities** (to the extent the agreement between the **Balancing Authority** and the CAISO so provides), and MSS Operators within the CAISO **Balancing Authority** Area and all System Resources must comply fully and promptly with CAISO Dispatch Instructions and operating orders, unless such operation would impair public health or safety. The CAISO will honor the terms of Existing Contracts, provided that in a System Emergency and circumstances in which the CAISO considers that a System Emergency is imminent or threatened, holders of Existing Rights must follow CAISO operating orders even if those operating orders directly conflict with the terms of Existing Contracts, unless such operating orders are inconsistent with the terms of an agreement between the CAISO and a **Balancing Authority**. In the event of a conflict between the CAISO Tariff and an agreement between the CAISO and a **Balancing Authority**, the agreement will govern. For this purpose CAISO operating orders to shed Load shall not be considered as an impairment to public health or safety. This section does not prohibit a Scheduling Coordinator from modifying its Bid or re-purchasing Energy in the HASP or **Real-Time** Market.

#### **16.6 Valid ETC Self-Schedules.**

The CAISO will accept a valid ETC Self-Schedule from a Scheduling Coordinator. That Scheduling Coordinator shall be either the holder of Existing Rights or its designee, the Participating TO, (in the case that no Scheduling Coordinator has been so identified by the parties to the Existing Contract, the Participating TO shall be the Scheduling Coordinator for the holder of the Existing Contract). ETC Self-Schedules submitted by Scheduling Coordinators to the CAISO, which use Existing Rights, must be submitted in accordance with this CAISO Tariff.

### **16.6.1 Validation of ETC Self-Schedules.**

An ETC Self-Schedule is a valid ETC Self-Schedule when the CAISO has determined that the ETC Self-Schedule, submitted to the CAISO pursuant to the requirements for Bids in Sections 30, properly reflects Existing Rights consistent with the TRTC Instructions, is labeled with a unique Existing Contract identifier, and includes balanced sources and sinks, within the ETC's capacity limits.

### **16.6.2 Treatment of Invalid ETC Self-Schedules.**

#### **16.6.2.1 Inconsistent with the TRTC Instructions.**

Except for the reasons listed below in 16.6.2, if the CAISO finds that the ETC Self-Schedule is not consistent with the TRTC Instructions, the CAISO shall find that the ETC Self-Schedule is not valid. If the CAISO finds the ETC Self-Schedule to be invalid, the CAISO shall notify the Scheduling Coordinator and convert the ETC Self-Schedule to an ordinary Self-Schedule and treat the ETC Self-Schedule as an ordinary Self-Schedule as such for terms of scheduling priority and Settlements.

#### **16.6.2.2 Unbalanced ETC Self-Schedules.**

If the ETC Self-Schedule is not balanced, the ETC Self-Schedule will not be a valid ETC Self-Schedule and the CAISO will: (i) remove any scheduling priority for the entire ETC Self-Schedule; (ii) apply the ETC Settlement treatment pursuant to Sections 11.2.1.5 and 11.5.7.1 to the valid balanced portions only; and (iii) assess any charges, and make any payments, consistent with the treatment of ordinary Self-Schedules for the unbalanced portions.

#### **16.6.2.3 Exceeds Capacity Limits in Existing Contracts as Reflected in TRTC Instructions.**

If the ETC Self-Schedule exceeds the capacity limits in Existing Contracts as reflected in TRTC Instructions, the ETC Self-Schedule will not be a valid ETC-Self-Schedule and the CAISO will: (i) remove any scheduling priority for the entire ETC Self-Schedule; (ii) apply the ETC Settlement treatment pursuant to Sections 11.2.1.5 and 11.5.7.1 to the valid balanced portions within the capacity limits of the Existing Contract as reflected in the TRTC Instructions; and (iii) assess any charges, and make any payments, consistent with the treatment of ordinary Self-Schedules for the portions in excess of the capacity limits of the Existing Contract as reflected in the TRTC Instructions.

**16.6.3 Treatment of Valid ETC Self-Schedules.**

The resulting valid ETC Self-Schedules shall have the following Settlement treatment:

- (1) The CAISO will apply the ETC Settlement treatment in Sections 11.2.1.5 and 11.5.7.1.
- (2) The CAISO shall base the Marginal Cost of Losses on LMP differentials at the Existing Contract source(s) and sink(s) identified in the valid ETC Self-Schedule.
- (3) The holders of Existing Rights will not be entitled to an allocation of revenues from the CAISO, including Access Charge revenue related to those Existing Rights.
- (4) Parties with Existing Rights shall continue to pay for Transmission Losses or Ancillary Services requirements in accordance with such Existing Contracts as they may be modified or changed in accordance with the terms of the Existing Contract. The Participating TOs shall continue to provide Transmission Losses and any other Ancillary Services to the holder of the rights under an Existing Contract as may be required by the Existing Contract. The CAISO will charge Scheduling Coordinators submitting the ETC Self-Schedule for Transmission Losses and Ancillary Services in accordance with the CAISO Tariff and any shortfall or surplus between the CAISO charges and the Existing Rights shall be settled bilaterally between the Existing Contract parties or through the relevant TO Tariff. To enable holders of Existing Rights to determine whether the CAISO's calculations result in any associated shortfall or surplus and to enable the parties to the Existing Contracts to settle the differences bilaterally or through the relevant TO Tariff, the CAISO shall calculate and provide the Scheduling

Coordinator's Settlements the amounts paid for the MCL for the amounts of MWh submitted with a valid ETC Self-Schedule. Each Participating TO will be responsible for recovering any deficits or crediting any surpluses associated with differences in Transmission Losses and Transmission Loss requirements and/or Ancillary Services requirements, through its bilateral arrangements or its Transmission Owner Tariff.

**16.6.4 Notification to Scheduling Coordinators of CAISO Determination.**

After performing validation of the ETC Self-Schedule, and prior to taking any action pursuant to Section 16.6.2, the CAISO will make an automated validation notice available to the Scheduling Coordinator indicating whether the ETC Self-Schedule is valid or invalid. If an ETC Self-Schedule involves more than one Scheduling Coordinator, the complete validation of the chain of ETC Self-Schedules will occur when the last Scheduling Coordinator submits its ETC Self-Schedule. At that time, the CAISO will make an automated validation notice available to each Scheduling Coordinator registered as associated with the chain of ETC Self-Schedules. The CAISO can accommodate corrections submitted by a Scheduling Coordinator to an ETC Self-Schedule up to Market Close of the Day-Ahead Market as further described in the applicable Business Practice Manual.

**16.7 [NOT USED]**

**16.8 [NOT USED]**

**16.9 The HASP.**

**16.9.1 Scheduling Deadlines.**

Those holders of Existing Rights who have Existing Rights as reflected in the TRTC Instructions that allow scheduling after the close of the Day-Ahead Market may submit ETC Self-Schedules for the use of those rights by the deadline for the Market Close for the HASP. Submission of schedule changes beyond the Market Close for the HASP permitted by the ETC will be treated as provided in Section 33.3.



**16.10 The CAISO's Real-Time Process.**

Consistent with this Section 16, the CAISO will honor those scheduling flexibilities that may be exercised by holders of Existing Rights through their respective Scheduling Coordinators during the CAISO's Real-Time Market to the extent that such flexibilities do not interfere with or jeopardize the safe and reliable operation of the CAISO Controlled Grid or **Balancing Authority** Area operations.

**16.11 Inter-**Balancing Authority** Area Changes to Bids that Rely on Existing Rights.**

Changes to ETC Self-Schedules that occur during the CAISO's Real-Time Market that involve changes to CAISO **Balancing Authority** Area imports or exports with other **Balancing Authority** Areas (that is, inter-**Balancing Authority** Area changes to ETC Self-Schedules) will be allowed and will be recorded by the CAISO based upon notification received from the Scheduling Coordinator representing the holder of the Existing Rights. **The** Scheduling Coordinator representing the holder of the Existing Right must notify the CAISO of any such changes to external import/export in submitted ETC Self-Schedules. **The** Scheduling Coordinator representing the holder of the Existing Right must notify the CAISO of Real-Time Market changes to external import/export **Interchange** Schedules in submitted ETC Self-Schedules, by telephone. The timing and content of any such notification must be consistent with the TRTC Instructions previously submitted to the CAISO by the Responsible PTO. The CAISO will manually adjust or update the HASP **Intertie** Schedule for the Scheduling Coordinator to conform with the other **Balancing Authority** Area's net ETC Self-Schedule in Real-Time, and the notifying Scheduling Coordinator will be responsible for and manage any resulting Energy imbalance. These Imbalance Energy deviations will be priced and charged to the Scheduling Coordinator representing the holder of Existing Rights in accordance with the Real-Time LMP.

**16.12            Intra-Balancing Authority Area Changes to Schedules that Rely on Existing Rights.**

Changes to ETC Self-Schedules that occur during the CAISO's Real-Time processes that do not involve changes to CAISO Balancing Authority Area imports or exports with other Balancing Authority Areas (that is, intra-Balancing Authority Area changes to Schedules) will be allowed and will give rise to Imbalance Energy deviations. These Imbalance Energy deviations will be priced and charged to the Scheduling Coordinator representing the holder of Existing Rights in accordance with the Real-Time LMP.

## **17 Transmission Ownership Rights (TORs).**

Transmission Ownership Rights represent transmission capacity on facilities that are located within the CAISO **Balancing Authority** Area that are either wholly or partially owned by an entity that is not a Participating TO. This Section 17 shall apply to the TORs of Non-Participating TOs. In any case in which (i) the CAISO has entered into a bilateral agreement with a Non-Participating TO regarding its TORs or (ii) a Participating TO has entered into a bilateral agreement with a Non-Participating TO regarding its TORs, which agreement has been accepted by FERC, the provisions of the agreement shall prevail over any conflicting provisions of this Section 17. Where the provisions of this Section 17 do not conflict with the provisions of the FERC-accepted agreement, the provisions of this Section 17 shall apply to the subject TORs.

### **17.1 Transmission Rights and Transmission Curtailment Instructions.**

#### **17.1.1 Responsibility to Create TRTC Instructions.**

To enable the CAISO to exercise its responsibilities as **Balancing Authority** in accordance with Applicable Reliability Criteria, each Non-Participating TO holding a TOR must work with the CAISO to develop the TRTC Instructions that allow the TOR to be accommodated in a way that: (i) maintains the existing scheduling and curtailment priorities of the TOR holder; (ii) is minimally burdensome to the CAISO (i.e., creates the least impact on the CAISO's preferred operational policies and procedures); (iii) to the extent possible, imposes no additional financial burden on the TOR holder (beyond that set forth in an applicable Existing Contract or any other contract pertaining to the TOR); (iv) is minimally burdensome to the TOR holder from an operational point of view; and (v) does not require the CAISO to interpret or underwrite the economics of any applicable Existing Contract. To enable the CAISO to exercise its responsibilities as **Balancing Authority** in accordance with Applicable Reliability Criteria, the parties holding joint ownership interests and Entitlements in facilities including TORs must attempt to jointly develop and agree on any TRTC Instructions that will be submitted to the CAISO, as provided in Section 17.1.6.

**17.1.2 TOR Scheduling Coordinator Responsibilities.**

To enable the CAISO to exercise its responsibilities as **Balancing Authority** in accordance with Applicable Reliability Criteria, each TOR holder must designate a Scheduling Coordinator as the responsible entity for submitting TOR Self-Schedules for the relevant TOR. The designated Scheduling Coordinator shall submit TOR Self-Schedules consistent with the terms and conditions specified in the TRTC Instructions.

**17.1.3 Submission of TRTC Instructions.**

For each TOR, the Non-Participating TO holding the TOR shall be obligated to submit TRTC Instructions to the CAISO electronically, unless the Non-Participating TO specifies to the CAISO otherwise. The Non-Participating TO shall notify the CAISO in writing the identity of the responsible party for submission of the TRTC Instructions, subject to the terms of any applicable Existing Contract that may specify the responsible party for submission of the TRTC Instructions and the term of such agreement between the parties to the Existing Contract. The Non-Participating TO shall undertake all obligations with respect to the submission of the TRTC Instructions to the CAISO and any subsequent obligations that follow with respect to the creation, management and updates to the TRTC Instructions. The CAISO is responsible for implementing only one set of TRTC Instructions for each TOR and for implementing only those TRTC Instructions that have been received and accepted by the CAISO. The Non-Participating TO shall submit the TRTC Instructions to the CAISO associated with its TORs thirty (30) days prior to the date on which the scheduling or curtailment of the use of the TORs is to change or commence.

**17.1.4 TRTC Instructions Content.**

TRTC Instructions will include the following information at a minimum and such other information as the CAISO may reasonably require the Non-Participating TO holder of a TOR to provide to enable the CAISO to carry out its functions under the CAISO Tariff, Operating Procedures and Business Practice Manuals:

- (1) A unique Contract Reference Number for each source and sink combination applicable to the TOR (i.e., the CRN that will be assigned by the CAISO and communicated to the Non-Participating TO that references a single TOR or a set of interdependent TORs for each source and sink combination);
- (2) Whether the instruction can be exercised independent of the CAISO's day-to-day involvement ("Yes/No");
- (3) Name of an operational single point of contact for instructions and a 24-hour a day telephone number for the Non-Participating TO contact for TOR issues or the agreed upon party;
- (4) Name(s) and number(s) of TOR(s) that are represented by the unique CRN;
- (5) The following information, as stored in the Master File: (a) the applicable Point(s) of Receipt and Point(s) of Delivery); (b) for each Point of Receipt, the resource names for the physical resources as the eligible sources (eligible physical sources include Generating Units and System Resources), and for each Point of Delivery, the resource names for the physical resources as the eligible sinks (eligible physical sinks include Load PNodes, Custom Load Aggregation Points and System Resources); (c) for each physical source or sink, the maximum capacity (MW) that can be scheduled as a TOR under the Existing Contract; and (d) for each physical source and sink, the Scheduling Coordinator(s) and their Business Associate Identification (BAID) that is (are) eligible to submit TOR Self-Schedules utilizing these sources and sinks;
- (6) Names of the party(ies) holding the TOR(s) and the parties to any agreements applicable to the TORs;

- (7) The Scheduling Coordinator BAID that is entitled to the Settlement of reversal of Congestion Charges;
- (8) Amount of TORs, in maximum MW, that may be utilized under the relevant TRTC Instructions;
- (9) Instructions for the allowable timeframes at which the TOR Self-Schedules and TOR Self-Schedule changes may be submitted to the CAISO, which include whether the Scheduling Coordinator may submit TOR Self-Schedules or TOR Self-Schedule changes: (a) into the DAM; (b) into the HASP and the RTM; (c) after the close of submitting Bids into the HASP and the RTM, but before twenty (20) minutes before the applicable Trading Hour of the Trading Day; and (d) at or after twenty (20) minutes before the applicable Trading Hour of the Trading Day; in addition, the Non-Participating TO may also provide any additional comments and restrictions on the submission time of TOR Self-Schedules and TOR Self-Schedule changes;
- (10) Term of ownership interest in the TOR(s) and of any agreements applicable to the TOR(s);
- (11) Any special procedures that would require the CAISO to implement curtailments in any manner different than pro rata reduction of the transfer capability of the transmission line; any such instructions submitted to the CAISO must be clear, unambiguous, and not require the CAISO to make any judgments or interpretations as to the meaning, intent, results, or purpose of the curtailment procedures or of any applicable Existing Contract, otherwise, they will not be accepted by the CAISO; and
- (12) Whether or not the TOR provides the right to self-provide Ancillary Services.

**17.1.5 Changes and Updates to TRTC Instructions.**

Updates or changes to the TRTC Instructions must be submitted to the CAISO through a revised set of TRTC Instructions by the Non-Participating TO, on an as needed or as required basis. The CAISO will implement the updated or changed TRTC Instructions as soon as practicable but no later than seven (7) days after receiving clear and unambiguous details of the updated or changed instructions under normal conditions. If the CAISO finds the TRTC Instructions to be inconsistent with the CAISO Tariff, the CAISO will notify the Non-Participating TO within forty-eight (48) hours after receipt of the updated or changed TRTC Instructions indicating the nature of the problem and allowing the Non-Participating TO to resubmit the TRTC Instructions as if they were new, updated or changed TRTC Instructions. If the CAISO finds the updated or changed TRTC Instructions to be acceptable, the CAISO will time-stamp the updated TRTC Instructions as received, confirm such receipt to the Non-Participating TO, and indicate the time at which the updated instructions take effect if prior to the seven (7) day deadline referred to above. In the event of a System Emergency, the CAISO will implement such submitted changes to the TRTC Instructions as soon as practical.

**17.1.6 CAISO Role in Accepting TRTC Instructions.**

The parties holding joint ownership interests and Entitlements in a facility including a TOR must, in the first instance, attempt jointly to agree on any TRTC Instructions that will be submitted to the CAISO. In the event that the parties holding joint ownership interests and Entitlements in a facility including a TOR cannot agree upon the TRTC Instructions, the dispute resolution provisions of any applicable Existing Contract shall be used to resolve the dispute; provided that, until the dispute is resolved, and unless the applicable Existing Contract specifies otherwise, the CAISO shall implement the Participating TO's TRTC Instructions, if one of the parties holding a joint ownership interest or an Entitlement in the facility is a Participating TO. If no party holding a joint ownership interest or Entitlement in a facility including a TOR is a Participating TO and the parties cannot agree to the TRTC Instructions to be submitted by the

parties, until the dispute is resolved, the CAISO shall implement the TRTC Instructions of the Non-Participating TO with the greatest ownership interest in the TOR. The CAISO shall not be responsible for resolution of any disputes that arise over the accuracy of the TRTC Instructions consistent with its obligations in Section 17.1.4.

**17.1.7 Implementation of TRTC Instructions.**

The CAISO shall determine, based on the information provided by the Non-Participating TOs under TRTC Instructions, the transmission capacities that must be reserved for TORs at Scheduling Points.

The CAISO shall coordinate the scheduling of TORs with the scheduling of CAISO transmission service, using the CAISO's Bid submission rules. In doing so, the CAISO shall create an automated day-to-day verification process based on parameters provided by the Non-Participating TO for the TOR to serve as the basis for TOR Self-Schedule validation. The Non-Participating TO will be responsible for: (1) the accuracy of the data files against which the CAISO will validate the TOR Self-Schedule; and (2) providing the data file to the CAISO.

The TOR holders shall remain liable for their performance under any applicable Existing Contracts or other agreements pertaining to their TORs. The CAISO shall be liable in accordance with the provisions of this CAISO Tariff for any damage or injury caused by its non-compliance with the TRTC Instructions submitted to it pursuant to this Section 17.1.

Unless specified otherwise, in the event that the dispute resolution mechanisms prescribed in an Existing Contract applicable to a TOR, including all recourses legally available under the contract, cannot, in the first instance, result in a resolution of such a dispute, the CAISO ADR Procedures will be used to resolve any disputes between the CAISO and the Non-Participating TO regarding any aspects of the implementation of this Section 17.1, including the reasonableness of a Non-Participating TO's TRTC Instructions or any other decision rules which the Non-Participating TO may submit to the CAISO as part of the TRTC Instructions. The holders of TORs shall have standing to participate in the CAISO ADR Procedures.



## **17.2 Treatment of TORs.**

The CAISO will accommodate TORs, so that the holders of TORs will receive the same priorities (in scheduling, curtailment, assignment and other aspects of transmission system usage) to which they are entitled under any applicable Existing Contracts or other agreements pertaining to the operation of their TORs.

In addition, scheduling deadlines and operational procedures associated with TORs will be honored by the CAISO, provided such information is explicitly included in the TRTC **Instructions**. The CAISO will accommodate and honor TORs as follows:

- (1) The CAISO will reserve transmission capacity equal to the TOR transmission capacity and make a corresponding adjustment in its determination of ATC. The CAISO will not limit parallel flow from flowing on TOR transmission capacity consistent with the redispatch provisions of Section 17.2(3), just as the CAISO does not limit TOR Self-Schedules from flowing on non-TOR transmission. There shall be no compensation for parallel flow for either the CAISO or the TOR holder.
- (2) In the HASP, the CAISO will give valid TOR Self-Schedules priority over other non-TOR Day-Ahead Schedules and HASP Bids. In the event of a reduction in capacity on the transmission path associated with the TOR, the CAISO will honor the TOR priority in accordance with this Section 17.
- (3) The CAISO will allow the holder of a TOR to make changes to the scheduled amounts of supply after the submission of HASP TOR Self-Schedules in accordance with the TRTC **Instructions** established for such changes. The CAISO will, as necessary, redispatch non-TOR resources to accommodate valid TOR Self-Schedule changes in Real-Time.

- (4) The CAISO will allow the holder of a TOR to self-provide Ancillary Services, which will include the ability of the holder of a TOR to import Ancillary Services at Scheduling Points with the CAISO.
- (5) The submission of a TOR Self-Schedule change that is authorized pursuant to an applicable existing agreement between the CAISO and the TOR holder shall not affect the application of the IFM Congestion Credit or the HASP and RTM Congestion Credit, and the IFM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules or the RTM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules for a TOR Self-Schedule that satisfies the applicable requirements of Sections 17.4.1 and 17.5.

#### **17.2.1 System Emergency Exceptions.**

As set forth in Section 4.2.1, all Market Participants, including Scheduling Coordinators, Utility Distribution Companies, Participating TOs, Participating Generators, Participating Loads, **Balancing Authorities** (to the extent the agreement between the **Balancing Authority** and the CAISO so provides), and MSS Operators within the CAISO **Balancing Authority** Area and all System Resources must comply fully and promptly with the CAISO's Dispatch Instructions and operating orders, unless such operation would impair public health or safety. The CAISO will honor the terms of TORs, provided that in a System Emergency and circumstances in which the CAISO considers that a System Emergency is imminent or threatened, to enable the CAISO to exercise its responsibilities as **Balancing Authority** in accordance with Applicable Reliability Criteria, holders of TORs must follow CAISO operating orders even if those operating orders directly conflict with the terms of applicable Existing Contracts or any other contracts pertaining to the TORs, unless such operating orders are inconsistent with the terms of an agreement between the CAISO and a **Balancing Authority**. In the event of a conflict between the CAISO Tariff and an agreement

between the CAISO and a **Balancing Authority**, the agreement will govern. For this purpose CAISO operating orders to shed Load shall not be considered as an impairment to public health or safety. This section does not prohibit a Scheduling Coordinator from modifying its Bid or re-purchasing Energy in the HASP or RTM.

### **17.3 Valid TOR Self-Schedules.**

The CAISO will accept a valid TOR Self-Schedule from a Scheduling Coordinator. That Scheduling Coordinator shall be either the holder of the TOR or its designee. TOR Self-Schedules submitted by Scheduling Coordinators to the CAISO must be submitted in accordance with this CAISO Tariff.

#### **17.3.1 Validation of TOR Self-Schedules.**

A TOR Self-Schedule is a valid TOR Self-Schedule when the CAISO has determined that the TOR Self-Schedule, submitted to the CAISO pursuant to the requirements for Bids in Section 30, properly reflects TORs consistent with the TRTC **Instructions**, is labeled with a unique TOR identifier, and includes balanced sources and sinks, within the TOR capacity limits.

#### **17.3.2 Treatment of Invalid TOR Self-Schedules.**

##### **17.3.2.1 Inconsistent with the TRTC **Instructions**.**

Except for the reasons listed below in 17.3.2, if the CAISO finds that the TOR Self-Schedule is not consistent with the TRTC **Instructions**, the CAISO shall find that the TOR Self-Schedule is not valid. If the CAISO finds the TOR Self-Schedule to be invalid, the CAISO shall notify the Scheduling Coordinator and convert the TOR Self-Schedule to an ordinary Self-Schedule and treat the TOR Self-Schedule as an ordinary Self-Schedule as such for terms of scheduling priority and **Settlements**.

##### **17.3.2.2 Unbalanced TOR Self-Schedules.**

If the TOR Self-Schedule is not balanced, the TOR Self-Schedule will not be a valid TOR Self-Schedule and the CAISO will: (i) remove any scheduling priority for the entire TOR Self-Schedule; (ii) apply the TOR **Settlement** treatment pursuant to Sections 11.2.1.5 and 11.5.7.1 to the valid balanced portions only; and (iii) assess any charges and make any payments consistent with the treatment of ordinary Self-Schedules for the unbalanced portions.

**17.3.2.3 Exceeds Capacity Limits for TORs as Reflected in TRTC Instructions.**

If the TOR Self-Schedule exceeds the capacity limits of the TOR as reflected in TRTC Instructions, the TOR Self-Schedule will not be a valid TOR-Self-Schedule and the CAISO will: (i) remove any scheduling priority for the entire TOR Self-Schedule; (ii) apply the TOR Settlement treatment pursuant to Sections 11.2.1.5 and 11.5.7.1 to the valid balanced portions within the capacity limits of the TOR as reflected in the TRTC Instructions; and (iii) assess any charges and make any payments consistent with the treatment of ordinary Self-Schedules for the portions in excess of the capacity limits of the TOR as reflected in the TRTC Instructions.

**17.3.3 Settlement Treatment of Valid TOR Self-Schedules.**

The resulting valid TOR Self-Schedules shall have the following Settlement treatment:

- (1) The CAISO will apply the TOR Settlement treatment in Sections 11.2.1.5 and 11.5.7.
- (2) The CAISO shall base the Marginal Cost of Losses on LMP differentials at the Points of Receipt and Points of Delivery identified in the valid TOR Self-Schedule; provided, however, that if a specific loss percentage exists in applicable agreement between the TOR holder and the CAISO, the CAISO will apply the IFM and RTM Marginal Cost of Losses Credit as provided in Sections 11.2.1.7 and 11.5.7.2.
- (3) The CAISO will assess only charges applicable to Ancillary Services, Imbalance Energy, Transmission Losses, and Grid Management Charges for the use of a TOR and will not assess charges for neutrality, UFE, transmission Access Charges, Minimum Load Costs, or other charges that might otherwise be applicable to the Demand or exports served solely over the TOR. The CAISO will assess charges applicable to

Ancillary Services for the use of a TOR only to the extent that the CAISO must procure Ancillary Services for the TOR holder because Ancillary Services are not self-provided by the TOR holder. The CAISO will assess charges applicable to Imbalance Energy for the use of a TOR only if the CAISO must procure Imbalance Energy for the TOR holder. *The CAISO will assess Grid Management Charges for the use of a TOR only in accordance with the provisions of Section 11.22 and Appendix F, Schedule 1.*

- (4) The holders of TORs will not be entitled to an allocation of revenues from the CAISO, including Access Charge revenues; provided that the Scheduling Coordinator for the TOR holder shall be allocated the applicable amount of IFM Marginal Losses Surplus Credit in accordance with the provisions of Section 11.2.1.6, except for any TOR Self-Schedule that received the IFM Marginal Cost of Losses Credit.
- (5) Parties with TORs shall continue to pay for Transmission Losses or Ancillary Services requirements in accordance with any Existing Contracts applicable to those TORs as they may be modified or changed in accordance with the terms of the Existing Contract. Any affected Participating TOs shall continue to provide Transmission Losses and any other Ancillary Services to the holder of a TOR subject to an Existing Contract as may be required by the Existing Contract. As described in Section 17.3.3(3) above, the CAISO will charge Scheduling Coordinators submitting the TOR Self-Schedule the charges applicable to Transmission Losses, Ancillary Services, and Imbalance Energy in accordance with the CAISO Tariff (e.g., the Transmission Losses Charge based on the Marginal Cost of Losses), and any shortfall or surplus between the CAISO charges and the provisions of any applicable Existing Contract shall be settled bilaterally between the Existing Contract parties or through the relevant TO Tariff. To enable holders of TORs to determine whether the CAISO's calculations result

in any associated shortfall or surplus and to enable the parties to the Existing Contracts to settle the differences bilaterally or through the relevant TO Tariff, the CAISO shall calculate and provide the Scheduling Coordinator's Settlements the amounts paid for the MCL for the amounts of MWh submitted with a valid TOR Self-Schedule. Each Participating TO will be responsible for recovering any deficits or crediting any surpluses associated with differences in Transmission Losses and Transmission Loss requirements and/or Ancillary Services requirements, through its bilateral arrangements or its Transmission Owner Tariff.

#### **17.3.4 Notification to Scheduling Coordinators of CAISO Determination.**

After performing validation of the TOR Self-Schedule, and prior to taking any action pursuant to 17.6.2, the CAISO will make an automated validation notice available to the Scheduling Coordinator indicating whether the TOR Self-Schedule is valid or invalid. If a TOR Self-Schedule involves more than one Scheduling Coordinator, the complete validation of the chain of TOR Self-Schedules will occur when the last Scheduling Coordinator submits its TOR Self-Schedule. At that time, the CAISO will make an automated validation notice available to each Scheduling Coordinator registered as associated with the chain of TOR Self-Schedules. The CAISO can accommodate corrections submitted by a Scheduling Coordinator to a TOR Self-Schedule up to Market Close of the Day-Ahead Market as further described in the applicable Business Practice Manual.

### **17.4 The HASP.**

#### **17.4.1 Scheduling Deadlines.**

Holders of TORs may submit TOR Self-Schedules for the use of those rights by the deadline for the Market Close for the HASP.

## **17.5 The CAISO's Real-Time Process.**

Consistent with this Section 17, the CAISO will honor those scheduling flexibilities that may be exercised by holders of TORs through their respective Scheduling Coordinators during the CAISO's Real-Time Market to the extent that such flexibilities do not interfere with or jeopardize the safe and reliable operation of the CAISO Controlled Grid or **Balancing Authority** Area operations.

## **17.6 Inter-**Balancing Authority** Area Changes to Bids that Rely on TORs.**

Changes to TOR Self-Schedules that occur during the CAISO's Real-Time Market that involve changes to CAISO **Balancing Authority** Area imports or exports with other **Balancing Authority** Areas (that is, inter-**Balancing Authority** Area changes to TOR Self-Schedules) will be allowed and will be recorded by the CAISO based upon notification received from the Scheduling Coordinator representing the holder of the TOR. The Scheduling Coordinator representing the holder of the TOR must notify the CAISO of any such changes to external import/export in submitted TOR Self-Schedules. The Scheduling Coordinator representing the holder of the TOR must notify the CAISO of Real-Time Market changes to external import/export **Interchange** Schedules in submitted TOR Self-Schedules, by telephone. The timing and content of any such notification must be consistent with the TRTC **Instructions** previously submitted to the CAISO by the Non-Participating TO. The CAISO will manually adjust or update the HASP **Intertie** Schedule for the Scheduling Coordinator to conform with the other **Balancing Authority** Area's net TOR Self-Schedule in Real-Time, and the notifying Scheduling Coordinator will be responsible for and manage any resulting Energy imbalance. These Imbalance Energy deviations will be priced and charged to the Scheduling Coordinator representing the holder of the TOR in accordance with the Real-Time LMP.

## **17.7 Intra-**Balancing Authority** Area Changes to Schedules that Rely on TORs.**

Changes to TOR Self-Schedules that occur during the CAISO's Real-Time processes that do not involve changes to CAISO **Balancing Authority** Area imports or exports with other **Balancing Authority** Areas (that is, intra-**Balancing Authority** Area changes to Schedules) will be allowed and will give rise to Imbalance Energy deviations. These Imbalance Energy deviations will be priced and charged to the Scheduling Coordinator representing the holder of the TOR in accordance with the Real-Time LMP.

**17.8 Continuation of Rights and Obligations of Non-Participating TOs Regarding TORs and Under Existing Contracts Applicable to TORs.**

The transmission service rights and obligations of Non-Participating TOs under Existing Contracts applicable to their TORs, including all terms, conditions and rates of the Existing Contracts, as they may change from time to time under the terms of the Existing Contracts, will continue to be honored by the parties to those contracts, for the duration of those contracts.

**17.8.1 Participating TO Obligation.**

If a Participating TO is a party to an Existing Contract with provisions applicable to a TOR of a Non-Participating TO, the Participating TO shall attempt to negotiate changes to the Existing Contract to align the contract's scheduling and operating provisions with the CAISO's scheduling and operational procedures, rules and protocols, to align operations under the contract with CAISO operations, and to minimize the contract parties' costs of administering the contract while preserving their financial rights and obligations.

**17.8.2 Right to Use and Ownership of TORs.**

If a Non-Participating TO has an Existing Contract with a Participating TO under which the Non-Participating TO's TORs, or a portion thereof, are subject to use by the Participating TO, the Non-Participating TO's rights to the use and ownership of its TORs shall remain unchanged, regardless of the Participating TO's act of turning over the Participating TO's Entitlement to use the Non-Participating TO's TORs to the extent possible to the Operational Control of the CAISO.

The CAISO will accept valid TOR Self-Schedules from holders of TORs that are Scheduling Coordinators or that are represented by a Scheduling Coordinator. TOR Self-Schedules submitted by Scheduling Coordinators to the CAISO must be submitted in accordance with Sections 17 and 30. The CAISO may refuse to accept TOR Self-Schedules that do not meet the requirements of the principles, protocols and rules referred to in this Section 17.



If the parties to an Existing Contract applicable to a TOR are unable to reach agreement on the changes needed to meet the requirements of this CAISO Tariff, any disputes related thereto shall be addressed using the dispute resolution provisions of the Existing Contract, including any remedies as are provided by law. The rights of the parties to seek changes or to challenge such changes, under the FPA or as otherwise provided by law, are preserved consistent with the terms of the Existing Contract. Unless and until the necessary changes to the Existing Contract are made, all terms and conditions of the Existing Contracts will continue to be honored by the parties to the Existing Contracts.

Non-Participating TOs holding TORs and who choose to become Participating TOs must, at the time of becoming a Participating TO, turn over Operational Control of those TORs to the CAISO in accordance with Section 4.3.1 and convert any Existing Contract rights associated with those TORs to Converted Rights in accordance with Section 4.3.1.6.

To enable the CAISO to exercise its responsibilities as **Balancing Authority** in accordance with Applicable Reliability Criteria, each Non-Participating TO must operate its ownership interests in facilities in which it holds a TOR in accordance with Good Utility Practice and Applicable Reliability Criteria.

**[NOT USED]**

Effective: March 31, 2008

**19 DEMAND FORECASTS.**

**19.1 Scheduling Coordinator and Load Serving Entity Demand Forecast Responsibilities.**

**19.1.1 Applicability to Scheduling Coordinators and Load Serving Entities.**

This Section 19.1 shall apply to each Scheduling Coordinator that must submit a Demand Forecast pursuant to Section 4.5.3.7 or the provisions of Section 40, and each Load Serving Entity on whose behalf such Demand Forecasts are submitted.

**19.1.2 Avoiding Duplication.**

Each Scheduling Coordinator submitting a Demand Forecast to the CAISO, and each Load Serving Entity on whose behalf such Demand Forecast is submitted, shall ensure, to the best of their ability, that any Demand Forecast submitted to the CAISO is not duplicated in another Scheduling Coordinator's Demand Forecast.

**19.1.3 Required Performance.**

Each Scheduling Coordinators submitting a Demand Forecast to the CAISO, and each Load Serving Entity on whose behalf such Demand Forecast is submitted, shall take all necessary actions to provide a Demand Forecasts that reflects reasonable forecast accuracy standards.

**19.3 [NOT USED]**

**20 CONFIDENTIALITY.**

**20.1 CAISO.**

The CAISO shall maintain the confidentiality of all of the documents, data and information provided to it by any Market Participant that are treated as confidential or commercially sensitive under Section 20.2; provided, however, that the CAISO need not keep confidential: (1) information that is explicitly subject to public data exchange pursuant to Section 6; (2) information that the CAISO or the Market Participant providing the information is required to disclose pursuant to this CAISO Tariff, or applicable regulatory requirements (provided that the CAISO shall comply with any applicable limits on such disclosure); or (3) information that becomes available to the public on a non-confidential basis (other than as a result of the CAISO's breach of this CAISO Tariff).

**20.2 Confidential Information.**

The following information provided to the CAISO by Scheduling Coordinators shall be treated by the CAISO as confidential:

- (a) individual Bids;
- (b) CRR bids and other CRR Allocation nomination information;
- (c) transactions between Scheduling Coordinators, including Inter-SC Trades;
- (d) individual Generator Outage programs unless a Generator makes a change to its Generator Outage program which causes Congestion in the short term (i.e. one month or less), in which case, the CAISO may publish the identity of that Generator; and

- (e) The following information related to the resource adequacy program in accordance with Section 40:
  - (i) Annual and monthly Resource Adequacy Plans and Supply Plans;
  - (ii) Demand Forecasts; and
  - (iii) Information on existing import contracts.
- (f) The following information related to the Transmission Planning Process in accordance with Section 24:
  - (1) Information received under Sections 24.2.3.2 and 24.2.3.3 to the extent such information has been designated as confidential in accordance with the Business Practice Manual;
  - (2) Information, the release of which may harm competitive markets, as determined by the CAISO's Department of Market Monitoring;
  - (3) Information received by the CAISO pursuant to agreements and contracts, executed prior to December 21, 2007, that preclude the release of the information;
  - (4) Information that involves proprietary analytical tools, computer codes, or any other material that is protected by intellectual property rights held by the CAISO, Project Sponsor, Market Participant or other third-party; and
  - (5) Critical Energy Infrastructure Information.

However, composite documents, data, and other information that may be developed based on confidential information under this Section shall not be deemed confidential if the composite documents, data, and other information do not disclose any confidential information of any individual Scheduling Coordinator, Market Participant, or other third-party or Critical Energy Infrastructure Information.

**20.3 Other Parties.**

No Market Participant shall have the right hereunder to receive from the CAISO or to review any documents, data or other information of another Market Participant to the extent such documents, data or information is to be treated as in accordance with Section 20.2; provided, however, a Market Participant may receive and review any composite documents, data, and other information that may be developed based upon such confidential documents, data, or information, if the composite document does not disclose such confidential data or information relating to an individual Market Participant and provided, however, that the CAISO may disclose information as provided for in its bylaws.

**20.4 Disclosure.**

Notwithstanding anything in this Section 20 to the contrary,

- (a) The CAISO: (i) shall publish individual Bids, provided that such data are published no sooner than six (6) months after the Trading Day with respect to which the Bid was submitted and in a manner that does not reveal the specific resource or the name of the Scheduling Coordinator submitting the Bid, but that allows the bidding behavior of individual, unidentified resources and Scheduling Coordinators to be tracked over time; and (ii) may publish data sets analyzed in any public report issued by the CAISO or by the Market Surveillance Committee, provided that such data sets shall be published no sooner than six (6) months after the latest Trading Day to which data in the data set apply, and in a manner that does not reveal any specific resource or the name of any Scheduling Coordinator submitting Bids included in such data sets.

- (b) If the CAISO is required by applicable laws or regulations, or in the course of administrative or judicial proceedings, to disclose information that is otherwise required to be maintained in confidence pursuant to this Section 20, the CAISO may disclose such information; provided, however, that as soon as the CAISO learns of the disclosure requirement and prior to making such disclosure, the CAISO shall notify any affected Market Participant of the requirement and the terms thereof. The Market Participant may, at its sole discretion and own cost, direct any challenge to or defense against the disclosure requirement and the CAISO shall cooperate with such affected Market Participant to the maximum extent practicable to minimize the disclosure of the information consistent with applicable law. The CAISO shall cooperate with the affected Market Participant to obtain proprietary or confidential treatment of confidential information by the person to whom such information is disclosed prior to any such disclosure.
- (c) The CAISO may disclose confidential or commercially sensitive information, without notice to an affected Market Participant, in the following circumstances:
  - (i) If the FERC, or its staff, during the course of an investigation or otherwise, requests information that is confidential or commercially sensitive. In providing the information to FERC or its staff, the CAISO shall take action consistent with 18 C.F.R. §§ 1b.20 and 388.112, and request that the information be treated as confidential and non-public by the FERC and its staff and that the information be withheld from public

disclosure. The CAISO shall provide the requested information to the FERC or its staff within the time provided for in the request for information. The CAISO shall notify an affected Market Participant within a reasonable time after the CAISO is notified by FERC or its staff that a request for disclosure of, or decision to disclose, the confidential or commercially sensitive information has been received, at which time the CAISO and the affected Market Participant may respond before such information would be made public; or

- (ii) In order to maintain reliable operation of the CAISO Control Area, the CAISO may share critical operating information, system models, and planning data with other WECC Reliability Coordinators, who have executed the Western Electricity Coordinating Council Confidentiality Agreement for Electric System Data, or are subject to similar confidentiality requirements; or
- (iii) In order to maintain reliable operation of the CAISO Control Area, the CAISO may share individual Generating Unit Outage information with the operations engineering and the outage coordination division(s) of other **Balancing Authorities**, Participating TOs, MSS Operators and other transmission system operators engaged in the operation and maintenance of the electric supply system whose system is significantly affected by the Generating Unit and who have executed the Western Electricity Coordinating Council Confidentiality Agreement for Electric System Data.



- (d) Notwithstanding the provisions of Section 20.2(e), information submitted through Resource Adequacy Plans and Supply Plans in accordance with Section 40 may be provided to:
- (i) the Scheduling Coordinator(s) and/or Market Participant(s) involved in a dispute or discrepancy as to whether a resource is properly identified in a Resource Adequacy Plan or a Supply Plan only to the limited extent necessary to identify the disputed transaction and the relevant counterparty or counterparties.
  - (ii) the regulatory entity, whether the CPUC, other Local Regulatory Authority, or federal agency, with jurisdiction over a Load Serving Entity involved in a dispute or discrepancy as to whether a resource is properly identified in a Resource Adequacy Plan or the Supply Plan, or otherwise identified by the CAISO as exhibiting a potential deficiency in demonstrating compliance with resource adequacy requirements adopted by the CPUC, other Local Regulatory Authority, or federal agency, as applicable. The information provided shall be limited to the particular dispute, discrepancy, or deficiency.
  - (iii) the California Energy Commission with respect to Demand Forecast information provided to the CAISO under Sections 40.2.2.3 and 40.2.3.3(b) to the extent the CAISO seeks, and the California Energy Commission grants, confidential treatment of such information pursuant to California Public Resources Code Section 25322 and related regulations.

(e) Notwithstanding the provisions of Section 20.2(f), information submitted through the Transmission Planning Process may be disclosed as follows:

- (i) Critical Energy Infrastructure Information may be provided to a requestor where such person is employed or designated by a Market Participant or electric utility regulatory agency within California to receive CEII, the requestor submits a statement as to the need for the CEII, and the requestor executes and returns to the CAISO the form of the non-disclosure agreement and non-disclosure statement included as part of the Business Practice Manual. The CAISO may, at its sole discretion, reject a request for CEII and upon such rejection, the requestor will be directed to utilize the FERC procedures for access to the requested CEII.
- (ii) Information that is confidential under Section 20.2(f)(i) or 20.2(f)(ii) may be disclosed to any individual designated by a Market Participant, electric utility regulatory agency within California, or other stakeholder that signs and returns to the CAISO the form of the non-disclosure agreement, nondisclosure statement and certification that the individual is or represents a non-Market Participant, which is any person or entity not involved in a marketing, sales, or brokering function as market, sales, or brokering are defined in FERC's Standards of Conduct for Transmission Providers (18 C.F.R. § 358 et seq.), included as part of the Business Practice Manual; and

- (iii) Data base and other transmission planning information obtained from the WECC, or its successor, may be disclosed to individuals designated by a Market Participant, electric utility regulatory agency within California, or other stakeholder in accordance with the procedures set forth in the Business Practice Manual.

Nothing in this Section 20 shall limit the ability of the CAISO to aggregate data for public release about the adequacy of supply.

#### **20.5 Confidentiality.**

The CAISO shall implement and maintain a system of communications with Scheduling Coordinators that includes the strict use of passwords for access to data to ensure compliance with Section 20. Access within the CAISO to such data on CAISO's communications systems, including databases and backup files, shall be strictly limited to authorized CAISO personnel through the use of passwords and other appropriate means.

Issued by: Charles A. King, PE, Vice President of Market Development and Program Management  
Issued on: December 21, 2007 Effective: March 31, 2008

**22 MISCELLANEOUS.**

**22.1 Audits.**

**22.1.1 Materials Subject to Audit.**

The CAISO's financial books, cost statements, accounting records and all documentation pertaining to its operation as a state chartered independent institution which controls the operation of the CAISO Controlled Grid to ensure open, non-discriminatory transmission access to all Market Participants and promotes the efficient use and reliable operation of the CAISO Controlled Grid in accordance with this CAISO Tariff, are subject to audit in the manner prescribed below:

**22.1.2 CAISO Audit Committee.**

The CAISO Governing Board shall have overall audit responsibility for the CAISO. The CAISO Audit Committee shall make recommendations to the CAISO Governing Board in relation to the approval, initiation and scheduling of the following audits:

**22.1.2.1 Certified Financial Statement Audit.**

Each year, an audit by an external independent certified public accounting firm shall be performed. This audit will be conducted in accordance with generally accepted auditing standards to verify that the CAISO's financial statements are in compliance with generally accepted accounting principles and fairly present, in all material respects, the financial position, results of operation and cash flows for the audit period. The audit report will be addressed to the CAISO Governing Board, copies will be provided to the CAISO Audit Committee, and, upon request, to Market Participants.

**22.1.2.2      Review of Compliance with Operations Policies and Procedures.**

Each year, an independent review shall be conducted of the CAISO management's compliance with its operations policies and procedures. The CAISO Audit Committee will appoint an independent party to perform this review. This review may also include material issues raised by Market Participants and approved by the CAISO Audit Committee for inclusion in the review. The report will be addressed to the CAISO Governing Board, copies provided to the CAISO Audit Committee, and upon request, to Market Participants.

**22.1.2.3      Code of Conduct Audits.**

On a periodic basis, but not less than once a year, an independent accounting firm shall conduct a management review of governors, officers, employees, substantially full-time consultants, or contractors of the CAISO for compliance with the CAISO Code of Conduct to ensure adherence to the highest standards of lawful and ethical conduct in their activities. The audit report shall be addressed to the CAISO Audit Committee with copies provided to the CAISO Governing Board and, upon request, to Market Participants.

**22.1.2.4      Interim Audits.**

At such other intervals agreed upon by a majority of the CAISO Audit Committee members, audits may be undertaken for specific issues and concerns of Market Participants that the CAISO Audit Committee believes, at its sole discretion, to be of significant and critical magnitude to the CAISO. Such audits will be conducted by an independent accounting firm. The costs of such an audit will be borne by the requesting Market Participant(s), unless the CAISO Audit Committee determines otherwise. Interim audits will be conducted during normal business hours, after reasonable notice has been given to the CAISO, and in accordance with the guidelines to be established by the CAISO Audit Committee.

**22.1.3            Audit Results.**

Exceptions identified as a result of an audit will be reviewed with the CAISO Audit Committee. The results of the audits and actions to be taken by the CAISO as a result of the audit shall be mailed to Market Participants upon request.

**22.1.4            Availability of Records.**

The CAISO will provide full and complete access to all financial books, cost statements, accounting records, and all documentation pertaining to the requirements of the specific audits being performed. Records relating to audits will be retained until the records retention requirements of the CAISO are satisfied or until the audit issues are fully resolved, whichever is the later. The right of access to records does not require the creation of new records, reports, studies, or evaluations not already available.

**22.1.5            Confidentiality of Information.**

All proprietary information obtained through any audits will remain strictly confidential. All auditors shall sign a confidentiality agreement prior to being accepted as auditors by the CAISO Audit Committee.

**22.1.6            Payments.**

Any payments agreed to between Market Participants and the CAISO as a result of an audit, or directed by FERC, or disclosed by the CAISO in reviews of its own books and records shall include Interest computed at the rate calculated in accordance with the methodology specified for interest on refunds in FERC's regulations at 18 C.F.R. § 35.19(a)(2)(iii) (as amended from time to time) from the due date to the date such adjustments are due.

**22.2 Assignment.**

Obligations and liabilities under this CAISO Tariff and any Scheduling Coordinator Agreement or other agreements giving contractual effect to this CAISO Tariff shall be binding on the successors and assigns of the parties to such agreements. No assignment of any Scheduling Coordinator Agreement or other agreements giving contractual effect to this CAISO Tariff shall relieve the original party from its obligations or liabilities to the CAISO under this CAISO Tariff or any such agreement arising or accruing due prior to the date of assignment.

**22.3 Term and Termination.**

**22.3.1** This CAISO Tariff shall become effective on the date it is permitted to become effective by the FERC.

**22.3.2** This CAISO Tariff shall terminate upon approval of termination by the CAISO Governing Board in accordance with the bylaws of the CAISO and receipt of any necessary regulatory approval from FERC.

**22.4 Notice.**

**22.4.1 Effectiveness.**

Any notice, demand, or request in accordance with this CAISO Tariff, unless otherwise provided in this CAISO Tariff, shall be in writing and shall be deemed properly served, given, or made: (a) upon delivery if delivered in person, (b) five (5) days after deposit in the mail if sent by first class United States mail, postage prepaid, (c) upon receipt of confirmation by return facsimile if sent by facsimile, or (d) upon delivery if delivered by prepaid commercial courier service.



**22.4.2 Addresses.**

Notices to the CAISO shall be sent to such address as shall be notified by the CAISO to Market Participants from time to time. Notices issued by the CAISO to any Scheduling Coordinator shall be delivered to the address of the representative designated to receive notices for the Scheduling Coordinator included in the Scheduling Coordinator Agreement. Notices to any Market Participant other than a Scheduling Coordinator shall be delivered by the CAISO to the address given to it by the Market Participant. The CAISO and any Market Participant may at any time change their address for notice by notifying the other party in writing.

**22.4.3 Notice of Changes in Operating Procedures and Business Practice Manuals.**

The CAISO will issue notice of any proposed changes to any Operating Procedure or Business Practice Manual. The effective date of any change or proposed change in any Operating Procedure or Business Practice Manual shall be established as part of the change management process set forth in Section 22.11 but will be no earlier than at least thirty (30) days from the date of publication of a Market Notice describing the change or proposed change, unless: (1) a different notice period is specified by state or federal law, (2) the change is reasonably required to address an emergency affecting the CAISO Controlled Grid or its operations, or (3) the change is to a provision of a Business Practice Manual that is necessitated by emergency circumstances specific to that Business Practice Manual. Such circumstances include, but are not limited to, any change necessary to ensure that the Business Practice Manual is consistent with the CAISO Tariff or any applicable law, regulation, NERC or WECC operating policies, guidelines and standards, or FERC order, in which case the CAISO shall give Market Participants as much notice as is reasonably practicable. Any notices issued under this provision shall be issued in accordance with the procedures set out in Section 22.11.

**22.5 Waiver.**

Any waiver at any time by the CAISO or any Market Participant of its rights with respect to any default under this CAISO Tariff, or with respect to any other matter arising in connection with this CAISO Tariff, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this CAISO Tariff. Any delay short of the statutory period of limitations in asserting or enforcing any right shall not constitute or be deemed a waiver.

**22.6 Staffing and Training To Meet Obligations.**

The CAISO shall engage sufficient staff to perform its obligations under this CAISO Tariff in a satisfactory manner consistent with Good Utility Practice. The CAISO shall make its own arrangements for the engagement of all staff and labor necessary to perform its obligations hereunder and for their payment. The CAISO shall employ (or cause to be employed) only persons who are appropriately qualified, skilled and experienced in their respective trades or occupations. CAISO employees and contractors shall abide by the CAISO Code of Conduct for employees contained in the CAISO bylaws and approved by FERC.

**22.7 Accounts and Reports.**

The CAISO shall notify Market Participants of any significant change in the accounting treatment or methodology of any costs or any change in the accounting procedures, which is expected to result in a significant cost increase to any Market Participant. Such notice shall be given at the earliest possible time, but no later than, sixty (60) days before implementation of such change.

**22.8 Applicable Law and Forum.**

This CAISO Tariff shall be governed by and construed in accordance with the laws of the State of California, except its conflict of laws provisions. Market Participants irrevocably consent that any legal action or proceeding arising under or relating to this CAISO Tariff to which the CAISO ADR Procedures do not apply, shall be brought in any court of the State of California or any federal court of the United States of America located in the State of California. Market Participants irrevocably waive any objection

that they may have now or in the future to said courts in the State of California as the proper and exclusive forum for any legal action or proceeding arising under or related to this CAISO Tariff.

**22.9 Consistency with Federal Laws and Regulations.**

- (a) Nothing in the CAISO Tariff shall compel any person or federal entity to: (1) violate federal statutes or regulations; or (2) in the case of a federal agency, to exceed its statutory authority, as defined by any applicable federal statutes, regulations, or orders lawfully promulgated thereunder. If any provision of this CAISO Tariff is inconsistent with any obligation imposed on any person or federal entity by federal law or regulation to that extent, it shall be inapplicable to that person or federal entity. No person or federal entity shall incur any liability by failing to comply with a CAISO Tariff provision that is inapplicable to it by reason of being inconsistent with any federal statutes, regulations, or orders lawfully promulgated thereunder; provided, however, that such person or federal entity shall use its best efforts to comply with the CAISO Tariff to the extent that applicable federal laws, regulations, and orders lawfully promulgated thereunder permit it to do so.
- (b) If any provision of this CAISO Tariff requiring any person or federal entity to give an indemnity or impose a sanction on any person is unenforceable against a federal entity, the CAISO shall submit to the Secretary of Energy or other appropriate Departmental Secretary a report of any circumstances that would, but for this provision, have rendered a federal entity liable to indemnify any person or incur a sanction and may request the Secretary of Energy or other appropriate Departmental Secretary to take such steps as are necessary to give effect to any provisions of this CAISO Tariff that are not enforceable against the federal entity.

- (c) To the extent that the CAISO suffers any loss as a result of being unable to enforce any indemnity as a result of such enforcement being in violation of federal laws or regulations to which it is entitled under the CAISO Tariff under this Section or otherwise, it shall be entitled to recover such loss through the Grid Management Charge.

**22.10 [NOT USED]**

**22.11 Operating Procedures and Business Practice Manuals Development and Amendment Process.**

The CAISO shall prepare, maintain, promulgate and update the Operating Procedures and Business Practice Manuals. The Operating Procedures and Business Practice Manuals shall be consistent with the CAISO Tariff, and any NERC or WECC operating policies, guidelines and standards, and shall be available on the CAISO Website, *provided that the CAISO shall not make available on the CAISO Website any portions of CAISO Operating Procedures that are confidential*. The CAISO shall establish a stakeholder process as set forth in Section 22.11.1 and in a Business Practice Manual for BPM change management in order to ensure that all affected parties have an opportunity to comment on and shape the proposed nature of any proposed changes to any Business Practice Manual. Under that process, the CAISO and stakeholders shall consider whether any amendments to the CAISO Tariff are necessary in order to ensure the consistency of the CAISO Tariff and the Business Practice Manuals.

**22.11.1 Process for Revisions of Business Practice Manuals.**

Revisions of Business Practice Manuals shall be made in accordance with the process set forth in this Section 22.11.1, provided that the details and procedures for submittal and consideration of a BPM Proposed Revision Request (PRR) and other elements of the BPM change management process shall be set forth in a separate Business Practice Manual for BPM change management.

**22.11.1.1 BPM Proposed Revision Request Submittal.**

A request to make any change to a BPM, including any attachments thereto that are incorporated by reference, and any changes to the BPM PRR must be initiated through a submittal of a BPM PRR, except as provided in Section 22.4.3 or 22.11.1.2.

The following entities may submit a BPM PRR:

- (1) Any Market Participant;
- (2) Local Regulatory Authority;
- (3) CAISO management; and
- (4) Any other entity that meets the following qualifications:
  - (a) The entity must represent a Market Participant in dealings with the CAISO or operate in the CAISO Markets, and
  - (b) The entity must demonstrate that the entity (or those it represents) is affected by the subject section(s) of the BPM.

BPM PRRs shall be submitted electronically to the CAISO in the form and manner described in the Business Practice Manual for BPM change management. The BPM PRR shall include a description of the requested revision, the reason for the suggested change, the impacts and benefits of the suggested change (including any impact on the CAISO Market structure, CAISO operations and Market Participants, to the extent the submitter may know this information), a list of affected BPM sections and subsections, general administrative information, suggested language for the requested revision, and for BPM PRRs submitted by CAISO management, a BPM PRR impact analysis.

#### **22.11.1.2 BPM Proposed Revision Request Processing.**

The CAISO shall review the BPM PRR for completeness and shall notify the submitter if the BPM PRR is incomplete, including the reasons for its determination, based upon the timelines provided in the BPM for BPM change management. An incomplete BPM PRR shall not receive further consideration until it is completed. In order to pursue the revision requested, a submitter must submit a completed version of the BPM PRR with the deficiencies corrected. If a submitted BPM PRR is complete or once a BPM PRR is corrected, the CAISO shall post the completed or corrected BPM PRR to the CAISO Website and publish a Market Notice of such posting.

#### **22.11.1.3 BPM PRR Coordinator.**

The consideration and disposition of BPM PRRs shall be led by a BPM change management coordinator. The BPM change management coordinator shall be an identified employee of the CAISO with responsibility for ensuring that BPM PRRs are processed and reviewed in accordance with the provisions of the Business Practice Manual for BPM change management. The BPM change management coordinator shall also be responsible for submitting a report to the CAISO Governing Board at each regularly scheduled CAISO Governing Board meeting that includes (1) the status of pending BPM PRRs, (2) a summary of proposed revisions that have been accepted, and (3) a summary of proposed revisions that have been rejected and the reason(s) that the proposed revisions have been rejected, including the positions of stakeholders, and any decision on appeal as provided in Section 22.11.1.6.

#### **22.11.1.4 Types and Treatment of BPM PRRs.**

Each BPM PRR shall be preliminarily classified by the BPM change management coordinator as either a Category A revision or a Category B or C revision. After further consultation with internal CAISO business units, the submitter (if not the CAISO), and representatives from potentially affected stakeholders in the BPM PRR review process, the BPM change management coordinator may reclassify the BPM PRR as appropriate. Types of BPM PRRs include:

- (a) Category A – Clarifications of existing BPM language, grammatical errors, and revisions with minor significance.

In the event the CAISO receives no comments or no adverse comments within the specified time frame, the CAISO may incorporate the proposed changes into the BPM, if reasonably acceptable to the CAISO, before the next BPM change management meeting. These changes may be placed into effect at any time after the comment period expires.

- (b) Category B – Revisions of substantial significance or revisions that require changes to CAISO or Market Participants' systems.

For proposals falling in this category, the CAISO will, unless urgent or emergency circumstances exist, delay implementation until after the next regularly scheduled BPM change management meeting even if no comments or no adverse comments are received. In the case of a proposed change affecting the CAISO's systems, the CAISO will prepare a BPM PRR impact analysis, if not already prepared, in accordance with the procedures set forth in the Business Practice Manual. The CAISO shall post the completed BPM PRR impact analysis to the CAISO Website and publish a Market Notice of such posting. Comments may be filed concerning the BPM PRR impact analysis. The comments must be delivered electronically to the CAISO within ten (10) Business Days or otherwise as specified in a Market Notice. Comments shall be posted to the CAISO Website.

- (c) Category C – Revisions implementing significant new CAISO policies and/or potentially requiring revisions to the CAISO Tariff.

Proposed revisions implementing significant new CAISO policies may have implications outside the scope of a proposed change to a BPM and may require alternative treatment. For proposals falling in this category, the CAISO will, unless urgent or emergency circumstances exist, delay implementation until after the next regularly scheduled BPM change management meeting. If the CAISO concludes that a Category C BPM PRR cannot be implemented without an amendment to the CAISO Tariff, the CAISO will provide a written explanation and indicate its support for or opposition to the need or appropriateness of a tariff amendment. The written explanation shall also indicate a lead department or business unit within the CAISO that would have responsibility for leading any stakeholder process necessary for the tariff amendment.

#### **22.11.1.5 BPM PRR Review and Action.**

Any interested stakeholder or CAISO management may comment on a posted BPM PRR in accordance with the process set forth in the Business Practice Manual for BPM change management. To receive consideration, comments must be delivered electronically to the CAISO within ten (10) Business Days, or within any shorter period determined to be necessary or appropriate pursuant to the provisions of either Sections 22.11.1.7 or 22.11.1.8. Comments shall be posted to the CAISO Website. After their



comment periods have expired, BPM PRRs shall be considered by the CAISO at a regularly established monthly public meeting or specially-noticed meeting dedicated to that purpose. Following any meeting to consider pending BPM PRRs and subject to the standards set forth in Section 22.11.1.4, the BPM change management coordinator shall issue a recommendation for action on each pending BPM PRR and shall publish for public comment a report on the recommendation in accordance with the procedures set forth in the Business Practice Manual for BPM change management. The report shall be sufficiently detailed and shall be published in a timeframe that allows interested stakeholders a meaningful opportunity to provide written comment. The BPM change management coordinator shall publish a final decision on any BPM PRR after considering stakeholder comments and all relevant impacts on their business needs and after the PRR recommendation report and comments concerning it have been discussed at a BPM change management meeting, in accordance with procedures set forth in the Business Practice Manual for BPM change management.

**22.11.1.6 Right to Appeal to CAISO.**

Any entity eligible to submit a BPM PRR under Section 22.11.1.1 may, within ten (10) Business Days, appeal in writing the outcome of any BPM PRR to a committee comprising at least three CAISO executives established in accordance with procedures set forth in the Business Practice Manual for BPM change management. The CAISO will establish a standing meeting time for the BPM appeals committee to be used if needed and will establish the composition of the BPM appeals committee, including alternates in the case of schedule or other conflicts. Standing meeting dates and the BPM appeals committee composition will be established at least three months in advance. The CAISO may change the meeting time with ten (10) Business Days notice if required to accommodate schedules of the members of the BPM appeals committee. The executive sponsor of a BPM PRR may not sit in review of any appeal of a final decision regarding that same BPM PRR but may participate in and be present during the public discussion of any appeal. The CAISO committee will review the appeal and publish its decision to

the appealing party and to the CAISO Website. If not satisfied with the decision on appeal, the appellant may raise concerns it may have with the CAISO Governing Board at the next regularly scheduled Board meeting through the public comment period or through prior letter to the Governing Board.

**22.11.1.7 CAISO Expedited Action in Emergency Circumstances.**

Notwithstanding the provisions of Section 22.11.1.1, the CAISO may take expedited action to change or clarify a provision of a BPM under emergency circumstances. In addition to the circumstances identified in Section 22.4.3, emergency circumstances exist whenever the CAISO determines in good faith that (i) failure to implement a change or clarification to a BPM on an expedited basis would substantially and adversely affect System Reliability or security or the competitiveness of the CAISO Markets, and (ii) there is insufficient time to comply with the BPM PRR procedures set forth in Section 22.11.1. The CAISO shall take reasonable steps to communicate with Market Participants and any other directly-affected entities prior to taking expedited action if practicable. If the CAISO takes expedited action to change or clarify a provision of a BPM in emergency circumstances, the CAISO shall promptly issue a Market Notice and submit a BPM PRR to examine the necessity of the change and its impacts.

**22.11.1.8 Urgent Requests by Entities for BPM Revisions.**

An entity submitting a BPM PRR may request that the BPM PRR be considered on an urgent basis and may be required to show reasonable necessity for such an urgent request. The BPM change management coordinator may designate a BPM PRR for urgent consideration if the BPM change management coordinator determines that such BPM PRR (1) requires immediate attention due to (i) serious concerns about CAISO System Reliability or market operations under the unmodified language or (ii) the crucial nature of Settlement activity conducted pursuant to any Settlement formula, and (2) is of a nature that allows for rapid implementation without negative consequences to the reliability and integrity of the CAISO's system or market operations. The BPM change management coordinator shall consider

the urgent BPM PRR at its next regularly scheduled meeting, or at a special meeting called by the BPM change management coordinator to consider the urgent BPM PRR. Any revisions to a BPM that take effect pursuant to an urgent BPM PRR shall be subject to a BPM PRR impact analysis.

**22.11.2 Changes to Business Practice Manual for BPM Change Management.**

Any changes to the Business Practice Manual for BPM change management shall require CAISO Governing Board approval.

**22.12 [Not Used]**

**22.13 Scheduling Responsibilities and Obligations.**

Nothing in this CAISO Tariff is intended to permit or require the violation of federal or California law concerning hydro-generation and Dispatch, including but not limited to fish release requirements, minimum and maximum dam reservoir levels for flood control purposes, and in-stream flow levels. In carrying out its functions, the CAISO will comply with and will have the necessary authority to give instructions to Participating TOs and Market Participants to enable it to comply with requirements of environmental legislation and environmental agencies having authority over the CAISO in relation to Environmental Dispatch and will expect that submitted Bids, including Self-Schedules will support compliance with the requirements of environmental legislation and environmental agencies having authority over Generators in relation to Environmental Dispatch. In contracting for Ancillary Services and Imbalance Energy the CAISO will not act as principal but as agent for and on behalf of the relevant Scheduling Coordinators.

## ARTICLE II – TRANSMISSION SERVICE

### 23 CATEGORIES OF TRANSMISSION CAPACITY.

References to new firm uses shall mean any use of CAISO transmission service, except for uses associated with Existing Rights or TORs. Prior to the start of the Day-Ahead Market, for each **Balancing Authority** Area **Transmission** Interface, the CAISO will allocate the forecasted **Total Transfer Capability** of the **Transmission** Interface to four categories. This allocation will represent the CAISO's best estimates at the time, and is not intended to affect any rights provided under Existing Contracts or TORs. The CAISO's forecast of **Total Transfer Capability** for each **Balancing Authority** Area **Transmission** Interface will depend on prevailing conditions for the relevant Trading Day, including, but not limited to, the effects of parallel path (unscheduled) flows and/or other limiting operational conditions. This information will be posted on OASIS in accordance with this CAISO Tariff. The four categories are as follows:

- (a) transmission capacity that must be reserved for firm Existing Rights;
- (b) transmission capacity that may be allocated for use as CAISO transmission service (i.e., "new firm uses");
- (c) transmission capacity that may be allocated by the CAISO for conditional firm Existing Rights; and
- (d) transmission capacity that may remain for any other uses, such as non-firm Existing Rights for which the Responsible PTO has no discretion over whether or not to provide such non-firm service.

## **24 TRANSMISSION EXPANSION.**

### **24.1 Determination of Need for Proposed Transmission Projects.**

A Participating TO, Market Participant, the CAISO, the CPUC, or CEC may propose a transmission system addition or upgrade, and the CAISO will determine, in accordance with this Section 24.1, whether the transmission addition or upgrade is needed, where it will (1) promote economic efficiency, (2) maintain System Reliability, (3) satisfy the requirements of a Location Constrained Resource Interconnection Facility, or (4) maintain the simultaneous feasibility of allocated Long-Term CRRs. CAISO management can determine the need for transmission additions or upgrades with an estimated capital investment of less than \$50 million without CAISO Governing Board approval. The determination of need by CAISO management for transmission additions or upgrades with an estimated capital cost of \$50 million or more must be approved by the CAISO Governing Board.

#### **24.1.1 Economically Driven Projects.**

The determination that a transmission addition or upgrade is needed to promote economic efficiency shall be made in accordance with this Section 24 and the Business Practice Manual in any of the following ways:

- (a) Where a Project Sponsor proposes a Merchant Transmission Facility and demonstrates to the CAISO the financial capability to pay the full cost of construction and operation of the Merchant Transmission Facility. The Merchant Transmission Facility must mitigate all operational concerns identified under Section 24.5 to the satisfaction of the CAISO, in consultation with the Participating TO(s) in whose PTO Service Territory the Merchant Transmission Facility will be located, and ensure the continuing feasibility of allocated Long Term CRRs over the length of their terms. To ensure that the Project Sponsor is

financially able to pay the construction and operating costs of the Merchant Transmission Facility, and where the Participating TO is not the Project Sponsor and is to construct the Merchant Transmission Facility under Section 24.1, the CAISO in cooperation with the Participating TO may require (1) a demonstration of creditworthiness (e.g., an appropriate credit rating), or (2) sufficient security in the form of an unconditional and irrevocable letter of credit or other similar security sufficient to meet its responsibilities and obligations for the full costs of the transmission addition or upgrade.

- (b) Where a Project Sponsor, the CPUC, or CEC proposes a transmission addition or upgrade during the Request Window and the project is approved by the CAISO Governing Board, or a Participating TO proposes a transmission upgrade or addition to an existing transmission facility with an estimated capital cost of less than \$50 million in accordance with the Study Plan and the project is included in the CAISO annual Transmission Plan. In determining whether to approve the project, the CAISO Governing Board or CAISO management, as applicable, shall consider the degree to which, if any, the benefits of the project outweigh the costs, in accordance with the procedures and using the technical studies set forth in the Business Practice Manual. The benefits of the project may include, but need not be limited to, a calculation of any reduction in production costs, Congestion costs, Transmission Losses, capacity or other electric supply costs resulting from improved access to cost-efficient resources, and environmental costs. The cost of the project must consider any estimated costs identified under Section 24.1.4 to maintain the simultaneous feasibility of allocated Long Term CRRs for the length of their term. The CAISO management

or CAISO Governing Board, as appropriate, in determining whether to approve or recommend the project, shall also consider the comparative costs and benefits of viable alternatives to the proposed transmission upgrade or addition, including (1) other transmission additions or upgrades, or the effects of other transmission additions or upgrades proposed under Section 24.2 during the Transmission Planning Process cycle, (2) Demand-side management, (3) acceleration or expansion of any transmission upgrade or addition already approved by the CAISO Governing Board or included in any CAISO annual Transmission Plan, or (4) Generation.

- (c) Where the CAISO proposes a transmission addition or upgrade during the CAISO's Transmission Planning Process and the project is approved by the CAISO Governing Board or included in the CAISO annual Transmission Plan, as appropriate. In determining whether to approve the CAISO proposed transmission addition or upgrade, the CAISO Governing Board and CAISO management shall apply the same factors set forth in Section 24.1.1(b). If approved by the CAISO Governing Board or CAISO management, as appropriate, the CAISO will designate one or more of the Participating TOs with PTO Service Territories in which the terminus of the transmission addition or upgrade will be located to act as Project Sponsor. Where two or more Participating TOs are designated as Project Sponsors, such CAISO designation will include the proportionate responsibility between or among Participating TOs to own, construct, and finance the transmission addition or upgrade. If a

Participating TO refuses to act as a Project Sponsor under this Section 24.1.1(c), the CAISO will first request other designated Participating TO(s) to assume the remainder or greater proportionate responsibility, and if no other Participating TO had been designated or is willing to increase its proportionate responsibility, the CAISO may solicit bids to finance, own, and construct the transmission addition or upgrade.

#### **24.1.1.1 Information Requirements for Economic Transmission Projects.**

The Project Sponsor and relevant Participating TOs shall provide any necessary assistance and information to the CAISO to enable the CAISO to determine that a transmission upgrade or addition is needed to promote economic efficiency, and will perform all studies required by the adopted Study Plan in a manner consistent with the Business Practice Manual. A Project Sponsor of an economically driven transmission upgrade or addition to promote economic efficiency under Section 24.1.1 shall also provide in its proposal a statement whether the proposed upgrade or addition will be a Merchant Transmission Facility.

#### **24.1.2 Reliability Driven Projects.**

The CAISO in coordination with each Participating TO with a PTO Service Territory will, consistent with the procedures set forth in the Business Practice Manual, identify the need for any transmission additions or upgrades required to ensure System Reliability consistent with all Applicable Reliability Criteria and CAISO Planning Standards. In making this determination, the CAISO, in coordination with each Participating TO with a PTO Service Territory and other Market Participants, shall consider lower cost alternatives to the construction of transmission additions or upgrades, such as acceleration or expansion of existing projects, Demand-side management, Remedial Action Schemes, appropriate Generation, interruptible Loads or reactive support. The CAISO shall direct each Participating TO with a PTO Service Area, as a registered Transmission Planner with NERC, to perform the necessary studies, based on the



Unified Planning Assumptions and Study Plan as set forth in Section 24.2.3 and in accordance with the Business Practice Manual, to determine the facilities needed to meet all Applicable Reliability Criteria and CAISO Planning Standards. The Participating TO with a PTO Service Area shall provide the CAISO and other Market Participants with all information relating to the studies performed under this Section, subject to any limitation provided in Section 20.2. The CAISO shall be free to propose any transmission upgrades or additions it deems necessary to ensure System Reliability consistent with Applicable Reliability Criteria and CAISO Planning Standards. The Participating TO with a PTO Service Territory in which the transmission upgrade or addition deemed needed under this Section 24.1.2 is to be located shall be the Project Sponsor, with the responsibility to construct, own and finance, and maintain such transmission upgrade or addition.

**24.1.3 Location Constrained Resource Interconnection Facility Projects.**

The CAISO, CPUC, CEC, a Participating TO or any other Market Participant may propose a transmission addition as a Location Constrained Resource Interconnection Facility. A proposal shall include the following information, to the extent available:

- (a) Information showing that the proposal meets the requirements of Section 24.1.3.1; and
- (b) A description of the proposed facility, including the following information:
  - (1) Transmission studies demonstrating that the proposed facility satisfies Applicable Reliability Criteria and CAISO Planning Standards;
  - (2) Identification of the most feasible and cost-effective alternative transmission additions, which may include network upgrades, that would accomplish the objective of the proposal;
  - (3) A planning level cost estimate for the proposed facility and all proposed alternatives;

- (4) An assessment of the potential for the future connection of further transmission additions that would convert the proposed facility into a network transmission facility, including conceptual plans;
- (5) The estimated in-service date of the proposed facility; and
- (6) A conceptual plan for connecting potential LCRIGs, if known, to the proposed facility.

**24.1.3.1 Criteria for Qualification as a Location Constrained Resource Interconnection Facility.**

- (a) The CAISO shall conditionally approve a facility as a Location Constrained Resource Interconnection Facility if it determines that the facility is needed and all of the following requirements are met:
  - (1) The facility is to be constructed for the primary purpose of connecting to the CAISO Controlled Grid two or more Location Constrained Resource Interconnection Generators in an Energy Resource Area, and at least one of the Location Constrained Resource Interconnection Generators is to be owned by an entity(ies) that is not an Affiliate of the owner(s) of another Location Constrained Resource Interconnection Generator in that Energy Resource Area;
  - (2) The facility will be a High Voltage Transmission Facility;
  - (3) At the time of its in-service date, the facility will not be a network facility and would not be eligible for inclusion in a Participating TO's TRR other than as an LCRIF; and
  - (4) The facility meets Applicable Reliability Criteria and CAISO Planning Standards.

- (b) The proponent of a facility that has been determined by the CAISO to meet the requirements of Section 24.1.3.1(a) shall provide the CAISO with information concerning the requirements of this subsection not less than ninety (90) days prior to the planned commencement of construction, and the facility shall qualify as a Location Constrained Resource Interconnection Facility if the CAISO determines that both of the following requirements are met:
- (1) The addition of the capital cost of the facility to ~~the~~ High Voltage TRR of a Participating TO will not cause the aggregate of the net investment of all LCRIFs (net of the amount of the capital costs of LCRIFs to be recovered from LCRIGs pursuant to Section 26.6) included in the High Voltage TRRs of all Participating TOs to exceed fifteen percent (15%) of the aggregate of the net investment of all Participating TOs in all High Voltage Transmission Facilities reflected in their High Voltage TRRs (net of the amount of the capital costs of LCRIFs to be recovered from LCRIGs pursuant to Section 26.6) in effect at the time of the CAISO's evaluation of the facility; and
- (2) Existing or prospective owners of LCRIGs have demonstrated their interest in connecting LCRIGs to the facility consistent with the requirements of Section 24.1.3.2, which establishes the necessary demonstration of interest.
- (c) Each Participating TO shall report annually to the CAISO the amount of its net investment in LCRIFs (net of the amount of the capital costs of LCRIFs to be recovered from LCRIGs pursuant to Section 26.6), and its net investment in High Voltage Transmission Facilities reflected in its High Voltage TRR (net of the amount of the capital costs of LCRIFs to be recovered from LCRIGs pursuant to Section 26.6), to enable the CAISO to make the determination required under Section 24.1.3.1(b)(1).

**24.1.3.2 Demonstration of Interest in a Location Constrained Resource Interconnection Facility.**

A proponent of an LCRIF must demonstrate interest in the LCRIF equal to sixty percent (60%) or more of the capacity of the facility in the following manner:

- (a) the proponent's demonstration must include a showing that LCRIGs that would connect to the facility and would have a combined capacity equal to at least twenty-five percent (25%) of the capacity of the facility have executed Large Generator Interconnection Agreements or Small Generator Interconnection Agreements, as applicable; and
- (b) to the extent the showing pursuant to Section 24.1.3.2(a) does not constitute sixty percent (60%) of the capacity of the LCRIF, the proponent's demonstration of the remainder of the required minimum level of interest must include a showing that additional LCRIGs:
  - (1) have obtained control over their site or paid a deposit to the CAISO in the amount of \$250,000, which deposit shall be refundable if the LCRIF is not approved or is withdrawn by the proponent; and

- (2) have demonstrated interest in the LCRIF by one of the following methods:
- (i) executing a firm power sales agreement for the output of the LCRIG for a period of five years or longer; or
  - (ii) being in the CAISO's interconnection queue and paying a deposit to the CAISO equal to the sum of the minimum deposits required of an Interconnection Customer for all studies performed in accordance with the Large Generator Interconnection Procedures (Appendix U) or Small Generator Interconnection Procedures (Appendix S), as applicable to the LCRIG, less the amount of any deposits actually paid by the LCRIG for such studies. The deposit shall be credited toward such study costs. If

the LCRIF is not approved or is withdrawn by the proponent, any deposit paid under this provision shall be refundable to the extent it exceeds costs incurred by the CAISO for such studies; or

- (iii) paying a deposit to the CAISO equal to five percent (5%) of the LCRIG's pro rata share of the capital costs of a proposed LCRIF. The deposit shall be credited toward study costs performed in connection with the Large Generator Interconnection Procedures (Appendix U) or Small Generator Interconnection Procedures (Appendix S), whichever is applicable. If the LCRIF is not approved or is withdrawn by the proponent, any deposit paid under this provision shall be refundable to the extent it exceeds the costs incurred by the CAISO for such studies.

#### **24.1.3.3 Coordination With Transmission Additions Proposed by Non-Participating TOs.**

In the event that a facility proposed as an LCRIF would connect to LCRIGs in an Energy Resource Area that would also be connected by a transmission facility that is in existence or is proposed to be constructed by an entity that is not a Participating TO and that does not intend to place that facility under the Operational Control of the CAISO, the CAISO shall coordinate with the entity owning or proposing that transmission facility through any regional planning process to avoid the unnecessary construction of duplicative transmission additions to connect the same LCRIGs to the CAISO Controlled Grid.

#### **24.1.3.4 Evaluation of Location Constrained Resource Interconnection Facilities.**

In evaluating whether a proposed LCRIF that meets the requirements of Section 24.1.3.1 is needed, and for purposes of ranking and prioritizing LCRIF projects, the CAISO will consider the following factors:

- (a) Whether, and if so, the extent to which, the facility meets or exceeds applicable CAISO Planning Standards, including standards that are Applicable Reliability Criteria.

- (b) Whether, and if so, the extent to which, the facility has the capability and flexibility both to interconnect potential LCRIGs in the Energy Resource Area and to be converted in the future to a network transmission facility.
- (c) Whether the projected cost of the facility is reasonable in light of its projected benefits, in comparison to the costs and benefits of other alternatives for connecting Generating Units or otherwise meeting a need identified in the CAISO Transmission Planning Process, including alternatives that are not LCRIFs. In making this determination, the CAISO shall take into account, among other factors, the following:
  - (1) The potential capacity of LCRIGs and the potential Energy that could be produced by LCRIGs in each Energy Resource Area;
  - (2) The capacity of LCRIGs in the CAISO's interconnection queue for each Energy Resource Area;
  - (3) The projected cost and in-service date of the facility in comparison with other transmission facilities that could connect LCRIGs to the CAISO Controlled Grid;
  - (4) Whether, and if so, the extent to which, the facility would provide additional reliability or economic benefits to the CAISO Controlled Grid; and
  - (5) Whether, and if so, the extent to which, the facility would create a risk of stranded costs.

**24.1.4 Maintaining the Feasibility of Allocated Long Term CRRs.**

The CAISO is obligated to ensure the continuing feasibility of Long Term CRRs that are allocated by the CAISO over the length of their terms. In furtherance of this requirement the CAISO shall, as part of its annual Transmission Planning Process cycle, test and evaluate the simultaneous feasibility of allocated Long Term CRRs, including, but not limited to, when acting on the following types of projects: (a) planned or proposed transmission projects; (b) Generating Unit or transmission retirements; (c) Generating Unit interconnections; and (d) the interconnection of new Load. Pursuant to such evaluations the CAISO shall identify the need for any transmission additions or upgrades required to ensure the continuing feasibility of allocated Long Term CRRs over the length of their terms. In assessing the need for transmission additions or upgrades to maintain the feasibility of allocated Long Term CRRs, the CAISO, in coordination with the Participating TOs and other Market Participants, shall consider lower cost alternatives to the construction of transmission additions or upgrades, such as acceleration or expansion of existing projects; Demand-side management; Remedial Action Schemes; constrained-on Generation; interruptible Loads; reactive support; or in cases where the infeasible Long Term CRRs involve a small magnitude of megawatts, ensuring against the risk of any potential revenue shortfall using the CRR Balancing Account and uplift mechanism in Section 11.2.4. As part of the CAISO's Transmission Planning Process, the Participating TOs and Market Participants shall provide the necessary assistance and information to the CAISO to allow it to assess and identify transmission additions or upgrades that may be necessary under Section 24.1.4. To the extent a transmission upgrade or addition is deemed needed to maintain the feasibility of allocated Long Term CRRs in accordance with this Section and included in the CAISO's annual Transmission Plan, the CAISO will designate the Participating TO(s) with a PTO Service Territory in which the transmission upgrade or addition is to be located as the Project Sponsor(s), responsible to construct, own and/or finance, and maintain such transmission upgrade or addition.



**24.2 Transmission Planning and Coordination.**

The CAISO shall perform the CAISO's Transmission Planning Process on an annual cycle in accordance with the terms of this CAISO Tariff, the Transmission Control Agreement, and the Business Practice Manual. The Transmission Planning Process shall, at a minimum:

- (a) Coordinate and consolidate the transmission needs of the CAISO **Balancing Authority** Area into a single plan, which will be assessed on the basis of maintaining the reliability of the CAISO Controlled Grid in accordance with Applicable Reliability Criteria and CAISO Planning Standards, in a manner that promotes the economic efficiency of the CAISO Controlled Grid and considers federal and state environmental and other policies affecting the provision of Energy.
- (b) Reflect a planning horizon covering a minimum of ten (10) years that considers transmission enhancements and expansions, Demand Forecasts, Demand-side management, and capacity forecasts relating to generation technology type, additions and retirements, and such other factors as the CAISO determines are relevant.
- (c) Seek to avoid unnecessary duplication of facilities and ensure the simultaneous feasibility of the CAISO Transmission Plan and the transmission plans of interconnected **Balancing Authority** Areas, and otherwise coordinate with regional and sub-regional transmission planning processes and entities in accordance with Section 24.8.

- (d) Identify existing and projected limitations of the CAISO Controlled Grid's physical, economic or operational capability or performance and identify transmission upgrades and additions, including alternatives thereto, deemed needed in accordance with Section 24.1 to address the existing and projected limitations.
- (e) Account for any effects on the CAISO Controlled Grid of the interconnection of Generating Units on the Distribution System under the Wholesale Distribution Access Tariffs of the Participating TOs, including an assessment of the deliverability of such Generating Units on a basis comparable to the Deliverability Assessment performed under Appendix U.

#### **24.2.1 CAISO Planning Standards Committee.**

The CAISO shall maintain a Planning Standards Committee, which shall be open to participation by all Market Participants, electric utility regulatory agencies within California, and other interested parties, to review, provide advice on, and propose modifications to CAISO Planning Standards for consideration by CAISO management and the CAISO Governing Board. The Planning Standards Committee shall meet, at a minimum, on an annual basis prior to publication of the draft Unified Planning Assumptions and Study Plan under Section 24.2.3; however, additional meetings, web conferences, teleconferences may be scheduled as needed. Meetings of the Planning Standards Committee shall be noticed by Market Notice and such notice shall be posted to the CAISO Website. Teleconference capability will be made available for all meetings of the Planning Standards Committee. The CAISO Vice President of Planning and Infrastructure Development or his or her designee shall serve as chair of the Planning Standards Committee. All materials addressed at or relating to such meetings, including agendas, presentations, background papers, party comments, and minutes shall be posted to the CAISO Website. The chair of

the Planning Standards Committee shall seek approval by the CAISO Governing Board of any modifications to the CAISO Planning Standards, as those CAISO Planning Standards exist as of the effective date of Section 24.2, and must include in the report to the CAISO Governing Board a summary of the positions of parties with respect to the proposed modifications to the CAISO Planning Standards and the ground(s) for rejecting modifications, if any, proposed by Market Participants or other interested parties.

#### **24.2.2 Request Window.**

Market Participants may propose Economic Planning Studies and transmission upgrades or additions for inclusion in the annual Transmission Plan during a Request Window. The duration of the Request Window will be set forth in the Business Practice Manual and will occur in the year prior to the year in which the Transmission Plan is prepared. Proposals for Economic Planning Studies and transmission upgrades or additions must use the forms and satisfy the information and technical requirements set forth in the Business Practice Manual. Proposals for transmission additions or upgrades must be within or connect to the CAISO **Balancing Authority** Area or CAISO Controlled Grid and proposals for Economic Planning Studies must be intended to promote competition or economic efficiency of serving Load within the CAISO Balancing Authority Area, but may relate to Congestion relief or transmission capacity expansion outside the CAISO **Balancing Authority** Area. The following proposals will only be considered in the Transmission Plan if proposed during the Request Window:

- (a) Economic transmission upgrades or additions proposed under Section 24.1.1, except for projects costing less than \$50 million that are identified through Participating TO proposals provided pursuant to the Study Plan;
- (b) Location Constrained Resource Interconnection Facilities under Section 24.1.3 not identified by the CAISO as part of Interconnection Studies performed under the LGIP set forth in Appendix U;

- (c) Demand response programs that are proposed for inclusion in the base case or assumptions for the Transmission Plan or as alternatives to transmission additions or upgrades;
- (d) Generation projects that are proposed as solutions to Congestion identified in previously published Economic Planning Studies, for inclusion in long-term planning studies, or as alternatives to transmission additions or upgrades; and
- (e) Requests for Economic Planning Studies.

**24.2.2.1 CAISO Assessment of Request Window Proposals.**

Following the submittal of a proposal for a transmission addition or upgrade, Demand response program, or generation project during the Request Window in accordance with Section 24.2.2, the CAISO will determine whether the proposal will be included in the Unified Planning Assumptions or Study Plan as appropriate. A proposal can only be included in the Unified Planning Assumptions or Study Plan upon the determination by the CAISO that:

- (a) the proposal satisfies the information requirements for the particular type of project submitted as set forth in templates included in the Business Practice Manual;
- (b) the proposal is not functionally duplicative of transmission upgrades or additions that have previously been approved by the CAISO; and
- (c) the proposal, if a sub-regional or regional project that affects other interconnected **Balancing Authority** Areas has been reviewed by the appropriate sub-regional or regional planning entity, is not inconsistent with such sub-regional or regional planning entity's preferred solution or project, and has been determined to be appropriate for inclusion in the CAISO Study Plan, rather than, or in addition to, being included in or deferred to the planning process of the sub-regional or regional planning entity.

In accordance with the schedule and procedures set forth in the Business Practice Manual, the CAISO will notify the Market Participant submitting the proposal of any deficiencies in the proposal and provide the Market Participant an opportunity to correct the deficiencies. The failure to correct the deficiency precludes the proposal from inclusion in the Study Plan. The CAISO will notify the Market Participant submitting the proposal whether or not the proposal will be included in the Study Plan.

**24.2.2.2 CAISO Assessment of Requests for Economic Planning Studies Received During the Request Window.**

Following the submittal of a request for an Economic Planning Study during the Request Window in accordance with Section 24.2.2, the CAISO will determine whether the request shall be designated as a High Priority Economic Planning Study for inclusion in the Unified Planning Assumptions and Study Plan.

In making the determination, the CAISO will consider:

- (a) Whether the requested Economic Planning Study seeks to address Congestion identified by the CAISO in the Congestion Data Summary published for the applicable Transmission Planning Process cycle and the magnitude, duration, and frequency of that Congestion;
- (b) Whether the requested Economic Planning Study addresses delivery of Generation from Location Constrained Resource Interconnection Generators or network transmission facilities intended to access Generation from an Energy Resource Area (ERA) or similar resource area assigned a high priority by the CPUC or CEC;
- (c) Whether the requested Economic Planning Study is intended to address Local Capacity Area Resource requirements; or

- (d) Whether resource and Demand information indicates that Congestion described in the Economic Planning Study request is projected to increase over the planning horizon used in the Transmission Planning Process and the magnitude of that Congestion.

In accordance with the schedule and procedures set forth in the Business Practice Manual, the CAISO will post to the CAISO Website the list of selected High Priority Economic Planning Studies to be included in the draft Unified Planning Assumptions and Study Plan. The CAISO may assess requests for Economic Planning Studies individually or in combination where such requests may have common or complementary effects on the CAISO Controlled Grid. The CAISO will perform a maximum of five High Priority Economic Planning Studies; however, the CAISO retains discretion to perform greater than five High Priority Economic Planning Studies should stakeholder requests or patterns of Congestion or anticipated Congestion so warrant.

#### **24.2.3 Additional Planning Information.**

##### **24.2.3.1 Information Provided by Participating TOs.**

In addition to any information that must be provided to the CAISO under the NERC Reliability Standards for Modeling, Data and Analysis (NERC MOD Standards), Participating TOs shall provide the CAISO on an annual or periodic basis in accordance with the schedule and procedures and in the form required by the Business Practice Manual any information and data reasonably required by the CAISO to perform the Transmission Planning Process, including, but not limited to: (1) modeling data for power flow, including reactive power, short-circuit and stability analysis; (2) a description of the total Demand to be served from each substation, including a description of any Energy efficiency programs reflected in the total Demand; (3) the amount of any interruptible Loads included in the total Demand (including conditions under which an interruption can be implemented and any limitations on the duration and frequency of interruptions);

(4), a description of Generating Units to be interconnected to the Distribution System of the Participating TO, including generation type and anticipated Commercial Operation Date; (5) detailed power system models of their transmission systems that reflect transmission system changes, including equipment replacement not requiring approval by the CAISO; (6) Distribution System modifications; (7) transmission network information, including line ratings, line length, conductor sizes and lengths, substation equipment ratings, circuits on common towers and with common rights-of-ways and cross-overs, special protection schemes, and protection setting information; and (8) Contingency lists.

#### **24.2.3.2 Information Provided by Participating Generators.**

In addition to any information that must be provided to the CAISO under the NERC Reliability Standards for Modeling, Data and Analysis (NERC MOD Standards), Participating Generators shall provide the CAISO on an annual or periodic basis in accordance with the schedule, procedures and in the form required by the Business Practice Manual any information and data reasonably required by the CAISO to perform the Transmission Planning Process, including, but not limited to (1) modeling data for short-circuit and stability analysis and (2) data, such as term, and status of any environmental or land use permits or agreements the expiration of which may affect that the operation of the Generating Unit.

#### **24.2.3.3 Information Requested from Load Serving Entities.**

In addition to any information that must be provided to the CAISO under the NERC Reliability Standards for Modeling, Data and Analysis (NERC MOD Standards), the CAISO shall solicit from Load Serving Entities through their Scheduling Coordinators information required by, or anticipated to be useful to, the CAISO in its performance of the Transmission Planning Process, including, but not limited to (1) long-term resource plans; (2) existing long-term contracts for resources and transmission service outside the CAISO Balancing Authority Area; (3) resource capacity and Energy Bid information received through requests for offers or similar solicitations; and (4) Demand Forecasts, including forecasted effect of Energy efficiency and Demand response programs.

**24.2.3.4 Information Requested from Interconnected *Balancing Authority* Areas, Sub-Regional Planning Groups and Electric Utility Regulatory Agencies.**

In accordance with Section 24.8 , the CAISO shall obtain or solicit from interconnected *Balancing Authority* Areas, regional and sub-regional planning groups within the WECC, the CPUC, the CEC, and Local Regulatory Authorities information required by, or anticipated to be useful to, the CAISO in its performance of the Transmission Planning Process, including, but not limited to (1) long-term transmission system plans; (2) long-term resource plans; (3) generation interconnection queue information; (4) Demand Forecasts; and (5) any other data necessary for the development of power flow, short-circuit, and stability cases over the planning horizon of the CAISO Transmission Planning Process.

**24.2.3.5 Obligation to Provide Updated Information.**

If material changes to the information provided under Sections 24.2.3.1 and 24.2.3.2 occur during the annual Transmission Planning Process, the providers of the information must provide notice to the CAISO of the changes.

**24.2.4 Unified Planning Assumptions and Study Plan.**

**24.2.4.1 Additional Projects and Data for Development of the Unified Planning Assumptions and Study Plan.**

The CAISO will develop Unified Planning Assumptions and Study Plan using information and data received during the Request Window and under Section 24.2.3. The CAISO will also use the following in the development of the Unified Planning Assumptions and Study Plan:

- (1) WECC base cases for the relevant planning horizon;
- (2) transmission upgrades and additions approved by the CAISO and scheduled to be energized within the planning horizon;
- (3) Location Constrained Resource Interconnection Facilities conditionally approved under Section 24.1.3.1(a);



- (4) Network Upgrades identified pursuant to Section 25, Appendix U or Appendix W relating to the CAISO's Large Generator Interconnection Procedures and Appendix AA relating to the CAISO's Small Generator Interconnection Procedures;
- (5) operational solutions validated by the CAISO to address Local Capacity Area Resource requirements;
- (6) regulatory initiatives, as appropriate, including state regulatory agency initiated programs;
- (7) Energy Resource Areas or similar resource areas identified as high priority by the CPUC or CEC; and
- (8) results and analyses from Economic Planning Studies or other assessments that may have identified potentially needed transmission upgrades or additions performed in past CAISO Transmission Planning Process cycles.

**24.2.4.2 General Scope of Unified Planning Assumptions and Study Plan.**

The Unified Planning Assumptions and Study Plan shall, at a minimum, describe:

- (a) the planning data and assumptions to be used, to the maximum extent possible, as a base case for each technical study to be performed in the Transmission Planning Process cycle, including, but not limited, to those related to Demand Forecasts and distribution, generation capacity additions and retirements, and transmission system modifications;
- (b) a list of each technical study to be performed in the Transmission Planning Process cycle and a summary of the technical study's objective or purpose;

- (c) a description of any modifications to the planning data and assumptions developed as the general base case in Section 24.2.4.2(a) made in each technical study performed in the Transmission Planning Process cycle;
- (d) a description of the software tools, methodology and other criteria used in each technical study performed in the Transmission Planning Process cycle;
- (e) the identification of any entities directed to perform a particular technical study or portions of a technical study;
- (f) a proposed schedule for all stakeholder meetings to be held as part of the Transmission Planning Process cycle, and means for notification of any changes thereto, the location on the CAISO Website of information relating to the technical studies performed in the Transmission Planning Process cycle, and the name of a contact person at the CAISO for each technical study performed in the Transmission Planning Process cycle;
- (g) a list and description of each Economic Planning Study studied by the CAISO as a High Priority Economic Planning Study under Section 24.9; and
- (h) to the maximum extent practicable, and where applicable, identify appropriate sensitivity analyses, including project or solution alternatives, to be performed as part of technical studies.

**24.2.4.3 Preparation of Draft and Final Unified Planning Assumptions and Study Plan.**

- (a) Following review of relevant information, the CAISO will prepare and post on the CAISO Website a draft Unified Planning Assumptions and Study Plan. The CAISO will issue a Market Notice announcing the availability such draft, soliciting comments, and scheduling a stakeholder conference(s) as required by Section 24.2.4.3(c).

- (b) All comments from stakeholders on the draft Unified Planning Assumptions and Study Plan will be posted by the CAISO to the CAISO Website.
- (c) Subsequent to the posting of the draft Unified Planning Assumptions and Study Plan, the CAISO will conduct a minimum of one stakeholder meeting open to Market Participants, electric utility regulatory agencies, and other interested parties to review, discuss, and recommend modifications to the draft Unified Planning Assumptions and Study Plan. Additional stakeholder meetings, web conferences, or teleconferences may be scheduled as needed. All stakeholder meetings, web conferences, or teleconferences shall be noticed by Market Notice and such notice shall be posted to the CAISO Website.
- (d) Following the stakeholder conference(s) required by Section 24.2.4.2(c), and under the schedule set forth in the Business Practice Manual, the CAISO will determine and publish to the CAISO Website the final Unified Planning Assumptions and Study Plan in accordance with the procedures set forth in the Business Practice Manual.

## **24.2.5 Development and Approval of Transmission Plan.**

### **24.2.5.1 Technical Studies.**

- (a) In accordance with the Unified Planning Assumptions and Study Plan and the procedures and deadlines in the Business Practice Manual, the CAISO will perform, or direct the performance by third parties of, technical studies and other assessments necessary for the Transmission Plan and Transmission Planning Process, post the preliminary results on the CAISO Website, conduct a minimum of one stakeholder conference, and provide an opportunity for comments of the preliminary results. Additional stakeholder meetings, web conferences, or

teleconferences may be scheduled as needed. All stakeholder meetings, web conferences, or teleconferences shall be noticed by Market Notice and such notice shall be posted to the CAISO Website.

- (b) All technical studies, whether performed by the CAISO or third party under the direction of the CAISO, must utilize the Unified Planning Assumptions for the particular technical study to the maximum extent practical, and deviations from the Unified Planning Assumptions for the particular technical study must be documented in the preliminary and final results of each technical study. The CAISO will measure the results of the studies against NERC planning standards, WECC planning standards, and the CAISO Planning Standards, and other criteria established by the Business Practice Manual. After consideration of the comments received on the preliminary results, the CAISO will complete, or direct the completion of, the technical studies and post the final study results on the CAISO Website.

#### **24.2.5.2 Development of Transmission Plan.**

- (a) In accordance with the schedule and procedures in the Business Practice Manual, the CAISO will post a draft Transmission Plan. The CAISO will subsequently conduct a stakeholder conference regarding the draft Transmission Plan and solicit comments, consistent with the timelines and procedures set forth in the Business Practice Manual. Additional stakeholder meetings, web conferences, or teleconferences may be scheduled as needed. All stakeholder meetings, web conferences, or teleconferences shall be noticed by Market Notice and such notice shall be posted to the CAISO Website. After consideration of comments, the CAISO will post a final Transmission Plan to the CAISO Website.

- (b) The draft and final Transmission Plan may include, but is not limited to: (1) the results of technical studies performed under the Study Plan; (2) determinations, recommendations, and justifications for the need, according to Section 24.1 for identified transmission upgrades and additions; (3) assessments of transmission upgrades and additions not proposed under Section 24.1 and for which need has not been formally determined by the CAISO Governing Board or management, as applicable, under Section 24.1, but which have been identified by the CAISO as potential solutions to transmission needs studied during the Transmission Planning Process cycle; (3) results of Economic Planning Studies performed during the Transmission Planning Process cycle; and (4) an update on the status of transmission upgrades or additions previously approved by the CAISO, including identification of mitigation plans, if necessary, to address any potential delay in the anticipated completion of an approved transmission upgrade or addition.
- (c) The Transmission Plan may not include the results of certain technical studies performed as part of the Transmission Planning Process cycle identified in the Unified Planning Assumptions and Study Plan that were scheduled for completion after publication of the Transmission Plan for the Transmission Planning Process cycle.

#### **24.2.5.3 Approval by the CAISO Governing Board.**

The CAISO will present the Transmission Plan to the CAISO Governing Board at the first meeting of the year following the year in which the Transmission Plan is prepared. The Transmission Plan will be considered final once it has been presented to the CAISO Governing Board and will be posted on the

CAISO Website. Transmission upgrades and additions for which CAISO Governing Board approval is required may be presented to the CAISO Governing Board for approval separate from presentation of the Transmission Plan.

### **24.3 Obligation to Construct Transmission Projects Included in Transmission Plan.**

A Participating TO that has a PTO Service Territory shall be obligated to construct all transmission additions and upgrades that are determined by the CAISO Governing Board or management, as applicable, to be needed in accordance with the requirements of Section 24, not including conditional approvals and determinations of need under Section 24.1.3.1(a), and which: (1) are additions or upgrades to transmission facilities that are located within its PTO Service Territory, unless (a) it does not own the facility being upgraded or added and neither terminus of such facility is located within its PTO Service Territory or (b) it does not own the facility being upgraded or added and the Project Sponsor is a Participating TO that elects to construct the transmission upgrade; or (2) are additions to existing transmission facilities or upgrades to existing transmission facilities that it owns, that are part of the CAISO Controlled Grid, and that are located outside of its PTO Service Territory, unless the joint-ownership arrangement, if any, does not permit. A Participating TO's obligation to construct such transmission additions and upgrades shall be subject to: (1) its ability, after making a good faith effort, to obtain all necessary approvals and property rights under applicable federal, state, and local laws and (2) the presence of a cost recovery mechanism with cost responsibility assigned in accordance with Section 24.7. The obligations of the Participating TO to construct such transmission additions or upgrades will not alter the rights of any entity to construct and expand transmission facilities as those rights would exist in the absence of a TO's obligations under this CAISO Tariff or as those rights may be conferred by the CAISO or may arise or exist pursuant to this CAISO Tariff.

**24.4 Participating TO Study Obligation.**

The Participating TO constructing or expanding facilities in accordance with Section 24.3, will be directed by the CAISO to coordinate with the Project Sponsor or Participating TO(s) with PTO Service Territories in which the transmission upgrade or addition will be located, as appropriate, and other Market Participants to perform any study or studies necessary, including a Facility Study, to determine the appropriate facilities to be constructed in accordance with the CAISO Transmission Planning Process and the terms set forth in the TO Tariff.

**24.5 Operational Review.**

The CAISO will perform an operational review of all facilities studied as part of the CAISO Transmission Planning Process that are proposed to be connected to, or made part of, the CAISO Controlled Grid to ensure that the proposed facilities provide for acceptable operating flexibility and meet all its requirements for proper integration with the CAISO Controlled Grid. If the CAISO finds that such facilities do not provide for acceptable operating flexibility or do not adequately integrate with the CAISO Controlled Grid, the CAISO shall coordinate with the Project Sponsor and, if different, the Participating TO with the PTO Service Territory in which the facilities will be located to reassess and redesign the facilities required to be constructed. Transmission upgrades or additions that do not provide acceptable operating flexibility or do not adequately integrate with the CAISO Controlled Grid cannot be included in the CAISO Transmission Plan or approved by CAISO management or the CAISO Governing Board, as applicable.

**24.6 State and Local Approval and Property Rights.**

**24.6.1** The Participating TO obligated to construct facilities under this Section 24 must make a good faith effort to obtain all approvals and property rights under applicable federal, state and local laws that are necessary to complete the construction of the required transmission additions or upgrades. This obligation includes the Participating TO's use of eminent domain authority, where provided by state law.

**24.6.2** If the Participating TO cannot secure any such necessary approvals or property rights and consequently is unable to construct a transmission addition or upgrade found to be needed in accordance with Section 24.1, it shall promptly notify the CAISO and the Project Sponsor, if any, and shall comply with its obligations under the TO Tariff to convene a technical meeting to evaluate alternative proposals. The CAISO shall take such action as it reasonably considers appropriate, in coordination with the Participating TO, the Project Sponsor, if any, and other affected Market Participants, to facilitate the development and evaluation of alternative proposals including, where possible, conferring on a third party the right to build the transmission addition or upgrade as set forth in Section 24.6.3.

**24.6.3** Where the conditions of Section 24.6.2 have been satisfied and it is possible for a third party to obtain all approvals and property rights under applicable federal, state and local laws that are necessary to complete the construction of transmission additions or upgrades required to be constructed in accordance with this CAISO Tariff (including the use of eminent domain authority, where provided by state law), the CAISO may confer on a third party the right to build the transmission addition or upgrade, which third party shall enter into the Transmission Control Agreement in relation to such transmission addition or upgrade.

**24.7 WECC and Regional Coordination.**

The Project Sponsor will have responsibility for completing any applicable WECC requirements and rating study requirements to ensure that a proposed transmission addition or upgrade meets regional planning requirements. The Project Sponsor may request the Participating TO to perform this coordination on behalf of the Project Sponsor at the Project Sponsor's expense.

**24.8 Regional and Sub-Regional Planning Process.**

The CAISO will be a member of the WECC and other applicable regional or sub-regional organizations and participate in WECC's operation and planning committees, and in other applicable regional and sub-regional coordinated planning processes.



**24.8.1 Scope of Regional or Sub-Regional Planning Participation.**

The details of the CAISO's participation in regional and sub-regional planning processes are set forth in the Business Practice Manual. At a minimum, the CAISO shall be required to:

- (a) solicit the participation, whether through sub-regional planning groups or individually, of all interconnected **Balancing Authority** Areas in the development of the Unified Planning Assumptions and Study Plan and in reviewing the results of technical studies performed as part of the CAISO's Transmission Planning Process in order to:
  - (1) coordinate, to the maximum extent practicable, planning assumptions, data and methodologies utilized by the CAISO, regional and sub-regional planning groups or interconnected **Balancing Authority** Areas;
  - (2) ensure transmission expansion plans of the CAISO, regional and sub-regional planning groups or interconnected **Balancing Authority** Areas are simultaneously feasible and seek to avoid duplication of facilities.
- (b) coordinate with regional and sub-regional planning groups regarding the entity to perform requests for Economic Planning Studies or other Congestion related studies;
- (c) transmit to applicable regional and sub-regional planning groups or interconnected **Balancing Authority** Areas information on technical studies performed as part of the CAISO Transmission Planning Process;
- (d) post on the CAISO Website links to the planning activities of applicable regional and sub-regional planning groups or interconnected **Balancing Authority** Areas.

Neither the CAISO nor any Participating TO nor any Market Participant shall take any position before the WECC or a regional organization that is inconsistent with a binding decision reached through an arbitration proceeding pursuant to Section 13.

### 24.9.1 Congestion Data Summary.

#### 24.9.2 High Priority Economic Planning Studies.

#### 24.10 Cost Responsibility for Transmission Additions or Upgrades.

**24.10.1** Where a Project Sponsor commits to pay the full cost of a transmission addition or upgrade as set forth in subsection (2) of Section 24.1.1, the full costs shall be borne by the Project Sponsor.

**24.10.2** Where the need for a transmission addition or upgrade is determined by the CAISO or as a result of the CAISO ADR Procedure as set forth in subsection (3) of Section 24.1.1, the cost of the transmission addition or upgrade shall be borne by the Participating TO that will be the owner of the transmission addition or upgrade and shall be reflected in its Transmission Revenue Requirement.

**24.10.3** Provided that the CAISO has Operational Control of the Merchant Transmission Facility, a Project Sponsor that does not recover the investment cost under a FERC-approved rate through the Access Charge or a reimbursement or direct payment from a Participating TO shall be entitled to receive Merchant CRRs as provided in Section 36.11. The full amount of capacity added to the system by such transmission upgrades or additions will be as determined through the regional reliability council process of the Western Electricity Coordinating Council or its successor. Pursuant to its Project Sponsor status as specified in Section 4.3.1.3, consistent with FERC's findings in Docket Nos. EL04-133-001, ER04-1198-000, and ER04-1198-001, issued on May 16, 2006 (115 FERC ¶ 61,178), Western Path 15 shall receive compensation associated with transmission usage rights modeled for Western Path 15. In the event that Western Path 15 has an approved rate schedule that returns excess revenue from any compensation obtained from the CAISO associated with the transmission usage rights for Western Path 15, such revenue shall be returned to the CAISO through a procedure established by the CAISO and the Western Area Power Administration for that purpose.

**24.10.4** Once a New Participating TO has executed the Transmission Control Agreement and it has become effective, the cost for New High Voltage Facilities for all Participating TOs shall be included in the CAISO Grid-wide component of the High Voltage Access Charge in accordance with Schedule 3 of Appendix F, unless and with respect to Western Path 15 only, cost recovery is provided in Section 24.7.3. The Participating TO who is supporting the cost of the New High Voltage Facility shall include such costs in its High Voltage Transmission Revenue Requirement, regardless of which TAC Area the facility is geographically located.

**24.11 Ownership of and Charges for Expansion Facilities.**

**24.11.1** All transmission additions and upgrades constructed in accordance with this Section 24 shall form part of the CAISO Controlled Grid and shall be operated and maintained by a Participating TO in accordance with the Transmission Control Agreement.

**24.11.2** Each Participating TO that owns or operates transmission additions and upgrades constructed in accordance with this Section 24 shall provide access to them and charge for their use in accordance with this CAISO Tariff and its TO Tariff.

**24.12 Expansion by Local Furnishing Participating TOs.**

Notwithstanding any other provision of this CAISO Tariff, a Local Furnishing Participating TO shall not be obligated to construct or expand facilities, (including interconnection facilities as described in Section 8 of the TO Tariff) unless the CAISO or Project Sponsor has tendered an application under FPA Section 211 that requests FERC to issue an order directing the Local Furnishing Participating TO to construct such facilities pursuant to Section 24. The Local Furnishing Participating TO shall, within 10 days of receiving a copy of the Section 211 application, waive its right to a request for service under FPA Section 213(a) and to the issuance of a proposed order under FPA Section 212(c). Upon receipt of a final order from FERC that is no longer subject to rehearing or appeal, such Local Furnishing Participating TO shall construct such facilities in accordance with this Section 24.

**25 INTERCONNECTION OF GENERATING UNITS AND GENERATING FACILITIES TO THE CAISO CONTROLLED GRID.**

**25.1 Applicability.**

This Section 25 and **Appendix U** (the Standard Large Generator Interconnection Procedures (LGIP)), **Appendix S** (the Small Generator Interconnection Procedures (SGIP)), or Appendix W, as applicable, shall apply to:

- (a) each new Generating Unit that seeks to interconnect to the CAISO Controlled Grid;
- (b) each existing Generating Unit connected to the CAISO Controlled Grid that will be modified with a resulting increase in the total capability of the power plant;
- (c) each existing Generating Unit connected to the CAISO Controlled Grid that will be modified without increasing the total capability of the power plant but has changed the electrical characteristics of the power plant such that its re-energization may violate Applicable Reliability Criteria; and
- (d) each existing **Qualifying Facility** Generating Unit connected to the CAISO Controlled Grid whose total Generation was previously sold to a Participating TO or on-site customer but whose Generation, or any portion thereof, will now be sold in the wholesale market, subject to Section 25.1.2.

**25.1.1** The owner of a Generating Unit described in Section 25.1 (a), (b), or (c), or its designee, shall be an Interconnection Customer required to submit an Interconnection Request and comply with **Appendix U** (the LGIP), **Appendix S** (the SGIP), or Appendix W, as applicable, which applicability shall be based on the maximum rated capacity of the new total capability of the power plant, including the capability of all of multiple energy production devices at a site, consistent with Section 4.10 of the SGIP.

**25.1.2** If the owner of a Qualifying Facility described in Section 25.1(d), or its designee, represents that the total capability and electrical characteristics of the Qualifying Facility will be substantially unchanged, then that entity must submit an affidavit to the CAISO and the applicable Participating TO representing that the total capability and electrical characteristics of the Qualifying Facility will remain substantially unchanged. If there is any change to the total capability and electrical characteristics of the Qualifying Facility, however, the affidavit shall include supporting information describing any such changes. The CAISO and the applicable Participating TO shall have the right to verify whether or not the total capability or electrical characteristics of the Qualifying Facility have changed or will change.

**25.1.2.1** If the CAISO and the applicable Participating TO confirm that the electrical characteristics are substantially unchanged, then that request will not be placed into the interconnection queue. However, the owner of the Qualifying Facility, or its designee, will be required to execute a Standard Large Generator Interconnection Agreement in accordance with Section 11 of Appendix U (the LGIP), a Small Generator Interconnection Agreement in accordance with Section 3.3.4, 3.4.5, or 3.5.7 and Section 4.8 of the SGIP, or an interconnection agreement in accordance with Appendix W, as applicable.

**25.1.2.2** If the CAISO and the applicable Participating TO cannot confirm that the total capability and electrical characteristics are and will be substantially unchanged, then the owner of the Qualifying Facility, or its designee, shall be an Interconnection Customer required to submit an Interconnection Request and comply with Appendix U (the LGIP), Appendix S (the SGIP), or Appendix W, as applicable.

## **25.2 Interconnections to the Distribution System.**

Any proposed interconnection by the owner of a planned Generating Unit, or its designee, to connect that Generating Unit to a Distribution System of a Participating TO will be processed, as applicable, pursuant to the Wholesale Distribution Access Tariff or CPUC Rule 21, or other Local Regulatory Authority requirements, if applicable, of the Participating TO; provided, however, that the owner of the planned Generating Unit, or its designee, shall be required to mitigate any adverse impact on reliability of the CAISO Controlled Grid consistent with **Appendix U** (the Standard Large Generator Interconnection Procedures). In addition, each Participating TO will provide to the CAISO a copy of the system impact study used to determine the impact of a planned Generating Unit on the Distribution System and the CAISO Controlled Grid pursuant to a request to interconnect under the applicable Wholesale Distribution Access Tariff or CPUC Rule 21, or other Local Regulatory Authority requirements, if applicable.

## **25.3 Maintenance of Encumbrances.**

No new Generating Unit shall adversely affect the ability of the applicable Participating TO to honor its Encumbrances existing as of the time an Interconnection Customer submits its Interconnection Request to the CAISO. The applicable Participating TO, in consultation with the CAISO, shall identify any such adverse effect on its Encumbrances in the Interconnection System Impact Study performed under Section 7 of **Appendix U** (the LGIP), under Section 3.4 of the SGIP, or under Section 5.1 of Appendix W, as applicable. To the extent the applicable Participating TO determines that the connection of the new Generating Unit will have an adverse effect on Encumbrances, the Interconnection Customer shall mitigate such adverse effect.

## **26 TRANSMISSION RATES AND CHARGES.**

### **26.1 Access Charges.**

All Market Participants withdrawing Energy from the CAISO Controlled Grid shall pay Access Charges in accordance with this Section 26.1 and Appendix F, Schedule 3, except as provided in Section 4.1 of Appendix I (Station Power Protocol). Prior to the TAC Transition Date determined under Section 4 of Schedule 3 of Appendix F, the Access Charge for each Participating TO shall be determined in accordance with the principles set forth in this Section 26.1 and in Section 5 of the TO Tariff. The Access Charge shall comprise two components, which together shall be designed to recover each Participating TO's Transmission Revenue Requirement. The first component shall be the annual authorized revenue requirement associated with the transmission facilities and Entitlements turned over to the Operational Control of the CAISO by a Participating TO approved by FERC. The second component shall be based on the Transmission Revenue Balancing Account (TRBA), which shall be designed to flow through the Participating TO's Transmission Revenue Credits calculated in accordance with Section 5 of the TO Tariff and other credits identified in Sections 6 and 8 of Schedule 3 of Appendix F of the CAISO Tariff.

Commencing on the TAC Transition Date determined under Section 4 of Schedule 3 of Appendix F, the Access Charges shall be paid by any UDC or MSS Operator that is serving Gross Load in a PTO Service Territory, and shall consist, where applicable, of a High Voltage Access Charge, a Transition Charge and a Low Voltage Access Charge. High Voltage Access Charges and Low Voltage Access Charges shall each comprise two components, which together shall be designed to recover each Participating TO's High Voltage Transmission Revenue Requirement and Low Voltage Transmission Revenue Requirement, as applicable. The first component shall be based on the annual authorized Transmission Revenue Requirement associated with the High Voltage Transmission Facilities or Low Voltage Transmission Facilities, as applicable, and Entitlements turned over to the CAISO Operational Control by a Participating TO. The second component shall be the Transmission Revenue Balancing Account (TRBA), which shall



be designed to flow through the Participating TO's Transmission Revenue Credits associated with the high voltage or low voltage, as applicable, transmission facilities and Entitlements and calculated in accordance with Section 5 of the TO Tariff and other credits identified in Sections 6, 8 and 13 of Schedule 3 of Appendix F of the CAISO Tariff. Each Participating TO shall provide in its TO Tariff filing with FERC an appendix to such filing that states the Participating TO's High Voltage Transmission Revenue Requirement, its Low Voltage Transmission Revenue Requirement (if applicable) and its Gross Load used in developing the rate. The allocation of each Participating TO's Transmission Revenue Requirement between the High Voltage Transmission Revenue Requirement and the Low Voltage Transmission Revenue Requirement shall be undertaken in accordance with Section 11 of Schedule 3 of Appendix F. To the extent necessary, each Participating TO shall make conforming changes to its TO Tariff.

The applicable High Voltage Access Charge and the Transition Charge shall be paid to the CAISO by each UDC and MSS Operator based on its Gross Load connected to a High Voltage Transmission Facility in a PTO Service Territory, either directly or through intervening distribution facilities, but not through a Low Voltage Transmission Facility. The applicable High Voltage Access Charge, the Transition Charge and the Low Voltage Access Charge for the applicable Participating TO shall be paid by each UDC and MSS Operator based on its Gross Load in the PTO Service Territory. The applicable High Voltage Access Charge and Transition Charge shall be assessed by the CAISO as a charge for transmission service under this CAISO Tariff, shall be determined in accordance with Schedule 3 of Appendix F, and shall include all applicable components of the High Voltage Access Charge and Transition Charge set forth therein.

The Low Voltage Access Charge for each Participating TO is set forth in that Participating TO's TO Tariff. Each Participating TO shall charge for and collect the Low Voltage Access Charge, as provided in its TO Tariff, except that the CAISO shall charge for and collect the Low Voltage Access Charge of each Non-Load-Serving Participating TO that qualifies under this Section 26.1 and Appendix F, Schedule 3, Section

13, unless otherwise agreed by the affected Participating TOs. If a Participating TO that is also a UDC, MSS Operator, or Scheduling Coordinator serving End-Use Customers is using the Low Voltage Transmission Facilities of another Participating TO, such Participating TO shall also be assessed the Low Voltage Access Charge of the other Participating TO by such other Participating TO, or by the CAISO pursuant to Section 13 of Schedule 3 of Appendix F. The CAISO shall provide to the applicable Participating TO a statement of the amount of Energy delivered to each UDC and MSS Operator serving Gross Load that utilizes the Low Voltage Transmission Facilities of that Participating TO on a monthly basis. If a UDC or MSS Operator that is serving Gross Load in a PTO Service Territory has Existing Rights to use another Participating TO's Low Voltage Transmission Facilities, such entity shall not be charged the Low Voltage Access Charge for delivery of Energy to Gross Load for deliveries using the Existing Rights. Each Participating TO shall recover Standby Transmission Revenues directly from the Standby Service Customers of that Participating TO through its applicable retail rates.

Where a Non-Load-Serving Participating TO has Low Voltage Transmission Facilities, the CAISO shall assess the Low Voltage Access Charge for each project of that Non-Load-Serving Participating TO to the UDC or MSS Operator of each Participating TO that is directly connected to one or more Low Voltage Transmission Facilities of that project, unless otherwise agreed by the affected Participating TOs. The Non-Load-Serving Participating TO shall calculate separately its Low Voltage Transmission Revenue Requirement for each individual transmission project that includes one or more Low Voltage Transmission Facilities. If the Non-Load-Serving Participating TO's Low Voltage Transmission Facilities projects are directly connected to the facilities of the same Participating TO(s), the Low Voltage Access Charge shall be calculated for the group of Low Voltage Transmission Facilities. A separate Low Voltage Access Charge shall apply based on the Low Voltage Transmission Revenue Requirement for the relevant project or projects of such Non-Load-Serving Participating TO divided by the Gross Load of all UDCs or MSS Operators of a Participating TO that are directly connected to the relevant Low Voltage Transmission Facility or group of facilities.

A Non-Load-Serving Participating TO must include any over- or under-recovery of its annual Low Voltage Transmission Revenue Requirement for the relevant project or group of projects in its low voltage TRBA adjustment for its Low Voltage Access Charge for the relevant project or group of projects pursuant to Section 13.1 of Schedule 3 of Appendix F.

A Participating TO that is a UDC or MSS Operator to whom the Low Voltage Access Charge of a Non-Load-Serving Participating TO is assessed shall include these billed Low Voltage Access Charge amounts in its low voltage TRBA adjustment for its Low Voltage Access Charge, together with all other applicable low voltage TRBA adjustments.

#### **26.1.1 Publicly Owned Electric Utilities Access Charge.**

Local Publicly Owned Electric Utilities whose transmission facilities are under CAISO Operational Control shall file with the FERC their proposed High Voltage Transmission Revenue Requirements, and any proposed changes thereto, under procedures determined by the FERC to be applicable to such filings and shall give notice to the CAISO and to all Scheduling Coordinators of any such filing. A prospective New Participating TO that is a Local Publicly Owned Electric Utility shall submit its first proposed High Voltage Transmission Revenue Requirement to the FERC and the CAISO at the time the Local Publicly Owned Electric Utility submits its application to become a New Participating TO in accordance with the Transmission Control Agreement. Federal power marketing agencies whose transmission facilities are under CAISO Operational Control shall develop their High Voltage Transmission Revenue Requirement pursuant to applicable federal laws and regulations.

The procedures for public participation in a federal power marketing agency's ratemaking process are posted on the federal power marketing agency's website. Each federal power marketing agency shall also post on its website the Federal Register notices and FERC orders for rate making processes that impact the federal power marketing agency's High Voltage Transmission Revenue Requirement. At the time the federal power marketing agency submits its application to become a New Participating TO in accordance with the Transmission Control Agreement, it shall submit its first proposed High Voltage Transmission Revenue Requirement to the FERC and the CAISO.

**26.1.2 High Voltage Access Charge and Transition Charge Settlement.**

UDCs and MSS Operators serving Gross Load in a PTO Service Territory shall be charged on a monthly basis, in arrears, the applicable High Voltage Access Charge and Transition Charge. The High Voltage Access Charge and Transition Charge for a billing period is calculated by the CAISO as the product of the applicable High Voltage Access Charge or Transition Charge, as applicable, and Gross Load connected to the facilities of the UDC and MSS Operator in the PTO Service Territory. The High Voltage Access Charge and Transition Charge are determined in accordance with Schedule 3 of Appendix F. These rates may be adjusted from time to time in accordance with Schedule 3 of Appendix F. During the 10-year TAC Transition Period described in Section 4 of Schedule 3 of Appendix F, a UDC or MSS Operator that is also a Participating TO shall pay, or receive payment of, if applicable, the difference between (i) the High Voltage Access Charge and the Transition Charge applicable to its transactions as a UDC or MSS Operator; and (ii) the disbursement of High Voltage Access Charge revenues to which it is entitled pursuant to Section 26.1.3.

**26.1.3 Disbursement of High Voltage Access Charge and Transition Charge Revenues.**

The CAISO shall collect and pay, on a monthly basis, to Participating TOs all High Voltage Access Charge and Transition Charge revenues at the same time as other CAISO charges and payments are settled. High Voltage Access Charge revenues received with respect to the High Voltage Access Charge and the Transition Charge shall be distributed to Participating TOs in accordance with Appendix F, Schedule 3, Section 10.

**26.1.4 Wheeling.**

Any Scheduling Coordinator or other such entity submitting a Bid or Self-Schedule for a Wheeling transaction shall pay to the CAISO the product of (i) the applicable Wheeling Access Charge, and (ii) the total hourly Schedules and awards of Wheeling in kilowatt-hours for each month at each Scheduling Point associated with that transaction, except as provided in Section 4.1 of Appendix I (Station Power Protocol). Schedules and awards that include Wheeling transactions shall be subject to any charges resulting from the CAISO Markets in accordance with Section 27.

**26.1.4.1 Wheeling Access Charge.**

The Wheeling Access Charge shall be determined by the TAC Area and transmission ownership or Entitlement, less all Encumbrances, associated with the Scheduling Point at which the Energy exits the CAISO Controlled Grid. The Wheeling Access Charge for Scheduling Points contained within a single TAC Area, that are not joint facilities, shall be equal to the High Voltage Access Charge for the applicable TAC Area in accordance with Schedule 3 of Appendix F plus the applicable Low Voltage Access Charge if the Scheduling Point is on a Low Voltage Transmission Facility. Wheeling Access Charges shall not apply for Wheeling under a bundled non-economy Energy coordination agreement of a Participating TO executed prior to July 9, 1996.

**26.1.4.2 Wheeling Over Joint Facilities.**

To the extent that more than one Participating TO owns or has Entitlement to transmission capacity, less all Encumbrances, exiting the CAISO Controlled Grid at a Scheduling Point, the Scheduling Coordinator shall pay the CAISO each month a rate for Wheeling at that Scheduling Point which reflects an average of the Wheeling Access Charge applicable to those Participating TOs, weighted by the relative share of such ownership or Entitlement to transmission capacity, less all Encumbrances, at such Scheduling Point. If the Scheduling Point is located at High Voltage Transmission Facilities, the Wheeling Access Charge will consist of a High Voltage Wheeling Access Charge component. Additionally, if the Scheduling Point is located at Low Voltage Transmission Facilities, the applicable Low Voltage Wheeling Access Charge component will be added to the Wheeling Access Charge. The methodology for developing the weighted average rate for Wheeling at each Scheduling Point is set forth in Appendix F, Schedule 3, Section 14.4.

**26.1.4.3 Disbursement of Wheeling Revenues.**

The CAISO shall collect and pay to Participating TOs and other entities as provided in Section 24.7.3 all Wheeling revenues at the same time as other CAISO charges and payments are settled. For Wheeling revenues associated with CRRs allocated to Load Serving Entities outside the CAISO **Balancing Authority Area**, the CAISO shall pay to the Participating TOs and other entities as provided in Section 24.7.3 any

excess prepayment amounts within thirty (30) days of the end of the term of the CRR Allocation. The CAISO shall provide to the applicable Participating TO and other entities as provided in Section 24.7.3 a statement of the aggregate amount of Energy delivered to each Scheduling Coordinator using such Participating TO's Scheduling Point to allow for calculation of Wheeling revenue and auditing of disbursements. Wheeling revenues shall be disbursed by the CAISO based on the following:

**26.1.4.3.1 Scheduling Point with All Participating TOs in the Same TAC Area.**

With respect to revenues received for the payment of High Voltage Wheeling Access Charges for Wheeling to a Scheduling Point at which all of the facilities and Entitlements, less all Encumbrances, are owned by Participating TOs in the same TAC Area, Wheeling revenues shall be disbursed to each such Participating TO based on the ratio of each Participating TO's High Voltage Transmission Revenue Requirement to the sum of all such Participating TO's High Voltage Transmission Revenue Requirements. If the Scheduling Point is located at a Low Voltage **Transmission** Facility, revenues received with respect to Low Voltage Wheeling Access Charges for Wheeling to that Scheduling Point shall be disbursed to the Participating TOs that own facilities and Entitlements making up the Scheduling Point in proportion to their Low Voltage Transmission Revenue Requirements. Additionally, if a Participating TO has a transmission upgrade or addition that was funded by a Project Sponsor, the Wheeling revenue allocated to such Participating TO shall be disbursed as provided in Section 24.7.3.

**26.1.4.3.2 Scheduling Point without All Participating TOs in the Same TAC Area.**

With respect to revenues received for the payment of Wheeling Access Charges for Wheeling to a Scheduling Point at which the facilities and Entitlements, less all Encumbrances, are owned by Participating TOs in different TAC Areas, Wheeling revenues shall be disbursed to such Participating TOs as follows. First, the revenues shall be allocated between such TAC Areas in proportion to the ownership and Entitlements of transmission capacity, less all Encumbrances, at the Scheduling Point of the Participating TOs in each such TAC Area. Second, the revenues thus allocated to each TAC Area shall be disbursed among the Participating TOs in the TAC Area in accordance with Section 26.1.4.3.1.

**26.1.4.4 Information Required from Scheduling Coordinators.**

Scheduling Coordinators for Wheeling Out or Wheeling Through transactions to a Bulk Supply Point, or other point of interconnection between the CAISO Controlled Grid and the transmission system of a Non-Participating TO, that are located within the CAISO **Balancing Authority** Area, shall provide the CAISO, within five (5) days from the end of the calendar month to which the relevant Trading Day relates, details of such transactions (other than transactions submitted as Self-Schedules pursuant to Existing Contracts) sorted by Bulk Supply Point or point of interconnection for each Settlement Period (including kWh for each transaction). The CAISO shall use such information, which may be subject to review by the CAISO, to settle Wheeling Access Charges and payments. The CAISO shall publish a list of the Bulk Supply Points or interconnection points to which this Section 26.1.4.4 applies together with details of the electronic form and procedure to be used by Scheduling Coordinators to submit the required information on the CAISO Website.

**26.1.5 Unbundled Retail Transmission Rates.**

The Access Charge for unbundled retail transmission service provided to End-Users by a FERC-jurisdictional electric utility Participating TO shall be determined by the FERC and submitted to the CAISO for information only. For a Local Publicly Owned Electric Utility, retail transmission service rates shall be determined by the Local Regulatory Authority and submitted to the CAISO for information only.

**26.2 Tracking Account.**

If the Access Charge rate methodology implemented pursuant to Section 26.1 results in Access Charge rates for any Participating TO which are different from those in effect prior to the CAISO Operations Date, an amount equal to the difference between the new rates and the prior rates for the remainder of the period, if any, during which a cost recovery plan established pursuant to Section 368 of the California Public Utilities Code (as added by AB 1890) is in effect for such Participating TO shall be recorded in a tracking account. The balance of that tracking account will be recovered from customers and paid to the appropriate Participating TO after termination of the cost recovery plan set forth in Section 368 of

California Public Utilities Code (as added by AB 1890). The recovery and payments shall be based on an amortization period not exceeding three years in the case of electric corporations regulated by the CPUC or five years for Local Publicly Owned Electric Utilities.

**26.3                    Addition of New Facilities After CAISO Implementation.**

The costs of transmission facilities placed in service after the CAISO Operations Date shall be recovered consistent with the cost recovery determinations made pursuant to Appendix F, Schedule 3 and Section 24.7.3.

**26.4                    Effect on Tax-Exempt Status.**

Nothing in this Section 26 shall compel any Participating TO to violate any restrictions applicable to facilities financed with tax-exempt bonds or contractual restrictions and covenants regarding the use of transmission facilities.

**26.5                    Transition Mechanism.**

During the ten-year TAC Transition Period described in Section 4 of Schedule 3 of Appendix F, the Original Participating TOs collectively shall pay to the CAISO each year an amount equal to, annually, for all New Participating TOs, the amount, if any, by which the New Participating TO's cost of Existing High Voltage Facilities associated with Gross Loads in the PTO Service Territory of the New Participating TO is increased by the implementation of the High Voltage Access Charge described in Schedule 3 of Appendix F. Responsibility for such payments shall be allocated to Original Participating TOs in accordance with Schedule 3 of Appendix F. Amounts payable by Original Participating TOs under this section shall be recoverable as part of the Transition Charge calculated in accordance with Schedule 3 of Appendix F. Amounts received by the CAISO under this section shall be disbursed to New Participating TOs with Existing High Voltage Facilities based on the ratio of each New Participating TO's net increase in costs in the categories described in the first sentence of this section, to the sum of the net increases in such costs for all New Participating TOs with Existing High Voltage Facilities.



**26.6 Location Constrained Resource Interconnection Facilities.**

The costs of an LCRIF shall be includable in a Participating TO's High Voltage Transmission Revenue Requirement. Any Participating TO that owns an LCRIF shall set forth in its TO Tariff a charge payable by LCRIGs connected to that facility. The charge shall require each LCRIG to pay on a going forward basis its pro rata share of the Transmission Revenue Requirement associated with the LCRIF, which shall be calculated based on the maximum capacity of the LCRIG relative to the capacity of the LCRIF. Each Participating TO shall credit its High Voltage TRR with revenues received from LCRIGs with respect to such charges either by recording such revenues in its TRBA or through another mechanism approved by FERC.

**26.6.1 Location Constrained Resource Interconnection Facilities that Become Network Facilities.**

If the construction of a new transmission facility or upgrade causes an LCRIF to become a network facility, then, effective on the in-service date of such new transmission facility or upgrade, the LCRIGs connected to the LCRIF shall not be required to pay charges described in Section 26.6. The LCRIGs shall remain responsible for charges due prior to that date.

## **ARTICLE III – MARKET OPERATIONS**

### **27 CAISO MARKETS AND PROCESSES.**

In the Day-Ahead and Real-Time time frames the CAISO operates a series of procedures and markets that together comprise the CAISO Markets Processes. In the Day-Ahead time frame, the CAISO conducts the MPM-RRD, an Integrated Forward Market (IFM) and the Residual Unit Commitment (RUC) process. In the Real-Time time frame, the CAISO conducts the Market Power Mitigation and Reliability Requirement Determination, the Hour-Ahead Scheduling Process (HASP), the Short-Term Unit Commitment (STUC), the Real-Time Unit Commitment (RTUC) and the five-minute Real-Time Dispatch (RTD). The CAISO Markets Processes utilize transmission and Security Constrained Unit Commitment and dispatch algorithms in conjunction with a Full Network Model to optimally commit, schedule and Dispatch resources and determine marginal prices for Energy, Ancillary Services and RUC Capacity. Congestion Revenue Rights are available and entitle holders of such instruments to a stream of hourly payments or charges associated with revenue the CAISO collects or pays from the Marginal Cost of Congestion component of hourly Day-Ahead LMPs. Through the operation of the CAISO Markets Processes the CAISO develops Day-Ahead Schedules, Day-Ahead AS Awards and RUC Schedules, HASP Advisory Schedules, HASP Intertie Schedules and AS Awards, Real-Time AS Awards and Dispatch Instructions to ensure that sufficient supply resources are available in Real-Time to balance Supply and Demand and operate in accordance with Reliability Criteria.

#### **27.1 Locational Marginal Pricing.**

The CAISO Markets are based on Locational Marginal Prices as provided below and further provided in Appendix C.

##### **27.1.1 Locational Marginal Prices for Energy.**

The LMP for Energy at any PNode is the marginal cost of serving the next increment of Demand at that PNode consistent with existing transmission facility Constraints and the performance characteristics of resources. The LMPs calculated in the IFM, the HASP for Scheduling Points, and the RTD are based on

Energy Bid Curves. The LMP at any given PNode is comprised of three cost components: the System Marginal Energy Cost (SMEC); Marginal Cost of Losses (MCL); and Marginal Cost of Congestion (MCC). The IFM calculates LMPs for each Trading Hour of the next Trading Day. The HASP, which is an hourly run of the RTUC with the Time Horizon that starts at the beginning of the next Trading Hour, calculates fifteen-minute LMPs (HASP Intertie LMPs) for that Trading Hour. The simple average of the four fifteen-minute LMPs for the Trading Hour computed at each Scheduling Point produces hourly LMPs for HASP Settlement of Energy at that Scheduling Point. The Real-Time Dispatch runs every five (5) minutes throughout each Trading Hour and calculates five-minute LMPs for the next Dispatch Interval. The CAISO uses the Resource-Specific Settlement Interval LMPs for Settlements of the Real-Time Market.

#### **27.1.1.1 System Marginal Energy Cost.**

The System Marginal Energy Cost (SMEC) component of the LMP reflects the marginal cost of providing Energy from a designated reference Location. For this designated reference Location the CAISO will utilize a distributed Reference Bus whose constituent PNodes are weighted in pre-specified proportions referred to as Reference Bus distribution factors. The SMEC shall be the same throughout the system.

#### **27.1.1.2 Marginal Cost of Losses.**

For all PNodes and Aggregated PNodes in the CAISO Balancing Authority Area, including Scheduling Points, the use of the FNM in the DAM and the RTM processes incorporates Transmission Losses. At each PNode or Aggregated PNode, the Marginal Cost of Losses is the System Marginal Energy Cost multiplied by the Marginal Loss factor at that PNode or Aggregated PNode. The Marginal Cost of Losses at a Location (PNode or APNode) may be positive or negative depending on whether an increase in Demand at that Location marginally increases or decreases the cost of Transmission Losses, using the distributed Reference Bus to balance it. The Marginal Loss factors are determined through a process that calculates the sensitivities of Transmission Losses with respect to changes in injection at each Location in the FNM. For CAISO Controlled Grid facilities outside the CAISO Balancing Authority Area, the CAISO

shall assess the cost of Transmission Losses to Scheduling Coordinators using each such facility based on the quantity of losses agreed upon with the neighboring **Balancing Authority** multiplied by the LMP at the PNode of the **Transmission** Interface with the neighboring **Balancing Authority** Area. The MCLs calculated for Locations within the CAISO **Balancing Authority** Area shall not reflect the cost of **Transmission Losses** on those facilities.

#### **27.1.1.3 Marginal Cost of Congestion.**

The Marginal Cost of Congestion at a PNode reflects a linear combination of the **Shadow Prices** of all binding **Constraints** in the network, each multiplied by the corresponding Power Transfer Distribution Factor (PTDF). The Marginal Cost of Congestion may be positive or negative depending on whether a power injection (i.e., incremental Load increase) at that Location marginally increases or decreases Congestion.

#### **27.2 Load Aggregation Points (LAP).**

The CAISO shall create Load Aggregation Points and shall maintain Default LAPs at which all Demand shall Bid and be settled, except as provided in Sections **27.2.1** and **30.5.3.2**.

##### **27.2.1 Metered Subsystems.**

The CAISO shall define specific MSS LAPs for each MSS. The MSS LAP shall be made up of the PNodes within the MSS that have Load served off of those Nodes. The MSS LAPs have unique Load Distribution Factors that reflect the distribution of the MSS Demand to the network **Nodes** within the MSS. These MSS LAPs are separate from the Default LAPs, and the **Load Distribution Factors** of the Default LAP do not reflect any MSS Load. **As further provided in Sections 11.2.3 and 11.5, MSS Demand is settled either at the price at the Default LAP for MSS Operators that have selected gross Settlement or at the price at the applicable MSS LAP for MSS Operators that have selected net Settlement.**

##### **27.2.2 Determination of LAP Prices.**

**27.2.2.1 IFM LAP Prices.**

The IFM LAP Price for a given Trading Hour is the weighted average of the individual IFM LMPs at the PNodes within the LAP, with the weights equal to the nodal Demand associated with that LAP that is scheduled by the IFM. The weights used in calculating the Default LAP prices will equal the total Demand scheduled by the IFM in each Default LAP except for the Demand specified in Sections 27.2.1 and 30.5.3.2.

**27.2.2.2 Real-Time Market LAP Prices.**

The Hourly Real-Time LAP Price is computed as described in Section 11.5.2.2. The weights used for calculating the Hourly Real-Time LAP Price at the time the RTM runs will not exclude the Demand specified in Sections 27.2.1 and 30.5.3.2. The weights used for calculating Hourly Real-Time LAP Price used for Settlements will be calculated based on Meter Data and will appropriately exclude the Demand specified in Sections 27.2.1 and 30.5.3.2. Hourly Real-Time LAP Price are further adjusted for Settlements purposes as described in Section 11.5.2.2.

**27.3 Trading Hubs.**

The CAISO shall create and maintain Trading Hubs, including Existing Zone Generation Trading Hubs, to facilitate bilateral Energy transactions in the CAISO Balancing Authority Area. Each Trading Hub will be based on a pre-defined set of PNodes. The CAISO shall calculate Trading Hub prices for each Settlement Period or Settlement Interval based on an average of the LMPs at the PNodes that constitute the Trading Hub. There will be three Existing Zone Generation Trading Hubs, which correspond geographically to the three Existing Zones. Each Existing Zone Generation Trading Hub will be comprised of an aggregation of PNodes for Generating Units within the corresponding Existing Zone, whose associated LMPs will be used to establish an Existing Zone Generation Trading Hub price representing the weighted-average price paid to Generating Units in that Existing Zone. The weights applied to the constituent nodal LMPs in each Existing Zone will be determined annually and separately

for each season and on-peak and off-peak period based on the ratio of the prior year's total output of Energy at that PNode to the total Generation output in that Existing Zone, for the corresponding season and on-peak or off-peak period. The specification of seasons will be identical to the seasons used in the annual CRR Allocation, and the annual calculation of Existing Zone Generation Trading Hub weights will be performed in a timely manner to be coordinated with the annual CRR Allocation and CRR Auction processes.

## **27.4 Optimization in the CAISO Markets Processes.**

The CAISO runs the DAM, HASP and RTM and their component CAISO Markets Processes utilizing a set of integrated optimization programs, including SCUC and SCED.

### **27.4.1 Security Constrained Unit Commitment.**

The CAISO uses SCUC to run the MPM-RRD processes associated with the DAM and the HASP, the IFM, the RUC, the HASP, the STUC and the RTUC. SCUC uses a multi-interval Time Horizon to commit and schedule resources and to meet Demand for which Bids have been submitted and procure AS in the IFM, and to meet the CAISO Forecast of CAISO Demand in the MPM-RRD, RUC, HASP, STUC and RTUC. In the Day-Ahead MPM-RRD, IFM and RUC processes, the SCUC optimizes over the ~~twenty-four~~ (24) hourly intervals of the next Trading Day. In the RTUC, which runs every ~~fifteen~~ (15) minutes, the SCUC optimizes over from four to seven 15-minute intervals comprising a portion of the current or imminent Trading Hour and the entire subsequent Trading Hour. In the HASP, which is a special run of the RTUC that runs once per hour just before the top of the hour, and its associated MPM-RRD process, the SCUC optimizes over seven ~~(7)~~ 15-minute intervals comprising the last ~~forty-five~~ (45) minutes of the imminent Trading Hour and the entire subsequent Trading Hour. Following the HASP run of the RTUC, each of the next three runs of the RTUC successively drops one 15-minute interval from the front of the optimization Time Horizon. In the STUC, the SCUC optimizes over seventeen fifteen-minute intervals

comprising the last fifteen (15) minutes of the imminent Trading Hour and the entire next four Trading Hours. The CAISO will also utilize the SCUC algorithm on a two-day-ahead basis to commit Extremely Long Start Resources, for which commitment in the DAM does not provide sufficient time to Start-Up and be available to supply Energy during the next Trading Day as provided in Section 31.7.

#### **27.4.1.1 Timing of Unit Commitment Instructions.**

For the Time Horizon of any given CAISO Markets Process, the associated SCUC optimization will typically commit resources having different Start-Up Times, not all of which need to be started up immediately upon completion of that CAISO Markets Process. The CAISO may defer issuing a Start-Up Instruction to a resource that can be started at a later time and still be available to supply Energy at the time the CAISO Markets Process indicated it would be needed. The CAISO shall re-evaluate the need to commit such resources in a subsequent CAISO Markets Process based on the most recent forecasts and other information about system conditions.

#### **27.4.2 Security Constrained Economic Dispatch.**

SCED is the optimization engine used to run the RTD to determine the optimal five-minute Dispatch Instructions throughout the Trading Hour consistent with resource and transmission Constraints within the CAISO Balancing Authority Area. The SCED runs every five (5) minutes and utilizes a Time Horizon comprised of up to thirteen (13) five-minute intervals, but produces Dispatch Instructions only for the first five-minute interval of that Time Horizon. The SCED produces LMPs at each PNode that are used for Settlements as described in Section 11.5.

#### **27.5 Full Network Model.**

### **27.5.1 Description of FNM for CAISO Markets.**

The FNM is a representation of the CAISO **Balancing Authority** Area that enables the CAISO to conduct power flow analyses to identify transmission Constraints for the optimization of the CAISO Markets. External **Balancing Authority** Areas and external transmission systems are modeled to the extent necessary to support the commercial requirements of the CAISO Markets. External connections are retained between Intertie branches within Transmission Interfaces. Certain external loops are modeled, which allows the CAISO to increase the accuracy of the Congestion Management process. Resources are modeled at the appropriate network Nodes. The pricing Location (PNode) of a Generating Unit generally coincides with the Node where the relevant revenue quality meter is connected or corrected, to reflect the point at which the Generating Units are connected to the CAISO Controlled Grid. The Dispatch, Schedule and LMP of a Generating Unit refers to a PNode, but the Energy injection is modeled in the FNM for network analysis purposes at the corresponding Generating Unit(s) (at the physical interconnection point), taking into account any losses in the transmission network leading to the point where Energy is delivered to Demand. For the CAISO Markets Processes, the FNM incorporates Transmission Losses and models and enforces all network Constraints, which are reflected in the Day-Ahead Schedules, AS Awards and RUC Awards, HASP Intertie Schedules, Dispatch Instructions and the LMPs resulting from each CAISO Markets Process. For the HASP, STUC, RTUC and the RTD processes, the Real-Time power flow parameters developed from the State Estimator are applied to the FNM.

### **27.5.2 Metered Subsystems.**

The FNM includes a full model of MSS transmission networks used for power flow calculations and Congestion Management in the CAISO Markets Processes. Network Constraints (i.e. circuit ratings, thermal ratings, etc.) within the MSS, or at the its boundaries, shall be monitored but not enforced in the



CAISO's FNM. If overloads are observed in the forward markets, are internal to the MSS or at the MSS boundaries, and are attributable to MSS operations, the CAISO shall communicate such events to the Scheduling Coordinator for the MSS and coordinate any manual Re-dispatch required in Real-Time. If, independent of the CAISO, the Scheduling Coordinator for the MSS is unable to resolve Congestion internal to the MSS or at the MSS boundaries in Real-Time, the CAISO will use Exceptional Dispatch Instructions on resources that have been bid into the HASP and RTM to resolve the Congestion. The costs of such Exceptional Dispatch will be allocated to the responsible MSS Operator. Consistent with Section 4.9, the CAISO and MSS Operator shall develop specific procedures for each MSS to determine how network Constraints will be handled.

### **27.5.3      *Integrated Balancing Authority Areas.***

To the extent sufficient data is available or adequate estimates can be made for *an IBAA*, the FNM used by the CAISO for the CAISO Markets Processes *will include a model of the IBAA's network topology*. The CAISO monitors but does not enforce the network Constraints for *an IBAA* in running the CAISO Markets Processes *unless enforcement of such Constraints is allowed under a Market Efficiency Enhancement Agreement*. Similarly, the CAISO models the resistive component for transmission losses on *an IBAA* but does not allow such losses to determine LMPs *that apply for pricing transactions to and from an IBAA and the CAISO Balancing Authority Area, unless allowed under a Market Efficiency Enhancement Agreement*. As described in Section 27.5.3.4, for Bids and Schedules between the CAISO Balancing Authority Area and the IBAA, the CAISO will model the associated sources and sinks that are external to the CAISO Balancing Authority Area using individual or aggregated System Resource injections and withdrawals at locations in the FNM that allow the impact of such injections and withdrawals on the CAISO Balancing Authority Area to be reflected in the CAISO Markets Processes as accurately as possible given the information available to the CAISO.

**27.5.3.1 Currently Established Integrated Balancing Authority Areas.**

The FNM includes the established IBAA's listed below. Additional details regarding the modeling specifications for these IBAA's are provided in the Business Practice Manuals.

(1) The Sacramento Municipal Utility District (SMUD) IBAA including the transmission facilities of the following entities:

(a) Western Area Power Administration – Sierra Nevada Region

(b) Modesto Irrigation District

(c) City of Redding

(d) City of Roseville

(2) Turlock Irrigation District IBAA

**27.5.3.2 Process for Establishing a New Integrated Balancing Authority Area or Market Efficiency Enhancement Agreement or Modifying an Existing Integrated Balancing Authority Area or Market Efficiency Enhancement Agreement.**

Except under exigent circumstances, the CAISO must follow a consultative process with the applicable Balancing Authority and CAISO Market Participants pursuant to the process further defined in the Business Practice Manuals, to establish a new IBAA or enter into a new MEEA or modify an existing IBAA or MEEA. Changes to an existing IBAA may include changes to the modeling of the IBAA's network topology or to the specification of the default Resource IDs described in Section 27.5.3.4. Upon completion of this process and having determined it necessary to establish a new IBAA or enter into a new MEEA or modify an existing IBAA or MEEA, the CAISO will make any necessary filings with FERC to amend this CAISO Tariff and to submit for FERC acceptance any related MEEA as appropriate, at which time the CAISO shall also provide its supportive findings for the establishment of the new IBAA or execution of the new MEEA or modification to an existing IBAA or MEEA.

**27.5.3.3 Factors to Be Considered in Establishing a New Integrated Balancing Authority Area or Modifying an Existing Integrated Balancing Authority Area.**

*In establishing a new IBAA or modifying an existing IBAA, the factors that the CAISO will consider shall include, but are not limited to the following:*

- (1) The number of Interties between the IBAA and the CAISO Balancing Authority Area and the distance between them;*
- (2) Whether the transmission system(s) within the other Balancing Authority Area runs in parallel to major parts of the CAISO Controlled Grid;*
- (3) The frequency and magnitude of unscheduled power flows at applicable Interties;*
- (4) The number of hours where the actual direction of power flows was reversed from scheduled directions;*
- (5) The availability of information to the CAISO for modeling accuracy; and*
- (6) The estimated improvement to the CAISO's power flow modeling and Congestion Management processes to be achieved through more accurate modeling of the Balancing Authority Area.*

**27.5.3.4 Default Designation of External Resource Locations for Modeling Transactions Between the CAISO and an IBAA.**

*Prior to the establishment of a new IBAA or a change to an existing IBAA, the CAISO will define and publish default Resource IDs to be used for submitting import and export Bids and for settling import and export Schedules between the CAISO Balancing Authority Area and the IBAA. These default Resource IDs will specify in the Master File the default associations of Intertie Scheduling Point Bids and Schedules to supporting individual or aggregate System Resource injection or withdrawal locations in the FNM. The supporting injection and withdrawal locations will be determined by the CAISO to allow the impact of the associated Intertie Scheduling Point Bids and Schedules on the CAISO IBAA to be reflected in the CAISO Markets Processes as accurately as possible given the information available to the CAISO. The CAISO's methodology for determining such default Resource IDs, as well as the specific default Resource IDs that have been adopted for the currently established IBAA's, are provided in the Business Practice Manuals. Alternative Resource IDs to be used instead of the default Resource IDs may be created and adopted for use in conjunction with Intertie Scheduling Point Bids and Schedules between the CAISO Balancing Authority Area and the IBAA based on a Market Efficiency Enhancement Agreement.*

**27.5.4 Accounting for Changes in Topology in FNM.**

The CAISO will incorporate into the FNM information received pursuant to Section 24 for transmission expansion and Section 25 for generation interconnection to account for changes to the CAISO Controlled Grid and other facilities located within the CAISO **Balancing Authority** Area. This information will be incorporated into the network model data base in which the electrical network model is maintained for use by the State Estimator and which forms the basis for the FNM used by the CAISO Markets. The updated

power system network model will be transferred at periodic model update cycle intervals established by the CAISO and incorporated into the FNM for use in the CAISO Markets. The Business Practice Manual for managing the Full Network Model will describe the information to be provided by Market Participants, the process by which the CAISO incorporates this information in the FNM, and operational details of the FNM. If the CAISO becomes aware of a material error or omission in the FNM, it will make a timely correction of the FNM.

#### **27.5.5 Load Distribution Factors.**

The CAISO will maintain a library of system-wide Load Distribution Factors for use in distributing Demand scheduled at the Default LAPs. The system Load Distribution Factors are derived from the State Estimator and are stored in the Load Distribution Factor library, and are updated periodically. For IFM the Load Distribution Factor library uses a similar-day methodology for smoothing the most recent Load Distribution Factors. The similar-day methodology uses data separately for each type of day. More recent days are weighted more heavily in the smoothing calculations. The market application then uses the set of Load Distribution Factors from the library that best represents the Load distribution conditions expected for the market Time Horizon. For the RTM, the State Estimator solution is used as a source for determining Load Distribution Factors. The Load Distribution Factor are also maintained for use for Demand scheduled at Custom LAPs. These custom Load Distribution Factors are not generated from the State Estimator and are fixed quantities representing the characteristics of the Custom LAP.

#### **27.6 State Estimator.**

The State Estimator produces a power flow solution based upon the modeled representation of the electrical network and available Real-Time SCADA telemetry. When this solution is applied to the FNM, it provides a reference of system conditions for determining Dispatch Instructions. The State Estimator also provides a reference for Real-Time Load Distribution Factors used to distribute the Real-Time CAISO Forecast of CAISO Demand as well as provide a source of historical data for the LDF library. If the State

Estimator is not capable of providing CAISO with a solution to clear the CAISO Markets, the CAISO shall use the last best State Estimator solution for determining Dispatch Instructions, provided the State Estimator is not unavailable for an extended period. If the State Estimator is not available for an extended period of time, the CAISO shall use the Load Distribution Factors from the Load Distribution Factors library as applicable to the prevailing system and time of use conditions to determine Dispatch Instructions.

**27.7 Constrained Output Generators.**

**27.7.1 Start-Up and Minimum Load Costs and Energy Bids of Constrained Output Generators.**

COGs will be eligible to set LMPs in the IFM based on their Energy Bids, as set out in this Section 27.7.1. Before each calendar year, the COG must elect one of the methods described in Section 27.7.1.1 for specifying its Start-Up Costs and Minimum Load Costs, and must elect one of the methods described in Sections 27.7.1.2 and 27.7.1.3 for determining its Energy Bids.

**27.7.1.1 Start-Up and Minimum Load Cost Options.**

A COG may elect to recover Start-Up Costs and Minimum Load Costs through a cost-based option based on heat rate and fuel costs. Fuel costs are adjustable by the CAISO on a daily basis for gas fired resources, or are registered non-adjustable costs for other resources. Alternatively, a COG may elect to register in the Master File a six-month value of its own choosing that does not need to be cost-based and will not be adjusted for fuel cost changes.

**27.7.1.2 Energy Bids Calculated from Start-Up and Minimum Load Costs.**

Under both options for specifying Start-Up Costs and Minimum Load Costs described in Section 27.7.1.1, a COG's Energy Bid will be determined by dividing its Minimum Load Cost by the MW quantity of its PMin. Based on the assumption that its PMin equals its PMax, it will be eligible to set the LMP in the IFM and the RTD based on this Energy Bid.

**27.7.1.3 Eligibility to Submit Market-Based Energy Bids by Waiving COG Status.**

For the purposes of specifying an Energy Bid that is not based on its Minimum Load Cost, a COG may elect to be modeled with different PMin and PMax values if the physical characteristics of the resource support such differences. Under this election the COG's PMin must be greater than or equal to its PMax minus the maximum of **three (3) MW** or **five percent (5%)** of its PMax. Under this option, **if** the resource is capable of being **dispatched** at an operating point other than zero **(0)** or its PMax, the resource does not meet the definition of COG and the resource is treated in the CAISO Markets Processes like any other resource. Such a resource may submit a market Energy Bid for the MW difference between its PMin and PMax, and if scheduled or issued a CAISO Schedule or Dispatch Instruction in this range it would be subject to Local Market Power Mitigation, eligible to set the LMP and would receive any appropriate BCR like any other resource.

**27.7.2 Constrained Output Generators in the IFM.**

In the IFM, COGs that elect the option described in Section 27.7.1.2 are modeled as though they are not constrained and can operate flexibly between zero and their PMax, which equals their PMin. Such a COG is eligible to set IFM LMPs in any Settlement Period in which a portion of its output is needed as a flexible resource to serve Demand. Such a COG is not eligible for recovery of Minimum Load Costs or BCR in the IFM due to the conversion of its Minimum Load Cost to an Energy Bid and its treatment by the IFM as a flexible resource. Such a COG is eligible for Start-Up **Cost** recovery based on its Commitment Period as determined in the RUC, HASP, STUC or RTUC. COGs that elect the option described in Section 27.7.1.3 are treated in the IFM like other resources having Energy Bids for a flexible **Dispatch** range above their Minimum Load.

**27.7.3 Constrained Output Generators in RUC.**

In RUC, any COG that elects the option described in Section 27.7.1.2 and is offered in the IFM but not scheduled in the IFM is treated as constrained, so that the entire capacity of the COG is scheduled in RUC and not a portion thereof. Because PMin and PMax are equal for such a COG, and RUC Awards apply to scheduled capacity in RUC in excess of the higher of: (a) the relevant Day-Ahead Schedule; or

(b) the relevant Minimum Load, such a COG is not eligible to receive a RUC Award. COGs that elect the option described in Section 27.7.1.3 are treated in the RUC like other resources having Energy Bids for a flexible Dispatch range above their Minimum Load and may be eligible to receive a RUC Award in accordance with Section 31.5.

#### **27.7.4 Constrained Output Generators in the Real-Time Market.**

A COG that can be started up and complete its Minimum Run Time within a five-hour period can be committed by the STUC. A COG that can be started up within the Time Horizon of a RTUC run, which varies from 60 to 105 minutes, can be committed by the RTUC. If the resource elects the method described in Section 27.7.1.2 for determining its Energy Bid, no Energy Bid Curve can be submitted for the resource. In this case, in the RTD the CAISO will dispatch a COG up to its PMax or down to zero (0) to ensure a feasible Real-Time Dispatch. The COG is eligible to set the RTM LMP in any Dispatch Interval in which a portion of its output is needed to serve Demand, not taking into consideration its Minimum Run Time constraint. For the purpose of making this determination and setting the RTM LMP, the CAISO treats a COG as if it were flexible with an infinite Ramp Rate between zero (0) and its PMax, and uses the COG's Energy Bid as determined in Section 27.7.1.2. In any Dispatch Interval where none of the output of a COG is needed as a flexible resource to serve Demand, the CAISO shall not dispatch the unit. In circumstances in which the output of the COG is not needed as a flexible resource to serve Demand, but the unit nonetheless is online as a result of a previous commitment or Dispatch Instruction by the CAISO, the COG is eligible for Minimum Load Cost compensation. If the resource elects the method described in Section 27.7.1.3 for determining its Energy Bid, the RTM will treat it like any other resource that is flexible over a non-zero operating range.



## **28 INTER-SC TRADES**

### **28.1 INTER-SC TRADES OF ENERGY**

#### **28.1.1 Purpose.**

Scheduling Coordinators submit Inter-SC Trades of Energy consistent with the provisions in this Section 28.

#### **28.1.2 Availability of Inter-SC Trades of Energy.**

The CAISO allows Inter-SC Trades of Energy at individual PNodes of Generating Units within the CAISO **Balancing Authority** Area and at Aggregated Pricing Nodes. The CAISO does not allow Inter-SC Trades of Energy at Scheduling Points. The CAISO allows submission of Inter-SC Trades of Energy in the DAM and the HASP. Inter-SC Trades of Energy submitted for the DAM are settled at the applicable Aggregated Pricing Nodes or PNodes for Generating Units. Inter-SC Trades of Energy submitted in the HASP are settled hourly based on the simple average of the Dispatch Interval LMPs at the applicable Aggregated Pricing Nodes or PNodes of Generating Units in those hours.

#### **28.1.3 Submission of Inter-SC Trades of Energy.**

A Scheduling Coordinator may submit Inter-SC Trades of Energy that it intends to have settled based on DAM LMPs at any time during the Day-Ahead Inter-SC Trade Period and may submit Inter-SC Trades of Energy for a particular hour that it intends to have settled based on the simple average of the Dispatch Interval LMPs during that hour at any time during the HASP Inter-SC Trade Period.

#### **28.1.4 Information Requirements.**

An Inter-SC Trade of Energy must consist of trades from both Scheduling Coordinators and contain the following information: (i) the Scheduling Coordinator **ID Code (SCID) of the Scheduling Coordinator** from **which** the Energy is traded; (ii) the **SCID of the** Scheduling Coordinator to **which** the Energy is traded; (iii) the location of the Energy trade; (iv) the CAISO Market the trade is to be settled in; (v) the time period over which the bilateral Energy trade will take place, including the start-date and Trading Hour and the end-date and Trading Hour; and (vi) the quantity (MWh) of the Energy traded.

### **28.1.5 General Validation Rules for Inter-SC Trades.**

For all Inter-SC Trades of Energy the CAISO shall verify that the Scheduling Coordinators for the Inter-SC Trade of Energy mutually agree on the quantity, location, time period , and CAISO Market LMPs (DAM LMP or Dispatch Interval LMP) for settling the Inter-SC Trade of Energy. Any individual Inter-SC Trade of Energy that is deemed invalid by the CAISO due to inconsistencies between the trading Scheduling Coordinators on these terms will be rejected. The CAISO will notify trading Scheduling Coordinators within a reasonable time if their Inter-SC Trades of Energy fail these general validation rules as described in the Business Practice Manuals.

### **28.1.6 Validation Procedures for Physical Trades.**

All Inter-SC Trades at PNodes will be subject to validation procedures as specified in this Section. Physical Trades can occur at any individual Generating Unit's PNode provided the Physical Trade satisfies the CAISO's Physical Trades validation procedures described herein. The Scheduling Coordinators must demonstrate that the trade is supported (directly or through an Inter-SC Trade of Energy with another Scheduling Coordinator) by a Day-Ahead Schedule for a Generating Unit at the same location for the Inter-SC Trade of Energy at a level greater than or equal to the amount of the Inter-SC Trade of Energy. The CAISO's validation procedures for Physical Trades include three components: (1) Physical Trade submittal screening, (2) Physical Trade pre-market validation, and (3) Physical Trade post-market confirmation.

#### **28.1.6.1 Physical Trade Submittal Screening.**

The CAISO's Physical Trade validation procedures begin upon initial submission of a Physical Trade to the CAISO. The first stage of that process, Physical Trade submittal screening, validates that the submitted Physical Trade does not exceed the PMax of the identified Generating Unit. The CAISO will reject Physical Trades that exceed the PMax and notify the responsible Scheduling Coordinators.

### **28.1.6.2 Physical Trade Pre-Market Validation.**

The purpose of the pre-market validation is to determine whether the total MWh quantity of all submitted Physical Trades at a PNode of an individual Generating Unit exceeds the Generating Unit's Energy Bid MWh. Pre-market validation is performed on all Physical Trades that pass the submittal screening set forth in Section 28.1.6.1. Scheduling Coordinators are notified within a reasonable time of their Physical Trades status as the CAISO conducts the pre-market validation to indicate, at a minimum, whether the Physical Trade is currently "valid" or "invalid." These Physical Trade notices are preliminary and subject to change until the final pre-market validation at the close of the **HASP** Inter-SC Trade Period. A Physical Trade with a "valid" status may be rendered "invalid" due to the actions of the Scheduling Coordinators to that Physical Trade or by other trading activities that are linked to the Generating Unit identified for the relevant Physical Trade whenever the quantities specified in the relevant Inter-SC Trades cannot be supported by the underlying Generating Unit's Bid. Scheduling Coordinators can use these status notices to make modifications to complete or correct invalid Physical Trades. The CAISO performs a final pre-market validation at the close of the **HASP** Inter-SC Trade Period. Physical Trades that are individually valid are concatenated (daisy chained) with other supporting Physical Trades at the same PNode of the Generating Unit. Once that concatenation is complete, the CAISO will determine whether the concatenated Physical Trades are physically supported by either another Inter-SC Trade of Energy at that same location or the Bid submitted in the relevant CAISO Market for the Generating Unit identified for that Physical Trade, individually and in the aggregate. If a Physical Trade is not adequately physically supported, the quantities in the Physical Trades of that Scheduling Coordinator and its downstream trading counter-parties are reduced on a pro-rata basis until those Physical Trades are valid. In performing physical pre-market validation of Inter-SC Trades of Energy in **HASP**, the CAISO also

considers final Inter-SC Trades of Energy for the DAM in determining whether the HASP Physical Trades are physically supported individually or in the aggregate. Specifically, the CAISO determines whether the Generating Unit's submitted Bid in HASP is greater than or equal to the sum of: (1) final Day-Ahead Inter-SC Trades of Energy at that location and (2) the additional Inter-SC Trades of Energy for the HASP at that location. If the amounts are greater than the Generating Unit's submitted Bids in HASP, the CAISO will adjust down on a prorated basis the HASP Physical Trades. Final Day-Ahead Physical Trades are not adjusted in the HASP pre-market validation. The CAISO does not perform any Settlement on Physical Trade quantities (MWh) that are curtailed during Physical Trade pre-market validation.

#### **28.1.6.3 Physical Trade Post-Market Confirmation.**

The CAISO conducts post-market confirmation of Physical Trades that pass pre-market validation in Section 28.1.6.2 after the Market Clearing and the market results are posted to ensure that the Generating Unit has a Schedule that can support all of the Physical Trades. During the post-market confirmation process, the MWh quantity of Physical Trades that passed the CAISO's pre-market validation process may be reduced if the Generating Unit supporting the Physical Trades has a Schedule that is below the quantity of Physical Trades at that Location. The MWh quantities of Physical Trades that are reduced during the post-market confirmation process are settled at the Existing Zone Generation Trading Hub price for the Existing Zone associated with the Generating Unit identified in the Inter-SC Trade of Energy. The portion of Physical Trades that remains intact will be settled at the LMP for the identified PNode for the Generating Unit.

#### **28.1.6.4 Inter-SC Trades of Energy at Aggregated Pricing Nodes.**

Inter-SC Trades of Energy at Aggregated Pricing Nodes that are also defined Trading Hubs or Default LAPs are subject to the general validation procedures in Section 28.1.5 but are not subject to the three-stage physical validation procedures for Physical Trades described in Section 28.1.6 above.

## **28.2 Inter-SC Trades Of Ancillary Services.**

Inter-SC Trades of Ancillary Services enable a Scheduling Coordinator to transfer any fixed quantity of Ancillary Services (MW) to another Scheduling Coordinator. An Inter-SC Trade of AS shall consist of a quantity in MWs traded between two Scheduling Coordinators for a specific hour and for a specific Ancillary Service type. The Inter-SC Trade of AS is a financial trade. The CAISO shall charge and pay the two parties of the trade based on the quantity (MW) of the Ancillary Service Obligation traded times the user rate for the Ancillary Service trades for the Trading Hour. Scheduling Coordinators may submit Inter-SC Trades of Ancillary Services for Regulation Up, Regulation Down, Spinning and Non-Spinning Reserves.

### **28.2.1 Information Requirements.**

An Inter-SC Trade of Ancillary Services shall contain the following information: (i) the Scheduling Coordinator **ID Code (SCID)** for the Scheduling Coordinator from whom the MW amounts of Ancillary Service is traded; (ii) the **SCID** for the Scheduling Coordinator to whom the MW amounts of AS is traded; (iii) the type of AS being traded; (iv) the time period over which the trade will take place, including the start-date and time and the end-date and time; and the (v) quantity (MW) of the AS to be traded.

### **28.2.2 Validation.**

The CAISO's validation of Inter-SC Trades of AS will begin upon submission of an Inter-SC Trade of AS. The CAISO shall conduct a final validation for Inter-SC Trades of AS at the end of the HASP Inter-SC Trade Period. The CAISO will validate each submitted Inter-SC Trade of AS to verify that the contents of the submission match the submittal by the counter-party Scheduling Coordinator by type (Regulation Up, Regulation Down, Spinning Reserve and Non-Spinning Reserve), quantity (MW), and time period. The CAISO will inform the submitting Scheduling Coordinators regarding the validity of a submitted trade of an AS and will allow the Scheduling Coordinator to resubmit the entire Inter-SC Trade of AS if it is not accepted. If only one of the two Scheduling Coordinators successfully submits an Inter-SC Trade of AS,

the CAISO will notify both Scheduling Coordinators that the Inter-SC Trade of AS for the specific hour does not match the corresponding Inter-SC Trade of AS. If both Scheduling Coordinators successfully submit the Inter-SC Trade of AS, the CAISO will notify the Scheduling Coordinators that their Inter-SC Trade of AS for the specific hour has been accepted. An Inter-SC Trade of Ancillary Services submitted at a later time, but before the deadline for the submission of the trade for the Trading Hour, renders a previously submitted Inter-SC Trade of AS invalid if it applies to the same hour, same type of AS, and the same Scheduling Coordinators to whom and from whom the AS is traded.

### **28.2.3 Submission of Inter-SC Trades of Ancillary Services.**

Scheduling Coordinators may submit Inter-SC Trades of Ancillary Services at any time during the HASP Inter-SC Trade Period.

### **28.3 Inter-SC Trades Of IFM Load Uplift Obligation.**

Scheduling Coordinators may submit system-wide Inter-SC Trades of IFM Load Uplift Obligations from within the CAISO Balancing Authority Area. Inter-SC Trades of IFM Load Uplift Obligations enable a Scheduling Coordinator to transfer any amount of net IFM Load Uplift Obligation (MW) to another Scheduling Coordinator. An Inter-SC Trade of IFM Load Uplift Obligation shall consist of a quantity in MWs traded between two Scheduling Coordinators for a specific Trading Hour of the IFM.

#### **28.3.1 Information Requirements.**

An Inter-SC Trade of IFM Load Uplift Obligation shall contain the following information: (i) the Scheduling Coordinator identification for the Scheduling Coordinator from whom the MW amounts of IFM Load Uplift Obligation is traded; (ii) the Scheduling Coordinator identification for the Scheduling Coordinator to whom the MW amounts of IFM Load Uplift Obligation is traded; (iii) the applicable Location of the Inter-SC Trade of IFM Load Uplift Obligation; (iv) the time period over which the trade will take place, including the start-date and time and the end-date and time; and (v) the quantity (MW) of the IFM Load Uplift Obligation to be traded.

### **28.3.2 Validation.**

The CAISO's validation of Inter-SC Trades of IFM Load Uplift Obligations will begin upon submission of an Inter-SC Trade of IFM Load Uplift Obligation. The CAISO shall conduct a final validation for Inter-SC Trades of IFM Load Uplift Obligations at the end of the HASP Inter-SC Trade Period. The CAISO will validate each submitted Inter-SC Trade of IFM Load Uplift Obligation to verify that the contents of the submission match the submittal by the counter-party Scheduling Coordinator in terms of quantity (MW), and time period. The CAISO will inform the submitting Scheduling Coordinators regarding the validity of a submitted Inter-SC Trade of IFM Load Uplift Obligation and will allow the Scheduling Coordinator to resubmit the entire Inter-SC Trade of IFM Load Uplift Obligation if it is not accepted. If only one of the two Scheduling Coordinators successfully submits an Inter-SC Trade of IFM Load Uplift Obligation, the CAISO will notify both Scheduling Coordinators that the Inter-SC Trade of IFM Load Uplift Obligation for the specific hour does not match the corresponding Inter-SC Trade of IFM Load Uplift Obligation. If both Scheduling Coordinators successfully submit the Inter-SC Trade of IFM Load Uplift Obligation, the CAISO will notify the Scheduling Coordinators that their Inter-SC Trade of IFM Load Uplift Obligations for the specific hour has been accepted. The CAISO will verify that an Inter-SC Trade of IFM Load Uplift Obligation is between different Scheduling Coordinators that are authorized to participate in the CAISO Markets during the time period covered by the trade and that the Trading Hour and the quantity of the trade must be greater than or equal to zero. An Inter-SC Trade of IFM Load Uplift Obligation submitted at a later time renders a previously submitted Inter-SC Trade of IFM Load Uplift Obligation invalid if it applies to the same hour and the same Scheduling Coordinators to whom and from whom the net IFM Load Uplift Obligation is traded.

### **28.3.3 Submission of Inter-SC Trades of IFM Load Uplift Obligation.**

Scheduling Coordinators may submit Inter-SC Trades of IFM Load Uplift Obligations at any time during the HASP Inter-SC Trade Period.

**29**

**[NOT USED]**

**[Ten Sheet Numbers Reserved for Future Filings]**



### **30. BIDS, INCLUDING SELF-SCHEDULES, SUBMISSION FOR ALL CAISO MARKETS**

#### **30.1 Bids, Including Self-Schedules.**

Scheduling Coordinators shall submit Bids to participate in the CAISO Markets, as well as any Self-Schedules, ETC Self-Schedules, TOR Self-Schedules, or Self-Provided Ancillary Services. Bidding rules for each type of resource are contained in this Section 30 and additional specifications regarding bidding practices are contained in the Business Practice Manuals posted on the CAISO Website. Bids will consist of various components described in this Section 30 through which the Scheduling Coordinator provides information regarding the parameters and conditions pursuant to which the Bid may be optimized by the CAISO Markets.

##### **30.1.1 Day-Ahead Market.**

Bids submitted in the DAM apply to the twenty-four (24) hours of the next Trading Day (23 or 25 hours on the Daylight Savings transition days) and are used in both the IFM and RUC. Bids for the Regulation Up, Regulation Down, Spinning Reserve, and Non-Spinning Reserve service in the Day-Ahead Market must be received by Market Close for the Day-Ahead Market. The Bids shall include information for each of the twenty-four (24) Settlement Periods of the Trading Day. Failure to provide the information within the stated time frame shall result in the Bids being declared invalid by the CAISO. Scheduling Coordinators may submit Bids for the DAM as early as seven (7) days ahead of the targeted Trading Day.

##### **30.1.2 HASP and Real-Time Market.**

Bids submitted in the HASP apply to a single Trading Hour and are used in the HASP and the RTM. The CAISO will require Scheduling Coordinators to honor their Day-Ahead Ancillary Services Awards when submitting Ancillary Services Bids in the HASP. Bids for Regulation Up, Regulation Down, Spinning Reserve, and Non-Spinning Reserve service for each Settlement Period must be received at least seventy-five minutes prior to the commencement of that Settlement Period. The Bids shall include information for only the relevant Settlement Period. Failure to provide the information within the stated time frame shall result in the Bids being declared invalid by the CAISO.

### **30.2 Bid Types.**

There are three types of Bids: Energy Bids, Ancillary Services Bids, and RUC Availability Bids. Each Bid type can be submitted as either an Economic Bid or a Self-Schedule (except for RUC Availability Bids, which cannot be self-scheduled). Economic Bids specify prices for MW amounts of capacity or MWh amounts of Energy. Self-Schedules do not have any prices associated for MW or MWh. Energy Bids, including both Economic Bids and Self-Schedules, may be either Supply Bids or Demand Bids. Ancillary Services Bids and RUC Availability Bids are Supply Bids only. Ancillary Services may be self-provided by providing a Submission to Self-Provide an Ancillary Service and having that submission accepted by the CAISO. Rules for submitting the three types of Bids vary by the type of resource to which the Bid applies as described in Section 30.5 and as further required in each CAISO Markets process as specified in Sections 31, 33, and 34.

### **30.3 [NOT USED]**

### **30.4 Election for Start-Up Costs and Minimum Load Costs.**

Scheduling Coordinators for Generating Units and Resource-Specific System Resources may elect on a semi-annual basis either of the two options provided below (the Proxy Cost option or the Registered Cost option) for specifying their Start-Up Costs and Minimum Load Costs to be used for those resources in the CAISO Markets Processes. Unless the Scheduling Coordinator has registered Start-Up Costs and Minimum Load Costs in the Master File in accordance with the Registered Cost option, the CAISO will assume the Proxy Cost option as the default option.

- (1) **Proxy Cost Option.** For natural gas fired resources, the Proxy Cost option uses fuel-cost adjusted formulas for Start-Up Costs and Minimum Load Costs based on the resource's actual unit-specific performance parameters. The Start-Up Costs and Minimum Load Costs values utilized in the CAISO Markets Processes will be these formulaic values adjusted for fuel-cost variation on a daily basis as calculated pursuant to a Business Practice Manual. For all other resources, this

*option shall be based on the relevant cost information of the particular resource, which will be provided to the CAISO by the Scheduling Coordinator and maintained in the Master File.* In the event that the Scheduling Coordinator for a unit does not provide sufficient data for the CAISO to determine the unit's Proxy Costs, the CAISO will assume that the unit's Start-Up Costs and Minimum Load Costs are zero.

- (2) **Registered Cost Option.** Under *the Registered Cost* option, the Scheduling Coordinator may *register* values of its choosing for Start-Up Costs and Minimum Load Costs *in the Master File subject to the maximum limit specified in Section 39.6.1.6. For a resource to be eligible for the Registered Cost option there must be sufficient information in the Master File to calculate the Proxy Cost option.* The Start-Up Cost and Minimum Load Cost values utilized in the CAISO Markets Processes will be these pre-specified values and will be fixed for six months in the Master File *unless the resource's costs, as calculated pursuant to the Proxy Cost option, exceed the Registered Cost option, in which case the Scheduling Coordinator may elect to switch to the Proxy Cost option for the balance of the six-month period.*

### **30.5 Bidding Rules.**

#### **30.5.1 General Bidding Rules.**

- (a) All Energy and Ancillary Services Bids of each Scheduling Coordinator submitted to the DAM for the following Trading Day shall be submitted at or prior to 10:00 a.m. on the day preceding the Trading Day, but no sooner than *seven (7)* days prior to the Trading Day. All Energy and Ancillary Services Bids of each Scheduling Coordinator submitted to the HASP for the following Trading Day shall be

submitted starting from the time of publication, at 1:00 p.m. on the day preceding the Trading Day, of DAM results for the Trading Day, and ending seventy-five (75) minutes prior to each applicable Trading Hour in the RTM. The CAISO will not accept any Energy or Ancillary Services Bids for the following Trading Day between 10:00 a.m. on the day preceding the Trading Day and the publication, at 1:00 p.m. on the day preceding the Trading Day, of DAM results for the Trading Day;

- (b) Bid prices submitted by a Scheduling Coordinator for Energy accepted and cleared in the IFM and scheduled in the Day-Ahead Schedule *may be increased or decreased in the HASP*. Bid prices for Energy submitted but not scheduled in the Day-Ahead Schedule may be increased or decreased in the HASP. Incremental Bid prices for Energy associated with Day-Ahead AS or RUC Awards in Bids submitted to the HASP may be revised. Scheduling Coordinators may revise ETC Self-Schedules for Supply only in the HASP to the extent such a change is consistent with TRTC Instructions provided to the CAISO by the Participating TO in accordance with Section 16. Scheduling Coordinators may revise TOR Self-Schedules for Supply only in the HASP to the extent such a change is consistent with TRTC Instructions provided to the CAISO by the Non-Participating TO in accordance with Section 17. Energy associated with awarded Ancillary Services capacity cannot be offered in the HASP or Real-Time Market separate and apart from the awarded Ancillary Services capacity;
- (c) Scheduling Coordinators may submit Energy, AS and RUC Bids in the DAM that are different for each Trading Hour of the Trading Day;

- (d) Bids for Energy or capacity that are submitted to one CAISO Market, but are not accepted in that market are no longer a binding commitment and Scheduling Coordinators may submit Bids in a subsequent CAISO Market at a different price; and
- (e) The CAISO shall be entitled to take all reasonable measures to verify that Scheduling Coordinators meet the technical and financial criteria set forth in Section 4.5.1 and the accuracy of information submitted to the CAISO pursuant to this Section 30.

### **30.5.2 Supply Bids.**

#### **30.5.2.1 Common Elements for Supply Bids.**

In addition to the resource-specific Bid requirements of this Section, all Supply Bids must contain the following components: Scheduling Coordinator ID Code; Resource ID; Resource Location; PNode or Aggregated Pricing Node as applicable; Energy Bid Curve; Self-Schedule component; Ancillary Services Bid; RUC Availability Bid; the Market to which the Bid applies; Trading Day to which the Bid applies; Priority Type (if any). Supply Bids offered in the CAISO Markets must be monotonically increasing. Energy Bids in the RTM must also contain a Bid for Ancillary Services to the extent the resource is certified and capable of providing Ancillary Service in the RTM up to the registered certified capacity for that Ancillary Service less any Day-Ahead Ancillary Services Awards.

#### **30.5.2.2 Supply Bids for Participating Generators.**

In addition to the common elements listed in Section 30.5.2.1, Supply Bids for Participating Generators shall contain the following components: Start-Up Bid, Minimum Load Bid, Ramp Rate, Minimum and Maximum Operating Limits; Energy Limit, Regulatory Must-Take/Must-Run Generation; Contingency Flag; and Contract Reference Number (if any). Supply Bids for Physical Scheduling Plants and System

Units must include the Generation Distribution Factors. If the Scheduling Coordinator has not submitted the Generation Distribution Factors applicable for the Bid, the CAISO will use default Generation Distribution Factors. All Generation Distribution Factors used by the CAISO will be normalized based on Outage data that is available to the automated market systems. Combined-cycle Generating Units may only be registered under a single Resource ID.

### **30.5.2.3      Supply Bids for Participating Loads, Including Pumped-Storage Hydro Units and Aggregated Participating Loads.**

In addition to the common elements listed in Section 30.5.2.1, Scheduling Coordinators submitting Supply Bids for Participating Loads, which includes Pumping Load or Pumped-Storage Hydro Units, may include the following components: Pumping Load (MW), Minimum Load Bid (Generation mode only of a Pumped-Storage Hydro Unit), Load Distribution Factor, Ramp Rate, Energy Limit (Generation mode only of a Pumped-Storage Hydro Unit), Pumping Cost, and Pump Shut-Down Costs. If no values for Pumping Cost or Pump Shut-Down Costs are submitted, the CAISO will generate these Bid components based on values in the Master File. Scheduling Coordinators may only submit Supply Bids for Aggregated Participating Loads by using a Generating Unit or Physical Scheduling Plant Resource ID for the Demand reduction capacity represented by the Aggregated Participating Load as set forth in a Business Practice Manual. The CAISO will use Generation Distribution Factors provided by the Scheduling Coordinator for the Aggregated Participating Load.

### **30.5.2.4      Supply Bids for System Resources.**

In addition to the common elements listed in Section 30.5.2.1, Supply Bids for System Resources shall also contain: the relevant Ramp Rate; Start-Up Costs; and Minimum Load Costs. Resource-Specific System Resources may elect the Proxy Cost option or Registered Cost option for Start-Up Costs and Minimum Load Costs as provided in Section 30.4. Other System Resources are not eligible to recover Start-Up Costs and Minimum Load Costs. Resource-Specific System Resources are eligible to

participate in the Day-Ahead Market on an equivalent basis as Generating Units and are not obligated to participate in RUC or the RTM if the resource did not receive a Day-Ahead Schedule unless the resource is a Resource Adequacy Resource. If the Resource-Specific System Resource is a Resource Adequacy Resource, the Scheduling Coordinator for the resource is obligated to make it available to the CAISO Market as prescribed by Section 40.6. Dynamic Resource-Specific System Resources are also eligible to participate in the HASP and RTM on an equivalent basis as Generating Units. Non-Dynamic Resource-Specific System Resources will be treated like other System Resources in the HASP and RTM. The quantity (in MWh) of Energy categorized as Interruptible Imports (non-firm imports) can only be submitted through Self-Schedules in the Day-Ahead Market and cannot be incrementally increased in the HASP or RTM. Bids submitted to the Day-Ahead Market for ELS Resources will be applicable for two days after they have been submitted and cannot be changed the day after they have been submitted.

#### **30.5.2.4.1 Intertie Block Bids.**

Intertie Block Bids must contain the same energy Bid price for all hours of the period for which the Intertie Block Bid is submitted. Intertie Block Bids may only be submitted in the DAM.

#### **30.5.2.5 Supply Bids for Metered Subsystems.**

Consistent with the bidding rules specified in this Section 30.5, Scheduling Coordinators that represent MSS Operators may submit Bids for Energy and Ancillary Services, including Self-Schedules and Submissions to Self-Provide an Ancillary Service, to the DAM. All Bids to supply Energy by MSS Operators must identify each Generating Unit on an individual unit basis. The CAISO will not accept aggregated Generation Bids without complying with the requirements of Section 4.9.12 of the CAISO Tariff. All Scheduling Coordinators that represent MSS Operators must submit Demand Bids at the relevant MSS LAP. Scheduling Coordinators that represent MSS Operators must comply with Section 4.9 of the CAISO Tariff. Scheduling Coordinators that represent MSS Operators that have opted out of RUC participation pursuant to Section 31.5 must Self-Schedule one hundred percent (100%) of the Demand

Forecast for the MSS. For an MSS that elects Load following, the MSS Operator shall also self-schedule or bid Supply to match the Demand Forecast. All Bids for MSSs must identify each Generating Unit on an individual unit basis or a System Unit. For an MSS that elects Load following consistent with Section 4.9.13.2, the Scheduling Coordinator for the MSS Operator must include the following additional information with its Bids: the Generating Unit(s) that are Load following; the range of the Generating Unit(s) being reserved for Load following; whether the quantity of Load following capacity is either up or down; and, if there are multiple Generating Units in the MSS, the priority list or distribution factors among the Generating Units. The CAISO will not dispatch the resource within the range declared as Load following capacity, leaving that capacity entirely available for the MSS to dispatch. The CAISO uses this information in the IFM runs and the RUC to simulate MSS Load following. The Scheduling Coordinator for the MSS Operator may change these characteristics through the Bid submission process in the HASP. If the Load following resource is also an RMR Unit, the MSS Operator must not specify the Maximum Net Dependable Capacity specified in the RMR Contract as Load following up or down capacity to allow the CAISO to access such capacity for RMR Dispatch.

#### **30.5.2.6 Ancillary Services Bids.**

There are four distinct Ancillary Services: Regulation Up, Regulation Down, Spinning Reserve and Non-Spinning Reserve. Participating Generators are eligible to provide all Ancillary Services. Dynamic System Resources are eligible to provide Operating Reserves and Regulation. Non-Dynamic System Resources are eligible to provide Operating Reserves only. No System Resource, including Dynamic Resource-Specific System Resources and Non-Dynamic Resource-Specific System Resources, can be used for self-provision of Ancillary Services. All System Resources, including Dynamic Resource-Specific System Resources and Non-Dynamic Resource-Specific System Resources, will be charged the Shadow Price as prescribed in Section 11.10. Participating Loads are eligible to provide Non-Spinning Reserve only. A Scheduling Coordinator may submit Ancillary Services Bids for Regulation Up, Regulation Down, Spinning Reserve, and Non-Spinning Reserve for the same capacity by providing a separate price in



\$/MW per hour as desired for each Ancillary Service. The Bid for each Ancillary Services is a single Bid segment. Only resources certified by the CAISO as capable of providing Ancillary Services are eligible to provide Ancillary Services. In addition to the common elements listed in Section 30.5.2.1, all Ancillary Services Bid components of a Supply Bid must contain the following: (1) the type of Ancillary Service for which a Bid is being submitted; (2) Ramp Rate (Operating Reserve Ramp Rate and regulating Ramp Rate, if applicable); (3) Distribution Curve for Physical Scheduling Plant or System Unit; and (4) Maximum Operating Limit (MOLmax) and Minimum Operating Limit (MOLmin). An Ancillary Services Bid submitted to the Day-Ahead Market when submitted to the Day-Ahead Market may be, but is not required to be, accompanied by an Energy Bid that covers the capacity offered for the Ancillary Service. Submissions to Self-Provide an Ancillary Services submitted to the Day-Ahead Market when submitted to the Day-Ahead Market may be, but are not required to be, accompanied by an Energy Bid that covers the capacity to be self-provided; provided, however, that such an Energy Bid shall be submitted prior to the close of the Real-Time Market for the day immediately following the Day-Ahead Market in which the Ancillary Service Bid was submitted if the Submission to Self-Provide an Ancillary Service is qualified as specified in Section 8.6. Submissions to Self-Provide an Ancillary Services submitted in the Day-Ahead Market must be accompanied by a Self-Schedule. When submitting Ancillary Service Bids in the Real-Time, Scheduling Coordinators for resources that either have been awarded or self-provide Spinning Reserve or Non-Spinning Reserve capacity in the Day-Ahead Market must submit an Energy Bid for at least the awarded or self-provided Spinning Reserve or Non-Spinning Reserve capacity, otherwise the CAISO will apply the Bid validation rules described in Section 30.9. As provided in Section 30.5.2.6.4, a Submission to Self-Provide an Ancillary Service shall contain all of the requirements of a Bid for Ancillary Services with the exception of Ancillary Service Bid price information. In addition, Scheduling Coordinators must comply with the Ancillary Services requirements of Section 8.

**30.5.2.6.1 Regulation Up or Regulation Down Bid Information.**

In the case of Regulation Up or Regulation Down, the Ancillary Services Bid must also contain: (a) the upward and downward range of generating capacity over which the resource is willing to provide Regulation within a range from a minimum of ten (10) minutes to a maximum of thirty (30) minutes; and (b) the Bid price of the capacity reservation, stated separately for Regulation Up and Regulation Down (\$/MW). In the case of Regulation Up or Regulation Down from Dynamic System Resources, the Ancillary Services Bid must also contain: (a) the Scheduling Point (the name), (b) Interchange ID code of the selling entity, (c) external Control Area ID, (d) Schedule ID (NERC ID number), and (e) the Contract Reference Number, if applicable. Ancillary Services Bids submitted to the Real-Time Market for Regulation need not be accompanied by an Energy Bid that covers the Ancillary Services capacity being offered into the Real-Time Market.

**30.5.2.6.2 Spinning Reserve Capacity Bid Information.**

In the case of Spinning Reserve capacity, the Ancillary Services Bid must also contain: (a) MW of additional capability synchronized to the system, immediately responsive to system frequency, and available within ten (10) minutes; (b) Bid price of capacity reservation, and (c) an indication whether the capacity reserved would be available to supply Imbalance Energy only in the event of the occurrence of an unplanned Outage, a Contingency or an imminent or actual System Emergency (Contingency Flag). In the case of Spinning Reserve capacity from System Resources, the Ancillary Services Bid must also contain: (a) Interchange ID code of the selling entity, (b) Schedule ID (NERC ID number, and (c) a Contract Reference Number, if applicable. Ancillary Services Bids and Submissions to Self-Provide an Ancillary Services submitted to the Real-Time Market for Spinning Reserves must also submit an Energy Bid that covers the Ancillary Services capacity being offered into the Real-Time Market.

### **30.5.2.6.3 Non-Spinning Reserve Capacity.**

In the case of Non-Spinning Reserve, the Ancillary Service Bid must also contain: (a) the MW capability available within **ten (10) minutes**; (b) the Bid price of the capacity reservation; (c) time of synchronization following notification (**minutes**); and (d) an indication whether the capacity reserved would be available to supply Imbalance Energy only in the event of the occurrence of an unplanned Outage, a Contingency or an imminent or actual System Emergency (Contingency Flag). In the case of Non-Spinning Reserve Capacity from System Resources, the Ancillary Services Bid must also contain: (a) Interchange ID code of the selling entity, (b) Schedule ID (NERC ID number); and (c) a Contract Reference Number, if applicable. In the case of Non-Spinning Reserve Capacity from Participating Load within the CAISO Control Area, the Ancillary Service Bid must also contain: (a) a Load identification name and Location Code, (b) Demand reduction available within ten (10) minutes, (c) time to interruption following notification (**minutes**), and (d) maximum allowable curtailment duration (**hour**). In the case of **Aggregated Participating Load**, Scheduling Coordinators must submit Bids using a Generating Unit or Physical Scheduling Plant Resource ID **for the Demand reduction capacity of the Aggregated Participating Load through a Bid to provide Non-Spinning Reserve or a Submission to Self-Provide an Ancillary Service for Non-Spinning Reserve.** Ancillary Services Bids and Submissions to Self-Provide an Ancillary Services submitted to the Real-Time Market for Non-Spinning Reserves must also submit an Energy Bid that covers the Ancillary Services capacity being offered into the Real-Time Market.

### **30.5.2.6.4 Additional Rules For Self-Provided Ancillary Services.**

Scheduling Coordinators electing to self-provide Ancillary Services shall supply the information referred to in this Section 30.5 in relation to each Ancillary Service to be self-provided, excluding the capacity price information, but including the name of the trading Scheduling Coordinator in the case of Inter-Scheduling Coordinator Ancillary Service Trades. The portion of the single Energy Bid that corresponds to the high end of the resource's operating range, shall be allocated to any awarded or **Self-Provided Ancillary**

Services in the following order from higher to lower capacity: (a) Regulation Up; (b) Spinning Reserve; and (c) Non-Spinning Reserve. For resources providing Regulation Up, the upper regulating limit shall be used if it is lower than the highest operating limit. The remaining portion of the Energy Bid (i.e. that portion not associated with capacity committed to provide Ancillary Services) shall constitute a Bid to provide Energy.

### **30.5.2.7 RUC Availability Bids.**

Scheduling Coordinators may submit RUC Availability Bids for specific Generating Units in the DAM; *however, Scheduling Coordinators for Resource Adequacy Capacity or ICPM Capacity must submit RUC Availability Bids for that capacity to the extent that the capacity has not been submitted in a Self-Schedule or already been committed to provide Energy or capacity in the IFM. Capacity* that does not have Bids for Supply of Energy in the IFM will not be eligible to participate in the RUC process. The RUC Availability Bid component is MW-quantity of non-Resource Adequacy Capacity in \$/MW per hour, and \$0/MW for Resource Adequacy Capacity *or ICPM Capacity*.

### **30.5.3 Demand Bids.**

Each Scheduling Coordinator representing Demand, *including Non-Participating Load and Aggregated Participating Load*, shall submit Bids indicating the hourly quantity of Energy in MWh that it intends to purchase in the IFM for each Trading Hour of the Trading Day. Scheduling Coordinators must submit Demand Bids, including Self Schedules, for CAISO Demand at Load Aggregation Points except as provided in Section 30.5.3.2. Scheduling Coordinators must submit a zero RUC Availability Bid for the portion of their qualified Resource Adequacy Capacity. If submitting Self-Schedules at Scheduling Points for export in the IFM, the Scheduling Coordinator shall indicate whether or not the export is served from Generation from Resource Adequacy Capacity, and if submitting Self-Schedules at Scheduling Points for export in HASP the Scheduling Coordinator shall indicate whether or not the export is served from Generation from Resource Adequacy Capacity or RUC Capacity. *The procedure for identifying the non-Resource Adequacy Capacity or non-RUC Capacity is specified in the Business Practice Manuals.*

### **30.5.3.1 Demand Bids Components.**

Demand Bids must have the following components: Scheduling Coordinator ID code; a Demand Bid curve that is a monotonically decreasing staircase function of no more than **ten (10)** segments defined by **eleven (11)** ordered pairs of MW and \$/MWh; Location Code for the LAP, Custom LAP or PNode, as applicable; and hourly scheduled MWh within the range of the Bid curve, including any zero values, for each Settlement Period of the Trading Day.

### **30.5.3.2 Exceptions to Requirement for Submission of Demand Bids and Settlement at the LAP.**

The following are exceptions to the requirement that Demand Bids be submitted and settled at the LAP:

- (a) ETC or TOR Self-Schedules submitted consistent with the submitted TRTC Instructions;
- (b) **Participating Load** and Aggregated Participating Load Bids for Supply and Demand may be submitted and settled at a PNode or Custom LAP, as appropriate; and
- (c) Export Bids are submitted and settled at Scheduling Points, which do not constitute a LAP.

### **30.5.4 Wheeling Through Transactions.**

A Wheeling Through transaction consists of an Export Bid and an Import Bid that includes: matching Self-Schedules or Economic Bids (i.e. the Export **Bid** and Import Bid pair must have matching MW quantities for each Trading Hour) and the same Wheeling reference (a unique identifier for each Wheeling Through transaction). If the Wheeling reference does not match at the time the relevant market closes, the Wheeling Through transaction will be treated as separate Export **Bids** and Import Bids, as appropriate. If the MW quantities of the Wheel Through transaction do not match at the time the relevant market closes, the Wheel Through transaction will be considered the minimum of the import and export MW quantities submitted.

**30.6 [NOT USED]**

**30.7 Bid Validation.**

The CAISO shall validate submitted Bids pursuant to the procedures set forth in this Section 30.7 and the rules set forth in the Business Practice Manuals.

**30.7.1 Scheduling Coordinator Access.**

Each Scheduling Coordinator will be provided access to the CAISO's secure communication system to submit, modify and cancel Bids prior to the close of both the DAM and HASP, as specified in Section 30.5.1. The CAISO shall provide information regarding submitted Bids including, but not be limited to, the following: (i) notification of acceptance; (ii) notification of validation; (iii) notification of rejection; (iv) notification of status; (v) notification of submission error(s); and (vi) default modification or generation of Bids as further provided below, if any, on behalf of Scheduling Coordinators.

**30.7.2 Timing of CAISO Validation.**

Once a Bid is submitted to the CAISO Markets, the Bid is available for validation, which is conducted in multiple steps. Clean Bids will be generated after Market Close.

**30.7.3 DAM Validation.**

**30.7.3.1 Validation Prior to Market Close and Master File Update.**

The CAISO conducts Bid validation in three steps:

Step 1: The CAISO will validate all Bids after submission of the Bid for content validation which determines that the Bid adheres to the structural rules required of all Bids as further described in the Business Practices Manuals. If the Bid fails any of the content level rules the CAISO shall assign it a rejected status and the Scheduling Coordinator must correct and resubmit the Bid.

Step 2: After the Bids are successfully validated for content, but prior to the Market Close of the DAM, the Bids will continue through the second level of validation rules to verify that the Bid adheres to the

applicable CAISO Market rules and if applicable, limits based on Master File data. If the Bid fails any level two validation rules, the CAISO shall assign the Bid as invalid and the Scheduling Coordinator must either correct or resubmit the Bid.

Step 3: If the Bid successfully passes validation in Step 2, it will continue through the third level of validation where the Bid will be analyzed based on its contents to identify any missing Bid components that must be either present for the Bid to be valid consistent with the market rules contained in Article III of this CAISO Tariff and as reflected in the Business Practice Manuals. At this stage the Bid will either be automatically modified for correctness and assigned a status of conditionally modified or modified, or if it can be accepted as is, the Bid will be assigned a status of conditionally valid, or valid. A Bid will be automatically modified and assigned a status of modified or conditionally modified Bid, whenever the CAISO inserts or modifies a Bid component. The CAISO will insert or modify a Bid component whenever (1) a Self-Schedule quantity is less than the lowest quantity specified as an Economic Bid for either an Energy Bid or Demand Bid, in which case the CAISO extends the Self-Schedule to cover the gap; (2) for non-Resource Adequacy Resources, the CAISO will extend the Energy Bid Curve using Proxy Costs to cover any capacity in a RUC Bid component, if necessary; and (3) for a Resource Adequacy Resource, the CAISO will extend the Energy Bid Curve using Proxy Costs to cover any capacity in a RUC Bid component and, if necessary, up to the full registered Resource Adequacy Capacity. The CAISO will generate a Proxy Bid or extend an Energy Bid or Self-Schedule to cover any RUC Award or Day-Ahead Schedule in the absence of any Self-Schedule or Economic Bid components, or to fill in any gaps between any Self-Schedule Bid and any Economic Bid components to cover a RUC Award or Day-Ahead Schedule. To the extent that an Energy Bid to the HASP/RTM is not accompanied by an Ancillary Services Bid, the CAISO will insert a Spinning Reserve and Non-Spinning Reserve Ancillary Services Bid at \$ 0/MW for any certified Operating Reserve capacity. The CAISO will also generate a Self-Schedule

Bid for any Generating Unit that has a Day-Ahead Schedule but has not submitted Bids in HASP/RTM, up to the quantity in the Day-Ahead Schedule. Throughout the Bid evaluation process, the Scheduling Coordinator shall have the ability to view the Bid and may choose to cancel the Bid, modify and re-submit the Bid, or leave the modified, conditionally modified or valid, conditionally valid Bid as is to be processed in the designated CAISO Market.

**30.7.3.2 Master File Data Update.**

Except as otherwise prescribed in this tariff, once a day the Master File data is updated with changes to the Master File that were submitted between at least five (5) and up to eleven (11) Business Days in advance, after which all conditional Bids must be re-validated prior to the trading period when the Bid will take effect. After this re-validation takes place, the status of all conditionally modified and conditionally valid Bids may be changed to modified or valid, if the Bid period is for the next relevant DAM.

**30.7.3.3 Validation Prior to Market Close and After Master File Update.**

Prior to the Market Close of the DAM, after the Master File data has been updated, all Bids must be re-validated using the same process as described in Section 30.7.3.1 to produce either valid Bids or modified Bids. Throughout this process the Scheduling Coordinator shall have the ability to view the Bid and may choose to re-submit (at which point the Bid would undergo the Bid validation process described in this Section 30.7 again), cancel, or modify the Bid. Valid or modified Bids that are not re-submitted or cancelled become Clean Bids after the Market Close of the DAM. Modified Bids for Resource Adequacy Resources will reflect the full capability of the resource as defined in the Master File.



#### **30.7.3.4 Validation after Market Close.**

To the extent that Scheduling Coordinators fail to enter a Bid for resource that is required to submit Bids in the full range of available capacity consistent with the Resource Adequacy provisions of Section 40, the CAISO will create a Bid for the Scheduling Coordinator, which is referred to as the Generated Bid. This does not apply to Load-following MSSs. The Generated Bid will be created only after the Market Close for the DAM and will be based on data registered in the Master File, and, if applicable, published natural gas pricing data. The Scheduling Coordinator may view Generated Bids, but may not modify such Bids. The CAISO will provide notice to the Scheduling Coordinator of the use of a Generated Bid prior to Market Clearing of the IFM. In addition validation of export priority pursuant to Sections 31.4 and 34.10.1 and Wheeling Through transactions pursuant to Section 30.5.4 occur after the Market Close for the DAM.

#### **30.7.4 HASP and RTM Validation.**

The HASP and RTM Bids will include the same validation process implemented in the DAM except that the CAISO will not validate the Bid before and again after the Master File Data update. HASP and RTM Bids are only validated based on the current Master File Data on the relevant Trading Day.

#### **30.7.5 Validation of ETC Self-Schedules.**

ETC Self-Schedules shall be validated pursuant to the procedures set forth in Section 16.6.

#### **30.7.6 Validation and Treatment of Ancillary Services Bids.**

##### **30.7.6.1 Validation of Ancillary Services Bids.**

Throughout the validation process described in Section 30.7, the CAISO will verify that each Ancillary Services Bid conforms to the content, format and syntax specified for the relevant Ancillary Service. If the Ancillary Services Bid does not so conform, the CAISO will send a notification to the Scheduling Coordinator notifying the Scheduling Coordinator of the errors in the Bids as described in Section 30.7. When the Bids are submitted, a technical validation will be performed to verify that the bid quantity of Regulation, Spinning Reserve, or Non-Spinning Reserve does not exceed the certified Ancillary Services

capacity for Regulation, or Operating Reserves on the Generating Units, System Units, Participating Loads and external imports/exports bid. The Scheduling Coordinator will be notified within a reasonable time of any validation errors. For each error detected, an error message will be generated by the CAISO in the Scheduling Coordinator's notification screen, which will specify the nature of the error. The Scheduling Coordinator can then look at the notification messages to review the detailed list of errors, make changes, and resubmit if it is still within the CAISO's timing requirements. The Scheduling Coordinator is also notified of successful validation. If a resource is awarded or has qualified Self-Provided Ancillary Services in the Day-Ahead Market, if no Energy Bid is submitted to cover the awarded or Self-Provided Ancillary Services by the Market Close of HASP and the RTM, the CAISO will generate or extend an Energy Bid as necessary to cover the awarded or Self-Provided Ancillary Services capacity using the registered values in the Master File and relevant fuel prices as described in the Business Practice Manuals for use in the HASP and IFM. If an AS Bid or Submission to Self-Provide an AS is submitted in the Real-Time for Spinning Reserve or Non-Spinning Reserve without an accompanying Energy Bid at all, the AS Bid or Submission to Self-Provide an Ancillary Service will be erased. If an AS Bid or Submission to Self-Provide an AS is submitted in the Real-Time Market for Spinning Reserve and Non-Spinning Reserve with only a partial Energy Bid for the AS capacity, the CAISO will generate an Energy Bid for the uncovered portions. For Generating Units with certified Regulation capacity, if there no Bid for Regulation in the Real-Time Market, but there is a Day-Ahead award for Regulation Up or Regulation Down or a submission to self-provide Regulation Up or Regulation Down, respectively, the CAISO will generate a Regulation Up or Regulation Down Bid at the default Ancillary Service Bid price of \$0 up to the certified Regulation capacity for the Generating Unit minus any Regulation awarded or self-provided in the Day-Ahead. If there is a Bid for Regulation Up or Regulation Down in the Real-Time Market, the CAISO will increase the respective Bid up to the certified Regulation capacity for the Generating Unit minus any Regulation awarded or self-provided in the Day-Ahead.

**30.7.6.2 Treatment of Ancillary Services Bids.**

When Scheduling Coordinators bid into the Regulation Up, Regulation Down, Spinning Reserve, and Non-Spinning Reserve markets, they may submit Bids for the same capacity into as many of these markets as desired at the same time by providing the appropriate Bid information to the CAISO. The CAISO optimization will evaluate AS Bids simultaneously with Energy Bids. A Scheduling Coordinator may specify that its Bid applies only the markets it desires. A Scheduling Coordinator shall also have the ability to specify different capacity prices for the Spinning Reserve, Non-Spinning Reserve, and Regulation markets. A Scheduling Coordinator providing one or more Regulation Up, Regulation Down, Spinning Reserve or Non-Spinning Reserve services may not change the identification of the Generating Units offered in the Day-Ahead Market, HASP or in the Real-Time Market for such services unless specifically approved by the CAISO (except with respect to System Units, if any, in which case Scheduling Coordinators are required to identify and disclose the resource specific information for all Generating Units and Participating Loads constituting the System Unit for which Bids and Submissions to Self-Provide Ancillary Services are submitted into the CAISO's Day-Ahead Market, HASP and Real-Time Market.

The following principles will apply in the treatment of Ancillary Services Bids in the CAISO Markets:

- (a) not differentiate between bidders for Ancillary Services and Energy other than through cost, price, effectiveness, and capability to provide the Ancillary Service or Energy, and the required locational mix of Ancillary Services;
- (b) select the bidders with most cost effective Bids for Ancillary Service capacity which meet its technical requirements, including location and operating capability to minimize the costs to users of the CAISO Controlled Grid;
- (c) evaluate the Day-Ahead Bids over the twenty-four (24) Settlement Periods of the following Trading Day along with Energy, taking into transmission constraints and AS Regional Limits;

- (d) evaluate Bids in the HASP and establish Ancillary Service Awards from imports at approximately sixty-five (65) minutes prior to the hour of operation;
- (e) evaluate Import Bids along with internal resource Bids and establish hourly Ancillary Service Awards in the HASP;
- (f) establish Real-Time Ancillary Service Awards from generation internal to the CAISO **Balancing Authority** Area at fifteen (15) minutes intervals to the hour of operation; and
- (g) procure sufficient Ancillary Services in the Day-Ahead, HASP, and Real-Time Markets to meet its forecasted requirements.

### **30.7.7 Format and Validation of Operational Ramp Rates.**

The submitted Operational Ramp Rate expressed in megawatts per minute (MW/min) as a function of the operating level, expressed in megawatts (MW), must be a staircase function with up to four segments.

There is no monotonicity requirement for the Operational Ramp Rate. The submitted Operational Ramp Rate shall be validated as follows:

- (a) The range of the submitted Operational Ramp Rate must cover the entire capacity of the resource, from the minimum to the maximum operating capacity, as registered in the Master File for the relevant resource.
- (b) The operating level entries must match exactly (in number, sequence, and value) the corresponding minimum and maximum Operational Ramp Rate breakpoints, as registered in the Master File for the relevant resource.
- (c) If a Scheduling Coordinator does not submit an Operational Ramp Rate for a generating unit for a day, the CAISO shall use the maximum Ramp Rate for each operating range set forth in the Master File as the Ramp Rate for that unit for that same operating range for the Trading Day.

- (d) The last Ramp Rate entry shall be equal to the previous Ramp Rate entry and represent the maximum operating capacity of the resource as registered in the Master File. The resulting Operational Ramp Rate segments must lie between the minimum and maximum Operational Ramp Rates, as registered in the Master File.
- (e) The submitted Operational Ramp Rate must be the same for each hour of the Trading Day, i.e., the Operational Ramp Rate submitted for a given Trading Hour must be the same with the one(s) submitted earlier for previous Trading Hours in the same Trading Day.
- (f) Outages that affect the submitted Operational Ramp Rate must be due to physical constraints, reported in SLIC and are subject to CAISO approval. All approved changes to the submitted Operational Ramp Rate will be used in determination of Dispatch Instructions for the shorter period of the balance of the Trading Day or duration of reported Outage.
- (g) If an Operational Ramp Rate is derated in SLIC, the Ramp Rate will only be to four segments. Ramping capability through Forbidden Operating Regions are not affected by derates entered in SLIC.
- (h) For all CAISO Dispatch Instructions of Reliability Must-Run Units the Operational Ramp Rate will be the Ramp Rate declared in the Reliability Must Run Contract Schedule A.

### **30.7.8 Format and Validation of Start-Up and Shut-Down Times.**

For a Generating Unit, the submitted Start-Up Time expressed in minutes (min) as a function of down time expressed in minutes (min) must be a staircase function with up to three (3) segments defined by a set of 1 to 4 down time and Start-Up Time pairs. The Start-Up Time is the time required to start the resource if it is offline longer than the corresponding down time. The last segment will represent the time to start the unit from a cold start and will extend to infinity. The submitted Start-Up Time function shall be validated as follows:

- (a) The first down time must be zero (0) min.
- (b) The down time entries must match exactly (in number, sequence, and value) the corresponding down time breakpoints of the maximum Start-Up Time function, as registered in the Master File for the relevant resource.
- (c) The Start-Up Time for each segment must not exceed the Start-Up Time of the corresponding segment of the maximum Start-Up Time function, as registered in the Master File for the relevant resource.
- (d) The Start-Up Time function must be strictly monotonically increasing, i.e., the Start-Up Time must increase as down time increases.

For Participating Load, a single Shut-Down time in minutes is the time required for the resource to Shut-Down after receiving a Dispatch Instruction.

### **30.7.9 Format and Validation of Start-Up Costs and Shut-Down Costs.**

For a Generating Unit, the submitted Start-Up Cost expressed in dollars (\$) as a function of down time expressed in minutes must be a staircase function with up to three (3) segments defined by a set of 1 to 4 down time and Start-Up Cost pairs. The Start-Up Cost is the cost incurred to start the resource if it is offline longer than the corresponding down time. The last segment will represent the cost to start the resource from cold Start-Up and will extend to infinity. The submitted Start-Up Cost function shall be validated as follows:

- (a) The first down time must be **zero (0)** min.
- (b) The down time entries must match exactly (in number, sequence, and value) the corresponding down time breakpoints of the Start-Up Cost function, as registered in the Master File for the relevant resource **as either the Proxy Cost or Registered Cost.**
- (c) The Start-Up Cost for each segment must not be negative and must **be equal to** the Start-Up Cost of the corresponding segment of the Start-Up Cost function, as registered in the Master File for the relevant resource. **If a value is submitted in a Bid for the Start-Up Cost, it will be overwritten by the Master File value as either the Proxy Cost or Registered Cost based on the option elected pursuant to Section 30.4. If no value for Start-Up Cost is submitted in a Bid, the CAISO will insert the Master File value, as either the Proxy Cost or Registered Cost based on the option elected pursuant to Section 30.4.**
- (d) The Start-Up Cost function must be strictly monotonically increasing, i.e., the Start-Up Cost must increase as down time increases.

For Participating Loads, a single Shut-Down Cost in **dollars (\$)** is the cost incurred to Shut-Down Cost the resource after receiving a Dispatch Instruction. The submitted Shut-Down Cost must not be negative.

### **30.7.10 Format and Validation of Minimum Load Costs.**

For a Generating Unit, the submitted Minimum Load Cost expressed in dollars per hour (\$/hr) is the cost incurred for operating the unit at Minimum Load. The submitted Minimum Load Cost must not be negative and must **be equal to** the Minimum Load Cost **under the Proxy Cost option or Registered Cost option**, as registered in the Master File for the relevant resource.

For Participating Loads, the submitted Minimum Load Cost (\$/hr) is the cost incurred while operating the resource at reduced consumption after receiving a Dispatch Instruction. The submitted Minimum Load Cost must not be negative.

**30.8 Prohibition on Bidding Across Out-of-Service Transmission Paths at Scheduling Points.**

Scheduling Coordinators shall not submit any Bids or ETC Self-Schedules at Scheduling Points using a transmission path for any Settlement Period for which the Operating Transfer Capability for that path is zero (0) MW. The CAISO shall reject Bids or ETC Self-Schedules submitted at Scheduling Points where the Operating Transfer Capability on the transmission path is zero (0) MW. If the Operating Transfer Capability of a transmission path at the relevant Scheduling Point is reduced to zero (0) after Day-Ahead Schedules have been issued, then, if time permits, the CAISO shall direct the responsible Scheduling Coordinators to reduce all MWh associated with the Bids on such zero-rated transmission paths to zero (0) in the HASP. As necessary to comply with Applicable Reliability Criteria, the CAISO shall reduce any non-zero (0) HASP Bids across zero-rated transmission paths to zero after the Market Close for the HASP.



### **31 Day-Ahead Market.**

The DAM consists of the following functions performed in sequence: the MPM-RRD, IFM, and RUC. Scheduling Coordinators may submit Bids for Energy, Ancillary Services and RUC Capacity for an applicable Trading Day. The CAISO shall issue Schedules for all Supply and Demand, including Participating Load, pursuant to their Bids as provided in this Section 31.

#### **31.1 Bid Submission and Validation in the Day-Ahead Market.**

Bids, including Self-Schedules and Ancillary Services Bids, and Submissions to Self-Provide an Ancillary Service shall be submitted pursuant to the submission rules specified in Section 30. Scheduling Coordinators submit a single Bid to be used in the DAM, which includes the MPM-RRD, the IFM and RUC. Scheduling Coordinators may submit Bids for the DAM as early as seven (7) days ahead of the targeted DAM and up to Market Close of the DAM for a targeted Trading Day. The CAISO will validate all Bids submitted to the DAM pursuant to the procedures set forth in Section 30.7. Scheduling Coordinators must submit Bids for participation in the IFM for Resource Adequacy Capacity as required in Section 40.

#### **31.2 Market Power Mitigation and Reliability Requirement Determination (MPM-RRD).**

After the Market Close of the DAM, and after the CAISO has validated the Bids pursuant to Section 30.7, the CAISO will perform the MPM-RRD procedures in a series of processing runs that occur prior to the IFM Market Clearing run. The MPM process determines which Bids need to be mitigated in the IFM. The RRD process is the automated process for determining RMR Generation requirements for RMR Units. The MPM-RRD process optimizes resources using the same optimization used in the IFM, but instead of

using Demand Bids as in the IFM the MPM-RRD process optimizes resources to meet one hundred percent of the CAISO Demand Forecast and Export Bids to the extent the Export Bids are selected in the MPM-RRD process, and meet one hundred percent of Ancillary Services requirements based on Supply Bids submitted to the DAM. The pool of resources identified in the MPM-RRD process is then passed to the IFM to constitute the pool of resources available for commitment in the IFM. The CAISO performs the MPM-RRD for the DAM for the twenty-four (24) hours of the targeted Trading Day.

### **31.2.1 The Reliability and Market Power Mitigation Runs.**

The first run of the MPM-RRD procedures is the Competitive Constraints Run (CCR), in which only limits on transmission lines pre-designated as competitive are enforced. The only RMR Units considered in the CCR are Condition 1 RMR Units that have provided market Bids for the DAM. The second run is the All Constraints Run (ACR), during which all transmission Constraints are enforced. All RMR Units, Condition 1 and Condition 2, are considered in the ACR. The resources committed in the ACR form the pool of resources that is available for commitment in the IFM.

### **31.2.2 Bid Mitigation.**

The CAISO shall compare the resource dispatch levels derived from CCR and ACR and will mitigate Bids as follows.

**31.2.2.1 RMR Units.**

For a Condition 1 RMR Unit that is dispatched in the CCR, the Bid used in the ACR for the entire portion of the unit's Energy Bid Curve above the CCR dispatch level and below the Maximum Net Dependable Capacity specified in the RMR Contract will be set to the lower of the RMR Proxy Bid, or the DAM Bid, but not lower than the unit's highest Bid price that cleared the CCR. If a Condition 1 RMR Unit is dispatched in the CCR and receives a greater dispatch in the ACR, the entire portion of the unit's Energy Bid Curve above the CCR dispatch level and below the Maximum Net Dependable Capacity specified in the RMR Contract, will be set to the lower of the RMR Proxy Bid or the DAM Bid, but not lower than the unit's highest Bid price that cleared the CCR for purposes of being considered in the IFM. For purposes of the MPM-RRD, Condition 1 RMR Units will be treated like non-RMR Units with respect to any capacity in excess of the Maximum Net Dependable Capacity specified in the RMR Contract. For Condition 1 RMR Units, the market Bid at and below the CCR dispatch level will be retained in the IFM. For Condition 2 RMR Units and for Condition 1 RMR Units that either did not submit DAM Bids or submitted DAM Bids but were not dispatched in the CCR, the CAISO will use the RMR Proxy Bid in the ACR to determine the Energy required from RMR Units for each Trading Hour. If the dispatch level produced through the ACR for a Condition 1 RMR Unit is not greater than the dispatch level produced through CCR, the unit's original, unmitigated DAM Bid will be retained in its entirety. For a Condition 1 RMR Unit, if the dispatch level produced through the ACR is greater than the dispatch level produced through the CCR, and for a Condition 2 RMR Unit that is dispatched through the ACR, the resource will be flagged as an RMR Dispatch in the Day-Ahead Schedule and shall constitute a Dispatch Notice pursuant to the RMR Contract.

**31.2.2.2 Non-RMR Units.**

If the dispatch level produced through the ACR is greater than the dispatch level produced through CCR, then the resource is subject to Local Market Power Mitigation, in which case the entire portion of the unit's Energy Bid Curve that is above the CCR dispatch level will be mitigated to the lower of the Default Energy Bid as specified in Section 39, or the DAM Bid, but no lower than the unit's highest Bid price that cleared the CCR.

**31.3 Integrated Forward Market.**

After the MPM-RRD and prior to RUC, the CAISO shall perform the IFM. The IFM performs Unit Commitment and Congestion Management, clears the Energy Bids as modified and in the MPM-RRD, taking into account transmission limits and honoring technical and inter-temporal operating Constraints, such as Minimum Run Times, and procures Ancillary Services to meet one hundred percent (100%) of the CAISO Forecast of CAISO Demand requirements. The IFM utilizes a set of integrated programs that: (1) determine Day-Ahead Schedules and AS Awards, and related LMPs and ASMPs; and (2) optimally commits resources that are bid in to the DAM. The IFM utilizes a SCUC algorithm that optimizes Start-Up Costs, Minimum Load Costs, and Energy Bids along with any Bids for Ancillary Services as well as Self-Schedules submitted by Scheduling Coordinators. The IFM also provides for the optimal management of Use-Limited Resources. The ELS Resources committed through the ELC Process conducted two days before the day the IFM process is conducted for the next Trading Day as described in Section 31.7 are binding and the IFM process will model such capacity as capacity that is under a contractual obligation to provide.

### **31.3.1 Market Clearing and Price Determination.**

#### **31.3.1.1 Integrated Forward Market Output.**

The IFM produces: (1) a set of hourly Day-Ahead Schedules, AS Awards, and AS Schedules for all participating Scheduling Coordinators that cover each Trading Hour of the next Trading Day; and (2) the hourly LMPs for Energy and the ASMPs for Ancillary Services to be used for settlement of the IFM. The CAISO will publish the LMPs at each PNode as calculated in the IFM. In determining Day-Ahead Schedules, AS Awards, and AS Schedules the IFM optimization will minimize total Bid Costs based on submitted and mitigated Bids while respecting the operating characteristics of resources, the operating limits of transmission facilities, and a set of scheduling priorities that are described in Section 31.4. In performing its optimization, the IFM first tries to complete its required functions utilizing Economic Bids without adjusting Self-Schedules, and adjusts Self-Schedules only if it is not possible to balance Supply and Demand and manage Congestion with available Economic Bids. The Day-Ahead Schedules are binding commitments, including the commitment to Start-Up, if necessary, to comply with the Day-Ahead Schedules. The CAISO will not issue separate Start-Up Instructions for Day-Ahead commitments. A resource's status, however, can be modified as a result of additional market processes occurring in HASP, STUC and RTUC. In addition, in Real-Time, resources are required to follow Real-Time Dispatch Instructions.

### **31.3.1.2 Treatment of Ancillary Services Bids in IFM.**

As provided in Section 30.7.6.2 the CAISO shall co-optimize the Energy and Ancillary Services Bids in clearing the IFM. To the extent that capacity subject to an Ancillary Services Bid submitted in the Day-Ahead Market is not associated with an Energy Bid, there is no co-optimization, and therefore, no opportunity cost associated with that resource for that Bid for the purposes of calculating the Ancillary Services Marginal Price as specified in Section 11.10.1.1. When the capacity associated with the Energy Bid overlaps with the quantity submitted in the Ancillary Services Bid, then the Energy Bid will be used to determine the opportunity cost, if any, in the co-optimization to the extent of the overlap. Therefore, the capacity that will be considered when co-optimizing the procurement of Energy and Ancillary Services from Bids in the IFM will consider capacity up to the total capacity of the resource as reflected in the Ancillary Services Bid as derated through SLIC, if at all. In the case of Regulation, the capacity that will be considered is the lower of the capacity of the resource offered in the Ancillary Services Bid or the upper Regulation limit of the highest Regulating Range as contained in the Master File.

### **31.3.1.3 Reduction of LAP Demand.**

To the extent the CAISO cannot resolve a non-competitive transmission Constraint utilizing effective Economic Bids such that Load at the LAP level in the pre-IFM pass 2 (ACR) would otherwise be adjusted to relieve the Constraint, the CAISO will take the following actions in sequence:

Step 1: Schedule the Energy from Self-Provided Ancillary Service Bids from capacity that is obligated to offer an Energy Bid under a must-offer obligation such as from an RMR Unit or a Resource Adequacy Resource. Since the otherwise Self-Provided Ancillary Services capacity in question is under a must-offer obligation, the associated Energy Bid prices will be either: (a) submitted Energy Bids; or (b) Default Energy Bids to the extent an Energy Bid was not submitted for the Self-Provided Ancillary Services capacity, but not lower than any Energy Bids from the same resource that may have cleared pre-IFM pass 1 (ACR).

Step 2: In case the measure in Step 1 is insufficient to avoid adjustment of Load at the LAP level, the CAISO will evaluate the validity of the binding transmission Constraint and if it is determined that the Constraint can be relaxed based on the operating practices, will relax the Constraint consistent with operating practices. The CAISO will use the following rules in relaxing the transmission Constraints in this step 2:

- (a) No Constraints on WECC rated paths or Interties with adjacent Balancing Authority Areas would be relaxed.
- (b) Only the transmission Constraints that can be mitigated in the Real-Time Market or Real-Time operation are candidates for Constraint relaxation. The criteria used to assess whether or not the Constraint can be mitigated in Real-Time can include, but are not limited to, the following: (1) there is a Submission to Self-Provide an Ancillary Service for Operating Reserves from non-Resource Adequacy Resources or non-RMR Units within the transmission constrained Load pocket constrained by the transmission path in question; provided, however, such Submissions to Self-Provide an Ancillary Service cannot be used in Step 1, but are available in Real-Time; (2) Scheduling Coordinators have submitted Self-Schedules for Participating Load in the constrained Load pocket; or (3) there are non-Resource Adequacy Resources and non-RMR Units within the constrained Load pocket that did not participate in the Day-Ahead Market but can be called upon under their Participating Generator Agreement before the CAISO curtails firm Load.

- (c) Candidate Constraints will be relaxed by assigning a high penalty for Constraint violation (as opposed to enforcing them as hard Constraints) in this Step 2. Such penalty will be lower than the penalty for curtailing firm (Price Taker) Load.
- (d) The higher of the facility rating or the pre-IFM flows through the facility with relaxed Constraints in this Step 2 will be used as hard limits in IFM.
- (e) To avoid unwarranted price impact in IFM, a Constraint violation penalty equal to three times the prevailing Energy Bid cap as specified in Section 39.6 will be applied to the Constraints relaxed in Step 2 between their operating limit and the relaxed limit determined.
- (f) The information relating to the relaxed Constraints will be forwarded to the CAISO Operator together with the necessary mitigating measures.

Step 3: In case the measures in Step 1 and Step 2 are insufficient, the CAISO may “soften” the LDF Constraints on a Node or sub-LAP basis, i.e., adjust Load at individual Nodes or, in aggregate, a group of Nodes to relieve the Constraint in such a way that minimizes the quantity of load curtailed. The adjustment to Load at individual Nodes shall be facilitated by adjustment and renormalization of applicable LDFs.



### **31.3.2 Congestion and Transmission Losses Cost Determination.**

Except for those transactions exempt from such charges as specified in Section 11.2.1.5, Scheduling Coordinators will be responsible for MCC and MCL as specified in Section 27.1. The CAISO will determine the Marginal Losses surplus it has collected and will allocate such revenues to Scheduling Coordinators as described in Section 11.2.1.6.

### **31.3.3 Metered Subsystems.**

In clearing the IFM, the CAISO will not enforce Constraints within each MSS. The Full Network Model (FNM) includes a full model of MSS transmission networks used for power flow calculations and Constraint management in the IFM and RTM. Network Constraints (i.e. circuit ratings, thermal ratings, etc.) within the MSS, or at its boundaries, shall be monitored but not enforced in the CAISO's FNM. If overloads are observed in the forward markets that are internal to the MSS or at the MSS boundaries and are attributable to MSS operations, the CAISO shall communicate such events to the Scheduling Coordinator for the MSS and coordinate any manual Re-dispatch required in Real-Time. If, independent of the CAISO, the Scheduling Coordinator for the MSS is unable to resolve Congestion internal to the MSS or at the MSS boundaries in Real-Time, the CAISO will use Exceptional Dispatch Instructions on resources that have been bid into the HASP and RTM to resolve the Congestion. Such costs will be allocated pursuant to the provisions specified in Section 11.5.6.2.5.2. The CAISO and MSS Operator shall develop specific procedures for each MSS to determine how network Constraints will be handled. Costs associated with internal Congestion and Transmission Losses in the MSS will be the responsibility of the MSS Operator. The Scheduling Coordinator for the MSS shall be responsible for payment of Marginal Losses for transactions at any points of interconnection between the MSS and the CAISO Controlled Grid, and for the delivery of Energy to the MSS or from the MSS in accordance with the CAISO Tariff. For MSS Operators that elect Load following, the CAISO shall exclude the effect of Transmission Losses in the relevant MSS in the CAISO's calculation of loss sensitivity factors used to calculate LMPs.

### **31.4 Uneconomic Adjustments in the IFM.**

All Self-Schedules are respected by SCUC to the maximum extent possible and are protected from curtailment in the Congestion Management process to the extent that there are Economic Bids that can relieve Congestion. If all Economic Bids in the IFM are exhausted, resource Self-Schedules between the resource's Minimum Load and the first Energy level of the first Energy Bid point will be subject to uneconomic adjustments based on the scheduling priorities listed below. Through this process, imports and exports may be reduced to zero, Demand Bids may be reduced to zero, Price Taker Demand (LAP load) may be reduced, and Generation may be reduced to a lower operating limit (or Regulation Limit) (or to a lower Regulation Limit plus any qualified Regulation Down award or Self-Provided Ancillary Services, if applicable). Any Self-Schedules below the Minimum Load level are treated as fixed Self-Schedules and are not subject to uneconomic adjustments for Congestion Management. The provisions of this section shall apply only to the extent they do not conflict with any MSS Agreement. The scheduling priorities for the IFM from highest priority (last to be adjusted) to lowest priority (first to be adjusted) are as follows:

- (a) Reliability Must Run (RMR) Generation pre-dispatch reduction;
- (b) Day-Ahead TOR Self-Schedules (balanced demand and supply reduction);
- (c) Day-Ahead ETC Self-Schedules (balanced demand and supply reduction);  
different ETC priority levels will be observed based upon global ETC priorities provided to the CAISO by the Responsible PTOs;

- (d) Other Self-Schedules of CAISO Demand reduction subject to Section 31.3.1.3, exports explicitly identified in a Resource Adequacy Plan to be served by Resource Adequacy Capacity explicitly identified and linked in a Supply Plan to the exports, and Self-Schedules of exports at Scheduling Points explicitly sourced by non-Resource Adequacy Capacity;
- (e) Self-Schedules of exports at Scheduling Points not explicitly sourced by non-Resource Adequacy Capacity, except those exports explicitly identified in a Resource Adequacy Plan to be served by Resource Adequacy Capacity explicitly identified and linked in a Supply Plan to the exports as set forth in Section 31.4(d);
- (f) Day-Ahead Regulatory Must-Run Generation and Regulatory Must-Take Generation reduction;
- (g) Other Self-Schedules of Supply reduction; and
- (h) Economic Bids of Demand and Supply.

### **31.5 Residual Unit Commitment.**

The CAISO shall perform the RUC process after the IFM. In the event that the IFM did not commit sufficient resources to meet the CAISO Forecast of CAISO Demand and account for other factors such as Demand Forecast error, as described in the Business Practice Manuals, the RUC shall commit additional resources and identify additional RUC Capacity to ensure sufficient on-line resources to meet Demand for

each hour of the next Trading Day. RUC Capacity is selected by a SCUC optimization that uses the same FNM used in the IFM to help ensure the deliverability of Energy from the RUC Capacity.

### **31.5.1 RUC Participation.**

#### **31.5.1.1 Capacity Eligible for RUC Participation.**

RUC participation is voluntary for capacity that has not been designated as Resource Adequacy Capacity. Scheduling Coordinators may make such capacity available for participation in RUC by submitting a RUC Availability Bid, provided the Scheduling Coordinator has also submitted an Energy Bid for such capacity into the IFM. Capacity from Non-Dynamic System Resources that has not been designated Resource Adequacy Capacity is not eligible to participate in RUC. Capacity from resources including System Resources that has been designated as qualified Resource Adequacy Capacity must participate in RUC. RUC participation is required for Resource Adequacy Capacity to the extent that Resource Adequacy Capacity is not committed following the IFM. System Resources eligible to participate in RUC will be considered on an hourly basis; that is, RUC will not observe any multi-hour block constraints and the Energy Limits that may have been submitted in conjunction with Energy Bids to the IFM. RMR Unit capacity will be considered in RUC in accordance with Section 31.5.1.3. MSS resources may participate in RUC in accordance with Section 31.5.2.3. COG resources are accounted for in RUC, but may not submit or be paid RUC Availability Payments. The ELS Resources committed through the ELC Process conducted two days before the day the RUC process is conducted for the next Trading Day as described in Section 31.7 are binding and the RUC process will model such capacity as capacity that is under a contractual obligation to provide.

#### **31.5.1.2 RUC Availability Bids.**

Scheduling Coordinators may only submit RUC Availability Bids for capacity (above the Minimum Load) for which they are also submitting an Energy Bid to participate in the IFM. The RUC Availability Bid for the Resource Adequacy Capacity submitted by a Scheduling Coordinator must be \$0/MW per hour for the entire Resource Adequacy Capacity. If the Scheduling Coordinator fails to submit a \$0/MW per hour for

**Resource Adequacy** Capacity, the CAISO will insert the \$0/MW per hour for the full amount of **Resource Adequacy** Capacity for a given resource. Scheduling Coordinators may submit non-zero RUC Availability Bids for the portion of a resource's capacity that is not **Resource Adequacy** Capacity.

### **31.5.1.3 RMR Generation Resources.**

If a resource is determined to have an RMR **Generation** requirement for any Trading Hour of the next day, either by the MPM-RRD process or by the CAISO through a manual RMR Dispatch Notice, and if any portion of the RMR **Generation** requirement has not been cleared in the IFM, the entire portion of the RMR **Generation** requirement will be represented as a RMR **Generation** Self-Schedule in the RUC.

### **31.5.2 Metered Subsystem RUC Obligation.**

MSS Operators are permitted to make an annual election to opt-in or opt-out of RUC participation. MSS Operators that elect to Load follow are automatically considered to opt-out of the RUC participation. Prior to the deadline for the annual CRR Allocation and **CRR** Auction process, as specified in Section 36, an MSS Operator that has selected not to Load follow shall notify the CAISO of its RUC participation option for the following CRR cycle.

#### **31.5.2.1 MSS Operator Opts-In to RUC Procurement.**

If the MSS Operator opts-in to the RUC procurement process, the Scheduling Coordinator for the MSS will be treated like any other Scheduling Coordinator that **submits a** Bid in the DAM with respect to RUC procurement by the CAISO and allocation of RUC costs. The CAISO will consider the CAISO **Demand Forecast** of the MSS Demand in setting the RUC procurement target, and the Scheduling Coordinator for the MSS will be responsible for any applicable allocation of costs related to the Bid Cost Recovery for RUC as provided in Section 11.8.

#### **31.5.2.2 MSS Operator Opts-out of RUC Procurement.**

If an MSS Operator opts out of the RUC procurement process, the CAISO shall not consider the CAISO **Demand Forecast** of the MSS Demand in setting the RUC procurement target, and will not commit

resources in RUC to serve the MSS Demand. The MSS Operator shall be responsible for meeting the Supply requirements for serving its Demand in accordance with this Section 31.5.2.2, and it will be exempt from the allocation of costs related to the Bid Cost Recovery for RUC as provided in Section 11.8. The MSS that opts out of the CAISO's RUC procurement will have two options for meeting the Supply requirements for serving its Demand, which it will select on an hourly basis depending on how it submits Self-Schedules for its Demand in the DAM.

**31.5.2.2.1 Based on CAISO Demand Forecast.**

If the Scheduling Coordinator for the MSS submits Hourly Demand Self-Schedules in the DAM that are greater than or equal to the CAISO Demand Forecast for the MSS Demand, the Scheduling Coordinator will have met its Supply requirement for such hours and will be exempt from the allocation of costs related to the Bid Cost Recovery for RUC as provided in Section 11.8.

**31.5.2.2.2 Not Based on CAISO Demand Forecast.**

If the Scheduling Coordinator for the MSS submits Hourly Demand Self-Schedules in the DAM that are less than the CAISO Demand Forecast for the MSS Demand, the Scheduling Coordinator will be exempt from the RUC cost allocation but will be monitored for its compliance with the Supply requirement based on the following performance criteria. If the MSS Demand Self-Schedule in the IFM for a given Trading Hour is less than the CAISO Demand Forecast for the MSS Demand and less than the actual metered Demand of the MSS for that Trading Hour, then penalty points will be accrued as follows: (i) if the difference between the actual metered Demand and the IFM Self-Schedule in any hour is greater than the lesser of two percent (2%) of the CAISO Demand Forecast for the MSS or five (5) MW, but less than the lesser of five percent (5%) or ten (10) MW, then the Scheduling Coordinator for the MSS will have one (1) penalty point against it for each occurrence; (ii) if the difference in any hour is more than the lesser of five percent (5%) or ten (10) MW, but less than the lesser of ten percent (10%) or twenty (20) MW, then the Scheduling Coordinator for the MSS will have two (2) penalty points against it for each occurrence; (iii) if

the difference in any hour is more than the lesser of ten percent (10%) or twenty (20) MW, then the Scheduling Coordinator for the MSS will have five (5) penalty points against it for each occurrence. The maximum penalty points that can be accrued during a single Trading Day for each MSS will be five (5). A total of more than twenty (20) penalty points within twelve (12) consecutive months will require the MSS to opt-in to RUC for the remainder of the CRR Annual Cycle and for the following CRR Annual Cycle. The provisions in this Section 31.5.2.2.2 do not apply to an MSS Operator that has elected to Load follow, and only apply to non-Load following MSS Operators.

### **31.5.2.3 MSS Option to Bid RUC Capacity.**

The Scheduling Coordinator for the MSS Operator may submit RUC Availability Bids for the capacity of MSS resources and receive RUC Availability Payments and other RUC Compensation for such capacity selected in RUC, subject to the same bidding and operational requirements as any other resources providing RUC Capacity. This capability is not affected by the MSS Operator's decision to opt-in to or opt-out of RUC per Sections 31.5.2.1 and 31.5.2.2.

### **31.5.3 RUC Procurement Target.**

The procurement target for RUC in any given Trading Hour will be determined based on the next day's hourly CAISO Forecast of CAISO Demand less the Energy scheduled in the Day-Ahead Schedule, and accounting for other factors, as appropriate, such as Demand Forecast error and estimated incremental HASP Bids including those from Participating Intermittent Resources. The adjustments listed in Sections 31.5.3.1 to 31.5.3.6 will be made to the CAISO Forecast of CAISO Demand to account for the conditions as provided therein. Adjustments may be made on a RUC Zone basis to ensure that RUC results in adequate local capacity procurement. The RUC procurement target-setting procedure is designed to meet the requirements of reliable grid operation without unnecessary over-procurement of RUC Capacity or over-commitment of resources. Additional detail on the process for setting the RUC procurement target is specified in the Business Practice Manuals.

**31.5.3.1 CAISO Operator Review & Adjustment.**

The CAISO Operator reviews the CAISO Forecast of CAISO Demand and all calculated adjustments as provided in Sections 31.5.3.2 through 31.5.3.6. The CAISO Operator shall accept, modify, or reject such adjustments based on Good Utility Practice. If the CAISO Operator determines it must modify or reject adjustments, the CAISO Operator shall log sufficient information as to reason, Operating Hour, and specific modification(s) made to the calculated adjustments.

**31.5.3.2 Demand Response Adjustments.**

The CAISO shall account for Demand response that is clearly communicated to the CAISO as certain to be curtailed for the next Trading Day only for the two following types of Demand response: 1) Demand response triggered by a staged System Emergency event; and 2) Demand response that is triggered by a price or an event known in advance. If an LSE informs the CAISO of anticipated Demand response prior to Market Close of the DAM, the CAISO Forecast of CAISO Demand used as the RUC procurement target will be reduced accordingly.

**31.5.3.3 MSS Adjustment.**

As specified in section 31.5.2.1, MSS Operators are permitted to make an annual election to opt-in or opt-out of RUC participation. If the MSS Operator opts-in to the RUC procurement process, the CAISO considers the CAISO's Demand Forecast of the MSS Demand in setting the RUC procurement target. If an MSS Operator opts-out of the RUC procurement process, the CAISO does not consider the CAISO's Demand Forecast of the MSS Demand in setting the RUC procurement target. An MSS Operator that has elected to opt-out of RUC, or has elected to Load follow and therefore has also elected to opt-out of RUC, is required to provide sufficient resources in the Day-Ahead Market, and in the case of a Load following MSS Operator, follow its Load within the MSS Deviation Band. To reflect these options and to prevent committing additional capacity or resources for any differences between the CAISO Demand Forecast for the MSS and the MSS Self-Scheduled quantities in the IFM, the CAISO replaces the CAISO Demand Forecast for such MSS with the quantity of Demand in Self-Schedules submitted by the Scheduling Coordinator for the MSS in the IFM.



#### **31.5.3.4 Eligible Intermittent Resource Adjustment.**

Scheduling Coordinators for Eligible Intermittent Resources may submit Bids, including Self-Schedules, in the Day-Ahead Market and the quantity ultimately scheduled from Eligible Intermittent Resources may differ from the CAISO forecasted deliveries from the Eligible Intermittent Resources. The CAISO may adjust the forecasted Demand either up or down for such differences by RUC Zone in which the Eligible Intermittent Resource resides. To the extent the scheduled quantity for an Eligible Intermittent Resource in the IFM is less than the quantity forecasted by CAISO, the CAISO makes a Supply side adjustment in RUC by using the CAISO forecasted quantity for the Eligible Intermittent Resource as the expected delivered quantity. To the extent the scheduled quantity for an Eligible Intermittent Resource in the IFM is greater than the quantity forecasted by the CAISO, the CAISO makes a Demand side adjustment to the RUC Zone Demand equal to the difference between the Day-Ahead Schedule and the CAISO forecasted quantity.

#### **31.5.3.5 Real-Time Expected Incremental Supply Self-Schedule Adjustment.**

In order to avoid over procurement of RUC, the CAISO shall, using a similar-day approach, estimate the HASP Self-Schedules for resources that usually submit HASP Self-Schedules that are greater than their Day-Ahead Schedules. The CAISO Operator may set the length of the Self-Schedule moving average window. Initially this moving average window shall be set by default to seven (7) days; in which case the weekday estimate is based on the average of five (5) most recent weekdays and the weekend estimate is based on the average of the two (2) most recent weekend days. To the extent weather conditions differ significantly from the historical days, additional adjustment may be necessary. After determining the estimate of Real-Time Self-Schedules, using a similar day forecasting approach, the CAISO adjusts the CAISO Forecast of CAISO Demand of a RUC Zone based on the forecasted quantity changes in Supply as a result of Self-Schedules submitted in the RTM. This adjustment for forecasted Real-Time Self-

Schedules may result in positive or negative adjustments. Demand adjustments to the CAISO Forecast of CAISO Demand result when there is a net forecast decrease in Real-Time Self-Schedule Supply relative to the Day-Ahead Schedule Supply. Supply adjustments to the individual resources occur when there is a net forecast increase in Real-Time Self-Schedule Supply relative to the Day-Ahead Schedule Supply of the individual resource.

#### **31.5.3.6 Day-Ahead Ancillary Service Procurement Deficiency Adjustment.**

While the CAISO intends to procure one hundred percent (100%) of its forecasted Operating Reserve requirement in the IFM based on the CAISO Forecast of CAISO Demand as specified in Section 8.3.1, the CAISO shall make adjustments to the CAISO Forecast of CAISO Demand used in RUC to ensure sufficient capacity is available or resources committed in cases that the CAISO is unable to procure one hundred percent (100%) of its forecasted Operating Reserve requirement in the IFM; provided, however, that the CAISO shall not procure specific Ancillary Services products in RUC, nor will the RUC optimization consider AS-related performance requirements of available capacity.

#### **31.5.3.7 RUC Zones.**

##### **31.5.3.7.1 Use of RUC Zones.**

The CAISO shall adjust the CAISO Forecast of CAISO Demand by RUC Zone for the conditions described in Sections 31.5.3.2 through 31.5.3.6. If any adjustments are made throughout the affected RUC Zone, such adjustments will be made consistent with the subset of system LDFs for the Nodes that define the RUC Zone(s). The CAISO will adjust the CAISO Forecast of CAISO Demand of each affected RUC Zone, preserving the LDFs within each RUC Zone, but the relative weighting of the LDFs across the system will deviate from the original LDFs. RUC costs will be pooled together to establish the RUC Compensation Costs. As described in Section 11.8.3, Settlement of RUC Compensation Costs will not be on a RUC Zone basis.

### **31.5.3.7.2 Designation of RUC Zones.**

The CAISO shall define RUC Zones as areas that represent UDC or MSS Service Areas, Local Capacity Areas, or any other collection of Nodes. RUC Zones will be designated by the CAISO as necessary and to the extent that the CAISO has developed sufficient data on historical CAISO Demand and weather conditions to allow it to perform Demand Forecasts. The mapping of RUC Zones to Nodes shall be static data and shall be maintained in the Master File. The CAISO may add new Nodes to a RUC Zone if new Nodes are added to the FNM. The status of each RUC Zone shall remain active for as long as the CAISO maintains regional forecasting capabilities, but once a RUC Zone is designated the CAISO will only adjust the CAISO Forecast of CAISO Demand as necessary to address RUC procurement constraints and not as a normal course for all CAISO Market functions. The actual RUC Zones used by the CAISO in its operation of RUC are posted on the CAISO Website.

### **31.5.4 RUC Procurement Constraints.**

In addition to the resource Constraints and network Constraints employed by SCUC as discussed in Section 27.4.1, the CAISO shall employ the following three Constraints in RUC:

- (a) To ensure that sufficient RUC Capacity is procured to meet the CAISO Forecast of CAISO Demand, the CAISO will enforce the power balance between the total Supply, which includes Day-Ahead Schedules and RUC Capacity, and the total Demand, which includes the CAISO Forecast of CAISO Demand and IFM export Schedules. The CAISO may adjust the CAISO Forecast of CAISO Demand to increase the RUC procurement target if there is AS Bid insufficiency in the IFM.
- (b) To ensure that RUC will neither commit an excessive amount of Minimum Load Energy nor procure an excessive amount of RUC Capacity from Scheduling Points the CAISO will verify that the sum of Day-Ahead Schedules, Schedules of

Generation Units, net imports and Participating Loads plus the Minimum Load Energy committed by RUC is not greater than a configurable percentage of the system CAISO Forecast of CAISO Demand.

- (c) The CAISO can limit the amount of RUC Capacity it will procure from resources that could otherwise be started during the Operating Day based on operational factors such as: 1) historical confidence that a Short Start Unit actually starts when needed based on the assessment of the CAISO Operators of the historical performance of Short Start Units; 2) need to conserve the number of run-hours and number of starts per year for critical loading periods; and 3) seasonal Constraints such as Overgeneration. The CAISO will verify that the total Day-Ahead Schedules and RUC Capacity from such resources is not greater than a configurable percentage of the total available capacity of all such resources.

### **31.5.5 Selection and Commitment of RUC Capacity.**

Capacity that is not already scheduled in the IFM may be selected as RUC Capacity through the RUC process of the DAM. The RUC optimization will select RUC Capacity and produce nodal RUC Prices by minimizing total Bid cost based on RUC Availability Bids and Start-Up and Minimum Load Bids. RUC will not consider Start-Up and Minimum Load Bids for resources already committed in the IFM. The RUC Capacity of a resource is the incremental amount of capacity selected in RUC above the resource's Day-Ahead Schedule. The resource's Day-Ahead Schedule plus its RUC Capacity comprise the resource's RUC Schedule. The CAISO will only issue RUC Start-Up Instructions to resources that must start in the Day-Ahead in order to be available to meet Real-Time Demand. RUC Schedules will be provided to Scheduling Coordinators even if a RUC Start-Up Instruction is not issued at that time. RUC shall not reverse commitments issued through the IFM. If the RUC process cannot find a feasible solution given the resources committed in the IFM, the RUC process will adjust Constraints as described in Section

31.5.4 to arrive at a feasible solution that accommodates all the resources committed in the IFM, and any necessary de-commitment of IFM committed units shall be effectuated through an Exceptional Dispatch.

**31.5.6 Eligibility for RUC Compensation.**

All RUC Capacity is eligible for the RUC Availability Payment except for: (i) RUC Capacity from RMR Units that has been designated as RMR Dispatch and included in RUC as a Self-Schedule; (ii) Resource Adequacy Capacity; and (iii) RUC Capacity that corresponds to the resource's Minimum Load, which is compensated through the Bid Cost Recovery as described in Section 11.8. Resources not committed in the IFM that are committed in RUC, including RMR Units that were not designated for RMR Dispatches and Resource Adequacy Resources, are also eligible for RUC Cost Compensation, which includes Start-Up and Minimum Load Cost compensation, and Bid Cost Recovery, subject to the resource actually following its Dispatch Instructions as verified by the CAISO pursuant to procedures set forth in the Business Practice Manuals.

**31.5.7 Rescission of Payments for Undispatchable and Undelivered RUC Capacity.**

If capacity committed in RUC provided from a Generating Unit, Participating Load, System Unit or System Resource is Undispatchable Capacity or Undelivered Capacity during the relevant Settlement Interval, then payments will be rescinded as described in this Section 31.5.7 and settled in accordance with Section 11.2.2.2. If the CAISO determines that non-compliance of a Participating Load, Generating Unit, System Unit or System Resource with an operating order or Dispatch Instruction from the CAISO, or with any other applicable technical standard under the CAISO Tariff, causes or exacerbates system conditions for which the WECC imposes a penalty on the CAISO, then the Scheduling Coordinator of such Participating Load, Generating Unit, System Unit or System Resource shall be assigned that portion of the WECC penalty which the CAISO reasonably determines is attributable to such non-compliance, in addition to any other penalties or sanctions applicable under the CAISO Tariff. The rescission of payments in this Section 31.5.7 shall not apply to a capacity payment for any particular RUC Capacity if the RUC Availability Payment is less than or equal to zero.

The CAISO shall calculate the Real-Time ability of each Generating Unit, Participating Load, System Unit or System Resource to deliver Energy from or capacity committed in RUC for each Settlement Interval based on its maximum operating capability, actual telemetered output, and Operational Ramp Rate as described in Section 30.10. System Resources that receive an award for RUC Capacity in the Day-Ahead Market are required to electronically tag (E-Tag as prescribed by the WECC) RUC Capacity. If the amounts of RUC Capacity in an electronic tag differ from the amounts of RUC Capacity for the System Resource, the Undispatchable Capacity will equal the amount of the difference, and will be settled in accordance with the provisions of Section 11.2.2.2.1. If the Undispatchable Capacity is capacity committed in RUC and is from a Generating Unit, System Unit or System Resource that is a Resource Adequacy Resource, there is no payment obligation to the CAISO for the Undispatchable Capacity. The CAISO will report the instance of non-compliance by the Resource Adequacy Resource to the appropriate Local Regulatory Authority.

For each Settlement Interval in which a Generating Unit, Participating Load, System Unit or System Resource fails to supply Energy from capacity committed in RUC in accordance with a Dispatch Instruction, or supplies only a portion of the Energy specified in the Dispatch Instruction, the RUC Availability Payment will be reduced to the extent of the deficiency, in accordance with the provisions of Section 11.2.2.2.2.

**31.6.1** The CAISO may at its sole discretion implement any temporary variation or waiver of the timing requirements of this Section 31 and Section 6.5.3 (including the omission of any step) if any of the following criteria are met:

- (i) such waiver or variation of timing requirements is reasonably necessary to preserve System Reliability, prevent an imminent or threatened System Emergency or to retain Operational Control over the CAISO Controlled Grid during an actual System Emergency.
- (ii) because of error or delay, the CAISO requires additional time to fulfill its responsibilities;
- (iii) problems with data or the processing of data cause a delay in receiving or issuing Bids or publishing information on the CAISO's secure communication system;
- (iv) problems with telecommunications or computing infrastructure cause a delay in receiving or issuing Day-Ahead Schedules or publishing information on the CAISO's secure communication system.

**31.6.2** If the CAISO temporarily implements a waiver or variation of such timing requirements, the CAISO will publish the following information on the CAISO's secure communication system as soon as practicable:

- (i) the exact timing requirements affected;
- (ii) details of any substituted timing requirements;
- (iii) an estimate of the period for which this waiver or variation will apply; and
- (iv) reasons for the temporary waiver or variation.

**31.6.3** If, despite the variation of any time requirement or the omission of any step, the CAISO either fails to receive sufficient Bids or fails to clear the Day-Ahead Market, the CAISO may abort the Day-Ahead Market and require all Bids to be submitted in the HASP and RTM.

**31.6.4 Demand Information.**

By 6:00 a.m. on the day preceding the Trading Day, each Scheduling Coordinator shall provide to the CAISO a Demand Forecast specified by UDC Service Area for which it will submit a Bid for each of the Settlement Periods of the following Trading Day. The CAISO shall aggregate the Demand information by UDC Service Area and transmit the aggregate Demand information to each UDC serving such aggregate Demand.

**31.7 Extremely Long-Start Commitment Process.**

The CAISO shall perform the Extremely Long-Start Commitment Process (ELC Process) after the regular DAM results are posted. During the ELC Process the CAISO shall use a 48-hour simultaneous SCUC to assist it in determining the commitment of ELS Resources. ELS Resources are flagged in the Master File and are the only resources eligible to be committed in the ELC Process.

**31.7.1 Execution of the Extremely Long-Start Commitment Process.**

Each day after the DAM results are posted, the CAISO shall conduct the ELC Process to determine commitment of ELS Resources to be available to the CAISO Markets in the second day out. The CAISO will use the latest CAISO Forecast of CAISO Demand available to the CAISO for the Trading Day two days ahead of the current day that the ELC Process is executed. For the purpose of conducting the ELC Process, the CAISO will set the Ancillary Services requirements for the second day out based on the CAISO Forecast of CAISO Demand and forecasted firm imports. The CAISO shall execute a 48-hour simultaneous SCUC process to inform the decisions made in the ELC Process. The result of the 48-hour simultaneous SCUC process shall be reviewed by the CAISO Operator. The CAISO Operator shall use its operator judgment consistent with Good Utility Practice to determine whether the commitment instructions to the ELS Resources for the second day in the 48-hour Time Horizon should be implemented. The ELC Process shall not dispatch Energy for the ELC Process Time Horizon and



therefore the commitment instructions do not include megawatts schedules greater than the Minimum Load. The Energy and Ancillary Service requirements are re-evaluated by the IFM executed the day after the applicable ELC Process. The Commitment Statuses of the ELS Resources are passed to the Bid validation process for use in the DAM for the Trading Day two days after the current day when the ELC Process is executed.

### **31.7.2 Inputs Used in the Extremely Long-Start Commitment Process.**

#### **31.7.2.1 Energy Bids and Ancillary Services Bids for the First Day of the ELC Process Time Horizon.**

The commitment results that have been determined in the DAM for the Trading Day as reflected in the Day-Ahead Schedule and RUC Schedule issued on the current day that the ELC Process is executed, representing the first day of the 48-hour ELC Process, are modeled as self-committed. These resources are modeled as self-scheduled at the greater of the Day-Ahead Schedule for Energy or RMR Generation requirement, plus any RUC Awards for the purpose of running the 48-hour SCUC optimization in the ELC Process. This self-scheduled consideration is only for modeling purposes and does not affect eligibility for BCR of such resources for that Trading Day. The Self-Provided Ancillary Services and the Ancillary Service Awards produced by the IFM application on the current day that the ELC Process is executed are fixed in the applicable ELC Process and, therefore, the ELC Process does not procure any additional Ancillary Services for the first day of the ELC Process Time Horizon.

#### **31.7.2.2 Energy Bids and Ancillary Services Bids for the Second Day of the ELC Process Time Horizon.**

For all resources that are not ELS Resources, Bids for Supply of Energy and Ancillary Services submitted for the first Trading Day of the ELC Process as submitted for the DAM for the same Trading Day are replicated as a surrogate for the Bids for the second Trading Day of the ELC Process Time Horizon. For all ELS Resources, Bids submitted for the Trading Day two days ahead of the current day on which the ELC Process is executed will be used as the Bids used for the second Trading Day of the ELC Process Time Horizon.

**31.7.2.3 Outages Considerations.**

Any resource and transmission Outages and de-rates, including Ramp Rate de-rates, are considered in the applicable Commitment Intervals in the two-day Time Horizon.

**31.7.2.4 Initial and Boundary Conditions.**

The CAISO will make the following assumptions in the ELC Process regarding resources already committed:

- (1) A resource that is committed by the IFM in a Trading Hour in the Trading Day is considered committed in the same hour in the same Trading Day within the ELC Process Time Horizon.
- (2) A resource that has an RMR Generation requirement in a Trading Hour in the Trading Day is considered committed in the same hour in the same Trading Day within the ELC Process Time Horizon.
- (3) A resource that has a RUC Schedule in a Trading Hour in the Trading Day is considered committed in the same hour in the same Trading Day within the ELC Process Time Horizon.

**31.7.2.5 Constraints.**

The ELC Process optimization will enforce the same Constraints that are enforced in RUC on the day the ELC Process is executed. These include but are not limited to the following:

- (1) The Energy balancing Constraints to meeting CAISO Forecast of CAISO Demand adjustable by RUC Zones.
- (2) The resource Constraints including capacity, Ramp Rates, Energy Limits, Forbidden Operating Regions, Minimum Run Time and Minimum Down Time Constraints, considering any Outages in the ELC Process Time Horizon.

- (3) The transmission Constraints including branch limits, **Transmission Interface** limits, and Nomograms, considering any Outages in the ELC Process Time Horizon.
- (4) Both Self-Provided Ancillary Services and Ancillary Services Awards are fixed for the first day of the ELC Process Time Horizon. The AS requirements, as used in the IFM, remain the same for the first day of the ELC Process Time Horizon optimization. The Ancillary Services requirements for the second day of the ELC Process Time Horizon are specified for the ELC Process optimization using the Ancillary Services procurement process.

### **31.7.3 Output of Extremely Long-Start Commitment Process.**

The results of the ELC Process are produced by 1500 hours two days ahead of the Trading Day. The results of the ELC Process indicate the commitment decisions for ELS Resources that were made in the ELC Process the day before. These commitment decisions are binding and the DAM applications model the committed ELS Resources as resources that are under a contractual obligation to provide. The CAISO Commitment **Period** or Self-Commitment Period determination for the ELS Resources depends on the DAM results and the Clean and Generated Bids, following the same rules that apply to other resources. All **Commitment** Intervals for the ELS Resources will be classified as CAISO Commitment Periods, unless there is a Self-Schedule or Self-Provided AS for that interval.

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**[NOT USED]**

**[Ten Sheet Numbers Reserved for Future Filings.]**

### **33. HOUR-AHEAD SCHEDULING PROCESS (HASP).**

The HASP is the hour-ahead process during the Real-Time which consists of the following activities. The HASP includes a special hourly run of the Real-Time Unit Commitment (RTUC), which is also one of the component processes of the RTM. The RTUC utilizes a SCUC optimization and runs every ~~fifteen~~ (15) minutes, as fully described in Section 34. This Section 33 describes the special features of the specific hourly HASP run of the RTUC. The HASP combines provisions for the CAISO to issue hourly pre-dispatch instructions to System Resources that submit Energy Bids to the RTM and for the procurement of Ancillary Services on an hourly basis from System Resources, with provisions for Scheduling Coordinators to self-schedule changes to their Day-Ahead Schedules as provided in Section 33.1, and submit Bids to export Energy at Scheduling Points. The HASP also performs the MPM-RRD procedure with respect to the Bids that will be used in the HASP optimization and in the RTM processes for the same Trading Hour.

#### **33.1 Submission of Bids for the HASP and RTM.**

Scheduling Coordinators may submit Bids that will be used for the HASP and the RTM processes starting from the time Day-Ahead Schedules have been posted until seventy-five (75) minutes prior to each applicable Trading Hour in the Real-Time. The HASP and RTM processes do not accept Demand Bids for CAISO Demand, or Self-Schedules for exports other than those utilizing ETC or TOR rights. Export Bids that are not Self-Schedules may be submitted in HASP. The rules for submitted Bids specified in Section 30 apply to Bids submitted to the HASP and RTM. After the Market Close of the HASP and the RTM the CAISO performs a validation process consistent with the provisions set forth in Section 30.7 and the following additional rules. The CAISO will generate a Self-Schedule to cover any RUC Award or Day Ahead Schedule in the absence of any Self-Schedule or Economic Bid components, or to fill in any gaps between any Self-Schedule Bid and any Economic Bid components to cover a RUC Award or Day-Ahead Schedule. Bids submitted to the HASP and the RTM to supply Energy and Ancillary Services will be considered in the various HASP and RTM processes, including the MPM-RRD process, the HASP optimization, the STUC, the RTUC and the RTD.

### **33.2 The HASP Optimization.**

After the Market Close for the HASP and RTM for the relevant Trading Hour, the Bids have been validated and the MPM-RRD process has been performed, the HASP optimization determines feasible but non-binding HASP Advisory Schedules for Generating Units for each fifteen-minute interval of the Trading Hour, as well as binding hourly HASP Intertie Schedules and binding hourly HASP AS Awards from Non-Dynamic System Resources for that Trading Hour. The HASP may also commit resources whose Start-Up Times are within its Time Horizon. The HASP, like the other runs of the RTUC, utilizes the same SCUC optimization and FNM as the IFM, with the FNM updated to reflect changes in system conditions as appropriate, to ensure that HASP Intertie Schedules are feasible. Instead of clearing against Demand Bids as in the IFM, the HASP clears Supply against the CAISO Forecast of CAISO Demand plus submitted Export Bids, to the extent the Export Bids are selected in the MPM-RRD process. The HASP optimization also factors in forecasted unscheduled flow at the Interties. The HASP optimization produces Settlement prices for hourly imports and exports to and from the CAISO Balancing Authority Area reflected in the HASP Intertie Schedule and for the HASP AS Awards for System Resources.

### **33.3 Treatment of Self-Schedules in HASP.**

Scheduling Coordinators may submit Self-Schedules for Supply of Energy to the HASP. This includes Self-Schedules by Participating Load that is submitting Bids as a negative Generating Unit. Scheduling Coordinators may not submit Self-Schedules for CAISO Demand in HASP. Scheduling Coordinators may submit Self-Schedules for exports at Scheduling Points. The HASP optimization clears Bids, including Self-Schedules, while preserving all priorities in this process consistent with Section 31.4. The HASP optimization does not adjust submitted Self-Schedules unless it is not possible to balance Supply and the CAISO Forecast of CAISO Demand plus Export Bids and manage Congestion using the available Economic Bids, in which case the HASP performs non-economic adjustments to Self-Schedules. The MWh quantities of Self-Schedules of Supply that clear in the HASP constitute a feasible Dispatch for the

RTM at the time HASP is run, but the HASP results do not constitute a final Schedule for Generating Units because these resources may be adjusted non-economically in the RTD if necessary to manage Congestion and clear Supply and Demand. Self-Schedules submitted for Generation Units that clear in the HASP will be issued HASP Advisory Schedules. Scheduling Coordinators representing Participating Intermittent Resources whose output is being used to satisfy a resource adequacy requirement must submit Self-Schedules in HASP in accordance with the forecast provided by the independent forecast service provider. The submission of a change to an ETC Self-Schedule beyond the deadline specified in Section 16.9.1, that is permitted pursuant to the terms of the applicable ETC, shall not be deemed to be an unbalanced ETC Self-Schedule for the purposes of Settlement, consistent with the ETC and TOR Self-Schedule Settlement treatment described in Section 11.5.7.

#### **33.4 MPM-RRD for the HASP and the RTM.**

After the Market Close of the HASP and RTM, after the CAISO has validated the Bids pursuant to section 30.7, and prior to running the HASP optimization, the CAISO conducts the MPM-RRD process, the results of which will be utilized in the HASP optimization and all RTM processes for the Trading Hour. The MPM-RRD process for the HASP and RTM produces results for each fifteen-minute interval of the Trading Hour and thus may produce up to four mitigated Bids for any given resource for the Trading Hour. A single mitigated Bid for the entire Trading Hour is calculated using the minimum Bid price of the four mitigated Bid curves at each Bid quantity level. The Bids are mitigated only for the Bid quantities that are above the minimum quantity cleared in the CCR across all four fifteen-minute intervals. For a Condition 1 RMR Unit, if the dispatch level produced through the ACR is greater than the dispatch level produced through the CCR, and for a Condition 2 RMR Unit that is dispatched through the ACR, the resource will be flagged as an RMR Dispatch in the RTM and shall constitute a Dispatch notice pursuant to the RMR Contract.

**33.5 [NOT USED]**

**33.6 HASP Results.**

The CAISO publishes the binding HASP Intertie Schedules and HASP AS Awards for System Resources, as well as HASP Advisory Schedules and HASP AS Awards for internal Generating Units no later than forty-five (45) minutes prior to the Trading Hour.

**33.7 Ancillary Services In the HASP and the RTUC.**

To maintain required Ancillary Services when changes in forecasts of Demand and resource Outages occur after the Day-Ahead AS Awards are established, the CAISO utilizes the RTUC runs, including the HASP, to procure additional Ancillary Services needed to meet Reliability Criteria. The HASP meets the expected need for additional Ancillary Services for the Trading Hour by utilizing the optimal mix of Ancillary Services from System Resources and from Generating Units. Only the AS from System Resources are binding AS Awards, and these are for the full Trading Hour. Those Generating Units designated in the HASP to provide Ancillary Services for the same Trading Hour are given non-binding advisory AS Awards as a result of the HASP because the use of Generating Units to provide AS will be re-optimized by a subsequent RTUC that is run closer to the time the AS will actually be needed, as described in Section 34.2. The HASP AS Awards for System Resources are settled at hourly ASMPs that are calculated in the HASP as described in Section 33.8. All Operating Reserves procured in HASP are Contingency Only Operating Reserves.

**33.8 HASP Prices for HASP Intertie Schedules and HASP AS Awards.**

The RTUC will produce fifteen-minute LMPs for the four fifteen-minute intervals for the applicable Trading Hour. The fifteen-minute LMPs corresponding to the Scheduling Points are then used to derive a simple average hourly price for the Settlement of hourly Intertie Schedules at each Scheduling Point. The RTUC will also produce fifteen-minute ASMPs for the four fifteen-minute intervals for the applicable Trading Hour. These fifteen-minute ASMPs are then used to derive an average hourly price for the Settlement of



hourly HASP AS Awards. The RTUC run will also produce fifteen-minute Shadow Prices for each of the Interties for the four fifteen-minute intervals for the applicable Trading Hour. These fifteen-minute Shadow Prices are then used to derive an average hourly price for charging hourly Intertie AS Award providers for Congestion on the Interties. HASP Intertie Schedules and HASP AS Awards are settled in accordance with Sections 11.4 and 11.10.1.2 respectively.

### **33.9 Cessation of the HASP.**

If, despite the variation of any time requirement or omission of any step, the CAISO is unable to operate the HASP, the CAISO may abort the HASP and perform all required functions through the RTM processes.

**34. REAL-TIME MARKET.**

The RTM is the market conducted by the CAISO during any given Operating Day in which Scheduling Coordinators may provide Real-Time Imbalance Energy and Ancillary Services. The Real-Time Market consists of the Real-Time Unit Commitment (RTUC), the Short-Term Unit Commitment (STUC) and the Real-Time Dispatch (RTD) processes. The Short-Term Unit Commitment (STUC) runs once per hour at the top of the hour and utilizes the SCUC optimization to commit Medium Start, Short Start and Fast Start Units to meet the CAISO Demand Forecast. The CAISO shall dispatch all resources, including Participating Load pursuant to submitted Bids or pursuant to the provisions below on Exceptional Dispatch. The Time Horizon of the STUC is approximately 255 minutes, starting with the fourth fifteen-minute interval of the next Trading Hour and extending for the next four Trading Hours. The RTUC runs every fifteen (15) minutes and utilizes the SCUC optimization to commit Fast Start and some Short Start resources and to procure any needed AS on a fifteen-minute basis. Any given run of the RTUC will have a Time Horizon of approximately sixty (60) to 105 minutes (four to seven fifteen-minute intervals) depending on when during the hour the run occurs. Not all resources committed in a given STUC or RTUC run will necessarily receive CAISO commitment instructions immediately, because during the Trading Day the CAISO may issue a commitment instruction to a resource only at the latest possible time that allows the resource to be ready to provide Energy when it is expected to be needed. The RTD uses a Security Constrained Economic Dispatch (SCED) algorithm every five minutes throughout the Trading Hour to determine optimal Dispatch Instructions to balance Supply and Demand and maintain required Ancillary Services quantities for the next binding target interval. The RTD optimization utilizes up to a sixty-five-minute Time Horizon (thirteen (13) five-minute intervals), but the CAISO issues Dispatch Instructions only for the next target five-minute Interval. The RTUC, STUC and RTD processes of the RTM use the same FNM used in the DAM and the HASP, subject to any necessary updates of the FNM pursuant to changes in grid conditions after the DAM has run.

### **34.1 Inputs to the Real-Time Market.**

The RTM utilizes results produced by the DAM and HASP for each Trading Hour of the Trading Day, including the combined commitments contained in the Day-Ahead Schedules, Day Ahead AS Awards, RUC Awards, HASP Intertie Schedules, HASP Self-Schedules, HASP Intertie AS Awards and the MPM-RRD that is run as part of the HASP to determine reliability needs and mitigated bids for each relevant Trading Hour. These results, plus the short-term Demand Forecast, Real-Time Energy Bids, Real-Time Ancillary Service Bids, updated FNM, State Estimator output, resource outage and de-rate information constitute the inputs to the RTM processes. Bids submitted in HASP for all Generating Units and Participating Load shall be used in the Real-Time Market.

### **34.2 Real-Time Unit Commitment.**

The Real-Time Unit Commitment (RTUC) process uses SCUC and is run every ~~fifteen~~ (15) minutes to: (1) make commitment decisions for Fast Start and Short Start resources having Start-Up Times within the Time Horizon of the RTUC process, and (2) procure required additional Ancillary Services and calculate ASMP used for settling procured Ancillary Service capacity for the next ~~fifteen~~ minute Real-Time Ancillary Service interval. RTUC is run four times an hour, at the following times for the following Time Horizons: (1) at approximately 7.5 minutes prior to the next Trading Hour, in conjunction with the HASP run, for T-45 minutes to T+60 minutes; (2) at approximately 7.5 minutes into the current hour for T-30 minutes to T+60 minutes; (3) at approximately 22.5 minutes into the current hour for T-15 minutes to T+60 minutes; and (4) at approximately 37.5 minutes into the current hour for T to T+60 minutes where T is the beginning of the next Trade Hour. The HASP, described in Section 33, is a special RTUC run that is performed at approximately 7.5 minutes before each hour and has the additional responsibility of: (1) pre-dispatching Energy and awarding Ancillary Services for hourly dispatched System Resources for the Trading Hour that begins 67.5 minutes later, and (2) performing the necessary MPM-RRD for that Trading Hour.

### **34.2.1 Commitment of Fast Start and Short Start Resources.**

RTUC produces binding and advisory Start-Up and Shut-Down Dispatch Instructions for Fast Start and Short Start resources that have Start-Up Times that would allow the resource to be committed prior to the end of the relevant Time Horizon of the RTUC run. A Start-Up Dispatch Instruction is considered binding if the resource could not achieve the target start time as determined in the current RTUC run in a subsequent RTUC run as a result of the Start-Up Time of the resource. A Start-Up Instruction is considered advisory if it is not binding, such that the resource could achieve its target Start-Up Time as determined in the current RTUC run in a subsequent RTUC run based on its Start-Up Time. A Shut-Down Instruction is considered binding if the resource could achieve the target Shut-Down Time as determined in the current RTUC in a subsequent RTUC run. A Shut-Down Dispatch Instruction is considered advisory if the resource Shut-Down Instruction is not binding such that the resource could achieve its target Shut-Down time as determined in the current RTUC run in a subsequent RTUC run. A binding Dispatch Instruction that results in a change in Commitment Status will be issued, in accordance with Section 6.3, after review and acceptance of the Start-Up Instruction by the CAISO Operator. An advisory Dispatch Instruction changing the Commitment Status of a resource may be modified by the CAISO Operator to a binding Dispatch Instruction and communicated in accordance with Section 6.3 after review and acceptance by the CAISO Operator. Only binding and not advisory Dispatch Instructions will be issued by the CAISO.

### **34.2.2 Real-Time Ancillary Services Procurement.**

If the CAISO determines that additional Ancillary Services are required, other than those procured in the DAM and the HASP, the RTUC will procure Ancillary Services on a fifteen-minute basis as necessary to meet reliability requirements and will determine Real-Time Ancillary Service Interval ASMPs for such AS for the next Commitment Period. All Operating Reserves procured in the RTM are considered Contingency Only Operating Reserves. Any Ancillary Service awarded in RTUC will be taken as fixed for

the three ~~five~~-minute RTD intervals of its target ~~fifteen~~-minute interval. In the RTUC, all resources certified and capable of providing Operating Reserves that have submitted Real-Time Energy Bids shall also submit applicable Spinning or Non-Spinning Reserves Bids, respectively, depending on whether the resource is online or offline. The CAISO will utilize the RTUC to procure Operating Reserves to restore its Operating Reserve requirements in cases when: (1) Operating Reserves awarded in DAM or HASP have been dispatched to provide Energy, (2) resource(s) awarded to provide Operating Reserves in the DAM or HASP ~~are~~ no longer capable of providing such awarded Operating Reserves, or (3) the Operator determines that additional Operating Reserves are necessary to maintain Operating Reserves within WECC/MORC criteria. The CAISO will utilize the RTUC to procure additional Regulation capacity in Real-Time in cases when: (1) resource(s) awarded to provide Regulation in the DAM or HASP are no longer capable of providing such awarded Regulation, or (2) the Operator determines that additional Regulation is necessary to maintain sufficient control consistent with NERC/WECC criteria and Good Utility Practice.

### **34.3 Real-Time Dispatch.**

The RTD can operate in three modes: RTED, RTCD and RTMD. The RTD (RTED and RTCD mode) uses a Security Constrained Economic Dispatch (SCED) algorithm every five ~~5~~ minutes throughout the Trading Hour to determine optimal Dispatch Instructions to balance Supply and Demand and maintain required Ancillary Service quantities for the next binding target interval. The Real-Time Economic Dispatch (RTED) will be used under most circumstances and will optimally dispatch resources based on their Energy Bids, excluding Contingency Only Operating Reserves except when needed to avoid an imminent System Emergency. The Real-Time Contingency Dispatch (RTCD) will be invoked when a transmission or generation contingency occurs and will include all Contingency Only Operating Reserves in the optimization. The Real Time Manual Dispatch (RTMD) will be invoked as a fall-back mechanism only when the RTED or RTCD fails to provide a feasible ~~D~~ispatch. These three modes of the RTD are described in Sections 34.3.1 to 34.3.3.

### **34.3.1 Real-Time Economic Dispatch.**

RTED mode of operation for RTD normally runs every ~~five~~ (5) minutes starting at approximately 7.5 minutes prior to the start of the next Dispatch Interval and produces a binding Dispatch Instruction for ~~E~~nergy for the next Dispatch Interval and advisory Dispatch Instructions for as many as twelve future Dispatch Intervals over the RTD optimization Time Horizon of sixty-five (65) minutes. After being reviewed by ~~the~~ CAISO Operator, only binding Dispatch Instructions are communicated for the next Dispatch Interval in accordance with Section 6.3. RTED will produce a Dispatch Interval LMP for each PNode for the Dispatch Interval associated with the binding Dispatch Instructions. The RTED Dispatch target is the middle of the interval between five (5) minutes boundary points.

### **34.3.2 Real-Time Contingency Dispatch.**

RTCD mode of operation for RTD is run in response to a significant Contingency event, such that waiting until the next normal RTD run is not adequate and/or Operating Reserve identified as Contingency Only need to be activated in response to the event. The CAISO Operator may activate the Operating Reserve identified as Contingency Only either on a resource specific basis or for all such resources. When activating Contingency Only reserves in RTCD, the original Energy Bids associated with the resources providing Operating Reserve will be used for the RTCD. RTCD uses SCED to produce an optimized set of binding Dispatch Instructions ~~s~~ for a single ~~ten~~-minute Dispatch Interval instead of a normal ~~five~~-minute Dispatch Interval. After being reviewed by ~~the~~ CAISO Operator, only binding Dispatch Instructions are communicated for the next Dispatch Interval in accordance with Section 6.3. When activating a RTCD and returning to normal RTED run after a RTCD run, ~~five~~-minute Dispatch Interval LMPs will be produced for each PNode be based on the last available price from either the RTCD or normal RTED run relative to a ~~five~~-minute target Dispatch Interval.

### **34.3.3 Real-Time Manual Dispatch.**

RTMD mode of operation for RTD is a merit-order run activated upon CAISO Operator request as a backup process in case the normal RTED process fails to converge. The RTMD run will provide the CAISO Operator a list of resources and quantity of MW available for Dispatch in merit-order based on Operational Ramp Rate but otherwise ignores Transmission Losses and network Constraints. The CAISO Operator may dispatch resources from the list by identifying the quantity of Imbalance Energy that is required for the system and/or directly selecting resources from the merit order taking into consideration actual operating conditions. After Dispatches have been selected, reviewed and accepted by the CAISO Operator, Dispatch Instructions will be communicated in accordance with Section 6.3. While the RTMD mode is being used for Dispatch a uniform five-minute MCP will be produced for all PNodes based on the merit order Dispatch. Until RTMD is actually run and RTMD-based Dispatch Instructions are issued after RTED fails to converge, all five-minute Dispatch Interval LMPs will be set to the last LMP at each Node produced by the last RTED run that converged.

### **34.4 Short-Term Unit Commitment.**

At the top of each Trading Hour, immediately after the RTUC run is completed, the CAISO performs an approximately five (5) hour Short-Term Unit Commitment (STUC) run using SCUC and the CAISO Forecast of CAISO Demand to commit Medium Start Units and Short Start Units with Start-Up Times greater than the Time Horizon covered by the RTUC. The Time Horizon for the STUC optimization run will extend three hours beyond the Trading Hour for which the RTUC optimization was run, and will replicate the Bids used in that Trading Hour for these additional hours. The CAISO revises these replicated Bids each time the hourly STUC is run, to utilize the most recently submitted Bids. A Start-Up Instruction produced by STUC is considered binding if the resource could not achieve the target Start-Up Time as determined in the current STUC run in a subsequent RTUC or STUC run as a result of the Start-Up Time of the resource. A Start-Up Instruction produced by STUC is considered advisory if it is not binding, such that the resource could achieve its target start time as determined in the current RTUC run

in a subsequent STUC or RTUC run based on its Start-Up Time. A binding Dispatch Instruction produced by STUC that results in a change in Commitment Status will be issued, in accordance with Section 6.3, after review and acceptance of the Start-Up Instruction by the CAISO Operator. The STUC will only decommit a resource to the extent that resource's physical characteristics allow it to be cycled in the same Time Horizon for which it was decommitted. STUC does not produce prices for Settlement.

### **34.5 General Dispatch Principles.**

The CAISO shall conduct all Dispatch activities consistent with the following principles:

- (1) The CAISO shall issue AGC instructions electronically as often as every four seconds from its Energy Management System (EMS) to resources providing Regulation and on Automatic Generation Control to meet NERC and WECC performance requirements;
- (2) In each run of the RTED or RTCD the objective will be to meet the projected Energy requirements over the Time Horizon of that run, subject to transmission and resource operational Constraints, taking into account the short term CAISO Forecast of CAISO Demand adjusted as necessary by the CAISO Operator to reflect scheduled changes to Interchange and non-dispatchable resources in subsequent Dispatch Intervals;
- (3) Dispatch Instructions will be based on Energy Bids for those resources that are capable of intra-hour adjustments and will be determined through the use of SCED except when the CAISO must utilize the RTMD;
- (4) When dispatching Energy from awarded Ancillary Service capacity the CAISO will not differentiate between Ancillary Services procured by the CAISO and Submissions to Self-Provide an Ancillary Service;



- (5) The Dispatch Instructions of a resource for a subsequent Dispatch Interval shall take as a point of reference the actual output obtained from either the State Estimator solution or the last valid telemetry measurement and the resource's operational ramping capability;
- (6) In determining the Dispatch Instructions for a target Dispatch Interval while at the same time achieving the objective to minimize Dispatch costs to meet the forecasted conditions of the entire Time Horizon, the Dispatch for the target Dispatch Interval will be affected by: (a) Dispatch Instructions in prior intervals, (b) actual output of the resource, (c) forecasted conditions in subsequent intervals within the Time Horizon of the optimization, and (d) operational Constraints of the resource, such that a resource may be dispatched in a direction for the immediate target Dispatch Interval that is different than the direction of change in Energy needs from the current Dispatch Interval to the next immediate Dispatch Interval;
- (7) Through Start-Up Instructions the CAISO may instruct resources to start up or shut down, or may reduce Load for Participating Loads, over the Time Horizon for the RTM based on submitted Bids, Start-Up Costs and Minimum Load Costs consistent with operating characteristics of the resources that the SCED is able to enforce. In making Start-Up or Shut-Down decisions in the RTM, the CAISO may factor in limitations on number of run hours or Start-Ups of a resource to avoid exhausting its maximum number of run hours or Start-Ups during periods other than peak loading conditions;
- (8) The CAISO shall only start up resources that can start within the Time Horizon used by the RTM optimization methodology;

- (9) The RTM optimization may result in resources being shut down consistent with their Bids and operating characteristics provided that: (1) the resource does not need to be on-line to provide Energy, (2) the resource is able to start up within the RTM optimization Time Horizon, (3) the Generating Unit is not providing Regulation or Spinning Reserve, and (4) Generating Units online providing Non-Spinning Reserve may be shut down if they can be brought up within ten (10) minutes as such resources are needed to be online to provide Non-Spinning Reserves; and
- (10) for resources that are both providing Regulation and have submitted Energy Bids for the RTM, Dispatch Instructions will be based on the Regulation Ramp Rate of the resource rather than the operational Ramp Rate.

### **34.6 Dispatch Instructions for Generating Units and Participating Load.**

The CAISO may issue Dispatch Instructions covering:

- (a) Ancillary Services;
- (b) Energy, which may be used for:
  - (i) Congestion relief;
  - (ii) provision of Imbalance Energy; or
  - (iii) replacement of an Ancillary Service;
- (c) agency operation of Generating Units, Participating Loads or Interconnection schedules, for example:
  - (i) output or Demand that can be Dispatched to meet Applicable Reliability Criteria;
  - (ii) Generating Units that can be Dispatched for Black Start;
  - (iii) Generating Units that can be Dispatched to maintain governor control regardless of their Energy schedules;

- (d) the operation of voltage control equipment applied on Generating Units as described in this CAISO Tariff;
- (e) MSS Load following instructions provided to the CAISO, which the CAISO incorporates to create their Dispatch Instructions; or
- (f) necessary to respond to a System Emergency or imminent emergency.

### **34.7 Utilization of the Energy Bids.**

The CAISO uses Energy Bids for the following purposes: (i) satisfying Real-Time Energy needs; (ii) mitigating Congestion; (iii) maintaining aggregate Regulation reserve capability in Real-Time; (iv) allowing recovery of Operating Reserves utilized in Real-Time operations; (v) procuring Voltage Support required from resources beyond their power factor ranges in Real-Time; (vi) establishing LMPs; (vii) as the basis for Bid Cost Recovery; and (viii) to the extent a Real-Time Energy Bid Curve is submitted starting at minimum operating level for a Short Start resource that is scheduled to be on-line, the RTM may Dispatch such a resource down to its minimum operating level and may issue a Shut-Down Instruction to the resource based on its Minimum Load Energy costs.

### **34.8 Dispatch of Energy From Ancillary Services.**

The CAISO may issue Dispatch Instructions to Participating Generators, Participating Loads, System Units and System Resources contracted to provide Ancillary Services (either procured through the CAISO Markets, Self-Provided by Scheduling Coordinators, or dispatched in accordance with the RMR Contract) for the Supply of Energy. During normal operating conditions, the CAISO shall Dispatch those Participating Generators, Participating Loads, System Units and System Resources that have contracted to provide Spinning and Non-Spinning Reserve, except for those reserves designated as Contingency Only, in conjunction with the normal Dispatch of Energy. Contingency Only reserves are Operating Reserve capacity that have been designated, either by the Scheduling Coordinator or the CAISO, as available to supply Energy in the Real-Time only in the event of the occurrence of an unplanned Outage,

a Contingency or an imminent or actual System Emergency. The CAISO may designate any reserve not previously identified as Contingency Only by Scheduling Coordinator as Contingency Only reserves, as necessary to maintain WECC MORC requirements. In the event of an unplanned Outage, a Contingency or a threatened or actual System Emergency, the CAISO may dispatch Contingency Only reserves. If Contingency Only reserves are dispatched through the RTCD, which as described in Section 34.3.2, only Dispatches in the event of a Contingency. Such Dispatch and pricing will be based on the original Energy Bids. If Contingency Only reserves are dispatched in response to a System Emergency that has occurred because the CAISO has run out of Economic Bids when no Contingency event has occurred, the RTED will Dispatch such Contingency Only reserves using maximum Bid prices as provided in Section 39.6.1 as the Energy Bids for such reserves and will set prices accordingly. If a Participating Generator, Participating Load, System Unit or System Resource that is supplying Operating Reserve is dispatched to provide Energy, the CAISO shall replace the Operating Reserve as necessary to maintain WECC MORC criteria. If the CAISO uses Operating Reserve to meet Real-Time Energy requirements, and if the CAISO needs Operating Reserves to satisfy MORC requirements, the CAISO shall restore the Operating Reserves to the extent necessary to meet MORC requirements through either the procurement of additional Operating Reserve in the RTM or the Dispatch of other Energy Bids in SCED to allow the resources that were providing Energy from the Operating Reserve to return to their Dispatch Operating Point. The Energy Bid Curve is not used by the AGC system when Dispatching Energy from Regulation. The upper portion of the resource capacity from its Regulation Limit is allocated to Regulation regardless of its Energy Bid Curve. For a resource providing Regulation Up or Operating Reserves the remaining Energy Bid Curve shall be allocated to any RTM AS Awards in the following order from higher to lower capacity where applicable: (a) Spinning Reserve; and (b) Non-Spinning Reserve. For resources providing Regulation Up, the applicable upper Regulation Limit shall be used as the basis of allocation if it is lower than the upper portion of the Energy Bid Curve. The remaining portion of the Energy Bid Curve, if there is any, shall constitute a Bid for RTM Energy.

The CAISO may perform Exceptional Dispatches for the circumstances described in this Section 34.9, which may require the issuance of forced Shut-Downs or forced Start-Ups. The CAISO shall conduct all Exceptional Dispatches consistent with Good Utility Practice. Dispatch Instructions issued pursuant to Exceptional Dispatches shall be entered manually by the Operator into the RTM optimization software so that they will be accounted for and included in the communication of Dispatch Instructions to Scheduling Coordinators. Exceptional Dispatches are not derived through the use of the RTM optimization software and are not used to establish the LMP at the applicable PNode. The CAISO will record the circumstances that have led to the Exceptional Dispatch. Imbalance Energy delivered or consumed pursuant to the various types of Exceptional Dispatch is settled according to the provisions in Section 11.5.6.

### 34.9.1 System Reliability Exceptional Dispatches.

The CAISO may manually dispatch Generation Units, System Units, Participating Loads, Dynamic System Resources, and Condition 2 RMR Units pursuant to Section 41.9, in addition to or instead of resources dispatched by RTM optimization software during a System Emergency, or to prevent an imminent System Emergency or a situation that threatens System Reliability and cannot be addressed by the RTM optimization and system modeling. To the extent possible, the CAISO shall utilize available and effective Bids from resources before dispatching resources without Bids. To deal with any threats to System Reliability, the CAISO may also dispatch in the Real-Time Non-Dynamic System Resources that have not been or would not be selected by the RTM for Dispatch, but for which the relevant Scheduling Coordinator has submitted a Bid into the HASP.

### **34.9.2 Other Exceptional Dispatch.**

The CAISO may also manually dispatch resources in addition to or instead of resources dispatched by the RTM optimization software to: (1) perform Ancillary Services testing; (2) perform pre-commercial operations testing for Generating Units; (3) mitigate for Overgeneration; (4) provide for Black Start; (5) provide for Voltage Support; (6) accommodate TOR or ETC Self-Schedule changes after the Market Close of the HASP; or (7) to reverse a commitment instruction issued through the IFM that is no longer optimal as determined through RUC. If the CAISO dispatches an RMR Unit for Voltage Support, the RMR Unit will be compensated under its RMR Contract and not as an Exceptional Dispatch under the CAISO Tariff.

### **34.9.3 Transmission-Related Modeling Limitations.**

The CAISO may also manually Dispatch resources in addition to or instead of resources dispatched by the RTM optimization software, during or prior to the Real-Time as appropriate, to address transmission-related modeling limitations in the Full Network Model. Transmission-related modeling limitations for the purposes of Exceptional Dispatch, including for settlement of such Exceptional Dispatch as described in Section 11.5.6, shall consist of any FNM modeling limitations that arise from transmission maintenance, lack of Voltage Support at proper levels as well as incomplete or incorrect information about the transmission network, for which the Participating TOs have primary responsibility. The CAISO shall also manually Dispatch resources under this Section 34.9.3 in response to system conditions including threatened or imminent reliability conditions for which the timing of the Real-Time Market optimization and system modeling are either too slow or incapable of bringing the CAISO Controlled Grid back to reliable operations in an appropriate time-frame based on the timing and physical characteristics of available resources to the CAISO.

All Self-Schedules are respected by the SCED and SCUC to the maximum extent possible and are protected from curtailment in the Congestion Management process to the extent that there are effective Economic Bids that can relieve Congestion. If all Economic Bids for the RTM are exhausted, all Self-Schedules between the Minimum Load and the lowest energy level of the first Energy Bid point will be subject to uneconomic adjustments based on assigned scheduling priorities. Through this process, imports and exports may be reduced to zero, Demand may be reduced to zero, and Generation may be reduced to a lower operating limit (or Regulation Limit) (or to a lower Regulation Limit plus any qualified Regulation Down Award or Self-Provided Ancillary Services, if applicable). Any Self-Schedules below the Minimum Load level are treated as fixed Self-Schedules and are not subject to uneconomic adjustments for Congestion Management but may be subject to decommitment via an Exceptional Dispatch if necessary as a last resort to relieve Congestion that could not otherwise be managed.

The scheduling priorities as defined in the RTM optimization to meet the need for increasing Supply as reflected from higher to lower priority are as follows:

- (a) Non-Participating Load reduction, exports explicitly identified in a Resource Adequacy Plan to be served by Resource Adequacy Capacity explicitly identified and linked in a Supply Plan to the exports, or Self-Schedules for exports at Scheduling Points in HASP served by Generation from non-Resource Adequacy Capacity or from non-RUC Capacity;
- (b) Self-Schedules for exports at Scheduling Points in HASP not offered by Generation from non-Resource Adequacy Capacity or not offered by Generation from non-RUC Capacity, except those exports explicitly identified in a Resource Adequacy Plan to be served by Resource Adequacy Capacity explicitly identified and linked in a Supply Plan to the exports as set forth in Section 34.10.1(a);

- (c) Contingency Only Operating Reserve if activated by Operator to provide Energy  
(as indicated by the Contingency Flag and the Contingency condition);
- (d) Economic Bids submitted in the HASP or RTM.

#### **34.10.2 Decreasing Supply.**

The scheduling priorities as defined in the RTM optimization to meet the need for decreasing Supply as reflected from higher to lower priority are as follows:

- (a) Non-Participating Load increase;
- (b) Reliability Must Run (RMR) Schedule (Day-Ahead manual pre-dispatch or Manual RMR Dispatches or Dispatches that are flagged as RMR Dispatches following the MPM-RRD process);
- (c) Transmission Ownership Right (TOR) Self-Schedule;
- (d) Existing Rights (ETC) Self-Schedule;
- (f) Regulatory Must-Run and Regulatory Must-Take (RMT) Self-Schedule;
- (g) Participating Load increase;
- (h) Day-Ahead Supply Schedule;
- (i) Self-Schedule submitted in HASP; and
- (j) Economic Bids submitted in the HASP or RTM.

These dispatch priorities as defined in the RTM optimization may be superseded by operator actions and procedures as necessary to ensure reliable operations.

#### **34.11 Means of Dispatch Communication.**

The CAISO dispatches Regulation by AGC to Participating Generators and, for Dynamic System Resources, through dedicated communication links that satisfy the CAISO's standards for external imports of Regulation. The CAISO communicates all other Dispatch Instructions electronically, except



that, at the CAISO's discretion, the CAISO may communicate Dispatch Instructions by telephone, or facsimile. Scheduling Coordinators shall confirm the Dispatch Instructions that are communicated orally by repeating them to the CAISO employee providing the Dispatch Instruction. Except in the case of deteriorating system conditions or an actual or threatened System Emergency, and except for Dispatch Instructions for Regulation, the CAISO sends all Dispatch Instructions to the Scheduling Coordinator. The recipient Scheduling Coordinator shall immediately communicate the Dispatch Instruction to the operator of the resource. The CAISO may, with the prior permission of the applicable Scheduling Coordinator, communicate with and give Dispatch Instructions to the operators of the resource directly without having to communicate through their Scheduling Coordinator. The CAISO shall record the communications between the CAISO and Scheduling Coordinators relating to Dispatch Instructions in a manner that permits auditing of the Dispatch Instructions, and of the response of the resources, as applicable. In situations of deteriorating system conditions or System Emergency, the CAISO reserves the right to communicate directly with the resource(s) as required to ensure System Reliability. Scheduling Coordinators are required to advise the CAISO immediately of any change in resource availability that prevents the recipient of a Dispatch Instruction from performing in accordance with that Dispatch Instruction.

**34.11.1 Response Required by Resources to CAISO Dispatch Instructions.**

Resources must:

- (a) unless otherwise stated in the Dispatch Instruction, comply with a Dispatch Instruction immediately upon receipt;
- (b) respond to all Dispatch Instructions in accordance with Good Utility Practice;
- (c) meet voltage criteria in accordance with the provisions in the CAISO Tariff;
- (d) meet any applicable Operational Ramp Rates;

- (e) respond to Dispatch Instructions for Ancillary Services within the required time periods and (in the case of Participating Generators providing Regulation) respond to AGC from the EMS; and
- (f) if a time frame is stated in a Dispatch Instruction, respond to a Dispatch Instruction within the stated time frame.

### **34.11.2 Failure to Conform to Dispatch Instructions.**

In the event that, in carrying out the Dispatch Instruction, an unforeseen problem arises (relating to plant operations or equipment, personnel or the public safety), the recipient of the Dispatch Instruction must notify the CAISO or, in the case of a Generator, the relevant Scheduling Coordinator immediately. The relevant Scheduling Coordinator shall notify the CAISO of the problem immediately. If a resource is unavailable or incapable of responding to a Dispatch Instruction, or fails to respond to a Dispatch Instruction in accordance with its terms, the resource shall be considered to be non-conforming to the Dispatch Instruction unless the resource has notified the CAISO of an event that prevents it from performing its obligations within thirty (30) minutes of the onset of such event through a SLIC log entry. Notification of non-compliance via the Automated Dispatch System (ADS) will not supplant nor serve as the official notification mechanism to the CAISO. If the resource is considered to be non-conforming as described above, the Scheduling Coordinator for the resource concerned shall be subject to Uninstructed Imbalance Energy as specified in Section 11.5.2 and Uninstructed Deviation Penalties as specified in Section 11.23. This applies whether any Ancillary Services concerned are contracted or Self-Provided. For a Non-Dynamic System Resource Dispatch Instruction prior to the Trading Hour, the Scheduling Coordinator shall inform the CAISO of its ability to conform to a Dispatch Instruction via ADS. The Non-Dynamic System Resource has the option to accept, partially accept, or decline the Dispatch Instruction, but in any case must respond within the timeframe specified in a Business Practice Manual. The Non-Dynamic System Resource can change its response within the indicated timeframe. If a Non-Dynamic System Resource does not respond within the indicated timeframe, the Dispatch Instruction will be

**considered declined.** A decline of such a Non-Dynamic System Resource for a Dispatch Instruction received at least forty (40) minutes prior to the Trading Hour will be subject to Uninstructed Deviation Penalties as specific in Section 11.23. A decline of such a Non-Dynamic System Resource for a Dispatch Instruction received less than forty (40) minutes prior to the Trading Hour will not be subject to Uninstructed Deviation Penalties. **A Non-Dynamic System Resource that only partially accepts a Dispatch Instruction is subject to Uninstructed Deviation Penalties for the portion of the Dispatch Instruction that is declined.**

When a resource demonstrates that it is not following Dispatch Instructions, the RTM will no longer assume that the resource will ramp from its current output level. The RTM assumes the resource to be “non-compliant” if it is deviating its five (5)-minute Ramping capability for more than N intervals by a magnitude determined by the CAISO based on its determination that it is necessary to improve the calculation of the expected Imbalance Energy as further defined in the BPM. When a resource is identified as “non-compliant,” RTM will set the Dispatch operating target for that resource equal to its actual output in the Market Clearing software such that the persistent error does not cause excessive AGC action and consequently require CAISO to take additional action to comply with reliability requirements. Such a resource will be considered to have returned to compliance when the resource’s State Estimator or telemetry value (whichever is applicable) is within the above specified criteria. During the time when the resource is “non-compliant”, the last applicable Dispatch target shall be communicated to the Scheduling Coordinator as the Dispatch operating target. The last applicable Dispatch target may be (i) the last Dispatch operating target within the current Trading Hour that was instructed prior to the resource becoming “non-compliant,” or (ii) the Day-Ahead Schedule, or (iii) the HASP Self-Schedule depending on whether the resource submitted a Bid and the length of time the resource was “non-compliant”.

**34.12 Metered Subsystems.**

Scheduling Coordinators that represent MSSs may submit Bids for Supply of Energy to the RTM, irrespective of whether the MSS is a Load following MSS. All Bids submitted for MSS generating resources for the RTM and all Dispatch Instructions shall be generating resource-specific. MSS non-Load following resources are responsible for following Dispatch Instructions. Load following MSS Operators shall provide the CAISO with an estimate of the number of MWs the applicable generating resource(s) will be generating over the next two hours in five-minute interval resolution. The Dispatch Instructions for Load following resources are incorporated with Generation estimates provided by MSS Operators. Such MSS Load following resources can deviate from the Dispatch Instructions in Real-Time to facilitate the following of Load without being subject to the Uninstructed Deviation Penalty as further described in Section 11.23 of the CAISO Tariff. The State Estimator will estimate all MSS Load in Real-Time and will incorporate the information provided by the Load following MSS Operator in clearing the RTM and its Dispatch Instructions.

**34.13 Treatment of Resource Adequacy Capacity in the Real-Time Market.**

Resource Adequacy Resources required to offer their Resource Adequacy Capacity in accordance with Section 40 shall be required to submit Energy Bids for: (1) all such Resource Adequacy Capacity and (2) any Ancillary Services capacity awarded or self-provided in the Day-Ahead, the HASP or RTM. In the absence of submitted Bids, as part of the validation described in 30.7, Generated Bids will be used for Resource Adequacy Resources required to offer their Resource Adequacy Capacity in accordance with Section 40. For any capacity from a Resource Adequacy Resource not required to offer Resource Adequacy Capacity in accordance with Section 40 that was awarded or is self-providing Operating Reserves capacity in the Day-Ahead Market, Scheduling Coordinators must submit an Energy Bid for no less than the amount of awarded or self-provided Operating Reserves capacity above their Day-Ahead

Schedule. Resource Adequacy Resources **that are** not required to offer their Resource Adequacy Capacity in accordance with Section 40 may voluntarily submit Energy Bids. Submitted Energy Bids shall be subject to the maximum and minimum Bid requirements and Mitigation Measures as set forth in Section 39.

**34.14 Real-Time Operational Activities in the Hour Prior to the Settlement Period.**

**34.14.1 Confirm Interchange Transaction Schedules (ITSs).**

Also in the hour prior to the beginning of the Operating Hour the CAISO will:

- (a) adjust Interchange transaction schedules (ITSs) as required under Existing Contracts in accordance with the procedures in the CAISO Tariff for the management of Existing Contracts;
- (b) adjust ITSs as required by changes in transfer capability of transmission paths occurring after Market Close of the HASP; and
- (c) agree on ITS changes with adjacent **Balancing Authorities**.

**34.15 Rules For Real-Time Dispatch of Imbalance Energy Resources.**

**34.15.1 Resource Constraints.**

The SCED shall enforce the following resource physical Constraints:

- (a) Minimum and maximum operating resource limits. Outages and limitations due to transmission clearances shall be reflected in these limits. The more restrictive operating or regulating limit shall be used for resources providing Regulation so that the SCED shall not Dispatch them outside their Regulating Range.
- (b) Forbidden Operating Regions. Resources can only be ramped through these regions. The SCED shall not Dispatch resources within their Forbidden Operating Regions unless at the maximum applicable Ramp Rate to clear the Forbidden Operating Region in consecutive Dispatch Intervals. Resources ramping through a Forbidden Operating Region shall not set LMP at its location and cannot provide Ancillary Services **and will not be called upon to provide**

Ancillary Services, unless the resource can cross the Forbidden Operating Region in less than twenty (20) minutes.

- (c) Operational Ramp Rates and Start-Up Times. The submitted Operational Ramp Rate for resources that are not providing Regulation, and the submitted Regulation Ramp Rate for resources that are providing Regulation shall be used for all Dispatch Instructions. The Ramp Rate for Non-Dynamic System Resources cleared in the HASP will not be observed. Rather, the ramp of the Non-Dynamic System Resource will respect inter-Balancing Authority Area Ramping conventions established by WECC. Ramp Rates for Dynamic System Resources will be observed like Participating Generators in the RTD. Each Energy Bid shall be Dispatched only up to the amount of Imbalance Energy that can be provided within the Dispatch Interval based on the applicable Operational Ramp Rate or Regulation Ramp Rate. The Dispatch Instruction shall consider the relevant Start-Up Time as, if the resource is off-line, the relevant Ramp Rate function, and any prior commitments such as Schedule changes across hours and previous Dispatch Instructions. The Start-Up Time shall be determined from the Start-Up Time function and when the resource was last shut down. The Start-Up Time shall not apply if the corresponding resource is on-line or expected to start. The CAISO Markets optimization considers fast and slow Ramping resources. Fast Ramping resources can ramp from PMin to PMax based on their Operational Ramp Rate in twenty (20) minutes or less. Slow Ramping resources take more than twenty (20) minutes to ramp from PMin to PMax based on their Operational Ramp Rate. The CAISO determines whether it is appropriate to procure Ancillary Services or Energy from fast Ramping and slow Ramping resources based on the RTUC optimization.

- (d) Maximum Number of Daily Start-Ups. The SCED shall not cause a resource to exceed its daily maximum number of Start-Ups.
- (e) Minimum Up and Down time. The SCED shall not start up off-line resources before their Minimum Down Time expires and shall not shut down on-line resources before their minimum up time expires.
- (f) Operating (Spinning and Non-Spinning) Reserve. The SCED shall Dispatch Spinning and Non-Spinning Reserve subject to the limitations set forth in Section 34.16.3.
- (g) Non-Dynamic System Resources. If Dispatched, each Non-Dynamic System Resource flagged for hourly pre-dispatch in the next Trading Hour shall be Dispatched to operate at a constant level over the entire Trading Hour. The HASP shall perform the hourly pre-dispatch for each Trading Hour once prior to the Operating Hour. The hourly pre-dispatch shall not subsequently be revised by the SCED and the resulting HASP Intertie Schedules are financially binding and are settled pursuant to section 11.4.
- (h) Daily Energy use limitation to the extent that Energy limitation is expressed in a resource's Bid. If the Energy Limits are violated for purposes of Exceptional Dispatches for System Reliability, the Bid will be settled as provided in Section 11.5.6.1.

**34.16 Ancillary Services in the Real-Time Market.**

**34.16.1 [NOT USED]**

**34.16.2 Dispatch of Self-Provided Ancillary Services.**

Where a Scheduling Coordinator has chosen to self-provide the whole of the additional Operating Reserve required to cover any Interruptible Imports which it has submitted through Self-Schedules in the Day-Ahead Market and has identified specific Generating Units, Participating Loads, System Units or System Resources as the providers of the additional Operating Reserve concerned, the CAISO shall Dispatch only the designated Generating Units, Participating Loads, System Units or System Resources in the event of the CAISO being notified that the on demand obligation is being curtailed. The Scheduling Coordinator scheduling an Interruptible Import will be responsible for Operating Reserves associated with the Interruptible Import, regardless of whether the Scheduling Coordinator is an LSE or not. For all other Submissions to Self-Provide an Ancillary Service, the Energy Bid shall be used to determine the Dispatch, subject to the limitation on the Dispatch of Spinning Reserve and Non-Spinning Reserve set forth in Section 34.10.

**34.16.3 Ancillary Services Requirements for RTM Dispatch.**

The following requirements apply to the Dispatch of Ancillary Services in the RTM:

**34.16.3.1 Regulation.**

- (a) Regulation provided from Generating Units or System Resources must meet the standards specified in this Tariff and Part A of Appendix K;
- (b) The CAISO will Dispatch Regulation in merit order of Bid prices as determined by the EMS. Dispatch of Regulation by EMS does not set the RTM LMP.
- (c) in the event of an unscheduled increase in system Demand or a shortfall in Generation output and Regulation margin drops, the CAISO will use Dispatch Energy in the RTM or Dispatch Operating Reserve, to restore Regulation margin; and
- (d) when scheduled Operating Reserve is used for restoration of Regulation reserve, the CAISO shall arrange for the replacement of that Operating Reserve.



**34.16.3.2      Operating Reserve.**

- (a)      Spinning Reserve:
  - (i)      Spinning Reserve provided from Generating Units and Interconnection schedules must meet the standards specified in Part B of Appendix K;
  - (ii)     the CAISO will Dispatch Spinning Reserve as may be required to meet the Applicable Reliability Criteria;
  - (iii)    the CAISO may Dispatch Spinning Reserve as balancing Energy to return Regulation Generating Units to their Set Points and restore full Regulation margin; and
  - (iv)    the CAISO will Dispatch Spinning Reserve in merit order of Energy Bid prices as determined by the SCED;
- (b)      Non-Spinning Reserve:
  - (i)      Non-Spinning Reserve provided from Generating Units, Demands, and external imports of System Resources must meet the standards specified in Part C of Appendix K
  - (ii)     the CAISO may Dispatch Non-Spinning Reserve in place of Spinning Reserve to meet Applicable Reliability Criteria;
  - (iii)    the CAISO will Dispatch Non-Spinning Reserve in merit order of Energy Bid prices as determined by the SCED ; and
  - (iv)    the CAISO may Dispatch Non-Spinning Reserve to replace Spinning Reserve if there is a shortfall in Spinning Reserve because of a deficiency of balancing Energy;

**34.16.3.3 Replacement of Operating Reserve.**

- (a) if pre-arranged Operating Reserve is used to meet balancing Energy requirements, the CAISO may replace such Operating Reserve by Dispatch of additional balancing Energy available from Energy Bids submitted in the HASP for the RTM or procurement of additional reserves based on an economic optimization of a resource's RTM Ancillary Service Bid and its Energy Bid.;
- (b) any additional Operating Reserve needs may also be met the same way; and
- (c) where the CAISO elects to rely upon Energy Bids, the CAISO shall select the resources with the lowest incremental Energy Bid price as established by SCED.

**34.16.3.4 Voltage Support.**

- (a) Voltage Support provided from Generating Units shall meet the standards specified in this Tariff and the Part E of Appendix K;
- (b) the CAISO may Dispatch Generating Units to increase or decrease MVar output within the power factor limits of 0.9 lagging to 0.95 leading (or within other limits specified by the CAISO in any exemption granted pursuant to Section 8.2.3.3 of the CAISO Tariff) at no cost to the CAISO when required for System Reliability;
- (c) may Dispatch each Generating Unit to increase or decrease MVar output outside of established power factor limits, but within the range of the Generating Unit's capability curve, at a price calculated in accordance with CAISO Tariff;
- (d) If Voltage Support is required in addition to that provided pursuant to 34.16.3.4 (b) and (c), the CAISO will reduce output of Participating Generators certified in accordance with Appendix K . The CAISO will select Participating Generators in the vicinity where such additional Voltage Support is required; and
- (e) the CAISO will monitor voltage levels at Interconnections to maintain them in accordance with the applicable Inter-Balancing Authority Area agreements.

**34.16.4 Inter-hour Dispatch of Resources With Real-Time Energy Bids.**

Dispatch Instructions associated with the ramp between the HASP Bid in one hour to the HASP Bid in the immediately succeeding Operating Hour shall be determined optimally by the SCED if the CAISO has Bids for either or both relevant Operating Hours. For any Operating Hour(s) for which Bids have been submitted Dispatch Instructions will be optimized such that the Dispatch Operating Point is within the Bid range(s). For any Operating Hour without submitted Bids, Dispatch Instructions will be optimized such that the Dispatch Operating Point conforms to the Schedule within the Operating Hour. Energy resulting from the Standard Ramp shall be deemed Standard Ramping Energy and will be settled in accordance with Section 11.5.1. Energy resulting from any ramp extending beyond the Standard Ramp will be deemed Ramping Energy Deviation and will be settled in accordance with Section 11.5.1. Energy delivered or consumed as a result of CAISO Dispatch of a resource's Energy Bid in one Operating Hour to a Dispatch Operating Point such that the resource cannot return to its successive Operating Hour Schedule or to an infra-marginal operating point by the beginning of the next Operating Hour is Residual Imbalance Energy and shall be settled as Instructed Imbalance Energy as provided for in Section 11.5.1 and also may be eligible for recovery of its applicable Energy Bid Costs in accordance with Section 11.8. Similarly, Energy delivered or consumed as a result of CAISO Dispatch of a resource's Energy Bid in a future Operating Hour to a Dispatch Operating Point different from its current Operating Point prior to the end of the current Operating Hour is also considered Residual Imbalance Energy and shall be settled as Instructed Imbalance Energy as provided for in Section 11.5.1 and also may be eligible for recovery of its applicable Energy Bid Costs in accordance with Section 11.8. When Ramping Energy Deviation and Residual Imbalance Energy coexist within a given Dispatch Interval, the Ramping Energy Deviation shall be the portion of Instructed Imbalance Energy that is produced or consumed within the Schedule-change band defined by the accepted HASP Bids of the two consecutive Settlement Periods; the Residual Imbalance Energy shall be the portion of Instructed Imbalance Energy that is produced or consumed outside the Schedule-change band.

**34.16.5 Inter-hour Dispatch of Resources Without Real-Time Energy Bids.**

Dispatch Instructions shall be issued for each Dispatch Interval as needed to prescribe the ramp between a resource's accepted HASP Bid in one Trading Hour to its accepted HASP Bid in the immediately succeeding Operating Hour. Such Dispatch Instructions shall be based on the lesser of: (1) the applicable Operational Ramp Rate as provided for in Section 30.10 and (2) the Ramp Rate associated with the Standard Ramp. The Dispatch Instructions for Ramping of Generating Units without Real-Time Energy Bids in both Operating Hours shall ramp the resource between hourly Schedules symmetrically across hourly boundaries in twenty (20) to sixty (60) minutes assuming congestion can be resolved utilizing Economic Bids. The minimum twenty (20)-minute ramp is required for smooth hourly Schedule changes and is consistent with Intertie scheduling agreements between Balancing Authority Areas. Resources with slower Ramp Rates would have longer ramps, and at the extreme, would ramp from the middle of an hour to the middle of the next hour. Energy resulting from the Standard Ramp shall be deemed Standard Ramping Energy and will be settled in accordance with Section 11.5.1. Energy resulting from any ramp extending beyond the Standard Ramp will be deemed Ramping Energy Deviation and will be settled in accordance with Section 11.5.1.

**34.16.6 Intra-Hour Exceptional Dispatches.**

For the special case where an Exceptional Dispatch begins in the new hour and the rules above would result in the violation of the resources inter-temporal constraint(s), the following rules are applied and the Energy is settled as Exceptional Dispatch Energy as described in Section 11.5.6.

- (a) If the ramp time is greater than one hour or greater than what can be achieved when RTM receives the Constraint, RTM starts the ramp at the earliest possible time and continues Ramping the resource in the new Trading Hour.

- (b) If the ramp time results in starting the ramp less than ten (10) minutes before the start of the hour, RTM instead starts the ramp at ten (10) minutes before the start of the hour and ramps the resource at a uniform rate so that it meets the Constraint by the start time of the Exceptional Dispatch.
- (c) If the new hour's Day-Ahead Schedule is beyond the Exceptional Dispatch Constraint, RTM resumes the basic Ramping rules after the Exceptional Dispatch Constraint is met, but limits the Ramp Rate as necessary to ensure that the resource does not complete its ramp before ten (10) minutes after the hour.

**34.17 Dispatch Information and Instructions.**

**34.17.1 Dispatch Information To Be Supplied by the CAISO.**

Communication of Dispatch information provided by the CAISO shall be in accordance with Section 6.3.

**34.17.2 Dispatch Information To Be Supplied by Scheduling Coordinator.**

Each Scheduling Coordinator shall be responsible for the submission of Bids and Dispatch of Generation and Demand in accordance with its Day-Ahead Schedule. Each Scheduling Coordinator shall keep the CAISO apprised of any change or potential change in the current status of all Generating Units, Interconnection schedules and Inter-SC Trades. This will include any changes in Generating Unit capacity that could affect planned Dispatch and conditions that could affect the reliability of a Generating Unit. Each Scheduling Coordinator shall immediately pass to the CAISO any information which it receives from a Generator which the Generator provides to the Scheduling Coordinator pursuant to Section 36.11.1. Each Scheduling Coordinator shall immediately pass to the CAISO any information it receives from a MSS Operator which the MSS Operator provides to the Scheduling Coordinator regarding any change or potential change in the current status of all Generating Units, System Units,

Interconnection schedules and Inter-Scheduling Coordinator Energy Trades. This information includes any changes in MSS System Units and Generating Unit capacity that could affect planned Dispatch and conditions that could affect the reliability of the System Unit or Generating Unit.

**34.17.3 Dispatch Information To Be Supplied by UDCs.**

Each UDC shall keep the CAISO informed of any change or potential change in the status of its transmission lines and station equipment at the point of Interconnection with the CAISO Controlled Grid. Each UDC shall keep the CAISO informed as to any event or circumstance in the UDC's service territory that could affect the reliability of the CAISO Controlled Grid. This would include adverse weather conditions, fires, bomb threats, etc.

**34.17.4 Dispatch Information To Be Supplied by PTOs.**

Each PTO shall report any change or potential change in equipment status of the PTO's transmission assets turned over to the control of the CAISO or in equipment that affects transmission assets turned over to the control of the CAISO immediately to the CAISO (this will include line and station equipment, line protection, Remedial Action Schemes and communication problems, etc.). Each PTO shall also keep the CAISO immediately informed as to any change or potential change in the PTO's transmission system that could affect the reliability of the CAISO Controlled Grid. This would include adverse weather conditions, fires, bomb threats, etc.

Each PTO shall schedule all Outages of its lines and station equipment which are under the Operational Control of the CAISO in accordance with the appropriate procedures in Section 9.3. Each PTO shall coordinate any requests for or responses to Forced Outages on its transmission lines or station equipment which are under the Operational Control of the CAISO directly with the appropriate CAISO Control Center as defined in Section 7.1.

**34.17.5 Dispatch Information To Be Supplied by *Balancing Authorities*.**

The CAISO and each adjacent *Balancing Authority* shall keep each other informed of any change or potential change in the status of the Interconnection and any changes in the Interconnection's TTC. The CAISO and each adjacent *Balancing Authority* shall keep each other informed of situations such as adverse weather conditions, fires, etc., that could affect the reliability of any Interconnection. Each *Balancing Authority* of the *Balancing Authority* Areas in the California area, as defined by the WECC Regional Security Plan, shall keep the CAISO informed of all information required by WECC for use by the Reliability Coordinator.

The CAISO and each adjacent *Balancing Authority* shall follow all applicable NERC and WECC scheduling procedures. This will include checking the Interconnection schedules for the next Settlement Period prior to the start of the Energy ramp going into that hour. The CAISO and each adjacent *Balancing Authority* shall check and agree on actual MWh net Interchange after the hour for the previous Settlement Period. One *Balancing Authority* Area shall change its actual number to reflect that of the other *Balancing Authority* Area in accordance with WECC standard procedures.

The CAISO and each adjacent *Balancing Authority* shall exchange MW, MVar, terminal and bus voltage data with each other on a four second update basis. MWh data for the previous hour shall be exchanged once per hour. All MW and MWh data for both the CAISO *Balancing Authority* Area and the adjacent *Balancing Authority* Areas must originate from the same metering equipment. All provisions in Sections 4.6.1.1(i) and 4.6.1.1 (ii) refer to information and data obtained from metering used for *Balancing Authority* Area operations and not metering used for billing and Settlement.

**34.18 [NOT USED]**

**34.19 Pricing Imbalance Energy.**

### **34.19.1 General Principles.**

Instructed and Uninstructed Imbalance Energy shall be paid or charged the applicable Resource-Specific Settlement Interval LMP except for hourly pre-dispatched Instructed Imbalance Energy, which shall be settled as set forth in **Section 11.5.2**. These prices are determined using the Dispatch Interval LMPs. The Dispatch Interval LMPs shall be based on the Bid of the marginal Generating Units, System Units, and Participating Loads dispatched by the CAISO to increase or reduce Demand or Energy output in each Dispatch Interval as provided in Section 34.19.2.1.

The CAISO will respond to the Dispatch Instructions issued by the SCED to the extent practical in the time available and acting in accordance with Good Utility Practice. The CAISO will record the reasons for any variation from the Dispatch Instructions issued by the SCED.

### **34.19.2 Determining Real-Time LMPs.**

#### **34.19.2.1 Dispatch Interval Real-Time LMPs.**

#### **34.19.2.2 Computation.**

For each Dispatch Interval, the CAISO will compute updated **S**upply and **D**emand curves, using the Generating Units, System Units, Dynamic System Resources and Participating Load Dispatched according to the CAISO's SCED during that time period to meet Imbalance Energy requirements. The RTM transactions will be settled at the Dispatch Interval LMPs in accordance with Section 11.5.

#### **34.19.2.3 Eligibility to Set the Real-Time LMP.**

All Generating Units, Participating Loads, Dynamic System Resources, System Units, or COGs subject to the provisions in Section 27.7, with Bids, including Default Energy Bids, that are unconstrained due to Ramp Rates or other temporal **C**onstraints are eligible to set the LMP, provided that the Generating Unit, Participating Load, Dynamic System Resource, or System Unit is Dispatched within its submitted Economic Bid range. If a resource is Dispatched beyond its Economic Bid range, the CAISO enforces a resource-specific **C**onstraint on the resource due to an RMR or Exceptional Dispatch, or the resource is



Ramping through a Forbidden Operating Region, the resource will not be eligible to set the LMP.

Resources identified as MSS Load following resources are not eligible to set the LMP. A resource constrained at an upper or lower operating limit, a boundary of a Forbidden Operating Region or dispatched for a quantity of Energy such that its full Ramping capability is constraining the ability of the resource to be dispatched for additional Energy in target interval, cannot be marginal (i.e., it is constrained by the Ramping capability) and thus is not eligible to set the Dispatch Interval LMP. Non-Dynamic System Resources are not eligible to set the Dispatch Interval LMP. Dynamic System Resources are eligible to set the Dispatch Interval LMP. A Constrained Output Generator that has the ability to be committed or shut off within the two-hour Time Horizon of the RTM will be eligible to set the Dispatch Interval LMP if any portion of its Energy is necessary to serve Demand. Dispatches of Regulation resources by EMS in response to AGC will not set the RTM LMP. Dispatches of Regulation resources to a Dispatch Operating Point by RTM SCED will be eligible to set the RTM LMP.

#### **34.19.2.4 Real-Time LMP When Responding To A Contingency.**

In cases when a Contingency occurs and the CAISO must activate its Operating Reserves, it may perform a Real-Time Contingency Dispatch (RTCD) for a target interval 10 minutes from the current time. When activating a Contingency Dispatch and returning to normal Dispatch in RTM, LMPs shall be based on the last available price from either the Contingency Dispatch or normal Dispatch run relative to the five-minute pricing target.

#### **34.19.2.5 Price for Uninstructed Deviations for Participating Intermittent Resources.**

Deviations associated with each Participating Intermittent Resource in a Scheduling Coordinator's portfolio shall be settled as provided in Section 11.12 at the monthly weighted average Dispatch Interval LMP, as calculated in accordance with Section 11.5.4.1 at each Pnode associated with the Participating Intermittent Resource, and using the monthly weighted average with weights equal to total Real-Time Generation.

**35 Market Validation and Price Correction.**

**35.1 Market Validation.**

The CAISO shall monitor the Market Clearing software solutions for the Day-Ahead Market, the RUC process, the Hour-Ahead Scheduling Process, and the Real-Time Market for all market intervals to determine whether prices are calculated accurately, consistent with the provisions of the CAISO Tariff. To the extent reasonably practicable, the CAISO shall correct erroneous prices identified through such monitoring and re-run the relevant CAISO Markets prior to publication of prices on its Open Access Same-Time Information System (OASIS) or provision of prices directly to Market Participants, if applicable.

**35.2 Timing of the Price Correction Process.**

Prices for each Trading Day shall become subject to the CAISO's price correction process once the CAISO publishes them on its OASIS or provides them directly to Market Participants, if applicable. The price correction process for each Trading Day shall end no later than 1700 hours of the eighth calendar day following that Trading Day. The CAISO may establish an earlier end-time for the price correction process in the applicable Business Practice Manual and may complete the price correction process for any Trading Day earlier than the end-time established in this Section 35 or in the Business Practice Manual. The CAISO shall provide notification on the CAISO Website when it has completed the price correction process for each Trading Day. If the CAISO does not provide such notification, the price correction process will be deemed complete at 1700 hours of the eighth calendar day following that Trading Day, unless an earlier time is established by the applicable Business Practice Manual.

**35.3 Finality of Prices Subject to the Price Correction Process.**

All prices shall be considered provisional until the CAISO has completed the price correction process regarding them. All prices for each Trading Day shall be considered final for purposes of this Section 35 once the price correction process for that Trading Day has ended, except that the CAISO may adjust, re-run, or otherwise correct such prices after the conclusion of the price correction process to the extent authorized by the provisions of the CAISO Tariff other than this Section 35.

**35.4 Scope of Price Corrections.**

The CAISO may correct all financially binding prices whenever the CAISO identifies an invalid market solution or invalid prices in an otherwise valid market solution. The circumstances in which the CAISO may determine that an invalid market solution or invalid prices exist include the following: the occurrence of data input failure; the occurrence of hardware or software failure; or a result that is inconsistent with the CAISO Tariff.

**35.5 Price Correction Methodology.**

The CAISO shall correct prices to conform with the relevant provisions of the CAISO Tariff to the extent such correction is practicable. To the extent such correction is not practicable, the CAISO shall correct prices so that they are as close as reasonably possible to the prices that should have resulted under the relevant provisions of the CAISO Tariff, using the most accurate data available, and in a manner that is consistent with the prevalent system conditions existing at that time. The CAISO shall correct prices using the first applicable and practicable correction method of the following:

- (a) The CAISO shall selectively recalculate incorrect financially binding prices when the invalid prices are isolated and can be corrected such that no other financially binding prices are affected by the correction.
- (b) If the correction method in Section 35.5(a) is not applicable and practicable, the CAISO shall conduct a market re-run for an invalidated market interval when all market inputs applicable to the market interval to be re-run are either (i) preserved from the original market run, for data that was not the cause of the invalidated price, (ii) corrected, in the case of invalid initial data in the initial Market Clearing, or (iii) recreated or replicated data using the best available alternate data sources, in the case of missing data in the initial Market Clearing.

(c) If the correction methods in Sections 35.5(a) and 35.5(b) are not applicable and practicable, the CAISO shall use, in place of prices for the binding interval of an invalidated market solution, replicated prices from binding or advisory intervals from the validated market solution in which the market conditions were most similar to the market conditions in the invalidated market solution, for the affected interval. In no case will an invalidated Day-Ahead Market solution be replaced with a valid Day-Ahead Market solution from a previous Trading Day. The method set forth in this Section 35.5(c) shall apply in the Day-Ahead Market only when some but not all hourly market intervals within a valid market run are deemed to be invalid and the market is not re-run pursuant to the method set forth in Section 35.5(b), above.

The CAISO shall include details concerning the CAISO's price correction methodology in the applicable Business Practice Manual.

### **35.6 Weekly Price Correction Report.**

The CAISO shall summarize all price corrections that occur within a week in a report that shall be posted on the CAISO Website by the seventh day of the following week. For all price corrections that occur during each week, the price correction report shall specify: (a) which market intervals were affected, (b) which price locations were affected, (c) a brief description of the reason for the price correction, and (d) the method of price corrective action undertaken.

**36 Congestion Revenue Rights.**

**36.1 Overview of CRRs and Procurement of CRRs.**

The CAISO distributes CRRs through an allocation and auction process as described in this Section 36. CRR Holders and Market Participants eligible to become CRR Holders can also buy, sell, or trade CRRs bilaterally as described in Section 36.7.

**36.2 Types of CRR Instruments.**

CRRs can be CRR Obligations or CRR Options. Each CRR is fully specified by its type (CRR Obligation or CRR Option), its CRR Source(s), its CRR Sink(s), its MW quantity, and the Trading Hours for which it is valid. The CRR Source(s) and CRR Sink(s) determine the direction of the CRR, which is from CRR Source(s) to CRR Sink(s).

**36.2.1 CRR Obligations.**

A CRR Obligation entitles its holder to receive a CRR Payment if the Congestion in a given Trading Hour is in the same direction as the CRR Obligation, and requires the CRR Holder to pay a CRR Obligation charge if the Congestion in a given Trading Hour is in the opposite direction of the CRR. The CRR Payment or CRR Obligation charge is equal to the per-MWh cost of Congestion (which equals the MCC at the CRR Sink minus the MCC at the CRR Source) multiplied by the MW quantity of the CRR.

**36.2.2 CRR Options.**

A CRR Option entitles its CRR Holder to a CRR Payment if the Congestion is in the same direction as the CRR Option, but requires no CRR Obligation charge if the Congestion is in the opposite direction of the CRR. The CRR Payment is equal to the per-MWh cost of Congestion (which equals the MCC at the CRR Sink minus the MCC at the CRR Source, when this quantity is positive and zero otherwise) multiplied by the MW quantity of the CRR.

**36.2.3 Point-to-Point CRRs.**

A Point-to-Point CRR is a CRR Option or CRR Obligation defined from a single CRR Source to a single CRR Sink.

**36.2.4 Multi-Point CRRs.**

A Multi-Point CRR is a CRR Obligation defined by more than one CRR Source and/or more than one CRR Sink, plus a specified distribution of the total MW value of the CRR over the multiple CRR Sources and/or multiple CRR Sinks such that the total MW assigned to all CRR Sources equals the total MW assigned to all CRR Sinks equals the MW value of the CRR. For the allocation of CRRs under this Section 36, an LSE seeking to be allocated a Multi-Point CRR must specify a single CRR Sink in its nomination.

**36.2.5 Monthly CRRs.**

Monthly CRRs have a term of one month, are differentiated by time of use periods (on-peak and off-peak), and are available through the monthly CRR Allocation and CRR Auction processes in advance of each month.

**36.2.6 Seasonal CRRs.**

Seasonal CRRs have a term of three months, and are differentiated by the different time of use periods (on-peak and off-peak) for each day within a season. Seasonal CRRs are made available through the annual CRR Allocation and CRR Auction processes conducted each year prior to the year in which the Seasonal CRR applies.

**36.2.7 Long Term CRRs.**

Long Term CRRs have a term of ten years. Long Term CRRs are seasonal and are differentiated by the different time of use periods (on-peak and off-peak) for each day within a season. When Long Term CRRs are nominated and allocated they apply to the same season and time of use period for each year

of the ten-year term and represent binding ten-year commitments by the CRR Holders that hold Long Term CRRs. Long Term CRRs are nominated and allocated to LSEs in Tier LT that is one tier in the sequence of tiers in the annual CRR Allocation process. Long Term CRRs are not available through the CRR Auction.

### **36.2.8 Full Funding of CRRs.**

All CRRs will be fully funded; provided however, that full funding of CRRs will be suspended if a System Emergency as described in Section 7.7.4, an Uncontrollable Force as described in Section 14, or a Participating TO's withdrawal of facilities or Entitlements from the CAISO Controlled Grid as described in Section 36.8.7 leaves the CAISO with inadequate revenues.

### **36.3 CRR Specifications.**

#### **36.3.1 Quantity.**

CRRs are distributed and settled in no less than one-**thousandth** of a MW denomination.

#### **36.3.2 Term.**

CRRs are Monthly CRRs, Seasonal CRRs, Long Term CRRs or Merchant Transmission CRRs. For CRR purposes, the applicable seasons are conventional calendar quarters as defined in the Business Practice Manual.

#### **36.3.3 On-Peak and Off-Peak Specifications.**

CRRs are defined either for on-peak or off-peak hours as specified by the CAISO in the applicable Business Practice Manuals consistent with the WECC standards at the time of the relevant CRR Allocation or CRR Auction.

### **36.4 FNM for CRR Allocation and CRR Auction.**

When the CAISO conducts its CRR Allocation and CRR Auction, the CAISO shall use the most up-to-date DC FNM which is based on the AC FNM used in the Day-Ahead Market. The Seasonal Available CRR Capacity shall be based on the DC FNM, taking into consideration the following, all of which are discussed in the applicable Business Practice Manual: (i) any long-term scheduled transmission Outages, (ii) OTC adjusted for any long-term scheduled derates, and (iii) a downward adjustment due to TOR as determined by the CAISO. The Monthly Available CRR Capacity shall be based on the DC FNM, taking into consideration: (i) any scheduled transmission Outages known at least thirty (30) days in advance of the start of that month as submitted for approval consistent with the criteria specified in Section 36.4.3, (ii) adjustments to compensate for the expected impact of Outages that are not required to be scheduled thirty (30) days in advance, including unplanned transmission Outages, (iii) adjustments to restore Outages or derates that were applied for use in calculating Seasonal Available CRR Capacity but are not applicable for the current month, (iv) any new transmission facilities added to the CAISO Controlled Grid that were not part of the DC FNM used to determine the prior Seasonal Available CRR Capacity and that have already been placed in-service and energized at the time the CAISO starts the applicable monthly process, (v) OTC adjusted for any scheduled derates or Outages for that month, and (vi) a downward adjustment due to TOR as determined by the CAISO. For the first monthly CRR Allocation and CRR Auction for CRR Year One, to account for any planned or unplanned Outages that may occur for the first month of CRR Year One, the CAISO will derate all flow limits, including Transmission Interface limits and normal thermal limits, based on statistical factors determined as provided in the Business Practice Manuals.



**36.4.1            Transmission Capacity Available for CRR Allocation and CRR Auction.**

With the exception of the Tier LT, the CAISO makes available seventy-five percent (75%) of Seasonal Available CRR Capacity for the annual CRR Allocation and CRR Auction processes, and one hundred percent (100%) of Monthly Available CRR Capacity for the monthly CRR Allocation and CRR Auction processes. The CAISO makes available sixty percent (60%) of Seasonal Available CRR Capacity in the Tier LT. Available capacity at Scheduling Points shall be determined in accordance with Section 36.8.4.2 for the purposes of CRR Allocation and CRR Auction of CRRs that have a CRR Source identified at a Scheduling Point. Before commencing with the annual or monthly CRR Allocation and CRR Auction processes, the CAISO may distribute Merchant Transmission CRRs and will model those as fixed injections and withdrawals on the DC FNM to be used in the allocation and auction. These fixed injections and withdrawals are not modified by the Simultaneous Feasibility Test. Similarly, before commencing the annual or monthly CRR Allocation and CRR Auction processes, the CAISO will model any previously allocated Long Term CRRs as fixed injections and withdrawals on the DC FNM to be used in the CRR Allocation and CRR Auction. These fixed injections and withdrawals are not modified by the Simultaneous Feasibility Test, which will ensure no degradation of previously allocated and outstanding Long Term CRRs due to the CRR Allocation and CRR Auction processes. Maintaining the feasibility of allocated Long Term CRRs over the length of their terms also is accomplished through the transmission planning process in Section 24.1.3.

**36.4.2            Simultaneous Feasibility.**

The annual and monthly CRR Allocation processes release CRRs to fulfill CRR nominations as fully as possible subject to a Simultaneous Feasibility Test. To the extent that nominations are not simultaneously feasible, the nominations are reduced in accordance with the CRR Allocation optimization formulation until simultaneous feasibility is achieved. The CRR Allocation optimization formulation,

detailed in the Business Practice Manuals, reduces nominated CRRs based on effectiveness in relieving overloaded constraints in order to minimize the total MW volume reduction of nominations while achieving simultaneous feasibility. In the event that there are two or more identical nominations for a specific combination of CRR Source and CRR Sink that affect an overloaded constraint, the CRR Allocation optimization formulation cannot distinguish these nominations based on effectiveness and, therefore, the CRR Allocation optimization will award each such Candidate CRR Holder a pro rata share of the CRRs that can be awarded based on each Candidate CRR Holder's nominated MW amounts. In addition to the adjustments in Section 36.4.1, the SFT for each CRR Allocation considers:

- (a) CRRs representing ETCs, Converted Rights and any TOR capacity that was not captured in the adjustments described in Section 36.4, which the CAISO deems necessary to prevent the Congestion Settlement of ETCs, Converted Rights, and TORs from causing revenue inadequacy of allocated and auctioned CRRs;
- (b) In the case of the monthly CRR Allocation, the CRRs already released for that month in the annual CRR Allocation and Auction; and,
- (c) The CRRs allocated in previous CRR Allocation tiers as described in Sections 36.8.3.1 through 36.8.3.6.

The CAISO will be responsible for submitting CRR nominations associated with ETC and ~~Converted Rights~~ Self-Schedules. These nominations will be ~~Point-to-Point~~ CRR nominations. The priority weights for these ~~Point-to-Point~~ CRR nominations will be given a higher value than the proxy bids associated with the nominations submitted by the CRR Allocation participants. In addition, as further provided in the

Business Practice Manual, the CAISO will enforce the following general pro-rationing rules when one or more sources from an Multi-Point CRR nomination compete with a Point-to-Point CRR nomination for a limited amount of capacity on a constraint, and the effectiveness on the constraint for each of the competing Multi-Point CRR sources is equal to the effectiveness of the Point-to-Point CRRs on the constraint. As further provided in the Business Practice Manual, in certain circumstances such as when the CAISO receives a relatively small sink nomination value, could not apply.

- (1) The cleared MW amounts for the Point-to-Point CRR and the Multi-Point CRR high priority sources are proportional to their respective nominated MW values;
- (2) The cleared MW amounts for the Multi-Point CRR sources are inversely proportional to the total number of high priority sources in the Multi-Point CRR; and
- (3) Point-to-Point CRR sources always have priority over low priority Multi-Point CRR sources.

In the event that transmission Outages and derates modeled for the monthly CRR Allocation and CRR Auction render previously issued Seasonal CRRs infeasible, the CAISO will increase the transfer capacity on the overloaded facilities just enough to render all Seasonal CRRs issued for the month feasible without creating any additional capacity beyond what is needed for the feasibility of the Seasonal CRRs. The CAISO will announce these adjustments to the market prior to conducting the monthly CRR Allocation and CRR Auction so that Candidate CRR Holders can take these facts into consideration in preparing their nominations and bids.

**36.4.3 Scheduling Requirements for Outages that May Have a Significant Effect on CRR Revenue Adequacy.**

As provided in Section 9.3.6.3.2, Outages that may have a significant effect upon CRR revenue adequacy must be submitted for approval no less than thirty (30) days in advance of the first day of the month in which the Outage is proposed to begin. Outages that may have a significant effect upon CRR revenue adequacy are defined in terms of the type of facility and the planned duration of the Outage. Outages of the types of transmission facilities described below that extend beyond a twenty-four (24) hour period must be submitted for CAISO approval consistent with this 30-day advance submittal requirement. The types of transmission facilities on the CAISO Controlled Grid to which this 30-day advance submittal and approval requirement applies consist of transmission facilities that:

- (a) are rated above 200 kV; or
- (b) are part of any defined flow limit as described in a CAISO Operating Procedure;
- or
- (c) were out of service in the last three (3) years and for which the CAISO determined a special flow limit was needed for real-time operation.

A list of the transmission facilities that satisfy criteria (b) and (c) above is provided in the Operating Procedures. The list will be reviewed by the CAISO on an annual basis and revised as appropriate. The following types of Outages need not be submitted for approval within this thirty-day time frame and will not be designated as Forced Outages if they otherwise comply with the requirements in Section 9.3.6: (1) Outages previously approved by CAISO that are moved within the same calendar month either by the CAISO or by request of the Participating TO; and (2) Outages associated with CAISO-approved allowable transmission maintenance activities during restricted maintenance operations as covered in CAISO Operating Procedures.

**36.5 Candidate CRR Holder and CRR Holder Requirements.**

Any entity that holds or intends to hold CRRs must register and qualify with the CAISO and comply with the other terms of this Section, regardless of whether they acquire CRRs by CRR Allocation, CRR Auction, the Secondary Registration System, or are assigned CRRs for Load Migration.

**36.5.1 Creditworthiness Requirements.**

All CRR Holders and Candidate CRR Holders must comply fully with all creditworthiness requirements as provided in Section 12 and Section 12.6 and as further developed in the applicable Business Practice Manuals. The amount of available credit for participating in a CRR Auction cannot exceed the entity's Aggregate Credit Limit as provided in Section 12.

**36.5.2 Required Training.**

CRR Holders and Candidate CRR Holders must attend a training class at least once prior to participating in the CRR Allocations or CRR Auctions. The CAISO may update training requirements annually or on an as-needed basis. Unless granted a waiver by the CAISO, Candidate CRR Holders and CRR Holders shall at all times have in their employment a person that has attended the CAISO's CRR training class and shall notify the CAISO as soon as practicable of a change in such status.

**36.6 [NOT USED]**

**36.7 Bilateral CRR Transactions.**

**36.7.1 Transfer of CRRs.**

**36.7.1.1 General Provisions of CRR Transfers.**

A CRR Holder may sell or otherwise transfer CRRs in increments of at least ~~one-thousandth~~ of a MW. Sales or other such transfers must be for at least a full day term consistent with the on-peak or off-peak specification of the CRR. The transferee may be any entity that is a Candidate CRR Holder or a CRR Holder consistent with the CAISO Tariff and the applicable Business Practice Manuals. All CRRs that are so sold or otherwise transferred by the CRR Holder continue to be subject to the relevant terms and conditions set forth in the CAISO Tariff and the applicable Business Practice Manuals.

**36.7.1.2 Specific Provisions for Transfer of Long Term CRRs.**

A CRR Holder that holds Long Term CRRs may sell or transfer through the Secondary Registration System MW portions and temporal segments of a Long Term CRR corresponding to the current calendar year as well as the calendar year covered by the most recently completed annual CRR Allocation. For such sales or transfers the Long Term CRR will be subject to the same limits on granularity that apply to Seasonal CRRs and Monthly CRRs, as specified in Section 36.7.1. A CRR Holder that holds Long Term CRRs may not transfer or sell through the Secondary Registration System any temporal segment of a Long Term CRR beyond the calendar year covered by the most recently completed annual CRR Allocation. For temporal segments beyond the year covered by the most recently completed annual CRR Allocation, the CRR Holder to whom a Long Term CRR was originally allocated remains the holder of record of the entire Long Term CRR for CAISO Settlement purposes. Allocated Long Term CRRs represent binding ten-year commitments by a CRR Holder that holds Long Term CRRs and may not be terminated or otherwise modified by the CRR Holder prior to the end of the Long Term CRR's ten-year term.

**36.7.2 Responsibility of the CAISO.**

The CAISO provides Market Participants a Secondary Registration System to facilitate and track CRR bilateral transactions. The bulletin board of the Secondary Registration System enables any entity that wishes to purchase or sell CRRs to post that information.

**36.7.3 CRR Holder Reporting Requirement.**

CRR Holders must report to the CAISO by way of the Secondary Registration System all bilateral CRR transactions consistent with the terms of this CAISO Tariff and the Business Practice Manuals. Both the

transferor and the transferee of the CRRs must register the transfer of the CRR with the CAISO using the Secondary Registration System at least five (5) Business Days prior to the effective date of transfer of revenues associated with a CRR. The CAISO shall not transfer any Settlement related to any CRR until such time that the CRR transfer has been successfully recorded through the SRS and the transferee has met all the creditworthiness requirements as specified in Section 12 and Section 12.6. Both the transferor and transferee shall submit the following information to the Secondary Registration System: (i) the effective start and end dates of the transfer of the CRR; (ii) the identity of the transferor; (iii) the identity of the transferee; (iv) the quantity of CRRs being transferred; (v) the CRR Sources and CRR Sinks of the CRRs being transferred; and (vi) time of use period of the CRR. The transferee must meet all requirements of CRR Holders, including disclosure to the CAISO of all entities with which the transferee is affiliated that are CRR Holders or Market Participants as defined in Section 36.5.

### **36.8 CRR Allocation.**

The CAISO allocates CRRs to Load Serving Entities serving Load internal to CAISO **Balancing Authority** Area, including MSS Operators as described in Section 36.10, as well as Qualified **OB**ALSEs. All CRRs allocated under the terms of this Section 36.8 will be CRR Obligations.

#### **36.8.1 Structure of the CRR Allocation Process.**

The CAISO conducts an annual CRR Allocation: (i) once a year for the entire year for Seasonal CRRs; and (ii) once a year for the ten-year term of Long Term CRRs. The annual CRR Allocation releases Seasonal CRRs and Long Term CRRs for four seasonal periods. The CAISO also conducts monthly CRR Allocations twelve times a year in advance of each month. Within each annual and monthly CRR Allocation process the CAISO performs distinct allocation processes for each on-peak and off-peak time of use specification. The CRR Allocation process for CRR Year One is a distinct process that differs from subsequent CRR Allocations as described in Sections 36.8.3.1 and 36.8.3.2. Each CRR Allocation

procedure is based on nominations to the CAISO by LSEs or Qualified OBAALSEs eligible to receive CRRs. The CAISO performs adjustments to the Seasonal CRRs and Long Term CRRs allocated to LSEs as necessary to reflect Load Migration between LSEs, as described in Section 36.8.5. A timeline of the CRR Allocation and CRR Auction processes is contained in the BPMs.

### **36.8.2 Load Eligible for CRRs and Eligible CRR Sinks.**

Any entity that wishes to participate in the CRR Allocation process must provide information that demonstrates that it has an obligation to serve load. An LSE's eligibility for allocation of CRRs is measured by the quantity of Load that it serves that is exposed to Congestion Charges for the use of the CAISO Controlled Grid as determined in Sections 36.8.2.1 and 36.8.2.2. An OBAALSE's eligibility for allocation of CRRs is also measured by the quantity of load that it serves that is exposed to Congestion Charges for the use of the CAISO Controlled Grid as determined in Section 36.9.3. For LSEs, the information necessary may include, but is not limited to, Settlement Quality Meter Data or relevant documents filed with the California Energy Commission. For OBAALSEs, the necessary information may include, but is not limited to, historical tagged Real-Time Interchange Export Schedules and historical load data reflecting the load they serve that is exposed to Congestion Charges for the use of the CAISO Controlled Grid. In addition, each such OBAALSE shall support its data submission with a written sworn affidavit by an executive authorized to represent the OBAALSE attesting to the accuracy of the data, and the CAISO will have the right to audit the raw data and calculations used to develop the submitted data set. An LSE serving internal Load is eligible for CRRs up to its Seasonal CRR Eligible Quantity or Monthly CRR Eligible Quantity, which is derived from its Seasonal CRR Load Metric or Monthly CRR Load Metric as described in Sections 36.8.2.1 and 36.8.2.2, respectively. Seasonal CRR Eligible Quantities and Monthly CRR Eligible Quantities for Qualified OBAALSEs are determined as provided in



Section 36.9.3. These quantities are calculated for each LSE or Qualified OBA LSE separately for each combination of season and time of use period for the annual CRR Allocation process, and for each time of use period for each monthly CRR Allocation process, and for each CRR Sink at which the eligible LSE serves Load or the Qualified OBA LSE exports Energy from the CAISO Balancing Authority Area. MSS eligibility for CRRs will account for net or gross MSS Settlement in accordance with Section 4.9.13.1. If the MSS Operator elects net Settlement, LSEs for such MSS Load shall submit CRR Sink nominations at the MSS LAP. If the MSS elects for gross Settlement, LSEs for such MSS Load shall submit CRRs Sink nominations at the applicable Default LAP. Load that is Pumped-Storage Hydro Units but is not Participating Load may be scheduled and settled at a PNode or Custom Load Aggregation Point and therefore LSEs for such Load shall submit CRR Sink nominations at the applicable PNode or Custom Load Aggregation Point. Load that is a Participating Load that is also aggregated is scheduled and settled at a Custom Load Aggregation Point that is customized specifically for such Load and, therefore, LSEs for such Participating Load shall submit CRR Sink nominations at the Custom Load Aggregation Point. Load that is Participating Load is scheduled and settled at an individual PNode, and therefore LSEs for such Load shall submit CRR Sink nominations at the applicable PNode. Load that is non-Participating Load, is not Pumped-Storage Hydro Units, and is not Load associated with ETCs, TORs, or MSS Operators that elects net Settlement, is scheduled and settled at the Default LAP. Therefore, LSEs for such Load shall submit CRR Sink nominations at their assigned Default LAP or Default LAPs if the Load they serve is located in more than one Default LAP. In tier 3 of the annual process and tier 2 of the monthly process, such LSEs may also submit CRR Sink nominations at a Sub-LAP of their assigned Default LAP. The CAISO will make available, prior to the beginning of the CRR Allocation process, a list of allowable CRR Sinks to be used in the allocation.

### **36.8.2.1 Seasonal CRR Eligible Quantity.**

The CAISO constructs Load duration curves by season and time of use periods for the annual CRR Allocation process for each LSE based on the LSE's submission to the CAISO of its historical hourly Load data for the prior year, for each LAP within which the LSE serves Load. An LSE's Seasonal CRR Load Metric for each season and time of use period is the MW level of Load that is exceeded only in 0.5% of the hours based on the LSE's historical Load data. In the event that the LSE has lost or gained net Load through Load Migration during the course of the prior year, the historical Load data will be adjusted to reflect the loss or gain in accordance with the applicable BPM. The CAISO calculates an LSE's Seasonal CRR Eligible Quantity by first subtracting from that LSE's Seasonal CRR Load Metric the quantity of Load served by its TORs, ETCs, and Converted Rights to form the LSE's Adjusted Load Metric, and then multiplying the result by 0.75.

### **36.8.2.2 Monthly CRR Eligible Quantity.**

#### **36.8.2.2.1 Based on Load Forecast.**

*Each month, LSEs whose Load forecasts are verifiable in accordance with Section 36.8.6 will submit hourly Load forecast data for the relevant month.* Each month the CAISO will use the LSE's submitted hourly Load forecast data for the relevant month to calculate two Load duration curves (one on-peak and one off-peak Load duration curve for the applicable month) to form the basis for monthly allocations for each CRR Sink in which the LSE serves Load. Each LSE's submitted hourly forecast data should reflect any Load growth that is not due to Load Migration as well as the effect of net Load Migration for that LSE. The Monthly CRR Load Metric *for such Load* is the MW level of Load that is exceeded only in 0.5% of the hours based on the LSE's submitted Load forecast. The CAISO will calculate an LSE's Monthly CRR Eligible Quantity by subtracting from that LSE's Monthly CRR Load Metric the quantity of Load served by its TORs, ETCs, and Converted Rights. In addition the CAISO will adjust the LSE's Monthly CRR Eligible Quantity, if such an adjustment is determined to be necessary pursuant to Section 36.8.6.

**36.8.2.2.2 Based on Historical Load Data.**

An LSE that serves Load that is eligible for CRRs but for which its Load forecast is not verifiable in accordance with Section 36.8.6 shall, each month, submit to the CAISO five (5) years of prior hourly historical Load data for that Load for the same applicable month. Such LSE may submit fewer years of historical data for that Load if granted a waiver by the CAISO because five (5) years of such Load data does not exist. Each month the CAISO will use the LSE's submitted hourly historical Load data for the relevant month to calculate two (2) Load duration curves for each year of historical Load data (one on-peak and one off-peak Load duration curve for the applicable month) for each CRR Sink in which such Load is located. For each Load duration curve, the CAISO will calculate the MW level of Load that is exceeded only in 0.5% of the hours. The CAISO will calculate an LSE's Monthly CRR Eligible Quantity for each on-peak and off-peak period for such Load by averaging the 0.5% exceeded values for all years of submitted historical data, and then subtracting the quantity of Load served by its TORs, ETCs, and Converted Rights.

### **36.8.3 CRR Allocation Process.**

#### **36.8.3.1 Annual CRR Allocation for CRR Year One.**

The annual CRR Allocation process for CRR Year One consists of a sequence of four (4) tiers for each season and time of use period (on-peak and off-peak). Each tier will feature a SFT applied to the CRR nominations submitted by eligible LSEs or Qualified OBAALSEs, the results of which are provided by the CAISO to the respective LSEs or Qualified OBAALSEs prior to the LSEs or Qualified OBAALSEs submitting their nominations to the next tier. Allocations of CRRs in each tier are considered final once they are provided by the CAISO to the respective LSEs or Qualified OBAALSEs. After each tier, LSEs or Qualified OBAALSEs will have an amount of time as specified in the Business Practice Manual after their receipt of the results of each tier to submit their nominations for the next tier, if there is one. The annual CRR Allocation allows LSEs or Qualified OBAALSEs to submit nominations for Seasonal CRRs up to their Seasonal CRR Eligible Quantities for each season of the relevant year, each time of use CRR Sink as provided in Sections 36.8.3.1.1, 36.8.3.1.2 and 36.8.3.1.4. The annual CRR Allocation also allows LSEs to submit nominations for Long Term CRRs up to twenty percent (20%) of their Adjusted Load Metric for each season, time of use period and each LAP; except that an LSE that demonstrates that more than twenty percent (20%) of its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of Generation resources is able to submit nominations for a greater amount as specified in Section 36.8.3.1.3. As provided in Section 36.8.3.1.3.2, the annual CRR Allocation allows a Qualified OBAALSE to submit nominations for Long Term CRRs up to fifty percent (50%) of its Adjusted Load Metric for each season, time of use period and Scheduling Point provided that the Qualified OBAALSE demonstrates that all of its nominated Long Term CRR Sources are covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources. The annual CRR Allocation for CRR Year One will be conducted in the following sequence of tiers:

**36.8.3.1.1** Tier 1. In tier 1, an LSE or a Qualified OBAALSE may nominate and the CAISO will allocate to the LSE or a Qualified OBAALSE Seasonal CRRs up to fifty percent (50%) of its Seasonal CRR Eligible Quantity for each season, time of use period and CRR Sink. An LSE or a Qualified OBAALSE can nominate Seasonal CRRs sourced at Trading Hubs in accordance with the LSE's or Qualified OBAALSE's verified CRR Sources. In running the SFT the CAISO shall disaggregate the Seasonal CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1. All allocated CRRs that result from such disaggregation will be Point-to-Point CRRs each of whose CRR Source is a Generating Unit PNode that is an element of the Trading Hub.

**36.8.3.1.2** Tier 2. In tier 2, an LSE or a Qualified OBAALSE may nominate and the CAISO will allocate to the LSE or Qualified OBAALSE Seasonal CRRs up to seventy-five percent (75%) of its Seasonal CRR Eligible Quantity for each season, time of use period and CRR Sink, minus the quantity of CRRs allocated to that LSE or Qualified OBAALSE in tier 1. An LSE or a Qualified OBAALSE can nominate Seasonal CRRs sourced at Trading Hubs in accordance with the LSE's or Qualified OBAALSE's verified CRR Sources. In tier 2 an LSE or a Qualified OBAALSE with a verified Trading Hub CRR Source may nominate up to seventy-five (75%) of the Adjusted Verified CRR Source Quantity for that Trading Hub, minus the total MW quantity of Point-to-Point CRRs the LSE or Qualified OBAALSE was allocated in tier 1 as a result of its tier 1 nomination of CRRs sourced at that Trading Hub. In running the SFT the CAISO shall disaggregate the Seasonal CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1. All allocated CRRs that result from such disaggregation will be Point-to-Point CRRs each of whose CRR Source is a Generating Unit PNode that is an element of the Trading Hub.

**36.8.3.1.3** Tier LT. Tier LT will follow tier 2 for CRR Year One. In Tier LT, an LSE or a Qualified OBAALSE may nominate Long Term CRRs from the Seasonal CRRs allocated in tiers 1 and 2 as provided in this Section 36.8.3.1. The cleared Point-to-Point CRRs awarded in tier 1 and tier 2 that resulted from disaggregated CRR nominations sourced at a Trading Hub may not be nominated in Tier LT in CRR Year One. Any Point-to-Point CRRs awarded as a result of disaggregated CRR nominations sourced at a Trading Hub, as described in Section 36.8.4.1, must be nominated as Trading Hub CRRs as described in this Section 36.8.3.1.3. In running the SFT the CAISO shall disaggregate the Seasonal CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1. All allocated Long Term CRRs that result from such disaggregation will be Point-to-Point CRRs each of whose CRR Source is a Generating Unit PNode that is an element of the Trading Hub.

**36.8.3.1.3.1 Tier LT for LSEs.**

The quantity of Seasonal CRRs that an LSE can nominate as Long Term CRRs is limited to twenty percent (20%) of the LSE's Adjusted Load Metric, except that an LSE that can demonstrate that more than twenty percent (20%) of its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of Generation resources is able to submit nominations for a greater amount as provided in this section. Such demonstrations shall be provided by the requesting LSE to the CAISO through the submission of a written sworn declaration by an executive employee authorized to represent the LSE and attest to the accuracy of the data demonstration. As necessary, the CAISO may request, and such LSE must produce in a timely manner, documents in support of such declaration. If the LSE has demonstrated that more than twenty percent (20%) of its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of Generation resources, the amount of Long Term CRRs that it may nominate is equal to the minimum of: (i) the sum of the owned resources and long-term procurement arrangements of ten (10) years or more and (ii) fifty percent (50%) of the LSE's Adjusted Load Metric.

Subject to the maximum quantities described above in this Section 36.8.3.1.3.1, an LSE can nominate CRRs sourced at a Trading Hub in Tier LT up to the total MW amount of the Point-to-Point CRRs the LSE was allocated in tiers 1 and 2 as a result of its disaggregated tier 1 and 2 nominations of CRRs sourced at that Trading Hub.

**36.8.3.1.3.2 Tier LT for Qualified OBAALSEs.**

A Qualified OBAALSE may submit nominations for Long Term CRRs up to fifty percent (50%) of its Adjusted Load Metric for each season, time of use period and Scheduling Point. The Qualified OBAALSE must demonstrate that all of its nominated Long Term CRRs are supported by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources. Such demonstrations shall be provided by the requesting Qualified OBAALSE to the CAISO through the submission of a written sworn declaration by an executive employee authorized to represent the Qualified OBAALSE attesting to the accuracy of the data demonstration. As necessary, the CAISO may request, and such Qualified OBAALSE must produce in a timely manner, documents in support of such declaration.

**36.8.3.1.3.3 Tier LT SFT.**

After receiving nominations for Long Term CRRs from LSEs and Qualified OBAALSEs, the CAISO will run SFTs to ensure the feasibility of the nominated Long Term CRRs for the remaining nine years of the ten-year term of the Long Term CRR. The SFT runs in Tier LT will test the feasibility of only the Long Term CRR nominations and will not include in the analysis those Seasonal CRRs allocated in tiers 1 and 2 that are not nominated as Long Term CRRs. The quantity of Long Term CRRs that can be allocated for any season and time of use period must be feasible for the entire ten-year term of the Long Term CRR.

As a result of the Tier LT SFT runs, Long Term CRR nominations may not be fully allocated; however, such a result will not affect the CRR Year One validity of the Seasonal CRR allocated in tiers 1 and 2. The CAISO will inform the nominating entity of the results of the Tier LT SFTs before the deadline for submission of the tier 3 nominations.

**36.8.3.1.4** Tier 3. In tier 3, an LSE or a Qualified OBAALSE may nominate and the CAISO will allocate to the LSE or Qualified OBAALSE Seasonal CRRs up to one hundred percent (100%) of its Seasonal CRR Eligible Quantity for each season, minus the quantity of CRRs allocated to that LSE or Qualified OBAALSE in tiers 1 and 2. In tier 3, Sub-LAPs will be eligible CRR Sinks provided that the Sub-LAP is within the nominating LSE's Default LAP. An LSE or a Qualified OBAALSE can nominate Seasonal CRRs sourced at Trading Hubs. In running the SFT the CAISO shall disaggregate the Seasonal CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1. All allocated CRRs that result from such disaggregation will be Point-to-Point CRRs each of whose CRR Source is a Generating Unit PNode that is an element of the Trading Hub. A Qualified OBAALSE can only nominate CRRs from its verified CRR Sources as provided in Section 36.8.3.4.

**36.8.3.2 Monthly CRR Allocation for CRR Year One.**

The monthly CRR Allocation in CRR Year One shall consist of a sequence of two (2) tiers for each time of use period (on-peak and off-peak). The monthly CRR Allocation will distribute Monthly CRRs to each LSE or Qualified OBAALSE up to one hundred percent (100%) of its Monthly CRR Eligible Quantity, minus CRRs allocated to that LSE or Qualified OBAALSE in the annual CRR Allocation for the relevant month and time of use period. The monthly CRR Allocation for CRR Year One will be conducted as follows:



**36.8.3.2.1** Tier 1. In tier 1 of the monthly CRR Allocations, an LSE or a Qualified OBAALSE may nominate and the CAISO will allocate to the LSE or Qualified OBAALSE Monthly CRRs up to fifty percent (50%) of the difference between its Monthly CRR Eligible Quantity and the quantity of Seasonal CRRs and previously allocated Long Term CRRs that apply to that month and time of use period. An LSE or a Qualified OBAALSE can nominate Monthly CRRs sourced at Trading Hubs in accordance with the LSE's or Qualified OBAALSE's verified CRR Sources. In running the SFT the CAISO shall disaggregate the Monthly CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1. All allocated CRRs that result from such disaggregation will be Point-to-Point CRRs each of whose CRR Source is a Generating Unit PNode that is an element of the Trading Hub.

**36.8.3.2.2** Tier 2. In tier 2 of the monthly CRR Allocations, an LSE or a Qualified OBAALSE may nominate and the CAISO will allocate to the LSE or Qualified OBAALSE Monthly CRRs up to one hundred percent (100%) of the difference between its CRR Eligible Quantity and the quantity of Seasonal CRRs and previously allocated Long Term CRRs that apply to that month and time of use period, minus the quantity of CRRs the entity was allocated in tier 1 of the CRR Year One monthly CRR Allocation. An LSE or a Qualified OBAALSE can nominate Monthly CRRs sourced at Trading Hubs. In running the SFT the CAISO shall disaggregate the Monthly CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1. In tier 2 of the monthly CRR Allocation, Sub-LAPs will be eligible CRR Sinks provided that the Sub-LAP is within the nominating LSE's Default LAP. A Qualified OBAALSE can only nominate CRRs from its verified CRR Sources as provided in Section 36.8.3.4.2.

**36.8.3.3 [NOT USED]**

**36.8.3.4 Source Verification.**

Source verification is required for LSE CRR nominations in tiers 1 and 2 of the CRR Year One annual allocation process and in tier 1 of each CRR Year One monthly allocation process. Source verification is required for all Qualified OBAALSE CRR nominations in all tiers of all CRR Allocation processes.

#### **36.8.3.4.1 CRR Year One Source Verification for LSEs.**

In CRR Year One, nominations for tier 1 and tier 2 of the annual CRR Allocation and tier 1 of the monthly CRR Allocations must be source verified for all LSEs. The CAISO will make available, prior to the beginning of the allocation process, a list of allowable CRR Sources to be used in the allocation. An LSE must demonstrate that it could actually submit Bids, including Self-Schedules and Inter-SC Trades, for Energy from the locations to be nominated as CRR Sources to serve its Load either through ownership of, or contractual rights to receive Energy from, the relevant Generating Units, or a contract to take ownership of power at the relevant source, such as a Trading Hub or a Scheduling Point. For the second, third and fourth quarters of calendar year 2008 for CRR Year One, in conducting its source verification the CAISO will use data for the period beginning April 1, 2006 and ending December 31, 2006. For the first quarter of calendar year 2009 for CRR Year One, the CAISO will use data for the period beginning January 1, 2007 and ending March 31, 2007 as the basis for verification. Such demonstrations shall be provided by the requesting LSE to the CAISO through the submission of a written sworn declaration by an executive employee authorized to represent the LSE and attest to the accuracy of the data demonstration. As necessary, the CAISO may request, and such LSE must produce in a timely manner, documents in support of such declaration.

#### **36.8.3.4.2 Source Verification for Qualified OBAALSEs.**

All CRR nominations by Qualified OBAALSEs must be source verified. A Qualified OBAALSE's source verification will be based on its legitimate need showing as specified in Section 36.9.1.

#### **36.8.3.4.3 Calculation of Verified CRR Source Quantity.**

The Verified CRR Source Quantity associated with each verified CRR Source for a particular LSE or Qualified OBAALSE will be: (i) for an owned generation resource the PMax of the unit multiplied by the LSE's or Qualified OBAALSE's ownership share; (ii) for a contract with a generation resource, the hourly MWh of Energy specified in the contract averaged over all hours of the relevant time of use period, but no greater than the PMax of the unit; or (iii) for a contract that delivers Energy to a Trading Hub or Scheduling Point, the hourly MWh of energy specified in the contract for delivery from the supplier to the LSE or Qualified OBAALSE at the Trading Hub or Scheduling Point, averaged over all hours of the

relevant time of use period. Energy contracts submitted by an LSE to demonstrate that the LSE can submit Bids, including Self-Schedules and Inter-SC Trades, for Energy from the nominated CRR Sources to serve its Load must be at least one month in duration. Energy contracts submitted by a Qualified OBA LSE to demonstrate that the Qualified OBA LSE can submit Bids, including Self-Schedules and Inter-SC Trades, for Energy from the nominated CRR Sources to serve its Load must be at least one month in duration to support nominations of Monthly and Seasonal CRRs, and at least ten (10) years in duration to support nominations of Long Term CRRs. Nominations of CRRs for which the CRR Source is a Scheduling Point must be source verified in accordance with Section 36.8.4.2.

**36.8.3.4.4 Calculation of Adjusted Verified CRR Source Quantity.**

For nominations by an LSE and a Qualified OBA LSE, except for a Qualified OBA LSE's nomination of Long Term CRRs, the CAISO will consider a contract that covers a portion of a season (but not less than one month) to be acceptable verification, with the adjustment described below, for the entire season for which a CRR is nominated. The CAISO will also consider a contract not less than one month in duration that covers portions of two consecutive months to be acceptable verification, with the adjustment described below, for both of the months that are partially covered. In such cases, for a contract that covers only a portion of the season or month for which the LSE or Qualified OBA LSE wishes to nominate source-verified CRRs, the CAISO will calculate an Adjusted Verified CRR Source Quantity, which equals the Verified CRR Source Quantity times the ratio of the number of days covered by the contract for a particular month or season to the total number of days in that month or season, consistent with the time of use period of the CRRs being nominated. Contracts submitted by a Qualified OBA LSE to support nomination of Long Term CRRs must be at least ten (10) years in duration and cover the entire season of the Long Term CRR being nominated, and therefore the Adjusted Verified CRR Source Quantity calculation does not apply to such nominations.

### **36.8.3.5 Annual CRR Allocation Beyond CRR Year One.**

The annual CRR Allocation for years beyond CRR Year One consists of a sequence of four (4) tiers for each season and time of use period (on-peak and off-peak). Allocations of CRRs in each tier are considered final once they are provided by the CAISO to the respective LSEs or Qualified OBAALSEs. After each tier, LSEs or Qualified OBAALSEs will have an amount of time as specified in the Business Practice Manual after their receipt of the results of each tier to submit their nominations for the next tier, if there is one. The annual CRR Allocation will allow LSEs or Qualified OBAALSEs to submit nominations up to their Seasonal CRR Eligible Quantities minus the quantity of previously allocated Long Term CRRs for each season of the relevant year, each time of use period and each CRR Sink at which they serve Load. Annual CRR Allocations for years beyond CRR Year One will be conducted in the following sequence of tiers:

#### **36.8.3.5.1 Tier 1 – Priority Nomination Process.**

Tier 1 of the annual CRR Allocation in years beyond CRR Year One will be a Priority Nomination Process through which CRR Holders may nominate some of the same CRRs that they were allocated in the immediately previous *annual CRR Allocation process*. As provided in Section 36.8.3.4.2, nominations by a Qualified OBAALSE in the PNP are subject to source verification. In all annual CRR Allocations after CRR Year One, an LSE or a Qualified OBAALSE may make PNP nominations up to the lesser of: (1) two-thirds of its Seasonal CRR Eligible Quantity, minus the quantity of previously allocated Long Term CRRs for each season, time of use period and CRR Sink for that year; or, (2) the total quantity of Seasonal CRRs allocated to that LSE in the previous annual CRR Allocation, minus the quantity of previously allocated Long Term CRRs for each season, time of use period and CRR Sink, and minus any reduction for net loss of Load or plus any increase for net gain of Load through retail Load Migration as described in Section 36.8.5.1. In addition,

an LSE's or Qualified OBAALSE's nomination of any particular CRR Source-CRR Sink combination in the PNP may not exceed the MW quantity of CRRs having that CRR Source and CRR Sink that the LSE or Qualified OBAALSE was allocated in the previous annual CRR Allocation for the same season and time of use period, and in the case of an LSE, adjusted for net Load loss or gain resulting from Load Migration as described in Section 36.8.5.2.2. An LSE or a Qualified OBAALSE may not nominate CRRs sourced at Trading Hubs in the PNP. CRRs whose CRR Sink is a Sub-LAP are not eligible for nomination in the PNP. A CRR whose CRR Sink is a Custom LAP or PNode is eligible for nomination in the PNP. PNP Eligible Quantities are not affected by secondary transfers of CRRs, except as performed by the CAISO to reflect Load Migration as described in Section 36.8.5. That is, with the exception of transfers to reflect Load Migration: (i) an LSE or a Qualified OBAALSE may nominate in the PNP a CRR it was allocated in the prior annual CRR Allocation even though it transferred that CRR to another party during the year, and (ii) an LSE or a Qualified OBAALSE may not nominate in the PNP a CRR that it received through a secondary transfer from another party. CRRs received through a CRR Auction are not eligible for nomination in the PNP. CRRs received as Offsetting CRRs to reflect Load Migration are not eligible for nomination in the PNP. The maximum quantity of CRRs that an LSE or a Qualified OBAALSE may nominate in the PNP is fifty percent (50%) of its Adjusted Load Metric, minus any previously allocated Long Term CRRs that are valid for the term of the CRRs being nominated. The CAISO does not guarantee that all CRR nominations in the PNP will be allocated. The CAISO will conduct an SFT to determine whether all CRR nominations in the PNP are simultaneously feasible. If the SFT determines that all priority nominations are not simultaneously feasible, the CAISO will reduce the allocated CRRs until simultaneous feasibility is achieved.

#### **36.8.3.5.2 Tier LT.**

In years subsequent to CRR Year One, Long Term CRRs will be allocated as provided in this section.

**36.8.3.5.2.1 Tier LT for LSEs.**

In Tier LT of CRR Year Two, an LSE may nominate Long Term CRRs from any of the Seasonal CRRs it was allocated in the PNP up to a maximum of thirty percent (30%) of the its Adjusted Load Metric, minus the quantity of previously allocated Long Term CRRs that are valid for that year; except that the LSE may nominate Long Term CRRs in amounts greater than thirty percent (30%) but no more than fifty percent (50%) of its Adjusted Load Metric if the LSE demonstrates that more than thirty percent (30%) of its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of Generation resources. Such demonstrations shall be provided by the requesting LSE to the CAISO through the submission of a written sworn declaration by an executive employee authorized to represent the LSE and attest to the accuracy of the data demonstration. As necessary, the CAISO may request, and such LSE must produce in a timely manner, documents in support of such declaration. If the LSE has demonstrated that more than thirty percent (30%) of its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of Generation resources, the amount of Long Term CRRs that it may nominate is equal to the minimum of: (i) the sum of the owned resources and long-term procurement arrangements of ten (10) years or more, minus the quantity of previously allocated Long Term CRRs that are valid for that CRR year, and (ii) fifty percent (50%) of the LSE's Adjusted Load Metric, minus the quantity of previously allocated Long Term CRRs that are valid for that CRR year. In CRR Year Three, the limit on Long Term CRR nominations will increase by ten percent (10%) to forty percent (40%) of the eligible entity's Adjusted Load Metric but shall not exceed fifty percent (50%) of the Adjusted Load Metric.

In CRR Year Three, an LSE may exceed the forty percent (40%) limit on Long Term CRR nominations if it demonstrates that its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of Generation resources. The amount of Long Term CRRs that it may nominate is equal to the minimum of: (i) the sum of the owned resources and long-term procurement arrangements of ten (10) years or more, minus the quantity of previously allocated Long Term CRRs that are valid for that CRR year, and (ii) fifty percent (50%) of the LSE's Adjusted Load Metric, minus the quantity of previously allocated Long Term CRRs that are valid for that CRR year. In CRR Year Four and all subsequent years, an LSE may nominate Long Term CRRs from any of the Seasonal CRRs allocated in the PNP up to the maximum of fifty percent (50%) of its Adjusted Load Metric, minus the quantity of previously allocated Long Term CRRs that are valid for that year.

**36.8.3.5.2.2 Tier LT for Qualified OBAALSEs.**

A Qualified OBAALSE may submit nominations for Long Term CRRs up to the portion of its Adjusted Load Metric for which it has demonstrated coverage by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources, up to a maximum of fifty percent (50%) of its Adjusted Load Metric for each season, time of use period and Scheduling Point, minus the quantity of previously allocated Long Term CRRs that are valid for that CRR year. Such demonstrations shall be provided by the requesting Qualified OBAALSE to the CAISO through the submission of a written sworn declaration by an executive employee authorized to represent the Qualified OBAALSE and attest to the accuracy of the data demonstration. As necessary, the CAISO may request, and such Qualified OBAALSE must produce in a timely manner, documents in support of such declaration. Contracts submitted in support of OBAALSE nominations of Long Term CRRs must cover the entire season of the Long Term CRR being nominated.

**36.8.3.5.2.3 Tier LT SFT.**

After receiving nominations for Long Term CRRs, the CAISO will run SFTs to ensure the feasibility of the nominated Long Term CRRs for the remaining nine years of the ten (10) year term of the Long Term CRR. The SFT run in Tier LT will test the feasibility of only the Long Term CRR nominations and will not include in the analysis those Seasonal CRRs allocated in the PNP that were not nominated as Long Term CRRs. The quantity of Long Term CRRs that can be allocated for any season and time of use period must be feasible for the entire ten (10) year term of the Long Term CRR. As a result of the Tier LT SFT runs, Long Term CRR nominations may not be fully allocated; however, such a result will not affect the validity of: (i) the Long Term CRRs allocated in previous years, or (ii) the Seasonal CRRs allocated in the PNP. The CAISO will inform nominating eligible entities of the results of the Tier LT SFTs before the deadline for submission of the tier 2 nominations.

**36.8.3.5.3 Tier 2.** In tier 2 of the annual CRR Allocation, the CAISO will allocate Seasonal CRRs to each LSE and Qualified OBAALSE up to two-thirds of its Seasonal CRR Eligible Quantity for each season, time of use period and CRR Sink, minus the quantity of: (i) CRRs allocated to that LSE or Qualified OBAALSE in tier 1, and (ii) Long Term CRRs previously allocated to it that are valid for the CRR term currently being allocated. An LSE or a Qualified OBAALSE can nominate Seasonal CRRs sourced at Trading Hubs. In running the SFT the CAISO shall disaggregate the Seasonal CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1.

**36.8.3.5.4 Tier 3.** In tier 3 of the annual CRR Allocation, the CAISO will allocate Seasonal CRRs to each LSE or Qualified OBAALSE up to one hundred percent (100%) of its Seasonal CRR Eligible Quantity for each season, time of use period and CRR Sink, minus the quantity of: (i) CRRs allocated to that LSE or Qualified OBAALSE in tiers 1 and 2, and (ii) Long Term CRRs previously allocated to that eligible entity that are valid for the CRR term currently being allocated. In tier 3 of the annual CRR Allocation, Sub-LAPs will be eligible CRR Sinks provided that the Sub-LAP is within the nominating LSE's



Default LAP. An LSE or a Qualified OBA LSE can nominate Seasonal CRRs where the CRR Source is a Trading Hub. In running the SFT the CAISO shall disaggregate the Seasonal CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1.

**36.8.3.5.5 Alternatives for Renewal of Long Term CRRs and for the Transition of Expiring ETCs and Converted Rights to Long Term CRRs.**

Eligible entities may, in the final year of a Long Term CRR, nominate the identical CRR Source, CRR Sink, and MW terms of the expiring Long Term CRR in the PNP conducted that year, subject to any applicable quantity limitations specified in this Section 36. An eligible entity with an Existing Transmission Contract or Converted Rights that expire by the start of the year for which the CRR Allocation process is conducted may participate in the PNP as if its Existing Transmission Contract or Converted Rights sources and sinks were previously allocated Seasonal CRRs, subject to any applicable quantity limitations specified in this Section 36. In either case, if Seasonal CRRs are awarded to an LSE or a Qualified OBA LSE in the PNP based on its nomination of its expiring rights, such entity may then nominate those Seasonal CRRs in Tier LT of the same year's annual CRR Allocation process, subject to any applicable quantity limitations specified in this Section 36. Alternatively, CRR Holders of expiring LT CRRs, expiring Existing Transmission Contracts or expiring Converted Rights may bypass the tier 1 Priority Nomination Process and nominate their expiring rights as Long Term CRRs in Tier LT one year prior to the year of expiration, subject to any applicable quantity limitations specified in this Section 36. This alternative allows the holder of the expiring rights to nominate Long Term CRRs in the first Tier LT SFT in which the capacity corresponding to the expiring rights becomes available for the full nine (9) year period of the Tier LT SFT. For any entity who elects this alternative and obtains an allocated Long Term CRR, the length of the renewed Long Term CRR (or initial Long Term CRR in the case of expiring Existing Transmission Contracts or expiring Converted Rights) will be nine (9) years, corresponding to the years included in the Tier LT SFT.

**36.8.3.6 Monthly CRR Allocation Beyond CRR Year One.**

The monthly CRR Allocation shall consist of a sequence of two (2) tiers of allocations for each time of use period (on-peak and off-peak). The monthly CRR Allocation will distribute Monthly CRRs and will allow an LSE and a Qualified OBAALSE to nominate CRRs up to one hundred percent (100%) of its Monthly CRR Eligible Quantity, minus the total of any Seasonal CRRs allocated in the annual CRR Allocation, and minus any holdings of Long Term CRRs that are valid for the month and time of use of the CRRs being nominated. All CRR nominations by Qualified OBALSEs must be source verified.

**36.8.3.6.1 Tier 1.** In tier 1 of the monthly CRR Allocations, each LSE or Qualified OBAALSE may nominate Monthly CRRs up to fifty percent (50%) of the difference between its Monthly CRR Eligible Quantity and the total of any Seasonal CRRs allocated in the annual CRR Allocation and any holdings of Long Term CRRs that are valid for the month and time of use of the CRRs being nominated. An LSE or a Qualified OBAALSE can nominate Monthly CRRs where the CRR Source is a Trading Hub. In running the SFT the CAISO shall disaggregate the Monthly CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1.

**36.8.3.6.2 Tier 2.** In tier 2 of the monthly CRR Allocations, each LSE or Qualified OBAALSE may nominate Monthly CRRs up to one hundred percent (100%) of the difference between its Monthly CRR Eligible Quantity and the total of any Seasonal CRRs allocated in the annual CRR Allocation and any holdings of Long Term CRRs that are valid for the month and time of use of the CRRs being nominated, minus the quantity of CRRs allocated to that LSE or Qualified OBAALSE in tier 1 of the current monthly CRR Allocation. In tier 2 of the monthly CRR Allocation, Sub-LAPs will be eligible CRR Sinks, provided that the Sub-LAP is within the nominating LSE's Default LAP. An LSE or a Qualified OBAALSE can nominate Monthly CRRs sourced at Trading Hubs. In running the SFT the CAISO shall disaggregate the Monthly CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1.

#### **36.8.4 Eligible Sources for CRR Allocation.**

In the CRR Allocation processes for Seasonal CRRs, Monthly CRRs, and Long Term CRRs, nominated CRR Sources can be either PNodes (including Scheduling Points) or Trading Hubs. An LSE or a Qualified OBAALSE may nominate up to one hundred percent (100%) of its Adjusted Verified CRR Source Quantities for Seasonal or Monthly CRRs in the combined tiers of the annual and monthly CRR Allocation processes as provided in this Section. For tiers 1 and 2 of the annual CRR Allocation in CRR Year One, an LSE may nominate CRRs from each of its verified CRR Sources in a quantity no greater than seventy-five percent (75%) of the Adjusted Verified CRR Source Quantity corresponding to each verified CRR Source. The LSE may then use tier 1 of the monthly CRR Allocations in CRR Year One to nominate up to the full one hundred percent (100%) of the Adjusted Verified CRR Source Quantity corresponding to each verified CRR Source. In tiers 1, 2 and 3 of the annual CRR Allocation in each year in which it participates, a Qualified OBAALSE may nominate CRRs from each of its verified CRR Sources in a quantity no greater than seventy-five percent (75%) of the Adjusted Verified CRR Source Quantity corresponding to each CRR Source. The Qualified OBAALSE may then use tiers 1 and 2 of the monthly CRR Allocations in the same year to nominate up to the full one hundred percent (100%) of the Adjusted Verified CRR Source Quantity corresponding to each verified CRR Source.

##### **36.8.4.1 CRRs with Trading Hub Sources.**

For purposes of the CRR Allocation processes the CAISO shall disaggregate CRR nominations with Trading Hub CRR Sources into Point-to-Point CRR nominations each of whose CRR Source is a Generating Unit PNode that is an element of the Trading Hub. In performing this disaggregation the MW quantity of each Point-to-Point CRR nomination will equal the MW quantity of the CRR nomination multiplied by the weighting factor of the corresponding Generating Unit PNode in the defined Trading Hub. The disaggregated, individual Point-to-Point CRRs will be used by the CAISO in conducting the SFTs for the nominated CRRs. In CRR years other than CRR Year One, an LSE may nominate in the

PNP any Point-to-Point CRRs it was allocated the previous year as a result of Seasonal CRR nominations with Trading Hubs as CRR Sources, and may then nominate those Seasonal CRRs awarded in the PNP as Long Term CRRs in Tier LT. In CRR Year One, an LSE that was allocated individual Point-to-Point CRRs in tiers 1 and 2 as a result of nominating CRRs sourced at a Trading Hub must nominate CRRs sourced at Trading Hubs in Tier LT in accordance with Section 36.8.3.1.3.1. For Qualified OBAALSEs, all nominated CRR Sources must be source verified as specified in Section 36.9.1. Any Long Term CRRs allocated by the CAISO as a result of nominations of CRRs sourced at Trading Hubs will be Point-to-Point CRRs each of whose CRR Sources is a Generating Unit PNode that is an element of the Trading Hub.

#### **36.8.4.2 Import CRRs.**

An LSE or a Qualified OBAALSE may nominate Seasonal, Monthly or Long Term CRRs whose CRR Source is a Scheduling Point in the annual and monthly CRR Allocation in accordance with this Section.

##### **36.8.4.2.1 Scheduling Points as CRR Sources for LSEs in CRR Year One.**

In CRR Year One, in tiers 1 and 2 of the annual CRR Allocation process an LSE may nominate Seasonal CRRs whose CRR Source is a Scheduling Point to the extent that it can demonstrate to the CAISO that, for the verification period stated in Section 36.8.3.4, it owned or was a party to a contract with a System Resource, and that it or the counter-party to the contract had procured appropriate transmission from the applicable transmission provider outside the CAISO to the Scheduling Point. In addition, also in tiers 1 and 2 of the annual CRR Allocation in CRR Year One, all LSEs eligible to nominate CRRs under this Section 36.8 may nominate as CRR Sources, without any verification, shares of the residual import CRR capacity at each Scheduling Point that remains after the completion of the CRR Source verification process. Each LSE's share of the residual import CRR capacity will be calculated as follows. Starting

with the total capacity at each Scheduling Point that is available in the DC FNM for the annual CRR Allocation and CRR Auction processes, the CAISO will calculate the residual amount of capacity that remains at each Scheduling Point after subtracting the capacity accounted for by those Scheduling Point CRR Sources submitted by LSEs for verification that have been verified. The CAISO will then set aside fifty percent (50%) of this residual amount at each Scheduling Point for the annual CRR Auction, and will allow LSEs to nominate pro rata shares of the other fifty percent (50%) in proportion to their Seasonal CRR Eligible Quantities. In each monthly CRR Allocation during CRR Year One, CRR Source verification will be required in tier 1 as in the annual CRR Allocation process. Following the verification process, the CAISO will calculate and set aside for the monthly CRR Auction fifty percent (50%) of the import capacity that remains at each Scheduling Point after accounting for the verified Scheduling Point CRR Source submissions to the monthly process and the annual CRR Allocation and CRR Auction results for that month, and will allow LSEs to nominate in tier 1 Monthly CRRs with CRR Sources at each Scheduling Point in quantities up to their pro rata shares of the other fifty percent (50%) in proportion to their Monthly CRR Eligible Quantities.

**36.8.4.2.2 Scheduling Points as CRR Sources for LSEs Beyond CRR Year One.**

In the annual CRR Allocation processes subsequent to CRR Year One, there will be no special provisions regarding CRR Sources at Scheduling Points in tiers 1 and 2 for LSEs. For tier 3 the CAISO will calculate and set aside for the annual CRR Auction fifty percent (50%) of the import capacity at each Scheduling Point that remains after the tier 1 and tier 2 CRR Allocations and after considering any previously allocated Long Term CRRs that are valid for that month as described in Section 36.4.1. In the monthly

CRR Allocation processes subsequent to CRR Year One there will be no special provisions regarding CRR Sources at Scheduling Points in tier 1 for LSEs. For tier 2 the CAISO will calculate and set aside for the monthly CRR Auction fifty percent (50%) of the import capacity that remains at each Scheduling Point after accounting for the annual CRR Allocation and CRR Auction results for that month, any previously allocated Long Term CRRs that are valid for that month, and the results of tier 1 of the monthly CRR Allocation.

#### **36.8.4.2.3 Scheduling Points as CRR Sources for Qualified OBA LSEs.**

In the annual CRR Allocation process a Qualified OBA LSE may nominate CRRs whose CRR Source is a Scheduling Point to the extent it meets the requirements of Section 36.9.1.

#### **36.8.5 Load Migration Between LSEs.**

The CAISO shall track Load Migration between LSEs through Load Migration data provided to the CAISO by each UDC, MSS Operator or other entity that provides distribution serve to customers. Load Migration will be reflected in the hourly Load data and Load forecasts used by the CAISO to calculate the CRR Load Metrics and Seasonal CRR Eligible Quantities and Monthly CRR Eligible Quantities for each LSE, in accordance with procedures set forth in the applicable Business Practice Manual. Load Migration will be reflected in appropriate adjustments to each affected LSE's Seasonal CRR Eligible Quantities and Monthly CRR Eligible Quantities in subsequent annual and monthly CRR Allocations, as well as its PNP Eligible Quantities in the next annual CRR Allocation. LSEs that hold Seasonal CRRs or Long Term CRRs and that lose or gain Load through Load Migration must comply with Section 36.8.5.3 regarding the transfers of current CRR holdings to reflect Load Migration.

**36.8.5.1 Tracking of Load Migration by CAISO.**

The CAISO will implement all appropriate adjustments due to Load Migration on a monthly basis. In order to enable the CAISO to track Load Migration and determine the appropriate adjustments, each UDC, MSS Operator, and other entity that provides distribution service to customers will provide to the CAISO the following minimum information on each customer that migrates between LSEs: (i) customer identification information, (ii) information to establish the customer's retail customer class, (iii) the original and new LSEs serving the customer, (iv) the effective date of the Load Migration, and (v) the most recent twelve (12) months of billing data for the customer. Each UDC, MSS Operator and other entity that provides distribution service to customers will also provide to the CAISO the number of customers served by each LSE in each retail customer class as of the start of each month, plus information on the average consumption by customers in each retail customer class. Further details regarding the information to be supplied to the CAISO is set forth in the applicable Business Practice Manual. The CAISO will receive information from each UDC, MSS Operator, and other entity providing distribution service on an ongoing daily basis, and will perform the calculations for any appropriate adjustments due to Load Migration on a monthly basis. New CRRs allocated due to Load Migration in accordance with Section 36.8.5.3 will be made effective on the first day of the first month, following the CAISO's performance of the calculations, in which the Load Migration is effective by the first of the month.

**36.8.5.2 Adjustments to CRR Eligible Quantities to Reflect Load Migration.**

An LSE who loses or gains net Load through Load Migration in a given year will have its Seasonal CRR Eligible Quantities in the next annual CRR Allocation reduced or increased, respectively, in proportion to the net Load lost or gained through Load Migration. In addition, an LSE that loses Load through Load Migration in a given year will have its PNP Eligible Quantities reduced in proportion to the gross amount of Load lost through Load Migration. An LSE that gains Load through Load Migration in a given year will have its PNP Eligible Quantities increased in proportion to the amount of Load gained through Load Migration.

**36.8.5.3      Adjustments to Current CRR Holdings to Reflect Load Migration.**

Because in between CRR Allocations each LSE can both lose Load and gain Load between itself and multiple other LSEs, the CAISO will calculate and perform appropriate adjustments to current CRR holdings for each pair of LSEs affected by Load Migration to reflect the net amount of Load that migrated between those two LSEs during each Load Migration tracking period and for each LAP in which the LSEs serve Load. The CAISO will perform such calculations in accordance with the appropriate Business Practice Manual, and will perform the adjustments by creating and allocating equal and opposite sets of new CRRs for each pair of LSEs affected by Load Migration. The net Load gaining LSE of the pair will receive a set of new CRRs that match the CRR Sources and CRR Sinks of all the Seasonal CRRs and Long Term CRRs previously allocated to the net Load losing LSE of the pair, in MW quantities proportional to the net amount of the net Load losing LSE's Load that migrated to the net Load gaining LSE of the pair within each LAP in which the LSEs serve Load. The net Load losing LSE of the pair will receive a set of new Offsetting CRRs. After the assignment of Offsetting CRRs, the net Load losing LSE will still hold the CRRs it held before it was assigned the Offsetting CRRs. The Load gaining LSE may nominate its new Seasonal CRRs in the Priority Nomination Process of the next annual CRR Allocation process. The net Load losing LSE may not nominate in the Priority Nomination Process either: (i) the Seasonal CRRs corresponding to the new CRRs allocated to the Load gaining LSE, or (ii) the Offsetting CRRs allocated due to Load Migration. An LSE to which the CAISO allocates new CRRs to reflect Load Migration must be either a Candidate CRR Holder or a CRR Holder and meet all requirements applicable to such entities.



**36.8.5.4 Load Migration and Compliance with CAISO Credit Requirements.**

To the extent that the credit requirements of an LSE as specified in Section 12 are updated by the allocation of new CRRs to reflect Load Migration, the CAISO will do the following. For new CRRs that result in net charges to the affected LSE over a Settlement period these charges will appear on the LSE's Settlement Statement irrespective whether the LSE has met the updated credit requirement. For new CRRs that result in net payments to the affected LSE over a Settlement period and that LSE has not met the updated credit requirements affected by the allocation of new CRRs to reflect Load Migration, the CAISO shall withhold payment until those updated credit requirements are met. At the end of each Settlement period, if the LSE has not met the updated credit requirements resulting from Load Migration CRR transfers, the CAISO will add any net payments that accrued to the transferred CRRs to the CRR Balancing Account to be included in the end-of-month clearing of the CRR Balancing Account, and those net payments will no longer be recoverable by the LSE. The CAISO may place new allocated CRRs into CRR Auctions if the non-compliance with credit or applicable Financial Security requirements is persistent.

**36.8.5.5 Load Migration Adjustment for CRR Year One.**

For the CRR Year One CRR Allocation process, the CAISO will account for the cumulative Load Migration that takes place between the beginning of the CRR Year One CRR Allocation process and the first date that the Day-Ahead Market is operational as a single adjustment as described in the Business Practice Manuals.

**36.8.5.6 Load Migration Reflected in the Monthly CRR Allocation Process.**

An LSE who loses or gains net Load through Load Migration must reflect that loss or gain in the monthly Load forecasts it submits to the CAISO for determining its monthly CRR Eligible Quantities for future monthly CRR Allocations.

**36.8.6 Load Forecasts Used to Calculate CRR MW Eligibility.**

The CAISO will work closely with appropriate state and Local Regulatory Authorities and agencies to ensure that historical Load data and Load forecasts used to establish Seasonal CRR Eligible Quantities and Monthly CRR Eligible Quantities *as provided in Section 36.8.2* are consistent with the Load data and Load forecasts used to establish resource adequacy requirements.

**36.8.7 Long Term CRRs and Participating TO Withdrawals from the CAISO Controlled Grid.**

In the event a Participating TO gives the required notice and withdraws facilities or Entitlements from the CAISO Controlled Grid, the CAISO will reconfigure Long Term CRRs as necessary to reflect the CAISO Controlled Grid after the withdrawal. After reconfiguration, the CAISO will run SFTs on the reconfigured Long Term CRRs and, if necessary, reduce some of the reconfigured Long Term CRRs to ensure their feasibility. If the CRR Source and CRR Sink for an allocated Long Term CRR both are located within a departing Participating TO Service Territory, the Long Term CRR would expire on the effective date of the Participating TO's withdrawal.

**36.9 CRR Allocation to OBAALSEs.**

OBAALSEs who wish to nominate and be allocated CRR Obligations in the same annual and monthly CRR Allocation processes described in Section 36.8 may do so subject to the provisions of this Section 36.9 and if such OBAALSEs are qualified and registered as Candidate CRR Holders or CRR Holders. An OBAALSE may participate in the CRR Allocation processes and be allocated CRRs to the extent that: (1) such OBAALSE makes a showing of legitimate need for the CRRs nominated as provided by Section 36.9.1;

(2) such OBAALSE pre-pays or commits to pay the appropriate Wheeling Access Charge in the amount of MWs of CRRs nominated as provided in Section 36.9.2; (3) the external load for which CRRs are nominated will be exposed to CAISO Congestion charges because it is not served by Supply resources other than exports from the CAISO Balancing Authority Area; (4) the external load for which CRRs are nominated is not served through an ETC, TOR or Converted Rights by which it has been designated as eligible to receive the reversal of Congestion charges; (5) such OBAALSE complies with the verification requirements in Section 36.9.4; and (6) the nominated CRRs clear the relevant SFTs. An OBAALSE that participates in the CRR Allocation processes will be subject to the applicable rules governing the tiered structure of these processes. All CRRs allocated under the terms of this Section 36.9 will be CRR Obligations.

### **36.9.1 Showing of Legitimate Need.**

An OBAALSE must make a showing to the CAISO of legitimate need to enable the CAISO to verify the CRR Sources it wants to nominate. All CRR nominations by OBAALSEs in all CRR years must be source verified based on the showing of legitimate need. The CAISO's verification of legitimate need will be based on demonstration by the OBAALSE of an executed Energy contract from a Generating Unit or System Resource that covers the time period of the CRRs nominated, or ownership of such Generating Unit or System Resource. For such CRR Sources the showing of legitimate need must be made for each CRR term for which the OBAALSE wants to nominate CRRs in a timely manner prior to the start of the relevant annual or monthly CRR Allocation process. For CRR Sources that will be verified based on generating resources located outside the CAISO Balancing Authority Area, a Scheduling Point must be nominated as the corresponding CRR Source. Generating resources located outside of the CAISO Balancing Authority Area to be used by the OBAALSE to verify a Scheduling Point as a CRR Source must not be located within the OBAALSE's own Balancing Authority Area. The Verified CRR Source Quantity and Adjusted Verified CRR Source Quantity corresponding to any CRR Source nominated by an

OBAALSE will be calculated in accordance with Section 36.8.3.4, with the modification that for an OBAALSE these quantities will be calculated for each CRR Allocation process in which the Qualified OBAALSE wants to participate, consistent with the requirement for ongoing source verification based on a forward showing in conjunction with the OBAALSE's annual showing of legitimate need. For a CRR Source that is a Scheduling Point, pursuant to the legitimate need showing requirement, an OBAALSE must demonstrate that it has procured the appropriate transmission service from the transmission provider outside the CAISO Balancing Authority Area to the Scheduling Point that the OBAALSE intends to nominate as a CRR Source for the term of the CRR being nominated. Such demonstrations shall be provided by the OBAALSE to the CAISO through the submission of a written sworn declaration by an executive employee authorized to represent the OBAALSE and attest to the accuracy of the data demonstration. As necessary, the CAISO may request, and such OBAALSE must produce in a timely manner, documents in support of such declaration.

### **36.9.2 Prepayment of Wheeling Access Charges.**

#### **36.9.2.1 Prepayment of Wheeling Access Charges for Allocated CRRs.**

An OBAALSE will be required to prepay relevant Wheeling Access Charges, to be calculated as described in this section and further specified in the Business Practice Manual, for the full term of the Monthly CRRs, Seasonal CRRs and Long Term CRRs it intends to nominate in order to participate in the CRR Allocation processes and be allocated CRRs. To be eligible for the allocation of Seasonal CRRs or Monthly CRRs the OBAALSE must submit the full required prepayment and have it accepted by the CAISO prior to the OBAALSE's submission of nominations for the relevant annual or monthly CRR Allocation, except as provided below in Section 36.9.2.2. To be eligible for nominations of Long Term CRRs, the OBAALSE must submit the full prepayment and have it accepted by the CAISO prior to the OBAALSE's submission of nominations of Long Term CRRs in Tier LT, except as provided below in

Section 36.9.2.2. For each MW of Monthly CRR, Seasonal CRR or Long Term CRR to be nominated the nominating OBAALSE must prepay one MW of the relevant Wheeling Access Charge, which equals the per-MWh WAC that is associated with the Scheduling Point the OBAALSE intends to nominate as a CRR Sink and that is expected at the time the CRR Allocation process is conducted to be applicable for the period of the CRR nominated, times the number of hours comprising the period of the CRR nominated as further specified in the applicable Business Practice Manual.

**36.9.2.2 Eligibility for Prepayment of WAC on an Annual or Monthly Basis.**

An OBAALSE deemed creditworthy pursuant to the requirements of Section 12 may elect to prepay the determined WAC responsibility on a monthly basis for the Seasonal CRRs or Long Term CRRs that it seeks to be allocated, provided that such OBAALSE has demonstrated a commitment to pay the required WAC for the entire term of the CRRs sought by submitting to the CAISO a written sworn statement by an executive that can bind the entity. In order to be eligible for this option, the OBAALSE must submit and the CAISO must accept this sworn statement prior to the applicable CRR Allocation process in which the OBAALSE intends to nominate a CRR. An OBAALSE choosing to pay on a monthly basis shall make its monthly payments on a schedule specified in the applicable Business Practice Manual. An OBAALSE deemed creditworthy pursuant to the requirements of Section 12 may also elect to prepay its determined WAC responsibility associated with an allocated Long Term CRR on an annual basis, provided that such OBAALSE has demonstrated a commitment to pay for the entire term of the Long Term CRRs sought by submitting to the CAISO and the CAISO accepting a written sworn statement by an executive that can bind the entity. An OBAALSE choosing to pay such WAC obligation on an annual basis shall make its payment each year on a schedule specified in the applicable Business Practice Manual.

### **36.9.2.3 Refund of Prepaid WAC for Unallocated CRRs.**

To the extent that an OBAALSE prepays a quantity of the WAC and is not allocated the full amount of CRRs nominated, WAC prepayment for CRRs not allocated will be refunded by the CAISO within thirty (30) days following the completion of the relevant CRR Allocation process.

### **36.9.3 CRR Eligible Quantities.**

The CAISO will calculate the Seasonal CRR Eligible Quantities and Monthly CRR Eligible Quantities for OBAALSEs as described in Section 36.8.2 with the following modifications. The OBAALSE must submit two (2) sets of hourly data from which the CAISO will construct Load duration curves for determining the Seasonal CRR Eligible Quantities and Monthly CRR Eligible Quantities. One set of hourly data must reflect the OBAALSE's historical hourly exports at the Scheduling Point that is the CRR Sink of the nominated CRRs. The historical hourly exports shall be based on the tagged Real-Time Interchange Export Schedules for the OBAALSE. An OBAALSE that wishes to nominate multiple Scheduling Points as CRR Sinks in the CRR Allocation process will have distinct CRR Eligible Quantities for each nominated Scheduling Point, and prior to each annual CRR Allocation process must submit historical hourly export data at each such Scheduling Point from which the CAISO will calculate the associated CRR Eligible Quantities. The second set of hourly data must reflect the prior year's hourly metered Load for the end-use customers the OBAALSE served outside the CAISO Balancing Authority Area and that were not served from sources other than exports from the CAISO Balancing Authority Area. The OBAALSE's Seasonal and Monthly CRR Eligible Quantities will be based on the lesser of (1) the total historical hourly export data for all Scheduling Points submitted as CRR Sinks, and (2) the hourly metered load for the external end-use customers served by the OBAALSE and that were not served from sources other than exports from the CAISO Balancing Authority Area. An OBAALSE also must demonstrate that it has firm transmission rights pursuant to the tariffs of intervening transmission providers from its Scheduling Point sink to the end-use customers in the OBAALSE's Balancing Authority Area. The

OBAALSE shall support its data submission and the demonstration of transmission rights to its end-use customers with a sworn affidavit by an executive employee authorized to represent the OBAALSE and attest to the accuracy of the data and demonstration. As necessary, the CAISO may request, and such OBAALSE must produce in a timely manner, the raw data and calculations used to develop the submitted data set and the demonstration of transmission rights to its end-use customers.

#### **36.9.4 Eligible CRR Sources and Sinks.**

Eligible CRR Sources will be the PNodes of the Generating Units or Scheduling Points for which the OBAALSE has made a legitimate need showing as described above in Section 36.9.1. Eligible CRR Sinks will be the Scheduling Points for which the CAISO has established Seasonal and Monthly CRR Eligible Quantities as described in Section 36.9.3. An OBAALSE nominating CRRs having CRR Sources internal to the CAISO **Balancing Authority** Area will be limited to seventy-five percent (75%) of each of its corresponding Adjusted Verified CRR Source Quantities in all tiers of the annual CRR Allocation process in CRR Year One and in subsequent years. An OBAALSE nominating CRRs having CRR Sources external to the CAISO **Balancing Authority** Area will be limited to seventy-five percent (75%) of each of its corresponding Adjusted Verified CRR Source Quantities in all tiers of the annual CRR Allocation process in CRR Year One. In CRR years subsequent to CRR Year One, the OBAALSE may renew previously allocated CRRs having external CRR Sources, subject to the applicable quantity limitations and other requirements specified in this Section 36.

#### **36.9.5 Priority Nomination Process.**

CRRs allocated pursuant to this Section 36.9 shall be eligible for nomination in the Priority Nomination Process to the extent that the requirements of this Section 36.9 are met at the time of the relevant CRR Allocation.

**36.10 CRR Allocation to Metered Subsystems.**

An MSS Operator that elects gross Settlement may participate in the CRR Allocation processes and be allocated CRR Obligations. An MSS Operator that elects net Settlement may participate in the CRR Allocation processes and be allocated CRRs, except that its Seasonal CRR Eligible Quantities and Monthly CRR Eligible Quantities will reflect its net Load and its allocated CRRs will use MSS-LAPs as CRR Sinks. The MSS Operator will be required to submit to the CAISO the appropriate hourly historical net Load data and net Load forecast data from which the CAISO will construct net Load duration curves to determine the Seasonal CRR Eligible Quantities and Monthly CRR Eligible Quantities.

**36.11 CRR Allocation to Merchant Transmission Facilities.**

Project Sponsors of Merchant Transmission Facilities who turn such facilities over to CAISO Operational Control and do not recover the cost of the transmission investment through the CAISO's Access Charge or WAC or other regulatory cost recovery mechanism may be allocated, at the Project Sponsor's election, either CRR Options or CRR Obligations that reflect the contribution of the facility to grid transfer capacity as determined below.

**36.11.1 Eligibility for Merchant Transmission CRRs.**

The Project Sponsor of a Merchant Transmission Facility shall be entitled to receive Merchant Transmission CRRs as determined in accordance with this Section 36.11. A Merchant Transmission CRR allocated through this process is effective for thirty (30) years or for the pre-specified intended life of the Merchant Transmission Facility, whichever is less. Merchant Transmission CRRs represent binding commitments for thirty (30) years or for the pre-specified intended life of the Merchant Transmission Facility, whichever is less. The binding commitment by a CRR Holder that holds Merchant Transmission CRRs may not be terminated or otherwise modified by the CRR Holder prior to the end of the term of the Merchant Transmission CRR.



**36.11.2 Procedure for Allocating Merchant Transmission CRRs.**

No less than forty-five (45) days prior to the in-service date of a Merchant Transmission Facility, the Project Sponsor of the facility will inform the CAISO of the In-Service Date of the facility and that the Project Sponsor will be requesting Merchant Transmission CRRs associated with the Merchant Transmission Facility. The CAISO will complete the Merchant CRR Allocation after the In-Service Date of the facility and will allocate Merchant Transmission CRRs whose payment stream will be retroactive back to the In-Service Date.

**36.11.3 Determination of Merchant Transmission CRRs to be Allocated to a Project Sponsor of a Merchant Transmission Facility.**

**36.11.3.1 Nominations of Merchant Transmission CRRs.**

The Project Sponsor of a Merchant Transmission Facility must submit nominations for Merchant Transmission CRRs at least twenty-one (21) days prior to the In-Service Date of the facility. The Project Sponsor may nominate up to five (5) individual, Point-to-Point CRRs for each of the two (2) on-peak and off-peak time of use periods. Each of the individual, point-to-point nominations must specify: (i) a single CRR Source location; (ii) a single CRR Sink location, (iii) a MW quantity; (iv) a time of use period (on-peak or off-peak); and (v) a CRR type, either CRR Options or CRR Obligations.

**36.11.3.2 Methodology to Determine Merchant Transmission CRRs.**

The CAISO shall determine the incremental Merchant Transmission CRRs associated with a Merchant Transmission Facility pursuant to this Section 36.11.3.2. The determination will include an assessment of the simultaneous feasibility of the incremental Merchant Transmission CRRs and all other outstanding CRRs. The CAISO will determine the feasible incremental Merchant Transmission CRRs using a three-step process.

**36.11.3.2.1 Step One: the Capability of the Existing Transmission System.**

In step one the CAISO will determine the base CRR capability of the system using a Simultaneous Feasibility Test that incorporates as Fixed CRRs all existing Encumbrances through the end of the CRR year for which the annual CRR Allocation and CRR Auction processes have already been conducted, including Encumbrances for the month covered by the most recently conducted monthly CRR Allocation and CRR Auction processes. This analysis will determine the extent to which the nominated Merchant Transmission CRRs are feasible on the existing transmission system absent the Merchant Transmission Facility. As a result of this analysis, the CAISO will create temporary test CRR Options to reserve grid capacity that the Project Sponsor of the Merchant Transmission Facility is not eligible to receive. The temporary test CRR Options will have the same CRR Source and CRR Sink pairs as the Merchant Transmission CRR nominations submitted by the Project Sponsor.

**36.11.3.2.2 Step Two: Mitigation of Impacts on Existing Encumbrances.**

In the second step, the CAISO will add the proposed Merchant Transmission Facility to the DC FNM and run a SFT using the Fixed CRRs. The second step will ensure that the addition of a Merchant Transmission Facility does not negatively impact any existing Encumbrances through the end of the CRR year for which the annual CRR Allocation and Auction process for Annual CRRs has already been conducted, including encumbrances for the month covered by the most recently conducted monthly CRR Allocation and CRR Auction processes. For any impacts identified in this step the Project Sponsor of the Merchant Transmission Facility will be required to mitigate the impacts for the same period. The mitigation can include having the Project Sponsor of the Merchant Transmission Facility hold counterflow CRRs that maintain the feasibility of the existing encumbrances over the same period.

**36.11.3.2.3 Step Three: the Incremental Merchant Transmission CRRs.**

In the third step, the CAISO will determine the Merchant Transmission CRRs to be allocated to the Project Sponsor of the Merchant Transmission Facility. The CAISO will determine the capability of the system to award incremental Merchant Transmission CRRs using a DC FNM that incorporates the proposed Merchant Transmission Facility. The CAISO will conduct separate SFTs for each time of use period. For each time of use period, the CAISO will perform a multi-period SFT that simultaneously evaluates two sets of grid conditions. The first set of grid conditions includes all existing Encumbrances for the month covered by the most recently conducted CRR Allocation and CRR Auction processes for Monthly CRRs including any temporary test CRRs from step one and any counterflow CRRs from step two. The second set of grid conditions models only Transmission Ownership Rights. Each SFT will consider the entire set of Merchant Transmission CRR nominations for the time of use period and will solve to maximize the MWs of Merchant Transmission CRRs to be allocated to the Project Sponsor of the Merchant Transmission Facility, subject to simultaneous feasibility. The nominated Merchant Transmission CRRs that are feasible in the multi-period SFTs for each time of use period will be allocated to the Project Sponsor of the Merchant Transmission Facility.

**36.12 [NOT USED]**

**36.13 CRR Auction.**

The CAISO shall conduct CRR Auctions on an annual and monthly basis subsequent to each annual and monthly CRR Allocation process. Candidate CRR Holders may bid to purchase and may acquire CRR Obligations through the CAISO's annual and monthly CRR Auctions in accordance with the provisions of this Section 36.13. CRR Auction results shall be settled as provided in Section 11.2.4.3.

**36.13.1        Scope of the CRR Auctions.**

The CAISO will conduct a CRR Auction corresponding to and subsequent to the completion of each CRR Allocation process, and prior to the start of the period to which the auctioned CRRs will apply. Each CRR Auction will release CRRs having the same seasons, months and time of use specifications as the CRRs released in the corresponding CRR Allocation. Each CRR Auction will utilize the same DC FNM that was utilized in the corresponding CRR Allocation. For each CRR Auction, the CRRs allocated in the corresponding CRR Allocation will be modeled as fixed injections and withdrawals on the DC FNM and will not be adjusted by the SFT in the CRR Auction process. Thus the CRR Auction will release only those CRRs that are feasible given the results of the corresponding CRR Allocation. CRRs released in a CRR Auction will be indistinguishable from CRRs released in the corresponding CRR Allocation for purposes of settlement and secondary trading. The following additional provisions apply. First, participants in the CRR Auctions will have more choices regarding CRR Sources and CRR Sinks than are eligible for nomination in the CRR Allocations, as described in Section 36.13.5. Second, to the extent a Market Participant receives CRRs in both a CRR Allocation and the corresponding CRR Auction, the CRRs obtained in the CRR Auction will not be eligible for nomination in the PNP. Third, in CRR Year One the CRR Auction cannot be used by CRR Holders to offer for sale CRRs they acquired in a prior CRR Allocation, CRR Auction or through the Secondary Registration System. In the annual and monthly CRR Auction processes for years following CRR Year One, CRR Holders may offer for sale any CRRs held by such holders, subject to the limitations on sale and transfer of Long Term CRRs specified in Section 36.7.1.2. Merchant Transmission CRRs that are CRR Options may be offered for sale in the annual and monthly CRR Auctions for years following CRR Year One, subject to the same temporal limitations that apply to Long Term CRRs as specified in Section 36.7.1.2.

**36.13.2 Responsibilities of the CAISO Prior to Each CRR Auction.**

The CAISO shall publish on the CAISO Website a notice of upcoming CRR Auctions at least seven (7) days prior to the CRR Auction. The CAISO will also provide additional information needed by CRR Auction participants in accordance with the provisions of Section 6.5.1.

**36.13.3 CRR Holder Creditworthiness.**

All Market Participants are eligible to acquire CRRs by participating in the CRR Auction, provided that the Market Participant has met all the CRR Holder requirements described in Section 36.5, the creditworthiness provisions in Section 12 and Section 12.6 and the relevant Business Practice Manual.

**36.13.4 Bids in the CRR Auctions.**

Bids to purchase CRRs shall be submitted in accordance with the requirements set out in this Section 36.13.4 and as further specified in the applicable Business Practice Manuals. Once submitted to the CAISO, CRR bids may not be cancelled or rescinded by the Market Participant after the CRR Auction is closed. Market Participants may bid for Point-to-Point CRRs and Multi-Point CRRs. Each bid for a Point-to-Point CRR shall specify:

- (a) The associated month or season and time of use period;
- (b) The associated CRR Source and CRR Sink;
- (c) A monotonically non-increasing piecewise linear bid curve in quantities (denominated in **thousandths** of **a** MW) and prices (\$/MW).

Each bid for a Multi-Point CRR shall specify:

- d) The associated month or season and time of use period;
- e) The associated CRR Sources and CRR Sinks;
- f) For each CRR Source, a monotonically non-decreasing piecewise linear bid curve in quantities (denominated in **thousandths** of **a** MW) and prices (\$/MW);
- g) For each CRR Sink, a monotonically non-increasing piecewise linear bid curve in quantities (denominated in **thousandths** of **a** MW) and prices (\$/MW).

Bid prices in all CRR bids may be negative.

### **36.13.5 Eligible Sources and Sinks for CRR Auction.**

Allowable CRR Sources for CRRs acquired in the CRR Auction will be PNodes, Scheduling Points, Trading Hubs, LAPs, MSS-LAPs and Sub-LAPs. Allowable CRR Sinks for CRRs acquired in the CRR Auction will be PNodes, Scheduling Points, Trading Hubs, LAPs, MSS-LAPs and Sub-LAPs.

### **36.13.6 Clearing of the CRR Auction.**

The SFT used to clear the CRR Auction will utilize the same DC FNM and optimization algorithm as the corresponding CRR Allocation, except that nominations to the CRR Auction will have associated price-quantity bid curves. The CRR Auction SFT will use the bid prices in determining which CRRs to award when not all nominations are simultaneously feasible, will select the set of simultaneously feasible CRRs with the highest total auction value as determined by the CRR bids, and will calculate nodal prices at each PNode of the DC FNM. In the event that there are two or more identical bids for a specific

combination of CRR Source and CRR Sink that affect an overloaded constraint, the CRR Auction optimization cannot distinguish these bids based on either effectiveness or price and therefore the CRR Auction optimization will award each CRR bidder a pro rata share of the CRRs that can be awarded based on the bid MW amounts. Based on the nodal prices calculated by the CRR Auction SFT, the CRR Market Clearing Price per MW for a specific CRR will equal the nodal price at the CRR Sink minus the nodal price at the CRR Source. For a Multi-Point CRR the CRR Market Clearing Price will equal the sum over all relevant CRR Sinks of the nodal price at each CRR Sink times that CRR Sink's share of the total MW of the CRR, minus the sum over all relevant CRR Sources of the nodal price at each CRR Source times that CRR Source's share of the total MW of the CRR Market Participants shall pay the associated CRR Market Clearing Prices for all CRRs bought through the CRR Auction.

**36.13.7            Announcement of CRR Auction Results.**

Within five (5) Business Days after the close of a CRR Auction, the CAISO shall post the results. The results shall include but are not limited to the MW quantity, the CRR Source and CRR Sink for each CRR awarded, the nodal prices calculated by the CRR Auction SFT, and the parties to whom the CRRs were awarded. The CAISO shall not disclose prices specified in any CRR bid.

**36.14 CRR Implications of Establishing New IBAA's or Modifying Existing IBAA's.**

**36.14.1 Coordination of IBAA Changes with Release of CRRs.**

To the extent practicable, the CAISO will coordinate future IBAA changes, including establishment of new IBAA's and modifications to existing IBAA's, with the annual CRR Allocation and CRR Auction processes. Where feasible, the CAISO will implement the FNM containing the IBAA changes for use in the CAISO Markets beginning with the markets for a Trading Day of January 1 of a new calendar year and, consistent with Section 6.5.1, will provide Market Participants all the IBAA modeling and pricing details as part of the FNM information package that is made available for CRR purposes prior to the CAISO conducting the annual CRR Allocation and CRR Auction process for that calendar year. As a result, all CRRs released in that process will be based upon the same FNM for IBAA's that will be used in the CAISO Markets when the released CRRs and the IBAA changes become effective. In the event that there is a need to implement an IBAA change other than on January 1, the CAISO will incorporate the IBAA change into the FNM for the monthly CRR Allocation and CRR Auction process for the first month in which the IBAA change will take effect. In all cases the CAISO will follow the provisions of this Section 36.14 for assessing and mitigating impacts on any Previously-Released CRRs.

**36.14.2 Modifications to CRR Settlement of Previously-Released CRRs to Reflect IBAA Changes.**

To the extent an IBAA change, including the establishment of a new IBAA or a change to an existing IBAA, modifies the pricing for Settlement purposes of IFM scheduled transactions between the CAISO Balancing Authority Area and the IBAA, the Settlement of certain Previously-Released CRRs may no longer be consistent with the modified IFM Settlement. A CRR Holder of a Previously-Released CRR whose CRR Source or CRR Sink is affected by an IBAA change may make a one-time election either to (a) modify the Settlement of the affected CRR Source or CRR Sink to conform to the revised IFM pricing



*associated with the IBAA change, or (b) retain the original CRR Source or CRR Sink specification of the Previously-Released CRR. The CRR Holder of such a CRR must make the one-time election prior to the first CRR Allocation and CRR Auction process that incorporates the IBAA change in the CRR FNM, in accordance with the process time line specified in the applicable Business Practice Manual. If the IBAA change is implemented to coincide with the beginning of a calendar year and is coordinated with the annual CRR Allocation and CRR Auction process for that year, as described in Section 36.14.1, the provisions discussed herein apply only to Previously-Released CRRs that are Long Term CRRs and Previously-Released CRRs that are Seasonal CRRs obtained through the CRR Allocation and are eligible for PNP nomination. In the event that the IBAA change is implemented in the CAISO Markets other than on January 1, then these provisions apply also to any Previously-Released CRRs that are Seasonal CRRs effective for the remainder of the year in which the IBAA change is implemented.*

**36.14.3 Potential Impact of an IBAA Change on the Revenue Adequacy of Previously-Released CRRs.**

*It is possible that, as a result of modifying the CRR Sources or CRR Sinks of Previously-Released CRRs as provided in Section 36.14.2, the entire set of Previously-Released CRRs may no longer be simultaneously feasible. Any such violation of simultaneous feasibility may or may not lead to a revenue shortfall, that is, a deficiency over the course of a month between the IFM Congestion Charge and the amount of funds needed to fully settle the CRRs that are in effect for that month. Consistent with Section 11.2.4.4.1, any revenue shortfall that may result from IBAA-related changes to CRR Sources and CRR Sinks would be funded through the relevant monthly CRR Balancing Account.*

**37 Rules of Conduct.**

**37.1 Objectives, Definitions, and Scope.**

**37.1.1 Purpose.**

Section 37 sets forth the guiding principles for participation in the markets administered by the CAISO. The specified Rules of Conduct are intended to provide fair notice to Market Participants of the conduct expected of them, to provide an environment in which all parties may participate on a fair and equal basis, to redress instances of gaming and other instances of anticompetitive behavior, and thereby to foster confidence of Market Participants, ratepayers and the general public in the proper functioning of the CAISO markets.

**37.1.2 Objectives.**

The objectives of this CAISO Tariff are to:

- (a) Provide clear Rules of Conduct specifying the behavior expected of Market Participants; and
- (b) Establish in advance the Sanctions and other potential consequences for violation of the specified Rules of Conduct.

**37.1.3 Application of Other Remedies.**

The activities and remedies authorized under this Section 37 are in addition to any other actions or relief that may be available to the CAISO elsewhere in the CAISO Tariff or under law, regulation or order. Nothing in this Section 37 limits or should be construed to limit the right of the CAISO to take action or seek relief otherwise available to it, and such action or relief may be pursued in lieu of or in addition to the action or relief specified in this Section 37.

**37.1.4 FERC Authority.**

In addition to any authority afforded Market Monitoring Unit in this Section 37, FERC shall have the authority to assess the sanctions, and otherwise to enforce the rules as set forth and described in this Section 37. FERC shall have authority to remedy a violation under this Section 37 from the date of the violation. Nothing in this Section 37 shall be deemed to be a limitation or condition on the authority of FERC or other entities under current law or regulation.

**37.1.5 Administration.**

The Marketing Monitoring Unit will administer the Rules of Conduct specified herein, except for Section 37.7, which shall be administered by FERC, and except as provided in Section 37.2.5 and Section 37.4.4. Nothing in this CAISO Tariff limits or should be construed to limit the ability of components of the CAISO organization other than the Market Monitoring Unit to analyze data and refer matters to the Market Monitoring Unit for enforcement.

**37.2 Comply with Operating Orders.**

**37.2.1 Compliance with Orders Generally.**

**37.2.1.1 Expected Conduct.**

Market Participants must comply with operating orders issued by the CAISO as authorized under the CAISO Tariff. For purposes of enforcement under this Section 37.2, an operating order shall be an order(s) from the CAISO directing a Market Participant to undertake, a single, clearly specified action (e.g., the operation of a specific device, or change in status of a particular Generating Unit) that is feasible and intended to resolve a specific operating condition. A Market Participant's failure to obey an operating order containing multiple instructions to address a specific operating condition will result in a single violation of Section 37.2. If some limitation prevents the Market Participant from fulfilling the action requested by the CAISO, then the Market Participant must promptly and directly communicate the nature of any such limitation to the CAISO. Compliance with CAISO operating orders requires a good faith effort to achieve full performance as soon as is reasonably practicable in accordance with Good Utility Practice.

**37.2.1.2 Sanctions.**

The Sanction for a violation of this Section shall be the greater of the quantity of Energy non-performance multiplied by the applicable Dispatch Interval Locational Marginal Price or the following: for the first violation in a rolling twelve (12) month period, \$5,000; for the second and subsequent violations in a rolling twelve (12) month period, \$ 10,000. Sanctions under Section 37.2.1 will not be greater than \$10,000 per violation and will be subject to the limitation stated in Section 37.2.6. If a quantity of Energy cannot be objectively determined, then the financial sanctions specified above will apply. A Market Participant may incur Sanctions for more than one violation per day.

**37.2.2 Failure to Curtail Load.**

**37.2.2.1 Expected Conduct.**

A UDC or MSS Operator shall promptly comply with any CAISO operating order to curtail interruptible or firm Load issued pursuant to the CAISO's authority under Section 7.7.11.3.

**37.2.2.2 Sanctions.**

The Sanction for non-compliance with an operating order to curtail Load will be \$10,000 for each violation.

**37.2.3 Operations & Maintenance Practices.**

**37.2.3.1 Expected Conduct.**

Market Participants shall undertake such operating and maintenance practices as necessary to avoid contributing to a major Outage or prolonging response time as indicated by Section 7.7.13.3.

**37.2.3.2 Sanctions.**

The Sanction for a violation of Section 37.2.3 will be \$10,000.

**37.2.4 Resource Adequacy Availability.**

**37.2.4.1 Expected Conduct.**

A Market Participant shall operate a Generating Unit listed as a Resource Adequacy Resource on-line and/or available consistent with a DAM or RUC commitment or Real-Time Dispatch Instructions, subject to Section 40, unless the CAISO releases the Generating Unit after the RUC process is completed, or a derate, Outage or other event outside the control of the Market Participant prevents the Generating Unit from being on-line and available. A Market Participant that fails to perform in accordance with the expected conduct described in this Section 37.2.4.1 shall be subject to Sanction.

**37.2.4.2 Sanctions.**

The Sanctions for a violation of Section 37.2.4 shall be as follows: for the first violation in a rolling twelve (12) month period, \$5,000; for the second and all subsequent violations in a rolling twelve (12) month period, \$10,000. A Market Participant is limited to one Sanction per Generating Unit per calendar day.

**37.2.5 Enhancements and Exceptions.**

Except as otherwise specifically provided, penalty amounts shall be tripled for any violation of Section 37.2.1 through Section 37.2.4 if a CAISO System Emergency exists at the time an operating order becomes effective or at any time during the Market Participant's non-performance. Notwithstanding the foregoing, violations of Section 37.2.1 through Section 37.2.4 are subject to penalty under this rule only to the extent that the CAISO has issued a separate and distinct non-automated Dispatch Instruction to the Market Participant. Any penalty amount that is tripled under this provision and that would exceed the \$10,000 per day penalty limit shall not be levied against a Market Participant until the CAISO proposes and the Commission approves such an enhancement. A Market Participant that is subject to an enhanced penalty amount under this Section 37.2.5 may appeal that penalty amount to FERC if the Market Participant believes a mitigating circumstance not covered in Section 37.9.2 exists. The duty of the Market Participant to pay the enhanced penalty amount will be tolled until FERC renders its decision on the appeal.

**37.2.6 Per Day Limitation on Amount of Sanctions.**

The amount of Sanctions that any Market Participant will incur for committing two or more violations of Section 37.2.1 through Section 37.2.4 on the same day will be no greater than \$10,000 per day.

**37.3 Submit Feasible Energy Bids, RUC Capacity Bids, Ancillary Service Bids, and Submissions to Self-Provide an Ancillary Service.**

**37.3.1 Bidding Generally.**

**37.3.1.1 Expected Conduct.**

Market Participants must submit Bids for Energy, RUC Capacity and Ancillary Services and Submissions to Self-Provide an Ancillary Service from resources that are reasonably expected to be available and capable of performing at the levels specified in the Bid, and to remain available and capable of so performing based on all information that is known to the Market Participant or should have been known to the Market Participant at the time of submission. HASP Intertie Schedules for import or export Energy are not subject to the foregoing requirement, but failure to deliver on such HASP Intertie Schedules can violate the anti-manipulation provisions in Section 37.7 and in any regulations issued by FERC.

**37.3.1.2 Consequence for Non-Performance.**

A Market Participant that fails to perform in accordance with the expected conduct described in Section 37.3.1.1 above shall be subject to having the payment rescinded for any portion of an Ancillary Service or RUC Capacity that is unavailable. If a Market Participant fails to deliver on a HASP Intertie Schedule for import or export Energy, it shall be subject to any charge that may apply in Section 11.31 and to any penalty or sanction FERC may impose for violation of Section 37.7, but shall not be subject to Sanctions pursuant to any other provision of Section 37, including this Section 37.3.

**37.3.2 Exceptions.**

Violations of Section 37.3.1 that result in circumstances in which an Uninstructed Deviation Penalty under Section 11.23 may be assessed or for which payments have been eliminated under Section 8.10.8 are not subject to Sanction under this section. The submission of a Bid or of a Submission to Self-Provide Ancillary Services that causes, or that the CAISO expects to cause Congestion shall not, by itself, constitute a violation of Section 37.3.1 unless the Market Participant fails to comply with an obligation under the CAISO Tariff to modify Bids as determined by the CAISO to mitigate such Congestion or such Bids violate another element of this rule.

**37.4 Comply with Availability Reporting Requirements.**

### **37.4.1 Reporting Availability.**

#### **37.4.1.1 Expected Conduct.**

A Market Participant shall notify the CAISO Control Center of any Outage reportable pursuant to Section 9.3.10.2.1 of a Generating Unit subject to Section 4.6 within **sixty (60)** minutes after the Outage is discovered.

#### **37.4.1.2 Sanctions.**

**A "violation" for purposes of this Section shall mean each failure to notify the CAISO Control Center about an Outage of a Generating Unit within sixty (60) minutes after the Outage is discovered, as required by Section 37.4.1, except that (a) for each Generating Unit, the first such failure in a calendar month shall not constitute a violation, and (b) for each Generating Unit, multiple failures in the same calendar day shall constitute a single violation.** The Sanctions for a violation of Section 37.4.1 shall be as follows:

- (a) for each Generating Unit that is the subject of a violation, the Sanction for the first violation in a calendar month shall be a warning letter;**
- (b) for each Generating Unit that is the subject of a violation, the Sanction for the second and subsequent violations in a calendar month will be a financial penalty, as follows:**
  - (i) if the Generating Unit has not been the subject of a financial penalty for a previous violation within twelve (12) months of the instant violation, the Sanction will be \$1,000;**
  - (ii) if the Generating Unit has been the subject of one financial penalty for a previous violation within twelve (12) months of the instant violation, the Sanction will be \$2,000;**
  - (iii) if the Generating Unit has been the subject of two or more financial penalties for previous violations within twelve (12) months of the instant violation, the Sanction will be \$5,000.**



**37.4.2 Scheduling and Final Approval of Outages.**

**37.4.2.1 Expected Conduct.**

A Market Participant shall not undertake an Outage except as approved by the CAISO Outage Coordination Office in accordance with Section 9.3.2, Section 9.3.9, and Section 9.3.6.6. A Market Participant shall not commence any Outage without obtaining final approval from the CAISO Control Center in accordance with Sections 9.3.9 and 9.3.10.

**37.4.2.2 Sanctions.**

The Sanctions for a violation of Section 37.4.2 shall be as follows: for the first violation within a rolling twelve (12) month period, \$5,000; for subsequent violations within a rolling twelve (12) month period, \$10,000. A "violation" shall mean each Outage undertaken for which all required approvals were not obtained.

**37.4.3 Explanation of Forced Outages.**

**37.4.3.1 Expected Conduct.**

As required by Section 9.3.10.6, a Market Participant must provide a detailed explanation of a Forced Outage within two (2) Business Days after the Operator initially notifies the CAISO pursuant to Section 9.3.10.2.1 of the change in maximum output capability. An Operator must promptly provide information requested by the CAISO to enable the CAISO to review the explanation submitted by the Operator and to prepare a report on the Forced Outage.

**37.4.3.2 Sanctions.**

The Sanction for failing to provide a timely explanation of Forced Outage shall be \$500 per day for each day the explanation is late. The Sanction for failing to provide a timely response to information requested shall be as specified in Section 37.6.1.

**37.4.4 Enhancements and Exceptions.**

Except as otherwise specifically provided, penalty amounts shall be tripled for any violation of Section 37.4.1 through Section 37.4.3 that occurs during a CAISO System Emergency. Violations of the above rules that result in circumstances in which an Uninstructed Deviation Penalty under Section 11.23 may be assessed shall not be subject to Sanction under this Section 37.4. A Market Participant that is subject to an enhanced penalty amount under this Section 37.4.4 may appeal that penalty amount to FERC if the Market Participant believes a mitigating circumstance not covered in Section 37.9.2 exists. The duty of the Market Participant to pay the enhanced penalty amount will be tolled until FERC renders its decision on the appeal.

**37.5 Provide Factually Accurate Information.**

**37.5.1 Accurate Information Generally.**

**37.5.1.1 Expected Conduct.**

All applications, Bids, Submissions, reports, and other communications by a Market Participant or agent of a Market Participant to the CAISO, including maintenance and Outage data, Bid data, transaction information, and Load and resource information, must be submitted by a responsible company official who is knowledgeable of the facts submitted. The Market Participant shall provide accurate and factual information and not submit false or misleading information, or omit material information, in any communication with FERC, FERC-approved market monitors, FERC-approved regional transmission organizations, or FERC-approved independent system operators, or jurisdictional transmission providers, unless the Market Participant exercised due diligence to prevent such occurrences.

**37.5.1.2 Sanctions.**

The Sanctions for a violation of Section 37.5.1 shall be as follows: for the first violation within a rolling twelve (12) month period, \$2,500; for the second violation within a rolling twelve (12) month period, \$5,000; subsequent violations within a rolling twelve (12) month period, \$10,000.

**37.5.2 Inaccurate Meter Data.**

**37.5.2.1 Expected Conduct.**

Market Participants shall provide complete and accurate Settlement Quality Meter Data for each Trading Hour and shall correct any errors in such data prior to the issuance of Initial Settlement Statement Reissue or Recalculation Settlement Statements, as relevant. Failure to provide complete and accurate Settlement Quality Meter Data, as required by Section 10 and that results in an error that is discovered after issuance of Initial Settlement Statement Reissue or Recalculation Settlement Statements, as relevant, shall be a violation of this rule.

**37.5.2.2 Sanctions.**

Violations under this Section 37.5.2 shall be subject to Sanction described in Section 37.11.

**37.5.2.3 Disposition of Sanction Proceeds.**

For purposes of redistributing collected **market** adjustments, any amounts collected under this provision shall be applied first to those parties affected by the conduct. Any excess amounts shall be disposed of as set forth in Section 37.9.4.

**37.6 Provide Information Required by CAISO Tariff.**

**37.6.1 Required Information Generally.**

**37.6.1.1 Expected Conduct.**

Except as provided below in Section 37.6.4 (Review by FERC), all information that is required to be submitted to the CAISO under the CAISO Tariff, CAISO Business Practice Manuals, or jurisdictional contracts must be submitted in a complete, accurate, and timely manner. Market Participants must comply with requests for information or data by the CAISO authorized under the CAISO Tariff, including timelines specified for submitting Bids and other information.

**37.6.1.2 Sanctions.**

Except as otherwise provided below, in Section 37.6.2 and Section 37.6.3, a violation of this rule is subject to a penalty of \$500 for each day that the required information is late.

**37.6.2 Investigation Information.**

**37.6.2.1 Expected Conduct.**

Except as provided below in Section 37.6.4 (Review by FERC), Market Participants must submit timely information in response to a written request by the CAISO for information reasonably necessary to conduct an investigation authorized by the CAISO Tariff.

**37.6.2.2 Sanctions.**

The Sanction for a violation of Section 37.6.2 shall be as follows: for the first violation in a rolling **twelve (12)** month period, \$1000/day; for the second violation in a rolling **twelve (12)** month period, \$2000/day; for the third and subsequent violations in a rolling **twelve (12)** month period, \$5000/day. For purposes of

### 37.6.3 Audit Materials.

### **37.6.3.2 Sanctions.**

Issued by: Charles A. King, PE, Vice President of Market Development and Program Management  
Issued on: December 21, 2007 Effective: March 31, 2008

**37.7 Prohibition of Electric Energy Market Manipulation.**

It shall be a violation of this CAISO Tariff for an entity, directly or indirectly, in connection with the purchase or sale of electric energy or the purchase or sale of transmission services subject to the jurisdiction of the FERC, (i) to use or employ any device, scheme, or artifice to defraud, (ii) to make any untrue statement of a material fact or to omit to state a material fact necessary in order to make the statements made, in light of the circumstances under which they were made, not misleading, or (iii) to engage in any act, practice, or course of business that operates or would operate as a fraud or deceit upon any entity. Violations or potential violations of this rule shall be referred to FERC for appropriate sanction.

Actions or transactions by a Market Participant that are explicitly contemplated in the CAISO Tariff or are undertaken at the direction of the CAISO are not in violation of this Rule of Conduct.

**37.8 Process for Investigation and Enforcement.**

**37.8.1 Purpose; Scope.**

The provisions of this Section 37.8 set forth the procedures by which the Market Monitoring Unit will independently investigate potential violations of the Rules of Conduct and administer enforcement activities. Except as hereinafter provided, and except as provided in Section 37.2.5 and Section 37.4.4, the provisions of this section apply to the Rules of Conduct set forth in Sections 37.2 through 37.7.

**37.8.2 Referrals to FERC.**

Section 37.7 shall be enforced by FERC, in accordance with FERC's rules and procedures. The Market Monitoring Unit shall refer to FERC and its staff all matters in which it has formed a reasonable belief that a violation of Section 37.7 may have occurred. Although Sections 37.2 through 37.6 will generally be enforced by the Market Monitoring Unit, the Market Monitoring Unit shall refer to FERC any matter for which the particular circumstances preclude the objective determination of a Rules of Conduct violation,

and shall refer to FERC any Sanction that it believes should be modified in accordance with Sections 37.2.5, 37.4.4, or 37.9.1. The time limitation contained in Section 37.10.1 to assess a Sanction under this **Section 37** shall be determined as of the date that a Sanction is initially assessed by the CAISO, excluding the time required for FERC to investigate a potential Rules of Conduct violation and/or determine a Sanction in accordance with this section, Sections 37.2.5, 37.4.4, or 37.9.1.

**37.8.3 Investigation.**

The Market Monitoring Unit shall conduct a reasonable investigation seeking available facts, data, and other information relevant to the potential Rules of Conduct violation.

**37.8.4 Notice.**

The Market Monitoring Unit shall provide notice of the investigation in sufficient detail to allow for a meaningful response to the Scheduling Coordinator and, as limited below, to all Market Participants the Scheduling Coordinator represents that are the subject(s) of the investigation. The Market Monitoring Unit shall contact the Market Participant(s) that may be involved, so long as the CAISO has sufficient objective information to identify and verify the role of the Market Participant(s) in the potential Rules of Conduct violation. Such Market Participant(s) will likely have an existing contractual relationship with the CAISO (e.g., UDC, MSS, CAISO Metered Entity, Participating Transmission Owner, Participating Generator, or Participating Load).

**37.8.5 Opportunity to Present Evidence.**

The Market Monitoring Unit shall provide an opportunity to the Market Participant(s) that are the subject(s) of the investigation to present any issues of fact or other information relevant to the potential Rules of Conduct violation being investigated. The Market Monitoring Unit shall consider all such information or data presented.

**37.8.6 Results of Investigation.**

The Market Monitoring Unit shall notify the Market Participant(s) that are the subject(s) of the investigation of the results of the investigation. The Market Participant(s) shall have **thirty (30)** days to respond to the findings of the Market Monitoring Unit before the Market Monitoring Unit makes a determination of whether a Sanction is required by this CAISO Tariff.

**37.8.7 Statement of Findings and Conclusions.**

Where the investigation results in a Sanction, the Market Monitoring Unit shall state its findings and conclusions in writing, and will make such writing available to the Scheduling Coordinator and, as provided in Section 37.8.4, to the Market Participant(s) that are the subject(s) of the investigation.

**37.8.8 Officer Representative.**

Where an investigation results in a Sanction by the Market Monitoring Unit, the Market Monitoring Unit shall direct its notice of such result to a responsible representative of the Scheduling Coordinator and, as provided in Section 37.8.4, to the Market Participant(s) that are the subject(s) of the investigation at the officer level.

**37.8.9 Record of Investigation.**

Where an investigation results in a Sanction, the Market Monitoring Unit will maintain a record of the investigation until its decision has been finally reviewed, if review is sought, or until the period for seeking review has expired.

**37.8.10 Review of Determination.**

A Market Participant that receives a Sanction may obtain immediate review of the Market Monitoring Unit's determination by directly appealing to FERC, in accordance with FERC's rules and procedures. In such case, the applicable Scheduling Coordinator shall also dispute the **Initial** Settlement Statement **T + 38 BD** containing the financial penalty, in accordance with Section 11. The **Initial** Settlement Statement



T + 38 BD dispute and appeal to FERC must be made in accordance with the timeline for raising disputes specified in Section 11.29.8.2. The penalty will be tolled until FERC renders its decision on the appeal. The disposition by FERC of such appeal shall be final, and no separate dispute of such Sanction may be initiated under Section 13, except as provided in Section 37.9.3.4. For the purpose of applying the time limitations set forth in Section 37.10.1, a sanction will be considered assessed when it is included on an Initial Settlement Statement T + 38 BD, whether or not the CAISO accepts a Scheduling Coordinator's dispute of such Initial Settlement Statement T + 38 BD pending resolution of an appeal to FERC in accordance with this section or Section 37.9.3.3.

### **37.9 Administration of Sanctions.**

#### **37.9.1 Assessment; Waivers and Adjustments.**

Penalty amounts for violation of these Rules of Conduct shall be calculated as specified in Section 37.2 through Section 37.7. A Sanction specified in this Section 37 may be modified by FERC when it determines that such adjustment is just and reasonable. The CAISO may make a recommendation to FERC to modify a Sanction. An adjustment generally shall be deemed appropriate if the prescribed Sanction appears to be insufficient to deter the prohibited behavior, or if the circumstances suggest that the violation was inadvertent, unintentional, or some other mitigating circumstances exist.

#### **37.9.2 Excuse.**

The following circumstances shall excuse a violation of a Rule of Conduct under the terms of this CAISO Tariff:

##### **37.9.2.1 Uncontrollable Force.**

No failure by a Market Participant to satisfy the Rules of Conduct shall be subject to penalty to the extent and for the period that the Market Participant's inability to satisfy the Rules of Conduct is caused by an event or condition of Uncontrollable Force affecting the Market Participant; provided that the Market Participant gives notice to the CAISO of the event or condition of Uncontrollable Force as promptly as possible after it knows of the event or condition and makes all reasonable efforts to cure, mitigate, or remedy the effects of the event or condition.

**37.9.2.2 Safety, Licensing, or Other Requirements.**

Failure by a Market Participant to perform its obligations shall not be subject to penalty if the Market Participant is able to demonstrate that it was acting in accordance with Section 4.2.1.

**37.9.2.3 Emergencies.**

Failure by a Market Participant to perform its obligations may not be subject to penalty if the Market Participant is able to demonstrate that it was acting in good faith and consistent with Good Utility Practice to preserve System Reliability in a System Emergency, unless contrary to a CAISO operating order.

**37.9.2.4 Conflicting Directives.**

To the extent that any action or omission by a Market Participant is specifically required by a FERC order or CAISO operating order, the Market Participant may not be subject to penalty for that act or omission.

**37.9.3 Settlement.**

**37.9.3.1 Settlement Statements.**

The CAISO will administer any penalties issued under this Section 37 through Initial Settlement Statements T + 38 BD, and Initial Settlement Statement Reissues or Recalculation Settlement Statements, as relevant, issued to the responsible Scheduling Coordinator by the CAISO. Before invoicing a financial penalty through the Settlement process, the CAISO will provide a description of the penalty to the responsible Scheduling Coordinator and all Market Participants the Scheduling Coordinator represents that are liable for the penalty, when the CAISO has sufficient objective information to identify and verify responsibility of such Market Participants. The CAISO shall specify whether such penalty is modified pursuant to Section 37.2.5, Section 37.4.4 or Section 37.9.1. The description shall include the identity of the Market Participant that committed the violation and the amount of the penalty. Where FERC has determined the Sanction, the CAISO will provide such of the above information as is provided to it by FERC. The CAISO also may publish this information under the CAISO Website after Initial Settlement Statement Reissues or Recalculation Settlement Statements, as relevant, are issued.

**37.9.3.2 Payment.**

Except as provided in Section 37.2.5, Section 37.4.4, Section 37.8.10 or Section 37.9.3.3 below, the Scheduling Coordinator shall be obligated to pay all penalty amounts reflected on Settlement Statements to the CAISO pursuant to the CAISO's Settlement process, as set forth in Section 11.

**37.9.3.3 Other Responsible Party.**

Where a party or parties other than the Scheduling Coordinator is responsible for the conduct giving rise to a penalty reflected on a Settlement Statement, and where the Scheduling Coordinator bears no responsibility for the conduct, such other party or parties ultimately shall be liable for the penalty. Under such circumstances, the Scheduling Coordinator shall use reasonable efforts to obtain payment of the penalty from the responsible party(ies) and to remit such payment to the CAISO in the ordinary course of the Settlement process. In the event that the responsible party(ies) wish to dispute the penalty, or the Scheduling Coordinator otherwise is unable to obtain payment from the responsible parties, the Scheduling Coordinator shall notify the CAISO and dispute the Initial Settlement Statement T+ 38 BD. The CAISO promptly shall notify FERC. If the CAISO finds that a Market Participant separate from the Scheduling Coordinator that is unable to obtain payment from the responsible party(ies) is solely responsible for a violation, the Scheduling Coordinator that is unable to obtain payment may net its payment of its Invoice amount by the amount of the penalty in question. The CAISO may refuse to offer further service to any responsible party that fails to pay a penalty, unless excused under the terms of the CAISO Tariff, by providing notice of such refusal to the Scheduling Coordinator. Following such notice, the Scheduling Coordinator shall be liable for any subsequent penalties assessed on account of such responsible party.

**37.9.3.4 Dispute of FERC Sanctions.**

The right that a Market Participant may otherwise have under the CAISO Tariff to dispute a penalty that has been determined by FERC shall be limited to a claim that the CAISO failed properly to implement the penalty or other Sanction ordered by FERC, except as provided by Section 37.2.5 and Section 37.4.4.

**37.9.4 Disposition of Proceeds.**

The CAISO shall collect penalties assessed pursuant to this Section 37.9 and deposit such amounts in an interest bearing trust account. After the end of each calendar year, the CAISO shall distribute the penalty amounts together with interest earned through payments to Scheduling Coordinators as provided herein.

For the purpose of this Section 37.9.4, "eligible Market Participants" shall be those Market Participants that were not assessed a financial penalty pursuant to this Section 37 during the calendar year.

Each Scheduling Coordinator that paid GMC during the calendar year will identify, in a manner to be specified by the CAISO, the amount of GMC paid by each Market Participant for whom that Scheduling Coordinator provided service during that calendar year. The total amount assigned to all Market Participants served by that Scheduling Coordinator in such calendar year (including the Scheduling Coordinator itself for services provided on its own behalf), shall equal the total GMC paid by that Scheduling Coordinator.

The CAISO will calculate the payment due each Scheduling Coordinator based on the lesser of the GMC actually paid by all eligible Market Participants represented by that Scheduling Coordinator, or the product of a) the amount in the trust account, including interest, and b) the ratio of the GMC paid by each Scheduling Coordinator for eligible Market Participants, to the total of such amounts paid by all Scheduling Coordinators. Each Scheduling Coordinator is responsible for distributing payments to the eligible Market Participants it represented in proportion to GMC collected from each eligible Market Participant.

Prior to allocating the penalty proceeds, the CAISO will obtain FERC's approval of its determination of eligible Market Participants and their respective shares of the trust account proceeds. If the total amount in the trust account to be so allocated exceeds the total GMC obligation of all eligible Market Participants, then such excess shall be treated in accordance with Section 11.8.5.3(b).

**37.10 Miscellaneous.**

**37.10.1 Time Limitation.**

An investigation of events potentially subject to Sanction under this Section 37 must be commenced within ninety (90) days of discovery of the events. Sanctions may be assessed under this Section 37 up to one year after discovery of the events constituting the violation, but no later than three years after the date of the violation. Nothing in this section shall limit the rights or liabilities of any party under any other provision of applicable laws, regulations or tariff provisions.

**37.10.2 No Limitation on Other Rights.**

Nothing contained in this Section 37 shall limit the ability of the CAISO to collect information from Market Participants or to establish new provisions pursuant to Section 15.

**37.11 Method for Calculating Penalties.**

**37.11.1 Method for Calculating Inaccurate Meter Data Penalty.**

There is no Sanction for the submission of inaccurate Meter Data used for an Initial Settlement Statement T+ 38 BD. However, an error in submitted Meter Data that is discovered after issuance of an Initial Settlement Statement Reissue or Recalculation Settlement Statement, as applicable, constitutes a Rule of Conduct violation. The level of the Sanction depends on whether the Scheduling Coordinator or the CAISO discovered the error. An increased penalty will apply for errors that are discovered by the CAISO. Table A1 below shows how the level of the Sanction depends on the following factors: whether or not the Scheduling Coordinator finds the error; whether or not the Scheduling Coordinator owes the market, and whether or not the CAISO performs a Settlement Statement Re-run of the market. If the CAISO performs a Settlement Statement Re-run, then Settlement to all Scheduling Coordinators is recalculated, and the impact of such re-runs on charges assessed will be considered. A penalty charge equal to thirty percent (30%) of the estimated value of the Energy error will apply if the Scheduling Coordinator discovers the

error or **seventy-five percent (75%)** of the estimated value of the Energy error if the CAISO discovers the error. Penalty assessment and disposition of penalty proceeds will be administered as described in Section 37.9.1 and Section 37.9.4 respectively. A Sanction will not be imposed unless such Sanction is more than \$1,000 for at least one Trading Day during the period for which there was incomplete or inaccurate **Meter Data**.

Table A1 – Calculation of Inaccurate Meter Data Penalty When There Is A **Settlement Statement** Re-run

Case	Does SC Owe Market?	
Case 1: SC Identifies Inaccurate Meter Data	Yes	<b>Penalty</b> = (MWh x <b>applicable price</b> ) x 0.30
Case 1: SC Identifies Inaccurate Meter Data	No	<b>Penalty</b> = (MWh x <b>applicable price</b> ) x 0.30
Case 2: CAISO Identifies Inaccurate Meter Data	Yes	<b>Penalty</b> = (MWh x <b>applicable price</b> ) x 0.75
Case 2: CAISO Identifies Inaccurate Meter Data	No	<b>Penalty</b> = (MWh x <b>applicable price</b> ) x 0.75

Note to Table A1:

The applicable price will be the greater of the **relevant hourly** LMP or \$10/MWh. The LMP used will be the values posted on OASIS for each Trading Hour of the applicable Trading Day **period**.

2. Method for Calculating Inaccurate Meter Data Penalty When there is not a Settlement Statement Re-run.

If the CAISO does not perform a Settlement Statement Re-run, for cases of inaccurate Meter Data, Table A2 will be used to determine and allocate penalty and any market adjustment amount. The market adjustment approximates the financial impact on the market; however, it does not completely reflect all the Settlement consequences of inaccurately submitted Meter Data. The approximated value of the inaccurate Meter Data in question will be calculated and returned to the market based on the average of the pro rata share of Unaccounted for Energy (UFE) charged in the utility Service Area during the period of the inaccurate Meter Data event. The thirty percent (30%) or seventy-five percent (75%) penalty will be distributed as discussed in Section 37.9.4. For cases where the CAISO does not perform a Settlement Statement Re-run and the Scheduling Coordinator does not owe the market, then no market adjustment will be performed.

TABLE A2- Calculation Of Inaccurate Meter Data Penalty When There Is a Settlement Statement Re-run

Case	Does SC Owe Market?	CAISO does not perform a Settlement Statement Re-run
Case 1: SC Identifies Inaccurate Meter Data	Yes	Market Adjustment = (MWh x applicable price) Penalty = (MWh x applicable price) x 0.30
Case 1: SC Identifies Inaccurate Meter Data	No	No market adjustment will be made Penalty = (MWh x Hourly LMP) x 0.30
Case 2: CAISO Identifies Inaccurate Meter Data	Yes	Market Adjustment = (MWh x applicable price) Penalty = (MWh x applicable price) x 0.75
Case 2: CAISO Identifies Inaccurate Meter Data	No	No market adjustment will be made Penalty = (MWh x Hourly LMP) x 0.75

Notes to Table A2:

The applicable price will be the greater of the relevant hourly LMP or \$10/MWh. The LMP used will be the value posted on OASIS for each Trading Hour of the applicable Trading Day.

A Sanction will be imposed only if the Sanction is more than \$1,000 for at least one Trading Day during the period for which there was incomplete or inaccurate Meter Data.



If the error is to the detriment of the responsible Scheduling Coordinator (e.g., under-reported **Generation** or over-reported **Demand**), and the CAISO does not **perform a Settlement Statement Re-run**, then no **market adjustment** will be made. If the **CAISO performs a Settlement Statement Re-run** after the error is corrected, then the Scheduling Coordinator will be given credit for the additional Energy through the normal Settlement process. If the Scheduling Coordinator is paid for an error due to a **Settlement Statement Re-run**, then a Sanction will be assessed to assure that **Settlement Statement Re-runs** do not diminish the incentive to correct such errors. This Sanction would be **thirty percent (30%)** of the Energy value of the error if the Scheduling Coordinator discovers the error or **seventy-five percent (75%)** estimated value of the error if the CAISO discovers the error.

If the error is to the detriment of the market, then a charge equal to **thirty percent (30%)** or **seventy-five (75%)** of the estimated value of the error, as appropriate, will be added to the charge for the Energy. If there is no **Settlement Statement Re-run**, then the cost of Energy supplied by the CAISO (and inappropriately charged to the market as Unaccounted for Energy) must be recovered as well, and the charge will be equal to 130% or 175% of the estimated value of the error, as appropriate.

**38 Market Monitoring.**

**38.1 Objectives and Scope.**

This Section 38 sets forth the framework under which the CAISO Department of Market Monitoring and CAISO Market Surveillance Committee will monitor the CAISO Markets to identify abuses of market power, to ensure to the extent possible the efficient working of the CAISO Markets immediately upon commencement of their operation, and to provide for their protection from abuses of market power in both the short term and the long term, and from other abuses that have the potential to undermine their effective functioning or overall efficiency in accordance with Section 38.1.1. Such monitoring activities will be carried out by, among other CAISO departments, the CAISO Department of Market Monitoring and the CAISO Market Surveillance Committee to be established and to operate under the terms of this CAISO Tariff, as set forth below. This Section provides a general framework for the operation of the Department of Market Monitoring and the Market Surveillance Committee and are not intended to limit the activities or remedies available to these entities or to the CAISO as a whole elsewhere in the CAISO Tariff or otherwise under law.

**38.1.1 Market Surveillance: Changes to Operating Rules and Procedures.**

The CAISO shall keep the operation of the markets that it administers under review to determine whether changes in its operating rules, Business Practice Manuals, or CAISO Tariff would improve the efficiency of those markets or prevent the exercise of market power by any Market Participant; and it shall institute necessary changes in accordance with this Section 38.

**38.1.2 Reporting Requirements.**

This Section 38 sets forth the information dissemination, publication and reporting activities and other means of providing information that the CAISO generally undertakes to meet its reporting requirements to regulatory agencies, Market Participants and others. The goal of the reporting provisions is to adequately inform regulatory agencies, law enforcement agencies, policymakers, Market Participants and others of the state of the CAISO Markets, especially their competitiveness and efficiency. This function is designed to facilitate efficient corrective actions to be taken by the appropriate body or bodies when required.

## **38.2 Practices Subject to Scrutiny – General.**

The Department of Market Monitoring shall monitor the activities of Market Participants that affect the operation of the CAISO Markets and that provide indications of the phenomena set forth below in this Section 38.2 and will monitor for violations of the **market** behavior rules specified in Section 37 and any FERC orders establishing market behavior rules for Market Participants. Any corrective actions taken in response to potential violations of market behavior rules shall be made consistent with Section 37 and the applicable FERC orders. Where appropriate, it will take such further action as it considers necessary under Section 38.4.

### **38.2.1 Abuse of Reliability Must-Run Unit Status.**

Where Generating Units are determined by the CAISO to be Reliability Must-Run Units, circumstances that indicate that such Generating Units are being operated in a manner that will adversely affect the competitive nature and efficient workings of the CAISO Markets.

### **38.2.2 CAISO and Other Market Design Flaws.**

The Department of Market Monitoring shall monitor design flaws and inefficiencies in the CAISO Tariff, Business Practices Manuals, and Operating Procedures, including the potential for problems between the CAISO and other independent power markets or exchanges insofar as they affect the CAISO Markets.

### **38.2.3 Market Structure Flaws.**

With respect to flaws in the overall structure of the California **E**nergy markets that may reveal undue concentrations of market power in Generation or other structural flaws, the Department of Market Monitoring shall provide such information or evidence of such flaws and such analysis as it may conduct to the CAISO CEO and/or to the CAISO Governing Board, subject to due protections of confidential or commercially sensitive information. After due internal consultation, if instructed by any of such CAISO institutions or persons, the Department of Market Monitoring shall also provide such information or evidence to the Market Surveillance Committee, the appropriate regulatory and antitrust enforcement

agency or agencies, subject to due protections of confidential or commercially sensitive information. The Department of Market Monitoring shall, at the direction of the CAISO CEO and/or the CAISO Governing Board, or their designee, provide such other evidence, views, analyses or testimony as may be appropriate or required and as it is reasonably capable of providing to assist the investigations of such agencies.

### **38.3 Scrutiny of Market Participant Changes Potentially Affecting Market Structure.**

The Department of Market Monitoring may undertake the following measures to monitor the special circumstances that may affect the operation of the CAISO Markets due to corporate reorganizations including bankruptcies or changes in Affiliate relationships and may recommend corrective actions as provided in Section 38.4.

#### **38.3.1 Exercises of Horizontal Market Power.**

The Department of Market Monitoring may analyze the impact of changes in market structure on the ability of Market Participants to exercise short-term horizontal market power.

### **38.4 Response Action by CAISO.**

#### **38.4.1 Corrective Actions.**

Where the monitoring activities or any consequent investigations carried out by the Department of Market Monitoring pursuant to Section 38.2 and Appendix P.1 reveal a significant possibility of the presence of or potential for exercises of market power that would adversely affect the operation of the CAISO Markets, or other markets interconnected or interdependent on the CAISO Markets, the Department of Market Monitoring shall take the appropriate measures under this section and under Appendix P to institute the corrective action most effective and appropriate for the situation or, in the case of markets interconnected to or interdependent on the CAISO Markets, the Department of Market Monitoring may recommend corrective actions to the appropriate regulatory agencies.

**38.4.2 Further Actions.**

Where the monitoring activities of or any consequent investigations carried out by the Department of Market Monitoring pursuant to Sections 38.2 and 38.3 reveal that activities or behavior of Market Participants in the CAISO Markets have the effect of, or potential for, undermining the efficiency, workability or reliability of the CAISO Markets to give or to serve such Market Participants an unfair competitive advantage over other Market Participants, the Department of Market Monitoring shall fully investigate and analyze the effect of such activities or behavior and make recommendations to the CAISO CEO and the CAISO Governing Board for further action by the CAISO or, where necessary, by other entities. The Department of Market Monitoring may, where appropriate, make specific recommendations to the CAISO CEO and to the CAISO Governing Board for amendment to rules and protocols under its control, or for changes to the structure of the CAISO Markets, and the Department of Market Monitoring may recommend actions, including fines or suspensions, against specific entities in order to deter such activities or behavior.

**38.4.3 Adverse Effects of Transition Mechanisms.**

Should the monitoring and analysis conducted reveal significant adverse effects of transition mechanisms on competition in or the efficient operation of the CAISO Markets, the Department of Market Monitoring shall examine and fully assess the efficacy of all possible measures that may be taken by the CAISO, in order to prevent or to mitigate such adverse effects. The Department of Market Monitoring shall make such recommendations to the CAISO CEO and to the CAISO Governing Board as it considers appropriate for action by the CAISO and/or for referral to regulatory or law enforcement agencies. Such proposed measures may include, but shall not be limited to the following:

- (a) the use of direct Bid caps as a mechanism to prevent or mitigate artificially high Market Clearing Prices caused by abuses of market power;

- (b) the use of contracts for differences for eliminating the incentive for Generators to bid CAISO prices to artificially high levels enabled by the presence of market power;
- (c) calling upon Reliability Must-Run Units to operate; and to modify Reliability Must-Run Contracts;
- (d) Bid floors to prevent or mitigate the possible exercise of below-cost bidding or predatory pricing.

In the event that the CAISO Governing Board adopts, and where necessary obtains regulatory approval for, any measure proposed pursuant to ~~this~~ Section 38.4.3, the Department of Market Monitoring shall monitor the implementation and effect of such measure on the state of the CAISO Markets and shall periodically report on them to the ~~CAISO~~ CEO and the CAISO Governing Board.

**39 Market Power Mitigation Procedures.**

**39.1** These CAISO market power mitigation measures ("Mitigation Measures") are intended to provide the means for the CAISO to mitigate the market effects of any conduct that would substantially distort competitive outcomes in the CAISO Markets while avoiding unnecessary interference with competitive price signals. These Mitigation Measures are intended to minimize interference with an open and competitive market, and thus to permit, to the maximum extent practicable, price levels to be determined by competitive forces under the prevailing market conditions. To that end, the Mitigation Measures authorize the mitigation only of specific conduct identified through explicit procedures specified below. In addition, the CAISO shall monitor the markets it administers for conduct that it determines constitutes an abuse of market power but is not addressed by the market power mitigation procedures specified below. If the CAISO identifies any such conduct, it shall make a filing under Section 205 of the Federal Power Act, 16 U.S.C. § 824d, with FERC requesting authorization to apply appropriate mitigation measures. Any such filing shall identify the particular conduct the CAISO believes warrants mitigation, shall propose a specific mitigation measure for the conduct, and shall set forth the CAISO's justification for imposing that mitigation measure.

**39.2 Conditions for the Imposition of Mitigation Measures.**

**39.2.1** In general, the CAISO shall consider a Market Participant's conduct to be inconsistent with competitive conduct if the conduct would not be in the economic interest of the Market Participant in the absence of market power. The categories of conduct that are inconsistent with competitive conduct include, but may not be limited to, the four categories of conduct specified in Section 39.3 below.

**39.3 Categories of Conduct that May Warrant Mitigation.**

**39.3.1** Mitigation Measures may be applied to bidding, scheduling or operation of an Electric Facility or as specified in Section 39.3.1. The following categories of conduct, whether by a single firm or by multiple firms acting in concert, may cause a material effect on prices or generally the outcome of the CAISO Markets if exercised from a position of market power. Accordingly, the CAISO shall monitor the CAISO Markets for the following categories of conduct, and shall impose appropriate Mitigation Measures if such conduct is detected and the other applicable conditions for the imposition of Mitigation Measures are met:

- (1) Physical withholding of an Electric Facility, in whole or in part, that is, not offering to sell or schedule the output of or services provided by an Electric Facility capable of serving a CAISO Market. Such withholding may include, but not be limited to: (i) falsely declaring that an Electric Facility has been forced out of service or otherwise become totally or partially unavailable, (ii) refusing to offer Bids for an Electric Facility when it would be in the economic interest, absent market power, of the withholding entity to do so, (iii) declining Bids called upon by the CAISO (unless the CAISO is informed in accordance with established procedures that the relevant resource for which the Bid is submitted has undergone a forced outage or derate), or (iv) operating a Generating Unit in Real-Time to produce an output level that is less than the Dispatch Instruction.
- (2) Economic withholding of an Electric Facility, that is, submitting Bids for an Electric Facility that are unjustifiably high (relative to known operational characteristics and/or the known operating cost of the resource) so that: (i) the Electric Facility is not or will not be dispatched or scheduled, or (ii) the Bids will set LMPs.



- (3) Uneconomic production from an Electric Facility that is, increasing the output of an Electric Facility to levels that would otherwise be uneconomic in order to cause, and obtain benefits from, a transmission constraint.
- (4) Bidding practices that distort prices or uplift charges away from those expected in a competitive market, such as (i) submitting Demand Bids at prices that are unjustifiably low relative to the expected marginal cost of meeting total expected demand resulting in DAM prices that are significantly below competitive levels and DAM clearing demand that is significantly below total expected demand or (ii) registering Start-Up Cost and Minimum Load Cost data or submitting Bid Costs on behalf of an Electric Facility that are unjustifiably high (relative to known operational characteristics and/or the known operating cost of the resource) or misrepresenting the physical operating capabilities of an Electric Facility in uplift payments or prices significantly in excess of actual costs.

**39.3.2** Mitigation Measures may also be imposed to mitigate the market effects of a rule, standard, procedure, design feature, or known software imperfection of a CAISO Market that allows a Market Participant to manipulate market prices or otherwise impair the efficient operation of that market, pending the revision of such rule, standard, procedure design feature, or software defect to preclude such manipulation of prices or impairment of efficiency.

**39.3.3** Taking advantage of opportunities to sell at a higher price or buy at a lower price in a market other than a CAISO Market shall not be deemed a form of withholding or otherwise inconsistent with competitive conduct.

**39.3.4** The CAISO shall monitor CAISO Markets for other categories of conduct, whether by a single firm or by multiple firms acting in concert, that have material effects on prices in a CAISO Market or other payments. The CAISO shall seek to amend the foregoing list as may be appropriate to include any such conduct that would substantially distort or impair the competitiveness of any of the CAISO Markets.

**39.4 Sanctions for Physical Withholding.**

The CAISO may report a Market Participant the CAISO determines to have engaged in physical withholding, including providing the CAISO false information regarding derating or outage of an Electric Facility, to the Federal Energy Regulatory Commission in accordance with Section 9.3.10.5. In addition, a Market Participant that fails to operate a Generating Unit in conformance with CAISO Dispatch Instructions shall be subject to the penalties set forth in Section 11.23.

**39.5 FERC-Ordered Measures.**

In addition to any mitigation measures specified above, the CAISO shall administer, and apply when appropriate in accordance with their terms, such other mitigation measures as it may be directed to implement by order of the FERC.

**39.6 Rules Limiting Certain Energy, Ancillary Services, And Residual Unit Commitment Bids.**

**39.6.1 Maximum Bid Prices.**

Notwithstanding any other provision of this CAISO Tariff, maximum Bid price provisions of Section 39 shall apply to limit, Energy Bids, RUC Availability Bids, and Ancillary Service Bids as specified below.

**39.6.1.1 Maximum Price for Energy Bids**

For the twelve (12) months following the effective date of this Section, the maximum Energy Bid prices shall be \$500/MWh. After the twelfth month following the effective date of this Section, the maximum Energy Bid price shall be \$750/MWh. After the twenty-fourth month following the effective date of this Section, the maximum Energy Bid price shall be \$1,000/MWh.

**39.6.1.2 Maximum RUC Availability Bid Prices**

The maximum RUC Availability Bid price shall be \$250/MW/h.

**39.6.1.3 Maximum Ancillary Services Bid Prices**

The maximum level for Ancillary Services Bid prices shall be \$250/MWh.

**39.6.1.4 Minimum Bid Price for Energy Bids.**

Energy Bids into the CAISO Markets less than -\$30/MWh are not eligible to set any LMP. If the CAISO dispatches a resource with an Energy Bid less than -\$30/MWh, the Scheduling Coordinator on behalf of the resource will be eligible to be paid the Bid price upon the submission of detailed information justifying the cost components of the Bid to the CAISO and FERC no later than seven (7) days after the end of the month in which the Bid was submitted. The CAISO will treat such information as confidential and will apply the procedure in Section 20.4 with regard to requests for disclosure of such information. The CAISO shall pay Scheduling Coordinators for amounts in excess of -\$30/MWh minimum Bid price upon FERC acceptance of the information justifying the cost components.

**39.6.1.5 Minimum Bid Price for Ancillary and RUC Bids.**

Ancillary Service Bids and RUC Availability Bids submitted into CAISO markets must have Bid prices not less than \$0/MW/h.

**39.6.1.6 Maximum Start-Up Cost and Minimum Load Cost Registered Cost Values.**

*The maximum Start-Up Cost and Minimum Load Cost values registered in the Master File by Scheduling Coordinators for resources located within a Local Capacity Area that elect the Registered Cost option in accordance with Section 30.4 will be limited to 200% of the Projected Proxy Cost. The maximum Start-Up Cost and Minimum Load Cost values registered in the Master File by Scheduling Coordinators for resources that are not located in Local Capacity Areas that elect the Registered Cost option in accordance with Section 30.4 will be limited to 400% of the Projected Proxy Cost.*

### **39.7 Local Market Power Mitigation for Energy Bids.**

Local market power mitigation is based on a periodic assessment and designation of transmission constraints as competitive or non-competitive. Such periodic assessment will be performed at a minimum on an annual basis and potentially more frequently if needed due to changes in system conditions, network topology, or market performance. Any changes in constraint designations will be publicly noticed prior to making the change. Upon determination that an ad hoc assessment is warranted, the CAISO will notice market participants that such an assessment will be performed. The determination whether a unit is being dispatched to relieve congestion on a competitive or non-competitive transmission constraint is based on two preliminary market runs that are performed prior to the actual pricing run of the market and are described in Sections 31 and 33 for the DAM and RTM, respectively.

#### **39.7.1 Calculation of Default Energy Bids**

Default Energy Bids shall be calculated by the CAISO, for the on-peak hours and off-peak hours for both the DAM and RTMs, pursuant to one of the methodologies described in this Section. The Scheduling Coordinator for each Generating Unit owner or Participating Load must rank order the following options of calculating the Default Energy Bid starting with its preferred method. The Scheduling Coordinator must provide the data necessary for determining the Variable Costs unless the Negotiated Rate Option precedes the Variable Cost option in the rank order, in which case the Scheduling Coordinator must have a negotiated rate established with the Independent Entity charged with calculating the Default Energy Bid. If no rank order is specified for a Generating Unit or Participating Load, then the default rank order of (1) Variable Cost Option, (2) Negotiated Rate Option, (3) LMP Option will be applied.

**39.7.1.1 Variable Cost Option.**

For natural gas-fueled units, the Variable Cost Option will calculate the Default Energy Bid by adding incremental fuel cost with variable operation and maintenance cost, adding ten percent (10%) to the sum, and adding a Bid Adder if applicable. For non-natural gas-fueled units, the Variable Cost Option will calculate the Default Energy Bid by summing incremental fuel cost plus ten percent (10%) of fuel cost plus a Bid Adder if applicable.

**39.7.1.1.1 Incremental Fuel Cost Calculation Under the Variable Cost Option.**

For natural gas-fueled units, incremental fuel cost is calculated based on an incremental heat rate curve multiplied by the natural gas price calculated as described below.

Resource owners shall submit to the CAISO average heat rates (Btu/kWh) measured for at least two (2) and up to eleven (11) generating operating points (MW), where the first and last operating points refer to the minimum and maximum operating levels (i.e., PMin and PMax), respectively. The average heat rate curve formed by the (Btu/kWh, MW) pairs is a piece-wise linear curve between operating points, and two (2) average heat rate pairs yield one (1) incremental heat rate segment that spans two (2) consecutive operating points. The incremental heat rates (Btu/kWh) in the incremental heat rate curve are calculated by converting the average heat rates submitted by resource owners to the CAISO to requirements of heat input (Btu/h) for each of the operating points and dividing the changes in requirements of heat input from one (1) operating point to the next by the changes in MW between two (2) consecutive operating points as specified in the Business Practice Manual. For each segment representing operating levels below eighty percent (80%) of the unit's PMax, the incremental heat rate is limited to the maximum of the average heat rates for the two (2) operating points used to calculate the incremental heat rate segment.

The unit's final incremental fuel cost curve is calculated by multiplying this incremental heat rate curve by the applicable natural gas price, and then, if necessary, applying a left-to-right adjustment to ensure that the final incremental cost curve is monotonically non-decreasing.

For non-natural gas-fueled units, incremental fuel cost is calculated based on an average cost curve as described below.

Resource owners for non-natural gas-fueled units shall submit to the CAISO average fuel costs (\$/MW) measured for at least two (2) and up to eleven (11) generating operating points (MW), where the first and last operating points refer to the minimum and maximum operating levels (i.e., PMin and PMax), respectively. The average cost curve formed by the (\$/MWh, MW) pairs is a piece-wise linear curve between operating points, and two (2) average cost pairs yield one (1) incremental cost segment that spans two (2) consecutive operating points. For each segment representing operating levels below eighty percent (80%) of the unit's PMax, the incremental cost rate is limited to the maximum of the average cost rates for the two (2) operating points used to calculate the incremental cost segment. The unit's final incremental fuel cost curve is then adjusted, if necessary, applying a left-to-right adjustment to ensure that the final incremental cost curve is monotonically non-decreasing.

Heat rate curves and average cost curves shall be stored, updated, and validated in the Master File. To calculate the natural gas price, the CAISO will use different gas price indices for the Day-Ahead Market and the Real-Time Market and each gas price index will be calculated using at least two prices from two or more of the following publications: Natural Gas Intelligence, Btu Daily Gas Wire, Platt's Gas Daily and the Intercontinental Exchange. For the Day-Ahead Market, the CAISO will update the gas price index between 00:00 and 03:00 Pacific Time in the Day-Ahead using natural gas prices published on the prior day, unless gas prices are not published on that day, in which case the CAISO will use the most recently published prices that are available. For the Real-Time Market, the CAISO will update gas price indices between the hours of 19:00 and 22:00 Pacific Time using natural gas prices published in the Day-Ahead, unless gas prices are not published on that day, in which case the CAISO will use the most recently published prices that are available.

**39.7.1.1.2 Variable Operation and Maintenance Cost Under the Variable Cost Option.**

The default value for the variable operation and maintenance cost portion will be \$2/MWh. Generating Units that are of the combustion turbine or reciprocating engine technology will be eligible for a default variable operation and maintenance cost of \$4/MWh. Resource specific values may be negotiated with the Independent Entity charged with calculating the Default Energy Bid.

**39.7.1.2 LMP Option.**

The CAISO will calculate the LMP Option for the Default Energy Bid as a weighted average of the lowest quartile of LMPs at the Generating Unit PNode in periods when the unit was Dispatched during the preceding ninety (90) days. The weighted average will be calculated based on the quantities Dispatched

within each segment of the Default Energy Bid curve. The LMP Option for Default Energy Bids will not be available until **ninety (90)** days of LMP pricing has occurred. Each Bid segment created under the LMP Option for Default Energy Bids will be subject to a feasibility test, as set forth in a Business Practice Manual, to determine whether there are a sufficient number of data points to allow for the calculation of an LMP based Default Energy Bid. The feasibility test is designed to avoid excessive volatility of the Default Energy Bid under the LMP Option that could result when calculated based on a relatively small number of prices.

### **39.7.1.3        Negotiated Rate Option.**

#### **39.7.1.3.1      Submission Process**

Scheduling Coordinators that elect the Negotiated Rate Option for the Default Energy Bid shall submit a proposed Default Energy Bid along with supporting information and documentation as described in a BPM. Within ten (10) Business Days of receipt, the CAISO or an Independent Entity selected by the CAISO will provide a written response. If the CAISO or Independent Entity accepts the proposed Default Energy Bid, it will become effective within three (3) Business Days from the date of acceptance by the CAISO and remain in effect until: (1) the Default Energy Bid is modified by FERC; (2) the Default Energy Bid is modified by mutual agreement of the CAISO and the Scheduling Coordinator; or (3) the Default Energy Bid expires, is terminated or is modified pursuant to any agreed upon term or condition or pertinent FERC order.

If the CAISO or Independent Entity selected by the CAISO does not accept the proposed Default Energy Bid, the CAISO or Independent Entity selected by the CAISO and the Scheduling Coordinator shall enter a period of good faith negotiations that terminates **sixty (60)** days following the date of submission of a proposed Default Energy Bid by a Scheduling Coordinator. If at any time during this period, the CAISO or Independent Entity selected by the CAISO and the Scheduling Coordinator agree upon the Default Energy Bid, it will become effective within three (3) Business Days of the date of agreement and



remain in effect until: (1) the Default Energy Bid is modified by FERC; (2) the Default Energy Bid is modified by mutual agreement of the CAISO and the Scheduling Coordinator; or (3) the Default Energy Bid expires, is terminated or is modified pursuant to any agreed upon term or condition or pertinent FERC order.

If by the end of the ~~sixty~~ (60)-day period the CAISO or Independent Entity selected by the CAISO and the Scheduling Coordinator fail to agree on the Default Energy Bid to be used under the Negotiated Rate Option, the Scheduling Coordinator has the right to file a proposed Default Energy Bid with FERC pursuant to Section 205 of the Federal Power Act.

During the ~~sixty~~ (60)-day period following the submission of a proposed negotiated Default Energy Bid by a Scheduling Coordinator, and pending FERC's acceptance in cases where the CAISO or Independent Entity selected by the CAISO fail to agree on the Default Energy Bid for use under the Negotiated Rate Option and the Scheduling Coordinator filed a proposed Default Energy Bid with FERC pursuant to Section 205 of the Federal Power Act, the Scheduling Coordinator has the option of electing to use any of the other options available pursuant to Section 39.7. If the Scheduling Coordinator does not elect to use any of the other options available pursuant to Section 39.7, or if sufficient data do not exist to calculate a Default Energy Bid using any of these options, the CAISO may establish a temporary Default Energy Bid as specified in Section 39.7.1.5.

#### **39.7.1.3.2 Informational Filings With FERC**

The CAISO shall make an informational filing with FERC of any Default Energy Bids negotiated pursuant to this section, or any temporary Default Energy Bids established pursuant to Section 39.7.1.5, no later than seven (7) days after the end of the month in which the Default Energy Bids were established.

#### **39.7.1.4 Frequently Mitigated Unit Option.**

A Frequently Mitigated Unit that is eligible for a Bid Adder may select a fourth Default Energy Bid option, which is equal to the Variable Cost Option plus the Bid Adder as described in Section 39.7.

**39.7.1.5 Temporary Default Energy Bid.**

If the Scheduling Coordinator does not elect to use any of the other options available pursuant to Section 39.7.1, or if sufficient data do not exist to calculate a Default Energy Bid using any of the available options, the CAISO will first seek to obtain from the Scheduling Coordinator any additional data required for calculating the Default Energy Bid options available pursuant to 39.7.1. If the provision of additional data by a Scheduling Coordinator results in additional or modified Default Energy Bid options pursuant to 39.7.1, the Scheduling Coordinator will have another opportunity to elect one of these options as its temporary Default Energy Bid. If the Scheduling Coordinator does not elect to use any of the other new options available pursuant to Section 39.7.1, or if sufficient data still do not exist to calculate a Default Energy Bid using any of the available options, the CAISO may establish a temporary Default Energy Bid based on one or more of the following: (1) operating cost data, opportunity cost, and other appropriate input from the Market Participant; (2) the CAISO's estimated operating costs of the Electric Facility, taking the best information available to the CAISO; (3) an appropriate average of competitive Bids of one or more similar Electric Facilities; or (4) any of the other options for determining a Default Energy Bid for which data are available.

**39.7.1.6 Default Energy Bids for RMR Units.**

The available capacity in excess of the Maximum Net Dependable Capacity (MNDC) specified in the RMR Contract up to the maximum generation capacity (PMax) is subject to Local Market Power Mitigation. The Scheduling Coordinator for the RMR Unit must rank order its preferences between the Variable Cost Option, the LMP Option, and the Negotiated Rate Option, which shall be the default rank order if no rank order is specified by the Scheduling Coordinator. These preferences will be used to determine the Default Energy Bids for the capacity between the MNDC and PMax. RMR Proxy Bids for RMR Units based on contractually specified costs are used in lieu of Default Energy Bids for the contractual RMR Unit capacity between the minimum generating capacity (PMin) and the MNDC. The

CAISO or Independent Entity will concatenate these two calculation methodologies (for calculating RMR Proxy Bids and Default Energy Bids for RMR Units) and will adjust them for monotonicity without lowering any price on either curve to create a single Energy Bid Curve to be used in the MPM-RRD processes as described in Sections 31 and 33 for the DAM and RTM, respectively. RMR Units are not eligible to receive a Bid Adder pursuant to Section 39.8 for contractual RMR Unit capacity between PMin and MNDC.

### **39.7.2 Competitive Path Designation.**

#### **39.7.2.1 Timing of Assessments.**

The CAISO will complete the first assessment of competitiveness of transmission constraints prior to the effective date of this provision. Constraint designations resulting from the first assessment will be applied in the MPM-RRD mechanism on the day this CAISO Tariff becomes effective and will not be changed until a subsequent assessment has been performed. The CAISO may perform additional competitive constraint assessments during the year if changes in transmission infrastructure, generation resources, or Load, in the CAISO **Balancing Authority** Area and adjacent **Balancing Authority** Areas suggest material changes in market conditions or if market outcomes are observed that are inconsistent with competitive market outcomes. The CAISO will calculate and post path designations not less than once prior to the effective date of this tariff provision and not less than four (4) times each year thereafter to provide timely seasonal path designations.

#### **39.7.2.2 Criteria.**

A transmission constraint will be deemed competitive if no three unaffiliated suppliers are jointly pivotal in relieving congestion on that constraint. The determination of whether or not the pivotal supplier criteria for an individual constraint are violated will be assessed using the Feasibility Index described in Section 39.7.2.4. Assessment of competitiveness will be performed assuming various system conditions potentially including but not limited to season, load, planned transmission and resource outages. If an individual constraint fails the pivotal supplier criteria under any of these system conditions, the constraint will be deemed uncompetitive for the entire year under all system conditions until a subsequent

assessment deems the constraint competitive. In general, a constraint may be an individual transmission line or a collection of lines that create a distinct transmission constraint. For purposes of the competitive assessment, the set of constraints that will be included in the network model are those modeled along with transmission limits to be enforced in the FNM used in clearing the CAISO Markets.

#### **39.7.2.3 Candidate Path Identification.**

The first assessment of competitive constraints will be determined prior to the effective date of this provision and will consider all interfaces to neighboring control areas and all inter-zonal interfaces for zones that existed prior to the effective date of this provision to be competitive. The set of candidate constraints that will be evaluated for competitiveness in the initial assessment will be limited to intra-zonal constraints for zones that existed prior to the effective date of this provision, that were managed for Congestion in Real-Time in greater than five hundred (500) hours in the most recent twelve (12)-month period. The Congestion frequency threshold of **five-hundred (500)** hours for designation of competitive constraint candidates will be based on the combination of real-time intra-zonal congestion hours that predated the effective date of this provision, and congestion in IFM and Real-Time markets after the effective date of this provision for the twelve (12) months of historical data. Subsequent assessments will again consider all pre-existing interfaces to neighboring control areas and all inter-zonal interfaces to be competitive and will not be included in the set of candidate constraints for assessment. The set of candidate constraints will be further reduced to those remaining constraints that were congested or managed for congestion in greater than five hundred (500) hours in the prior twelve (12) months.

#### **39.7.2.4 Feasibility Index.**

The CAISO will perform a pivotal supplier test on all suppliers in the CAISO **Balancing Authority** Area for each path to be assessed using the Feasibility Index (FI). Suppliers will be considered in two groups: those suppliers with the largest portfolios will be considered in the preliminary simulations, and any additional suppliers who are likely to be pivotal given the competitive designations from the preliminary

simulations. The FI requires solving the network model having removed all internal resources of a supplier and modifying the candidate constraints of the network model such that the flow limits of the set of candidate constraints can be exceeded with a penalty imposed for excess flow. The resulting solution to the network model produces constraint flows that can be used to calculate the FI. The FI is calculated for each constraint as the proportion of the constraint limit that is exceeded to solve the FNM without the specified supplier's supply. FI values less than zero indicate the supplier is pivotal in relieving Congestion on the specified constraint. The process is repeated by removing the supply portfolio of two and three suppliers for paths with non-negative FI. If any three suppliers are jointly pivotal in relieving congestion on a candidate path, as indicated by an FI value less than zero, the candidate path will be deemed uncompetitive. Otherwise, the candidate path will be deemed competitive. The portfolio of each supplier will be based on ownership information available to the CAISO, taking into account any material transfer of sufficient length that the transfer of control could have persistent impact on the relative shares of supply within the CAISO **Balancing Authority** Area. These transfers of control will be utilized in the assessment as provided to the CAISO by the supplier reflecting its triennial filing with FERC for market-based rate authority.

### **39.8 Eligibility for Bid Adder.**

A Scheduling Coordinator submitting Bids for Generating Units is eligible to have a Bid Adder applied to a Generating Unit for the next operating month if the criteria in Section 39.8.1 are met as determined on a monthly basis in the preceding month.

#### **39.8.1 Bid Adder Eligibility Criteria.**

To receive a Bid Adder, a Generating Unit must: (i) have a Mitigation Frequency that is greater than eighty percent (80%) in the previous twelve (12) months; and (ii) must not have a contract to be a Resource Adequacy Resource for its entire **Net Qualifying Capacity** **or be designated under the ICPM for its entire Eligible Capacity**, or be subject to an obligation to make capacity available under this CAISO Tariff. **If a**

Generating Unit *is designated under the ICPM for a portion of its Eligible Capacity, the provisions of this section apply only to the portion of the capacity not designated. Scheduling Coordinators for Generating Units seeking to receive Bid Adders* must *further* agree to be subject to the Frequently Mitigated Unit option for a Default Energy Bid. Run hours are those hours during which a Generating Unit has positive metered output. During the first *twelve (12)* months after the effective date of this Section, the Mitigation Frequency will be based on a rolling *twelve (12)*-month combination of RMR *D*ispatches and incremental *B*ids dispatched out of economic merit order to manage local *C*ongestion from the period prior to the effective date of this Section, which will serve as a proxy for being subject to Local Market Power Mitigation, and a Generating Unit's Local Market Power Mitigation frequency after the effective date of this Section. Generating Units that received RMR *D*ispatches and/or incremental *B*ids dispatched out of economic merit order to manage local Congestion in an hour prior to the effective date of this Section will have that hour counted as a mitigated hour in their Mitigation Frequency. After the first *twelve (12)* months from the effective date of this Section, the Mitigation Frequency will be based entirely on a Generating Unit being mitigated under the MPM-RRD procedures in Sections 31 and 33.

### **39.8.2 New Generating Units.**

For new Generating Units, with less than *twelve (12)* months of operation, determination of eligibility for the Bid Adder will be based on data beginning with the first date the Generating Unit participated in the CAISO Markets through the end date of the period for which the Mitigation Frequency is being calculated. The 200 run hour criteria will be pro-rated for the proportion of a *twelve (12)*-month period that the new Generating Unit submitted effective Bids in the CAISO markets.

### **39.8.3 Bid Adder Values.**

The value of the Bid Adder will be either: (i) a unit-specific value determined in consultation with the CAISO or an independent entity selected by the CAISO, or (ii) a default Bid Adder of \$24/MWh. For Generating Units with a portion of their capacity identified as meeting an LSE's Resource Adequacy Requirements, that Generating Unit's Bid Adder value will be reduced by the percent of the Generating Unit's capacity that is identified as meeting an LSE's Resource Adequacy Requirements. The reduced Bid Adder will be applied to that Generating Unit's entire Default Energy Bid Curve.

**39.9 CRR Monitoring and Affiliate Disclosure Requirements.**

The CAISO will monitor the CRR holdings and CAISO Markets activity for anomalous market behavior, gaming, or exercise of market power resulting from CRR ownership concentrations that are not aligned with actual transmission usage as a result of secondary market auction outcomes. If the CAISO identifies such behavior it may seek FERC approval to impose position limits on the total number or MW quantity of CRRs that may be held by any single entity and its Affiliates. **Each** CRR Holder **or Candidate CRR Holder** must notify the CAISO of all entities **that are Affiliates or become Affiliates of** the CRR Holder **or Candidate CRR Holder**.

## **ARTICLE V – RESOURCE ADEQUACY**

### **40                RESOURCE ADEQUACY DEMONSTRATION FOR ALL SCHEDULING COORDINATORS BIDDING AND SCHEDULING DEMAND IN THE CAISO BALANCING AUTHORITY AREA.**

#### **40.1            Applicability.**

A Load Serving Entity, and its Scheduling Coordinator, shall be exempt from this Section 40 during the next Resource Adequacy Compliance Year, if the metered peak Demand of the Load Serving Entity did not exceed one (1) MW during the twelve months preceding the last date on which the Load Serving Entity can make the election in Section 40.1.1 for the next Resource Adequacy Compliance Year. This Section 40 shall apply to all other Load Serving Entities and their respective Scheduling Coordinators. For purposes of Section 40, a Load Serving Entity shall not include any entity satisfying the terms of California Public Utilities Code Section 380(j)(3).

#### **40.1.1        Election of Load Serving Entity Status.**

On an annual basis, in the manner and schedule set forth in the Business Practice Manual, the Scheduling Coordinator for a Load Serving Entity, not exempt under Section 40.1, shall inform the CAISO whether each such LSE elects to be either: (i) a Reserve Sharing LSE or (ii) a Modified Reserve Sharing LSE. A Scheduling Coordinator for a Load following MSS is not required to make an election under this Section. Scheduling Coordinators for Load following MSSs are subject solely to Sections 40.2.4 and 40.3.

The CAISO may confirm with the CPUC, Local Regulatory Authority, or federal agency, as applicable, the accuracy of the election by the Scheduling Coordinator for any LSE under its respective jurisdiction, or, in the absence of any election by the Scheduling Coordinator, the desired election for any LSE under its jurisdiction. The determination of the CPUC, Local Regulatory Authority, or federal agency will be deemed binding by the CAISO on the Scheduling Coordinator and the LSE. If the Scheduling Coordinator and CPUC, Local Regulatory Authority, or federal agency, as appropriate, fail to make the election on behalf of an LSE in accordance with the Business Practice Manual, the LSE shall be deemed a Reserve Sharing LSE.



**40.2 Information Requirements Regarding Resource Adequacy Programs.**

**40.2.1 Reserve Sharing LSEs.**

**40.2.1.1 Requirements for CPUC Load Serving Entities Electing Reserve Sharing LSE Status.**

- (a) The Scheduling Coordinator for a CPUC Load Serving Entity electing Reserve Sharing LSE status must provide the CAISO with all information or data to be provided to the CAISO as required by the CPUC and pursuant to the schedule adopted by the CPUC.
- (b) Where the information or data provided to the CAISO under Section 40.2.1.1(a) does not include Reserve Margin(s), then the provisions of Section 40.2.2.1(b) shall apply.
- (c) Where the information or data provided to the CAISO under Section 40.2.1.1(a) does not include criteria for determining qualifying resource types and their Qualifying Capacity, then the provisions of Section 40.8 shall apply.
- (d) Where the information or data provided to the CAISO under Section 40.2.1.1(a) does not include annual and monthly Demand Forecast requirements, then the provisions of Section 40.2.2.3 shall apply.
- (e) Where the information or data provided to the CAISO under Section 40.2.1.1(a) does not include annual and monthly Resource Adequacy Plan requirements, then Section 40.2.2.4 shall apply.

**40.2.2 Requirements for Non-CPUC Load Serving Entities Electing Reserve Sharing LSE Status, Including Default Provisions for CPUC Load Serving Entities.**

**40.2.2.1 Reserve Margin.**

- (a) The Scheduling Coordinator for a Non-CPUC Load Serving Entity electing Reserve Sharing LSE status must provide the CAISO with the Reserve Margin(s) adopted by the appropriate Local Regulatory Authority or federal agency for use in the annual Resource Adequacy Plan and monthly Resource Adequacy Plans listed as a percentage of the Demand Forecasts developed in accordance with Section 40.2.2.3.
- (b) For the Scheduling Coordinator for a Non-CPUC Load Serving Entity for which the appropriate Local Regulatory Authority or federal agency has not established a Reserve Margin(s) or a CPUC Load Serving Entity subject to Section 40.2.1.1(b) that has elected Reserve Sharing LSE status, the Reserve Margin for each month shall be no less than fifteen percent (15%) of the LSE's peak hourly Demand for the applicable month, as determined by the Demand Forecasts developed in accordance with Section 40.2.2.3.

**40.2.2.2 Qualifying Capacity Criteria.**

The Scheduling Coordinator for a Non-CPUC Load Serving Entity electing Reserve Sharing LSE status must provide the CAISO with a description of the criteria adopted by the Local Regulatory Authority or federal agency for determining qualifying resource types and the Qualifying Capacity from such resources and any modifications thereto as they are implemented from time to time. The Reserve Sharing LSE may elect to utilize the criteria set forth in Section 40.8.

#### **40.2.2.3 Demand Forecasts.**

The Scheduling Coordinator for a Non-CPUC Load Serving Entity or CPUC Load Serving Entity subject to Section 40.2.1.1(b) electing Reserve Sharing LSE status must provide annual and monthly Demand Forecasts on the schedule and in the reporting format(s) set forth in the Business Practice Manual. The annual and monthly Demand Forecasts shall utilize the annual and monthly coincident peak Demand determinations provided by the California Energy Commission for such Load Serving Entity, which will be calculated from the Demand Forecast information submitted to the California Energy Commission by each Reserve Sharing LSE; or (ii) if the California Energy Commission does not produce coincident peak Demand Forecasts for the Load Serving Entity, the annual and monthly coincident peak Demand Forecasts produced by the CAISO for such Load Serving Entity in accordance with its Business Practice Manual. Scheduling Coordinators must provide data and information, as may be requested by the CAISO, necessary to develop or support the Demand Forecasts required by this Section.

#### **40.2.2.4 Annual and Monthly Resource Adequacy Plans.**

The Scheduling Coordinator for a Non-CPUC Load Serving Entity or a CPUC Load Serving Entity subject to Section 40.2.1.1(b) electing Reserve Sharing LSE status must provide annual and monthly Resource Adequacy Plans for such Load Serving Entity, on a schedule and in the reporting format(s) set forth in the Business Practice Manual. The annual Resource Adequacy Plan must, at a minimum, set forth the Local Capacity Area Resources, if any, procured by the Load Serving Entity as described in Section 40.3. The monthly Resource Adequacy Plan should identify all resources, including Local Capacity Area Resources, the Load Serving Entity will rely upon to satisfy the applicable month's peak hour Demand of the Load Serving Entity as determined by the Demand Forecasts developed in accordance with Section 40.2.2.3 and applicable Reserve Margin. Resource Adequacy Plans must utilize the Net Qualifying Capacity requirements of Section 40.4.

#### **40.2.3 Modified Reserve Sharing LSEs.**

**40.2.3.1 Reserve Margin.**

- (a) The Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status must provide the CAISO with the Reserve Margin(s) adopted by the CPUC, Local Regulatory Authority, or federal agency, as appropriate, for use in the annual Resource Adequacy Plan and monthly Resource Adequacy Plans listed as a percentage of the Demand Forecasts developed in accordance with Section 40.2.3.3.
- (b) For the Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status for which the CPUC, Local Regulatory Authority, or federal agency, as appropriate, has not established a Reserve Margin, the Reserve Margin shall be no less than fifteen percent (15%) of the applicable month's peak hour Demand of the Load Serving Entity, as determined by the Demand Forecasts developed in accordance with Section 40.2.3.3.

**40.2.3.2 Qualifying Capacity.**

The Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status must provide the CAISO with a description of the criteria for determining qualifying resource types and the Qualifying Capacity from such resources and any modifications thereto as they are implemented from time to time. The Modified Reserve Sharing LSE may elect to utilize the criteria set forth in Section 40.8.

**40.2.3.3 Demand Forecasts.**

- (a) The Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status must provide annual and monthly Demand Forecasts on the schedule and in the reporting format(s) set forth in the Business Practice Manual. The annual and monthly Demand Forecasts shall utilize the annual and monthly coincident peak Demand determinations provided by the California Energy Commission for such Load Serving Entity, which will be calculated from Demand

Forecast data submitted to the California Energy Commission by each Modified Reserve Sharing LSE; or (ii) if the California Energy Commission does not produce coincident peak Demand Forecasts for the Load Serving Entity, the annual and monthly coincident peak Demand Forecasts produced by the CAISO for such Load Serving Entity in accordance with its Business Practice Manual. Scheduling Coordinators must provide data and information, as may be requested by the CAISO, to develop or support the Demand Forecast required by this Section 40.2.3.3(b).

- (b) The Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status must submit, on the schedule and in the reporting format set forth in the Business Practice Manual, hourly Demand Forecasts for each Trading Hour of the next Trading Day for each Modified Reserve Sharing LSE represented. The Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status must provide data or supporting information, as requested by the CAISO, for the Demand Forecasts required by this Section 40.2.3.3(b) for each Modified Reserve Sharing LSE served by the Scheduling Coordinator and a description of the criteria upon which the Demand Forecast was developed, and any modifications thereto as they are implemented from time to time.

#### **40.2.3.4 Annual and Monthly Resource Adequacy Plans.**

The Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status must provide annual and monthly Resource Adequacy Plans, on a schedule and in the reporting format(s) set forth in the Business Practice Manual, for each Modified Reserve Sharing LSE served by the Scheduling

Coordinator. The annual Resource Adequacy Plan **must, at a minimum,** set forth the Local Capacity Area Resources, if any, procured by the Modified Reserve Sharing LSE as described in Section 40.3. The monthly Resource Adequacy Plan **must** identify the resources the Modified Reserve Sharing LSE will rely upon to satisfy its forecasted monthly Demand and Reserve Margin as set forth in Section 40.2.3.1, for the relevant reporting period and must utilize the Net Qualifying Capacity requirements of Section 40.4.

#### **40.2.4 Load Following MSS.**

A Scheduling Coordinator for a Load following MSS must provide an annual Resource Adequacy Plan that sets forth, **at a minimum,** the Local Capacity Area Resources, if any, procured by the Load following MSS as described in Section 40.3. **The annual Resource Adequacy Plan shall utilize the annual coincident peak Demand determination provided by the California Energy Commission for such Load following MSS using Demand Forecast data submitted to the California Energy Commission by the Load following MSS, or, if the California Energy Commission does not produce coincident peak Demand Forecasts for the Load following MSS, the annual coincident peak Demand Forecast produced by the CAISO for such Load following MSS in accordance with its Business Practice Manual using Demand Forecast data submitted to the CAISO by the Load following MSS.**

### **40.3 Local Capacity Area Resource Requirements Applicable to Scheduling Coordinators for All Load Serving Entities.**

#### **40.3.1 Local Capacity Technical Study.**

**On an annual basis, pursuant to the schedule set forth in the Business Practice Manual, the CAISO will, perform, and publish on the CAISO Website the Local Capacity Technical Study. The Local Capacity Technical Study shall identify Local Capacity Areas, determine the minimum amount of Local Capacity Area Resources in MW that must be available to the CAISO within each identified Local Capacity Area, and identify the Generating Units within each identified Local Capacity Area. The CAISO shall**

collaborate with the CPUC, Local Regulatory Authorities within the CAISO **Balancing Authority** Area, federal agencies, and Market Participants to ensure that the Local Capacity Technical Study is performed in accordance with this Section 40.3 and to establish for inclusion in the Business Practice Manual other parameters and assumptions applicable to the Local Capacity Technical Study and a schedule that provides for: (i) reasonable time for review of a draft Local Capacity Technical Study, (ii) reasonable time for Participating TOs to propose operating solutions, and (iii) release of the final Local Capacity Technical Study no later than 120 days prior to the date annual Resource Adequacy Plans must be submitted under this Section 40.

#### **40.3.1.1 Local Capacity Technical Study Criteria.**

The Local Capacity Technical Study will determine the minimum amount of Local Capacity Area Resources needed to address the Contingencies identified in Section 40.3.1.2. In performing the Local Capacity Technical Study, the CAISO will apply those methods for resolving Contingencies considered appropriate for the performance level that corresponds to a particular studied Contingency, as provided in NERC Reliability Standards TPL-001-0, TPL-002-0, TPL-003-0, and TPL-004-0, as augmented by CAISO Reliability Criteria in accordance with the Transmission Control Agreement and Section 24.2.1. The CAISO Reliability Criteria shall include:

- (1) Time Allowed for Manual Readjustment: This is the amount of time required for the Operator to take all actions necessary to prepare the system for the next Contingency. This time should not be less than thirty (30) minutes.
- (2) No voltage collapse or dynamic instability shall be allowed for a Contingency in Category D – extreme event (any B1-4 system readjusted (Common Mode) L-2), as listed in Section 40.3.1.2.

**40.3.1.2 Local Capacity Technical Study Contingencies.**

The Local Capacity Technical Study shall assess the following Contingencies:

<b>Contingency Component(s)</b>
<b>NERC/WECC Performance Level A – No Contingencies</b>
<b><u>NERC/WECC Performance Level B – Loss of a single element</u></b>
1. Generator (G-1) 2. Transmission Circuit (L-1) 3. Transformer (T-1) 4. Single Pole (dc) Line 5. G-1 system readjusted L-1
<b><u>NERC/WECC Performance Level C – Loss of two or more elements</u></b>
3. L-1 system readjusted G-1 3. G-1 system readjusted T-1 or T-1 system readjusted G-1 3. L-1 system readjusted T-1 or T-1 system readjusted L-1 3. G-1 system readjusted G-1 3. L-1 system readjusted L-1 4. Bipolar (dc) Line 5. Two circuits (Common Mode) L-2 9. SLG fault (stuck breaker or protection failure) for Bus section WECC-S3. Two generators (Common Mode) G-2
<b><u>D – Extreme event – loss of two or more elements</u></b>
Any B1-4 system readjusted (Common Mode) L-2 All other extreme combinations D1-14.



**[NOT USED]**

**40.3.2 Allocation of Local Capacity Area Resource Obligations.**

The CAISO will allocate responsibility for Local Capacity Area Resources to Scheduling Coordinators for Load Serving Entities in the following sequential manner:

- (a) The responsibility for the aggregate Local Capacity Area Resources required for all Local Capacity Areas within each TAC Area as determined by the Local Capacity Technical Study will be allocated to all Scheduling Coordinators for Load Serving Entities that serve Load in the TAC Area in accordance with the Load Serving Entity's proportionate share of the LSE's TAC Area Load at the time of the CAISO's annual coincident peak Demand set forth in the annual peak Demand Forecast for the next Resource Adequacy Compliance Year as determined by the California Energy Commission. Expressed as a formula, the allocation of Local Area Capacity Resource obligations will be as follows: 
$$\left( \frac{\text{Local Capacity Area MW in TAC Area from the Local Capacity Technical Study}}{\text{(LSE Demand in TAC Area at CAISO annual coincident peak Demand) / (Total TAC Area Demand at the time of CAISO annual coincident peak Demand)}} \right) *$$
 This will result in a MW responsibility for each Load Serving Entity for each TAC Area in which the LSE serves Load. The LSE may meet its MW responsibility, as assigned under this Section, for each TAC Area in which the LSE serves Load by procurement of that MW quantity in any Local Capacity Area in the TAC Area.
- (b) For Scheduling Coordinators for Non-CPUC Load Serving Entities, the Local Capacity Area Resource obligation will be allocated based on Section 40.3.2(a) above.

- (c) For Scheduling Coordinators for CPUC Load Serving Entities, the CAISO will allocate the Local Capacity Area Resource obligation based on an allocation methodology, if any, adopted by the CPUC. However, if the allocation methodology adopted by the CPUC does not fully allocate the total sum of each CPUC Load Serving Entity's proportionate share calculated under Section 40.3.2(a), the CAISO will allocate the difference to all Scheduling Coordinators for CPUC Load Serving Entities in accordance with their proportionate share calculated under 40.3.2(a). If the CPUC does not adopt an allocation methodology, the CAISO will allocate Local Capacity Area Resources to Scheduling Coordinators for CPUC Load Serving Entities based on Section 40.3.2(a).

Once the CAISO has allocated the total responsibility for Local Capacity Area Resources, the CAISO will inform the Scheduling Coordinator for each LSE of the LSE's specific allocated responsibility for Local Capacity Area Resources in each TAC Area in which the LSE serves Load.

**40.3.3 Procurement of Local Capacity Area Resource Obligations by Load Serving Entities.**

Nothing in this Section 40 obligates any Scheduling Coordinator to demonstrate on behalf of a Load Serving Entity that the Load Serving Entity has procured Local Capacity Area Resources to satisfy capacity requirements for each Local Capacity Area identified in the technical study. Scheduling Coordinators for Load Serving Entities may aggregate responsibilities for procurement of Local Capacity Area Resources. If a Load Serving Entity has procured Local Capacity Area Resources that satisfy generation capacity requirements for Local Capacity Areas, the Scheduling Coordinator for such Load Serving Entity shall include this information in its annual and monthly Resource Adequacy Plan(s).

**40.3.4**      **[NOT USED]**

**[NOT USED]**

**40.3.4.1**      **[NOT USED]**

**40.3.4.2**      **[NOT USED]**

**40.4**            **General Requirements on Resource Adequacy Resources.**

**40.4.1            Designation of Eligible Resources and Determination of Qualifying Capacity.**

The CAISO shall use the criteria provided by the CPUC or Local Regulatory Authority to determine and verify, if necessary, the Qualifying Capacity of all Resource Adequacy Resources; however, to the extent a resource is listed by one or more Scheduling Coordinators in their Resource Adequacy Plans, which apply the criteria of more than one Local Regulatory Authority that leads to conflicting Qualifying Capacity values for that resource, the CAISO will accept the methodology that results in the highest Qualifying Capacity value. Only if the CPUC, Local Regulatory Authority, or federal agency has not established any Qualifying Capacity criteria, or chooses to rely on the criteria in this CAISO Tariff, will the provisions of Section 40.8 apply.

**40.4.2            Net Qualifying Capacity Report.**

The CAISO shall produce an annual report posted to the CAISO Website on the schedule set forth in the Business Practice Manual that sets forth the Net Qualifying Capacity of all Participating Generators. All other Resource Adequacy Resources may be included in the annual report under Section 40.4.2 upon their request. The Net Qualifying Capacity of any resource included in the annual report, once posted to the CAISO Website, shall not be reduced by the CAISO for the next Resource Adequacy Compliance Year. Any change proposed to be made to a Net Qualifying Capacity value for a resource included in a prior annual report shall be explained, and any test results or analyses underlying the change provided, to the Scheduling Coordinator within ten (10) days of the CAISO's determination that a change to the resource's Net Qualifying Capacity is appropriate, which also must be at least fifteen (15) days prior to the posting on the CAISO Website of the annual report. Any disputes as to the CAISO's determination regarding Net Qualifying Capacity shall be subject to the CAISO ADR Procedures.

#### **40.4.3 General Qualifications for Supplying Net Qualifying Capacity.**

Resource Adequacy Resources included in a Resource Adequacy Plan submitted by a Scheduling Coordinator on behalf of a Load Serving Entity serving Load in the CAISO **Balancing Authority** Area must:

- (1) Be available for testing by the CAISO to validate Qualifying Capacity and determine Net Qualifying Capacity for the next Resource Adequacy Compliance Year;
- (2) Provide any information requested by the CAISO to apply the performance criteria to be adopted by the CAISO pursuant to Section 40.4.5;
- (3) Submit Bids into the CAISO Markets as required by this CAISO Tariff;
- (4) Be in compliance, as of the date that the CAISO performs any testing or otherwise determines Net Qualifying Capacity for the next Resource Adequacy Compliance Year, with the criteria for Qualifying Capacity established by the CPUC, relevant Local Regulatory Authority, or federal agency and provided to the CAISO; and
- (5) Be subject to Sanctions for non-performance as specified in the CAISO Tariff.

#### **40.4.4 Reductions for Testing.**

In accordance with the procedures specified in the Business Practice Manual, the Generating Unit of a Participating Generator or other Generating Units, System Units or Loads of Participating Loads included in a Resource Adequacy Plan submitted by a Scheduling Coordinator on behalf of a Load Serving Entity can have its Qualifying Capacity reduced, for purposes of the Net Qualifying Capacity annual report under Section 40.4.2 for the next Resource Adequacy Compliance Year, if a CAISO testing program determines that it is not capable of supplying the full Qualifying Capacity amount.



#### **40.4.5 Reductions for Performance Criteria.**

No later than 12 months after the effective date of this Section 40, the CAISO will issue a report outlining a proposal with respect to performance criteria for Resource Adequacy Resources. The CAISO will collaborate with the CPUC and other Local Regulatory Authorities to develop the performance criteria to be submitted to FERC. The Scheduling Coordinator for a Resource Adequacy Resource shall provide or make available to the CAISO, subject to the confidentiality provisions of this CAISO Tariff, all documentation requested by the CAISO to determine, develop or implement the performance criteria, including, but not limited to, NERC Generating Availability Data System data.

#### **40.4.6 Reductions for Deliverability.**

##### **40.4.6.1 Deliverability Within the CAISO Balancing Authority Area.**

In order to determine Net Qualifying Capacity from Resource Adequacy Resources subject to this Section 40.4, the CAISO will determine that a Resource Adequacy Resource is available to serve the aggregate of Load by means of a deliverability study. Documentation explaining the CAISO's deliverability analysis will be posted on the CAISO Website. The deliverability study will be performed annually and shall focus on peak Demand conditions. The results of the deliverability study shall be incorporated into the Net Qualifying Capacity annual report under Section 40.4.2 and will be effective for the next Resource Adequacy Compliance Year. To the extent the deliverability study shows that the Qualifying Capacity is not deliverable to the aggregate of Demand under the conditions studied, the Qualifying Capacity of the Resource Adequacy Resource will be reduced on a MW basis for the capacity that is undeliverable.

##### **40.4.6.2 Deliverability of Imports.**

**40.4.6.2.1 Available Import Capability Assignment Process.**

For Resource Adequacy Plans covering any period after December 31, 2007, total Available Import Capability will be assigned on an annual basis for a one-year term to Load Serving Entities serving Load in the CAISO **Balancing Authority** Area and other Market Participants through their respective Scheduling Coordinators, as described by the following sequence of steps. However, should the CPUC modify by decision its compliance period from January to December of the calendar year to May through April of the calendar year, the CAISO shall extend the effectiveness of the assignment for Resource Adequacy Compliance Year 2008 through April 2009.

Step 1: Determination of Maximum Import Capability on Interties into the CAISO **Balancing Authority** Area: The CAISO shall establish the Maximum Import Capability for each Intertie into the CAISO **Balancing Authority** Area, and will post those values on the CAISO Website in accordance with the schedule and process set forth in the Business Practice Manual.

Step 2: Determination of Available Import Capability by Accounting for Existing Contracts and Transmission Ownership Rights Held by Out-of- **Balancing Authority** Area LSEs: For each Intertie, the Available Import Capability will be determined by subtracting from the Maximum Import Capability established in Step 1 for each Intertie the import capability on each Intertie associated with (i) Existing Contracts and (ii) Transmission Ownership Rights held by load serving entities that do not serve Load within the CAISO **Balancing Authority** Area. The remaining sum of all Intertie Available Import Capability is the Total Import Capability. Total Import Capability shall be used to determine the Load Share Quantity for each Load Serving Entity that serves Load within the CAISO **Balancing Authority** Area.

Step 3: Determination of Existing Contract Import Capability by Accounting for Existing Contracts and Transmission Ownership Rights Held by CAISO **Balancing Authority** Area LSEs: From the Available Import Capability remaining on each Intertie after Step 2 above, Existing Contracts and Transmission Ownership Rights held by Load Serving Entities that serve Load within the CAISO **Balancing Authority** Area shall be reserved for the holders of such commitments and will not be subject to reduction under any subsequent steps in this Section. The import capability reserved pursuant to this Step 3 is the Existing Contract Import Capability.

Step 4: Assignment of Pre-RA Import Commitments: From the Available Import Capability remaining on each Intertie after reserving Existing Contract Import Capability under Step 3 above, the CAISO will assign to Load Serving Entities serving Load within the CAISO **Balancing Authority** Area Pre-RA Import Commitment Capability on a particular Intertie based on Pre-RA Import Commitments in effect (where a supplier has an obligation to deliver the Energy or make the capacity available) at any time during the Resource Adequacy Compliance Year for which the Available Import Capability assignment is being performed. The Pre-RA Import Commitment will be assigned to the Intertie selected by the Load Serving Entity during the Resource Adequacy Compliance Year 2007 import capability assignment process, which was required to be based on the Intertie upon which the Energy or capacity from the Pre-RA Import Commitment had been primarily scheduled or, for a Pre-RA Import Commitment without a scheduling history at the time of the Resource Adequacy Compliance Year 2007 import capability assignment process, the primary Intertie upon which the Energy or capacity was anticipated to be scheduled. To the extent a Pre-RA Import Commitment was not presented during the Resource Adequacy Compliance Year 2007 import capability assignment process, the Load Serving Entity shall select the Intertie upon which the Pre-RA Import Commitment is primarily anticipated to be scheduled during the term of the Pre-RA Import Commitment and that

selection shall be utilized in future annual Available Import Capability assignment processes. If a Pre-RA Import Commitment submitted on behalf of a LSE with Existing Contract Import Capability is assigned under this Section to the same Intertie on which the LSE holds Existing Contract Import Capability, the Pre-RA Import Commitment will be assumed to deliver over the Existing Contract Import Capability until exhausted, unless the LSE can demonstrate otherwise.

To the extent a particular Intertie becomes over requested with Pre-RA Import Commitments due to either Pre-RA Import Commitments not included in the Resource Adequacy Compliance Year 2007 import capability assignment process or changes in system conditions that decrease the Maximum Import Capability of the Intertie, such that the MW represented in all Pre-RA Import Commitments utilizing the Intertie exceed the Intertie's Available Import Capability in excess of that reserved for Existing Contracts and Transmission Ownership Rights under Steps 2 and 3, the Pre-RA Import Commitments will be assigned Pre-RA Import Commitment Capability, based on the Import Capability Load Share Ratio of each Load Serving Entity submitting Pre-RA Import Commitments on the particular Intertie. To the extent this initial assignment of Pre-RA Import Commitment Capability has not fully assigned the Available Import Capability of the particular over requested Intertie, the remaining Available Import Capability on the over requested Intertie will be assigned until fully exhausted based on the Import Capability Load Share Ratio of each Load Serving Entity whose submitted Pre-RA Import Commitment has not been fully satisfied by the previous Import Capability Load Share Ratio assignment iteration. The Available Import Capability assigned pursuant to this Step 4 is the Pre-RA Import Commitment Capability.

Step 5: Assignment of Remaining Import Capability Limited by Load Share Quantity: The Total Import Capability remaining after Step 4 will be assigned only to Load Serving Entities serving Load within the CAISO **Balancing Authority** Area that have not received Existing Contract Import Capability and Pre-RA Import Commitment Capability under Steps 3 and 4, that exceed the Load Serving Entity's Load Share Quantity. Only the MW quantity of any Pre-RA Import Commitment Capability assigned to Existing Contract Import Capability under Step 4 that exceeds the Existing Contract Import Capability on the particular Intertie will be counted for purposes of this Step 5. This Total Import Capability will be assigned until fully exhausted to those Load Serving Entities eligible to receive an assignment under this Step based on each Load Serving Entity's Import Capability Load Share Ratio up to, but not in excess of, its Load Share Quantity. The quantity of Total Import Capability assigned to the Load Serving Entity under this Step is the Load Serving Entity's Remaining Import Capability. This Step 5 does not assign Remaining Import Capability on a specific Intertie.

Step 6: CAISO Posting of Assigned and Unassigned Capability: Following the completion of Step 5, the CAISO will post to the CAISO Website, in accordance with the schedule set forth in the Business Practice Manual the following information:

- (a) The Total Import Capability;
- (b) The quantity in MW of Existing Contracts and Transmission Ownership Rights assigned to each Intertie, distinguishing between Existing Contracts and Transmission Ownership Rights held by Load Serving Entities within the CAISO **Balancing Authority** Area and those held by load serving entities outside the CAISO **Balancing Authority** Area;
- (c) The aggregate quantity in MW, and identity of the holders, of Pre-RA Import Commitments assigned to each Intertie; and

- (d) The aggregate quantity in MW of Available Import Capability after Step 4, the identity of the Interties with Available Import Capability, and the MW quantity of Available Import Capability on each such Intertie.

Step 7: CAISO Notification of LSE Assignment Information: Following the completion of Step 5, in accordance with the schedule set forth in the Business Practice Manual, the CAISO will notify the Scheduling Coordinator for each Load Serving Entity of:

- (a) The Load Serving Entity's Import Capability Load Share;
- (b) The Load Serving Entity's Load Share Quantity; and
- (c) The amount of, and Intertie on which, the Load Serving Entity's Existing Contract Import Capability and Pre-RA Import Commitment Capability, as applicable, has been assigned; and
- (d) The Load Serving Entity's Remaining Import Capability.

Step 8: Transfer of Import Capability: In accordance with the schedule set forth in the Business Practice Manual, a Load Serving Entity shall be allowed to transfer some or all of its Remaining Import Capability to any other Load Serving Entity or Market Participant. The CAISO will accept transfers among LSEs and Market Participants only to the extent such transfers are reported to the CAISO, in accordance with the schedule set forth in the Business Practice Manual and through the CAISO's Import Capability Transfer Registration Process, by the entity receiving the Remaining Import Capability who must set forth (1) the name of the counter-parties, (2) the MW quantity, (3) term of transfer, and (4) price on a per MW basis. The CAISO will post to the CAISO Website by August 8, 2007 for Resource Adequacy Compliance Year 2008 and for subsequent Resource Adequacy Compliance Years in accordance with the schedule set forth in the Business Practice Manual the information on transfers of Remaining Import Capability received under this Step 8.

Step 9: Initial Scheduling Coordinator Request to Assign Remaining Import Capability by Intertie: In accordance with the schedule set forth in the Business Practice Manual, the Scheduling Coordinator for each Load Serving Entity or Market Participant shall notify the CAISO of its request to assign its post-trading Remaining Import Capability on a MW basis per available Intertie. Total requests for assignment of Remaining Import Capability by a Scheduling Coordinator cannot exceed the sum of the post-traded Remaining Import Capability of its Load Serving Entities. The CAISO will honor the requests to the extent an Intertie has not been over requested. If an Intertie is over requested, the requests for Remaining Import Capability on that Intertie will be assigned based on each Load Serving Entity's Import Capability Load Share Ratio in the same manner as set forth in Step 4. A Market Participant without an Import Capability Load Share will be assigned the Import Capability Load Share equal to the average Import Capability Load Share of those Load Serving Entities from which it received transfers of Remaining Import Capability.

Step 10: CAISO Notification of Initial Remaining Import Capability Assignments and Unassigned Capability: In accordance with the schedule set forth in the Business Practice Manual, the CAISO will:

- (a) Notify the Scheduling Coordinator for each Load Serving Entity or Market Participant of the Load Serving Entity or Market Participant's accepted request(s) for assigning Remaining Import Capability under Step 9; and
- (b) Publish on the CAISO Website aggregate unassigned Available Import Capability, if any, the identity of the Interties with unassigned Available Import Capability, and the MW quantity of Available Import Capability, on each such Intertie.

Step 11: Secondary Scheduling Coordinator Request to Assign Remaining Import Capability by

Intertie: To the extent Remaining Import Capability remains unassigned as disclosed by Step 10, in accordance with the schedule set forth in the Business Practice Manual, Scheduling Coordinators for Load Serving Entities or Market Participants shall notify the CAISO of their requests to assign any remaining Remaining Import Capability on a MW per available Intertie basis. The CAISO will honor the requests to the extent an Intertie has not been over requested. If an Intertie is over requested, the requests on that Intertie will be assigned based on each Load Serving Entity or Market Participant's Import Capability Load Share Ratio, as used in Steps 4 and 9.

Step 12: Notification of Secondary Remaining Import Capability Assignments and Unassigned

Capability: In accordance with the schedule set forth in the Business Practice Manual, the CAISO will:

- (a) Notify the Scheduling Coordinator for each Load Serving Entity or Market Participant of the Load Serving Entity or Market Participant's accepted request(s) for assigning Remaining Import Capability under Step 11; and
- (b) Publish on the CAISO Website unassigned aggregate Available Import Capability, if any, the identity of the Interties with Available Remaining Import Capability, and the MW quantity of Availability Import Capability on each such Intertie.

Step 13: Requests for Balance of Year Unassigned Available Import Capability: To the extent total Available Import Capability remains unassigned as disclosed by Step 12, Scheduling Coordinators for Load Serving Entities or Market Participants may notify the CAISO at any time, except as limited herein, of a request for unassigned Available Import Capability on a specific Intertie on a per MW basis. Each request must include the identity of Load Serving Entity or Market Participant on whose behalf the request is made. The CAISO will accept only two (2) requests per calendar week from any



Scheduling Coordinator on behalf of a single Load Serving Entity or other Market Participant. The CAISO will honor requests in priority of the time requests from Scheduling Coordinators were received until the Intertie is fully assigned and without regard to any Load Serving Entity's Load Share Quantity. Any honored request shall be for the remainder of the Resource Adequacy Compliance Year; however, any notification by the CAISO of acceptance of the request in accordance with this Section after the 20<sup>th</sup> calendar day of any month shall not be permitted to be included in the Load Serving Entity's Resource Adequacy Plan submitted in the same month as the acceptance.

The CAISO shall provide an electronic means, either through the Import Capability Transfer Registration Process or otherwise, of notifying the Scheduling Coordinator of the time the request was deemed received by the CAISO and, within seven (7) days of receipt of the request, whether the request was honored. If honored, it shall be the responsibility of the Scheduling Coordinator and its Load Serving Entity to notify the CPUC or applicable Local Regulatory Authority of the acceptance of the request for unassigned Available Import Capability. If the request is not honored because the Intertie requested was fully assigned, the request will be deemed rejected and the Scheduling Coordinator, if it still seeks to obtain unassigned Available Import Capability, will be required to submit a new request for unassigned Available Import Capability on a different Intertie. The CAISO will update on its website the list of unassigned Available Import Capability by Intertie in accordance with the schedule set forth in the Business Practice Manual.

This multi-step process for assignment of Total Import Capability does not guarantee or result in any actual transmission service being assigned and is only used for determining the import capability that can be credited towards satisfying the Reserve Margin of a Load Serving Entity under this Section 40. Upon the request of the CAISO, Scheduling Coordinators must provide the CAISO with information on Pre-RA Import Commitments and any transfers or sales of assigned Total Import Capability.

**40.4.6.2.2 Bilateral Import Capability Transfers and Registration Process.**

**40.4.6.2.2.1 Eligibility Registration for Bilateral Import Capability Transfers.**

To be eligible to engage in any bilateral assignment, sale, or other transfer of Remaining Import Capability under Step 8 of Section 40.4.6.2.1 or Section 40.4.6.2.2.2 or Existing Contract Import Capability, and Pre-RA Import Commitment Capability under Section 40.6.2.2.2, a Load Serving Entity or other Market Participant must provide the CAISO through the Import Capability Transfer Registration Process the following information:

- (a) Name of the Load Serving Entity or Market Participant
- (b) E-mail contact information

The CAISO will post to the CAISO Website the information received under this Section on a monthly basis in accordance with the schedule set forth in the Business Practice Manual. Any assignment, sale, or other transfer of Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability may only be made by or to a Load Serving Entity or Market Participant whose information received under this Section has been posted to the CAISO Website prior to the date of the assignment, sale, or other transfer of the Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability. It shall be the exclusive responsibility of the Scheduling Coordinator for the Load Serving Entity or Market Participant to ensure that the information posted to the CAISO Website under this Section is accurate and up to date.

**40.4.6.2.2.2 Reporting Process for Bilateral Import Capability Transfers.**

This Section shall apply to all transfers of Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability other than that provided for in Step 8 of Section 40.4.6.2.1. Any Load Serving Entity or other Market Participant that has obtained Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability may assign, sell, or otherwise transfer such Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability in MW increments. The import capability subject to each transfer shall remain on the Intertie assigned pursuant to Section 40.4.6.2.1.

The Scheduling Coordinator for the Load Serving Entity or Market Participant receiving the transferred Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability must report the transfer to the CAISO through the CAISO's Import Capability Transfer Registration Process by providing the following information:

- (a) Identity of the counter-party(ies);
- (b) The MW quantity;
- (c) The Intertie on which the Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability was assigned;
- (d) Term of the transfer;
- (e) Price on a per MW basis; and
- (f) Whether the import capability assignment being transferred is Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability.

The CAISO will promptly post to the CAISO Website the information on transfers received under this Section except for the information received pursuant to subpart (f) of this Section. On a quarterly basis, the CAISO shall also report to FERC the transfer information received under this Section and Step 8 of Section 40.4.6.2.1. Transfer information received in accordance with this Section after the 20<sup>th</sup> calendar day of any month shall not be permitted to be included in the Load Serving Entity's Resource Adequacy Plan submitted in the same month as the transfer submission.

#### **40.4.6.2.2.3 Other Import Capability Information Postings.**

The CAISO will post to the CAISO Website on a monthly basis in accordance with the schedule set forth in the Business Practice Manual, for each Intertie, the holder and that holder's quantity in MW of import capability assigned on the particular Intertie as of the reporting date.

The CAISO will also post to the CAISO Website following submission of the annual Resource Adequacy Plans under Sections 40.2.1.1, 40.2.2.4, 40.2.3.4, and 40.2.4, for each Intertie, by a "yes" or "no"

designation, whether each holder of import capability assigned on the particular Intertie has fully included the assigned import capability in the holder's annual Resource Adequacy Plans.

**40.4.7 Submission of Supply Plans.**

**40.4.7.1 Schedule for Submission of Supply Plans.**

Scheduling Coordinators representing Resource Adequacy Resources supplying Resource Adequacy Capacity shall provide the CAISO with annual and monthly Supply Plans, on the schedule set forth in the Business Practice Manual verifying their agreement to provide Resource Adequacy Capacity during the next Resource Adequacy Compliance Year or relevant month, as applicable.

**40.4.7.2 Form of Supply Plans.**

The Supply Plan must be in the form of the template provided on the CAISO Website, which shall include an affirmative representation by the Scheduling Coordinator submitting the Supply Plan that the CAISO is entitled to rely on the accuracy of the information provided in the Supply Plan to perform those functions set forth in this Section 40.

**40.4.7.3 Validation of Supply Plans.**

The CAISO shall be entitled to take reasonable measures to validate the accuracy of the information submitted in Supply Plans under this Section. Supply Plan validation measures may include the following:

- (a) The CAISO may compare a Resource Adequacy Resource's Resource Adequacy Capacity against the Resource Adequacy Resource's Net Qualifying Capacity, if applicable. To the extent the Resource Adequacy Capacity of a Resource Adequacy Resource included in a Supply Plan is greater than the Resource Adequacy Resource's Net Qualifying Capacity, the CAISO will notify the respective Scheduling Coordinators for the Resource Adequacy Resource and each Load Serving Entity that has included the Resource Adequacy Resource in its Resource Adequacy Plan that the Resource Adequacy Capacity from the Resource Adequacy Resource shall be reduced to the Resource Adequacy Resource's Net Qualifying Capacity and that it will be considered a mismatch under Section 40.7. If the CAISO is not advised as to how the reduction in Resource Adequacy Capacity to conform with the Resource Adequacy Resource's Net Qualifying Capacity shall be allocated among each Load Serving Entity that included the Resource Adequacy Resource on its Resource Adequacy Plan, the CAISO will apply a pro rata reduction based on the Supply Plan.
- (b) Other errors or inaccuracies identified by the CAISO in a Supply Plan shall be treated as a mismatch under Section 40.7.

Disputes regarding the CAISO's determination of Net Qualifying Capacity shall be subject to Section 40.5.2. The provisions of this Section shall not affect a Resource Adequacy Resource's Net Qualifying Capacity posted by the CAISO under Section 40.5.2.

**40.5 Requirements Applicable to Modified Reserve Sharing LSEs Only.**

**40.5.1 Day Ahead Scheduling and Bidding Requirements.**

- (1) Scheduling Coordinators on behalf of Modified Reserve Sharing LSEs serving Load within the CAISO **Balancing Authority** Area for whom they submit Demand Bids shall submit into the IFM a Self-Schedule or Bid equal to 115% of the hourly Demand Forecasts for each Modified Reserve Sharing LSE it represents for each Trading Hour for the next Trading Day. Subject to Section 40.5.5, the resources included in a Self-Schedule or a Bid in each Trading Hour to satisfy 115% of the Modified Reserve Sharing LSE's hourly Demand Forecasts will be deemed Resource Adequacy Resources and (a) shall be those resources listed in the Modified Reserve Sharing LSE's monthly Resource Adequacy Plan and (b) shall include all Local Capacity Area Resources listed in the Modified Reserve Sharing LSE's annual Resource Adequacy Plan, if any, except to the extent the Local Capacity Area Resources, if any, are unavailable due to any

Outages or reductions in capacity reported to the CAISO in accordance with this CAISO Tariff.

- (i) A Local Capacity Area Resource that has not fully submitted a Bid or Self-Schedule for all of its Resource Adequacy Capacity will be subject to the CAISO's optimization for the remainder of its capacity, which must be Bid into the Day-Ahead Market; however, to the extent the Generating Unit providing Local Capacity Area Resource capacity constitutes a Use-Limited Resource under Section 40.6.4, the provisions of Section 40.6.4 will apply.
  - (ii) If the Resource Adequacy Resource submits a Bid for Ancillary Services, the Energy Bid associated with the Bid for Ancillary Services will be optimized by the CAISO. However, pursuant to Section 8.6.2, to the extent the Local Capacity Area Resource self-provides Ancillary Services and local Constraints result in a solution in the MPM-RRD that involves Load reduction, then Self-Provided AS from the Local Capacity Area Resource will be converted into Ancillary Service Bids at the minimum Bid price for Ancillary Services as prescribed in Section 39.6.1.5.
  - (iii) Resource Adequacy Resources must participate in the RUC to the extent that the resource has not submitted a Self-Schedule or already committed to provide Energy or capacity in the IFM. Resource Adequacy Resources will be required to offer into RUC and will be considered based on a \$0 RUC Availability Bid.
  - (iv) Capacity from Resource Adequacy Resources selected in RUC will not be eligible to receive a RUC Availability Payment.
- (2) Resource Adequacy Resources of Modified Reserve Sharing LSEs that do not clear in the IFM or are not committed in RUC shall have no further offer

requirements in HASP or Real-Time, except under System Emergencies as provided in this CAISO Tariff.

- (3) Resource Adequacy Resources committed by the CAISO must maintain that commitment through Real-Time. In the event of a Forced Outage on a Resource Adequacy Resource committed in the Day-Ahead Market to provide Energy, the Scheduling Coordinator for the Modified Reserve Sharing LSE will have up to the next HASP bidding opportunity, plus one hour, to replace the lesser of: (i) the committed resource suffering the Forced Outage, (ii) the quantity of Energy committed in the Day-Ahead Market, or (iii) 107% of the hourly forecast Demand.

#### **40.5.2 Demand Forecast Accuracy.**

On a monthly basis, the CAISO will review Meter Data to evaluate the accuracy or quality of the hourly Day-Ahead Demand Forecasts submitted by the Scheduling Coordinator on behalf of Modified Reserve Sharing LSEs. If the CAISO determines, based on its review, that one or more Demand Forecasts materially under-forecasts the Demand of the Modified Reserve Sharing LSEs for whom the Scheduling Coordinator schedules, after accounting for weather adjustments, the CAISO will notify the Scheduling Coordinator of the deficiency and will cooperate with the Scheduling Coordinator and Modified Reserve Sharing LSE(s) to revise its Demand Forecast protocols or criteria. If the material deficiency affects ten (10) hourly Demand Forecasts over a minimum of two (2) non-consecutive Business Days within a month, the CAISO may: (i) inform State of California authorities including, but not necessarily limited to the California Legislature, and identify the Modified Reserve Sharing LSE(s) represented by the Scheduling Coordinator and (ii) assign to the Scheduling Coordinator responsibility for all tier 1 RUC charges as specified in Section 11.8.6.5 to address the uncertainty caused by the Scheduling Coordinator's deficient hourly Demand Forecasts until the deficiency is addressed.

#### **40.5.3 Requirement to Make Resources Available During System Emergencies.**

Scheduling Coordinators for Modified Reserve Sharing LSEs that are MSS Operators shall make resources available to the CAISO during a System Emergency in accordance with the provisions of their Metered Subsystem Agreement. Scheduling Coordinators for all other Modified Reserve Sharing LSEs



shall make available to the CAISO upon a warning or emergency notice of an actual or imminent System Emergency all resources that have not submitted a Self-Schedule or Economic Bid in the IFM that were listed in the Modified Reserve Sharing LSE's monthly Resource Adequacy Plan that are physically capable of operating without violation of any applicable law.

**40.5.4 Consequence of Failure to Meet Scheduling Obligation.**

- (1) If the Scheduling Coordinator for the Modified Reserve Sharing LSE fails to submit a Self-Schedule or submit Bids equal to 115% of its hourly Demand Forecasts for each Trading Hour for the next Trading Day in the IFM and RUC, the Scheduling Coordinator will be charged a capacity surcharge of three times the price of the relevant Day-Ahead Hourly LAP LMP in the amount of the shortfall. To the extent the Scheduling Coordinator for the Modified Reserve Sharing LSE schedules imports on one or more Scheduling Points in an aggregate megawatt amount greater than its aggregate import deliverability allocation under Section 40.4.6.2, the quantity of megawatts in excess of its import deliverability allocation will not count toward satisfying the Modified Reserve Sharing LSE's scheduling obligation, unless it clears the Day-Ahead Market.
- (2) If the Scheduling Coordinator for the Modified Reserve Sharing LSE cannot fulfill its obligations under Section 40.5.1(3), the Scheduling Coordinator for the Modified Reserve Sharing LSE will be charged a capacity surcharge of two times the average of the six (6) Settlement Interval LAP prices for the hour in the amount of the shortfall. Energy scheduled in the HASP will not net against, or be used as a credit to correct, any failure to fulfill the Day-Ahead IFM hourly scheduling and RUC obligation in Section 40.5.1(1).
- (3) Any Energy surcharge received by the CAISO pursuant to this Section 40.5.4 shall be allocated to Scheduling Coordinators representing other Load Serving

Entities in proportion to each such Scheduling Coordinator's Measured Demand during the relevant Trading Hour(s) to the aggregate CAISO Measured Demand during the relevant Trading Hour(s).

#### **40.5.5 Substitution of Resources.**

Subject to the provisions of this Section 40.5, the Scheduling Coordinator for a Modified Reserve Sharing LSE may substitute for its Resource Adequacy Resources listed in its monthly Resource Adequacy Plan provided:

- (1) Substitutions must occur no later than the close of the IFM; and
- (2) Resources eligible for substitution are either imports or capacity from non-Resource Adequacy Resources or Resource Adequacy Resources with additional available capacity defined as Net Qualifying Capacity in excess of previously sold Resource Adequacy Capacity; however a Local Capacity Area Resource may be substituted only with capacity from non-Resource Adequacy Resources located in the same Local Capacity Area.

#### **40.6 Requirements Applicable to Scheduling Coordinators for Reserve Sharing LSEs and Resources Providing Resource Adequacy Capacity to Reserve Sharing LSEs.**

This Section 40.6 does not apply to Resource Adequacy Resources of Load following MSSs and those entities that participate in the Modified Reserve Sharing LSE program under Section 40.5. Scheduling Coordinators supplying Resource Adequacy Capacity shall make the Resource Adequacy Capacity listed in the Scheduling Coordinator's monthly Supply Plans under Section 40.4.7 available to the CAISO each hour of each day of the reporting month in accordance with this Section 40.6.

##### **40.6.1 Day-Ahead Availability.**

Scheduling Coordinators supplying Resource Adequacy Capacity shall make the Resource Adequacy Capacity, except for that subject to Section 40.6.4, available Day-Ahead to the CAISO as follows:

- (1) Resource Adequacy Resources physically capable of operating must submit Economic Bids or Self-Schedules for their Resource Adequacy Capacity into the IFM and RUC.

- (2) Resource Adequacy Resources that are Extremely Long-Start Resources must make themselves available to the CAISO by complying with the Extremely Long-Start Commitment Process under Section 31.7 or otherwise committing the ELS Resource upon instruction from the CAISO, if physically capable.
- (3) Resource Adequacy Resources must be available except for limitations specified in the Master File, legal or regulatory prohibitions or as otherwise required by this CAISO Tariff or by Good Utility Practice.
- (4) Resource Adequacy Resources that do not submit Self-Schedules or Economic Bids reflecting all of their Resource Adequacy Capacity will be subject to the CAISO's optimization for the remainder of their Resource Adequacy Capacity Bids into the Day-Ahead Market. If the Resource Adequacy Resource submits a Bid for Ancillary Service(s), the Energy Bid associated with the Bid for Ancillary Services will be optimized by the CAISO.
- (5) Resource Adequacy Resources must participate in the RUC to the extent that the resource has available Resource Adequacy Capacity that is not reflected in a Self-Schedule is already committed to provide Energy or capacity in the IFM. Resource Adequacy Resources will be subject to RUC and will be optimized at a zero dollar RUC Availability Bid.
- (6) Capacity from Resource Adequacy Resources selected in RUC will not be eligible to receive a RUC Availability Payment.

#### **40.6.2 Real-Time Availability.**

Resource Adequacy Resources that have been committed by the CAISO in the Day-Ahead Market or the RUC for part of their Resource Adequacy Capacity or have submitted a Self-Schedule for part of their Resource Adequacy Capacity must remain available to the CAISO through Real-Time, including capacity reflected in the Day-Ahead Schedule and any remaining capacity, for the scheduled and non-scheduled portions of their Resource Adequacy Capacity, subject to the provisions of Section 40.6.4.

**40.6.3 Additional Availability Requirements for Short Start Units and Dynamic System Resources.**

Short Start Units and Dynamic System Resources, unless a Dynamic System Resource is demonstrated to be incapable of meeting the definition of a Short Start Unit based on physical operating characteristics, that supply Resource Adequacy Capacity not committed under Section 40.6.1, and therefore are subject to Section 40.6.2, and Use-Limited Resources subject to Section 40.6.4 to the extent consistent with their applicable use plan, must submit Economic Bids or Self-Schedules for the Resource Adequacy Capacity into the Real-Time Market.

The CAISO may waive these availability obligations for Short Start Units and Dynamic System Resources that have not submitted a Self-Schedule or otherwise been selected in the IFM or RUC based on the procedure to be published on the CAISO Website.

**40.6.4 Additional Availability Requirements for Use-Limited Resources.**

**40.6.4.1 Registration of Use-Limited Resources.**

Scheduling Coordinators for Use-Limited Resources, other than for hydroelectric Generating Units and Participating Load, including Pumping Load, must provide the CAISO an application in the form specified on the CAISO Website requesting registration of a specifically identified resource as a Use-Limited Resource. This application shall include specific operating data and supporting documentation including, but not limited to;

- (1) a detailed explanation of why the resource is subject to operating limitations;
- (2) historical data to show attainable MWhs for each 24-hour period during the preceding year, including, as applicable, environmental restrictions for NOx, SOx, or other factors; and
- (3) further data or other information as may be requested by the CAISO to understand the operating characteristics of the unit.

Within five (5) Business Days after receipt of the application, the CAISO will respond to the Scheduling Coordinator as to whether or not the CAISO agrees that the facility is eligible to be a Use-Limited

Resource. If the CAISO determines the facility is not a Use-Limited Resource, the Scheduling Coordinator may challenge that determination in accordance with the CAISO ADR Procedures.

#### **40.6.4.2 Use Plan.**

The Scheduling Coordinator shall provide for the following Resource Adequacy Compliance Year a proposed annual use plan for each Use-Limited Resource that is a Resource Adequacy Resource. The proposed annual use plan will delineate on a month-by-month basis the total MWhs of Generation, total run hours, expected daily supply capability (if greater than four hours) and the daily Energy limit, operating constraints, and the timeframe for each constraint. The CAISO will have an opportunity to discuss the proposed annual use plan with the Scheduling Coordinator and suggest potential revisions to meet reliability needs of the system. The Scheduling Coordinator shall then submit its final annual use plan. Scheduling Coordinators for Use-Limited Resources must submit the proposed and final annual use plans in accordance with the schedule set forth in the Business Practice Manual. The Scheduling Coordinator will be able to update the projections made in the annual use plan in the monthly Resource Adequacy Plans. Hydroelectric Generating Units and Pumping Load will be able to update use plans intra-monthly as necessary to reflect evolving hydrological and meteorological conditions. The annual use plan must reflect the potential operation of the Use-Limited Resource at a level no less than the minimum criteria set forth by the Local Regulatory Authority for qualification of the resource.

#### **40.6.4.3 Bidding Requirements on Use-Limited Resources.**

##### **40.6.4.3.1 Non-Hydro and Dispatchable Use-Limited Resources.**

Use-Limited Resources, other than those subject to the provisions of 40.6.4.3.2, must submit a Supply Bid or Self-Schedule for their Resource Adequacy Capacity in the Day-Ahead Market whenever the Use-Limited Resources are physically capable of operating in accordance with their operating criteria, including environmental or other regulatory requirements. Use-Limited Resources will also provide a daily Energy limit as part of their Day-Ahead Market offer to enable the CAISO to schedule them for the period in which they are capable of providing the Energy. To the extent that the daily Energy limit has been reached through Self-Schedules, no further action will be taken by the CAISO, unless rescheduling of the Energy is necessary for System Reliability. Use-Limited Resources will attempt to reschedule the Energy

in recognition of the System Reliability concern, to the extent that the change is possible without violating a Use-Limited Resource's operating criteria.

#### **40.6.4.3.2 Hydro and Non-Dispatchable Use-Limited Resources.**

Hydroelectric Generating Units, Pumping Load, and Non-Dispatchable Use-Limited Resources shall submit Self-Schedules or Bids in the Day-Ahead Market for their expected available Energy or their expected as-available Energy, as applicable, in the Day-Ahead Market and HASP. Such resources shall also revise their Self-Schedules or submit additional Bids in HASP based on the most current information available regarding expected Energy deliveries. Hydroelectric Generating Units, Pumping Load, and Non-Dispatchable Use-Limited Resources will not be subject to commitment in the RUC process. The CAISO will retain discretion as to whether a particular resource should be considered a Non-Dispatchable Use-Limited Resource, and this decision will be made in accordance with the provisions of Section 40.6.4.1.

#### **40.6.4.3.3 Availability of Use-Limited Resources During System Emergencies.**

All Use-Limited Resources remain subject to Section 7.7.2.3 regarding System Emergencies to the extent the Use-Limited Resource is owned or controlled by a Participating Generator.

#### **40.6.4.3.4 Availability of Intermittent Resources.**

Any Eligible Intermittent Resource that provides Resource Adequacy Capacity may, but is not required to, submit Bids in the Day-Ahead Market.

#### **40.6.5 Additional Availability Requirements for System Resources.**

In the IFM, the multi-hour block constraints of a System Resource, other than a System Resource capable of submitting a Dynamic Schedule, are honored in the optimization. Multi-hour block System Resources that are not capable of submitting a Dynamic Schedule and are Resource Adequacy Resources must be capable of hourly selection by the CAISO in RUC if not fully committed in the IFM. If selected in the RUC, the System Resource must be dispatchable in those hours in the HASP and Real Time Market. For existing System Resources with a call-option that expires prior to the completion of the IFM, such System Resources listed on a Resource Adequacy Plan must be reported to the CAISO for consideration in the Extremely Long-Start Commitment Process.

**40.6.5.1 Additional Availability Requirements for Dynamic Resource-Specific System Resources.**

A Dynamic Resource-Specific System Resource that supplies Resource Adequacy Capacity, and is not otherwise a Use-Limited Resource under Section 40.6.4, will be subject to either Section 40.6.3 as a Short Start Unit or Section 40.6.7 as a Long Start Unit based upon the Dynamic Resource-Specific System Resource's registered physical operating characteristics.

**40.6.6 Availability Requirements for Partial Resource Adequacy Resources.**

Only that output of a Partial Resource Adequacy Resource that is designated by a Scheduling Coordinator as Resource Adequacy Capacity in its monthly or annual Supply Plan shall have an availability obligation to the CAISO. Exports being supported by non-Resource Adequacy Capacity from a Partial Resource Adequacy Resource that becomes unavailable or unusable shall be considered as an export of non-Resource Adequacy Capacity based on the pro-rata allocation of derated capacity of the Partial Resource Adequacy Resource as follows:

- (a) Resource Adequacy Capacity – [(Resource Adequacy Capacity/PMax Capacity of Resource Adequacy Resource) x MW Derate or Outage]; or
- (b) [1- (Resource Adequacy Capacity/PMax Capacity of Resource Adequacy Resource)] x De-rated PMax].

**40.6.7 Availability Requirements for Long Start Units.**

**40.6.7.1 Release of Long Start Units.**

Long Start Units not committed in the Day-Ahead Market will be released from any further obligation to submit Self-Schedules or Bids for the relevant Operating Day. Scheduling Coordinators for Long Start Units are not precluded from self-committing the unit after the Day-Ahead Market and submitting a Self-Schedule for Wheeling-Out in the HASP, unless precluded by terms of their contracts.

**40.6.7.2 Obligation of Long Start Units to Offer Remaining Capacity in Real-Time.**

Long Start Units that have been committed by the CAISO in the Day-Ahead Market or the RUC for part of their Resource Adequacy Capacity or have submitted a Self-Schedule for part of their Resource

Adequacy Capacity must remain available to the CAISO through Real-Time for the full value of their Resource Adequacy Capacity.

#### **40.6.8 Use of Default Energy Bids.**

Prior to completion of the Day-Ahead Market, the CAISO will determine if dispatchable Resource Adequacy Capacity from Resource Adequacy Resources has not been reflected in a Bid and will insert a Default Energy Bid for any dispatchable Resource Adequacy Capacity that is not reflected in a Bid into the CAISO Day-Ahead Market and for which the CAISO has not received notification of an Outage. In addition, the CAISO will determine if all dispatchable Resource Adequacy Capacity from Short Start Units, not otherwise selected in the IFM or RUC, is reflected in a Bid into the HASP and will insert a Default Energy Bid for any remaining dispatchable Resource Adequacy Capacity for which the CAISO has not received notification of an Outage.

#### **40.6.9 Availability Requirements for Grandfathered Firm Liquidated Damages Contracts.**

Resource Adequacy Capacity represented by a Firm Liquidated Damages Contract and relied upon by a Scheduling Coordinator in a monthly or annual Resource Adequacy Plan shall be submitted as a Self-Schedule or Bid in the Day-Ahead IFM to the extent such scheduling right exists under the Firm Liquidated Damages Contract.

#### **40.6.10 Exports of Energy from Resource Adequacy Capacity.**

Resource Adequacy Capacity may be utilized to serve an Export Bid. An Export Bid may be submitted into the CAISO Markets and be cleared by the Energy being provided by Resource Adequacy Capacity.

#### **40.6.11 Curtailment of Exports in Emergency Situations.**

At its sole discretion, the CAISO may curtail exports from Resource Adequacy Capacity to prevent or alleviate a System Emergency. An Export Bid or a Self-Schedule to provide exports included in a binding Schedule accepted in the IFM or HASP will not be distinguished from a Demand Bid or Self-Schedule to serve Load within the CAISO Balancing Authority Area included in a binding Schedule accepted in the IFM or HASP for purposes of curtailment under this Section, except as consistent with Good Utility Practice.



#### **40.6.12 Participating Loads.**

Participating Loads included in a Resource Adequacy Plan and Supply Plan, if the Scheduling Coordinator for the Participating Loads is not the same as that for the Load Serving Entity, will be dispatched by the CAISO in accordance with the terms and conditions established by the CPUC or the Local Regulatory Authority.

#### **40.7 Compliance.**

The CAISO will evaluate whether each annual and monthly Resource Adequacy Plan submitted by a Scheduling Coordinator on behalf of a Load Serving Entity demonstrates Resource Adequacy Capacity sufficient to satisfy the Load Serving Entity's (i) allocated responsibility for Local Capacity Area Resources under Section 40.3.2 and (ii) applicable Demand and Reserve Margin requirements. If the CAISO determines that a Resource Adequacy Plan does not demonstrate Local Capacity Area Resources sufficient to meet its allocated responsibility under Section 40.3.2, compliance with applicable Demand and Reserve Margin requirements, or compliance with any other resource adequacy requirement in this Section 40 or adopted by the CPUC, Local Regulatory Authority, or federal agency, as applicable, the CAISO will notify the relevant Scheduling Coordinator, CPUC, Local Regulatory Authority, or federal agency with jurisdiction over the relevant Load Serving Entity, or in the case of a mismatch between Resource Adequacy Plan(s) and Supply Plan(s), the relevant Scheduling Coordinators, in an attempt to resolve any deficiency in accordance with the procedures set forth in the Business Practice Manual. The notification will include the reasons the CAISO believes a deficiency exists. If the deficiency relates to the demonstration of Local Capacity Area Resources in a Load Serving Entity's annual Resource Adequacy Plan, and the CAISO does not provide a written notice of resolution of the deficiency as set forth in the Business Practice Manual, the Scheduling Coordinator for the Load Serving Entity may demonstrate that the identified deficiency is cured by submitting a revised annual Resource Adequacy Plan within thirty (30) days of the beginning of the Resource Adequacy Compliance Year. For all other identified

deficiencies, at least ten (10) days prior the effective month of the relevant Resource Adequacy Plan, the Scheduling Coordinator for the Load Serving Entity shall (i) demonstrate that the identified deficiency is cured by submitting a revised Resource Adequacy Plan or (ii) advise the CAISO that the CPUC, Local Regulatory Authority, or federal agency, as appropriate, has determined that no deficiency exists. In the case of a mismatch between Resource Adequacy Plan(s) and Supply Plan(s), if resolved, the relevant Scheduling Coordinator(s) must provide the CAISO with revised Resource Adequacy Plan(s) or Supply Plans, as applicable, at least ten (10) days prior to the effective month. If the CAISO is not advised that the deficiency or mismatch is resolved at least ten (10) days prior to the effective month, the CAISO will use the information contained in the Supply Plan to set the obligations of Resource Adequacy Resources under this Section 40 and/or to assign any costs incurred under this Section 40 and Section 43.

#### **40.7.1 Other Compliance Issues.**

Scheduling Coordinators representing Generating Units, System Units or System Resources supplying Resource Adequacy Capacity that fail to provide the CAISO with an annual or monthly Supply Plan, as applicable, as set forth in Section 40.7, shall be subject to Section 37.6.1. Further, Scheduling Coordinators representing Generating Units, System Units or System Resources supplying Resource Adequacy Capacity that fail to provide the CAISO with information required for the CAISO to determine Net Qualifying Capacity shall not be eligible for inclusion in the Net Qualifying Capacity annual report under Section 40.4.2 for the next Resource Adequacy Compliance Year and may be subject to Sanctions under Section 37.6.1.

#### **40.7.2 Penalties for Non-Compliance.**

The failure of a Resource Adequacy Resource or Resource Adequacy Capacity to be available to the CAISO in accordance with the requirements of this Section 40 and the failure to operate a Resource Adequacy Resource by placing it online or in a manner consistent with a submitted Bid or Default Energy Bid shall be subject to the Sanctions set forth in Section 37.2. However, any failure of the Resource Adequacy Resource to satisfy any obligations prescribed under this Section 40 during a Resource

Adequacy Compliance Year for which Resource Adequacy Capacity has been committed to a Load Serving Entity shall not limit in any way, except as otherwise established under Section 40.4.5 or requirements of the CPUC, Local Regulatory Authority, or federal agency, as applicable, the ability of the Load Serving Entity to whom the Resource Adequacy Capacity has been committed to use such Resource Adequacy Capacity for purposes of satisfying the resource adequacy requirements of the CPUC, Local Regulatory Authority, or federal agency, as applicable. In addition, a Reserve Sharing LSE shall not be subject to any sanctions, penalties, or other compensatory obligations under this Section 40 on account of a Resource Adequacy Resource's satisfaction or failure to satisfy its obligations under this Section 40.

#### **40.8 CAISO Default Qualifying Capacity Criteria.**

##### **40.8.1 Applicability.**

The criteria in this Section 40.8 shall apply only: (i) where the CPUC or Local Regulatory Authority has not established and provided to the CAISO criteria to determine the types of resources that may be eligible to provide Qualifying Capacity and for calculating Qualifying Capacity for such eligible resource types and (ii) until the CAISO has been notified in writing by the CPUC of its intent to overturn, reject or fundamentally modify the capacity-based framework in CPUC Decisions 04-01-050 (Jan. 10, 2004), 04-10-035 (Oct. 28, 2004), and 05-10-042 (Oct. 31, 2005). The types of resources specified in this Section 40.8.1 will be eligible to provide Qualifying Capacity to the extent they meet the criteria for each type of resource set forth in this Section 40.8.1.

##### **40.8.1.2 Nuclear and Thermal.**

Nuclear and thermal Generating Units, other than Qualifying Facilities with effective contracts under the Public Utility Regulatory Policies Act addressed in Section 40.8.1.8 below, must be a Participating Generator or a System Unit. The Qualifying Capacity of nuclear and thermal units, other than Qualifying Facilities addressed in Section 40.8.1.8, will be based on net dependable capacity defined by NERC Generating Availability Data System information.

#### **40.8.1.3 Hydro.**

Hydroelectric Generating Units, other than Qualifying Facilities with contracts under the Public Utility Regulatory Policies Act, must be either Participating Generators or System Units. The Qualifying Capacity of a pond or Pumped-Storage Hydro Unit, other than a QF, will be determined based on net dependable capacity defined by NERC GADS minus variable head derate based on an average dry year reservoir level. The Qualifying Capacity of a pond or Pumped-Storage Hydro Unit that is a QF will be determined based on historic performance during the hours of noon to 6:00 p.m., using a three-year rolling average.

The Qualifying Capacity of all run-of-river hydro units, including Qualifying Facilities, will be based on net dependable capacity defined by NERC GADS minus an average dry year conveyance flow, stream flow, or canal head derate. As used in this section, average dry year reflects a one-in-five year dry hydro scenario (for example, using the 4th driest year from the last 20 years on record).

#### **40.8.1.4 Unit-Specific Contracts.**

Unit-specific contracts with Participating Generators or System Units will qualify as Resource Adequacy Capacity subject to the verification that the total MW quantity of all contracts from a specific unit do not exceed the total Net Qualifying Capacity (MW) consistent with the Net Qualifying Capacity determination for that unit.

#### **40.8.1.5 Contracts with Liquidated Damage Provisions.**

Firm Energy contracts with liquidated damages provisions, as generally reflected in Service Schedule C of the Western Systems Power Pool Agreement or the Firm LD product of the Edison Electric Institute pro forma agreement, or any other similar firm Energy contract that does not require the seller to source the Energy from a particular unit, and specifies a delivery point internal to the CAISO Balancing Authority Area entered into before October 27, 2005 shall be eligible to count as Qualifying Capacity until the end of 2008. A Scheduling Coordinator, however, cannot have more than twenty-five percent (25%) of its portfolio of Qualifying Capacity met by contracts with liquidated damage provisions for 2008.

#### **40.8.1.6 Wind and Solar.**

As used in this Section, wind units are those wind Generating Units without backup sources of Generation and solar units are those solar Generating Units without backup sources of Generation. Wind and solar units, other than Qualifying Facilities with effective contracts under the Public Utility Regulatory Policies Act, must be Participating Intermittent Resources or subject to availability provisions of Section 40.6.4.3.4.

The Qualifying Capacity of all wind or solar units, including Qualifying Facilities, for each month will be based on their monthly historic performance during that same month during the hours of noon to 6:00 p.m., using a three-year rolling average. For wind or solar units with less than three years operating history, all months for which there is no historic performance data will utilize the monthly average production factor of all units (wind or solar, as applicable) within the TAC Area in which the Generating Unit is located.

#### **40.8.1.7 Geothermal.**

Geothermal Generating Units, other than Qualifying Facilities addressed in Section 40.8.1.8, must be Participating Generators or System Units. The Qualifying Capacity of geothermal units, other than Qualifying Facilities addressed in Section 40.8.1.8, will be based on NERC GADS net dependable capacity minus a derate for steam field degradation.

#### **40.8.1.8 Treatment of Qualifying Capacity for Qualifying Facilities.**

Qualifying Facilities must be subject to an effective Participating Generator Agreement or QF Participating Generator Agreement or must be System Units, unless they have a PURPA contract. Except for hydro, wind, and solar Qualifying Facilities addressed pursuant to Sections 40.8.1.3 and 40.8.1.6, the Qualifying Capacity of Qualifying Facilities under PURPA contracts, will be based on historic monthly Generation output during the hours of noon to 6:00 p.m. (net of Self-provided Load) during a three-year rolling average.

**40.8.1.9 Participating Loads.**

The Qualifying Capacity of Participating Loads shall be the average reduction in Demand over a three-year period on a per Dispatch basis or, if the Load does not have three years of performance history, based on comparable evaluation data using similar programs. Loads of Participating Loads must be available at least 48 hours, and if the Loads can only be dispatched for a maximum of two hours per event, then only 0.89 percent of a Scheduling Coordinator's portfolio may be made up of such Loads.

**40.8.1.10 Jointly-Owned Facilities.**

A jointly-owned facility must be either a Participating Generator or a System Unit. The Qualifying Capacity for the entire facility will be determined based on the type of resource as described elsewhere in this Section 40.8.1. In addition, the Scheduling Coordinator must provide the CAISO with a demonstration of its entitlement to the output of the jointly-owned facility's Qualified Capacity and an explanation of how that entitlement may change if the facility's output is restricted.

**40.8.1.11 Facilities under Construction.**

The Qualifying Capacity for facilities under construction will be determined based on the type of resource as described elsewhere in this Section 40.8. In addition, the facility must have been in commercial operation for no less than one month to be eligible to be included as a Resource Adequacy Resource in a Scheduling Coordinator's monthly Resource Adequacy Plan.

**40.8.1.12 System Resources.**

**40.8.1.12.1 Dynamic System Resources.**

Dynamic System Resources shall be treated similar to resources within the CAISO Balancing Authority Area, except with respect to the deliverability screen under Section 40.4.6.1. However, eligibility as a Resource Adequacy Resource is contingent upon a showing by the Scheduling Coordinator that the Dynamic System Resource has secured transmission through any intervening Balancing Authority Areas for the Operating Hours that cannot be curtailed for economic reasons or bumped by higher priority transmission and that the Load Serving Entity for which the Scheduling Coordinator is submitting Demand

Bids has an allocation of import capacity at the import Scheduling Point under Section 40.4.6.2 that is not less than the Resource Adequacy Capacity provided by the Dynamic System Resource.

**40.8.1.12.2 Non-Dynamic System Resources.**

For Non-Dynamic System Resources, the Scheduling Coordinator must demonstrate that the Load Serving Entity **for** which the Scheduling Coordinator is scheduling Demand has an allocation of import capacity at the import Scheduling Point under Section 40.4.6.2 that is not less than the Resource Adequacy Capacity from the Non-Dynamic System Resource. The Scheduling Coordinator must also demonstrate that the Non-Dynamic System Resource is covered by Operating Reserves, unless unit contingent, in the sending **Balancing Authority** Area. Eligibility as Resource Adequacy Capacity **is** contingent upon a showing by the Scheduling Coordinator of the System Resource that it has secured transmission through any intervening **Balancing Authority** Areas for the **Operating Hours** that cannot be curtailed for economic reasons or bumped by higher priority transmission. With respect to Non-Dynamic System Resources, any inter-temporal constraints, such as multi-hour run blocks, must be explicitly identified in the monthly Resource Adequacy **Plan**, and no constraints may be imposed beyond those explicitly stated in the plan.

**41 Procurement of RMR Generation.**

**41.1 Procurement of Reliability Must-Run Generation by the CAISO.**

A Reliability Must-Run Contract is a contract entered into by the CAISO with a Generator which operates a Generating Unit giving the CAISO the right to call on the Generator to generate Energy and, only as provided in this Section 41.1, or as needed for Black Start or Voltage Support required to meet local reliability needs, or to procure Ancillary Services from Potrero power plant to meet operating criteria associated with the San Francisco local reliability area, to provide Ancillary Services from the Generating Units as and when this is required to ensure that the reliability of the CAISO Controlled Grid is maintained.

**41.2** The CAISO will, subject to any existing power purchase contracts of a Generating Unit, have the right at any time based upon CAISO Controlled Grid technical analyses and studies to designate a Generating Unit as a Reliability Must-Run Unit. A Generating Unit so designated shall then be obligated to provide the CAISO with its proposed rates for Reliability Must-Run Generation for negotiation with the CAISO. Such rates shall be authorized by FERC or the Local Regulatory Authority, whichever authority is applicable.

**41.3** In addition to the Local Capacity Technical Study under 40.3.1, the CAISO may perform additional technical studies, as necessary, to ensure compliance with Reliability Criteria. The CAISO will then determine which Generating Units it requires to continue to be Reliability Must-Run Units, which Generating Units it no longer requires to be Reliability Must-Run Units and which Generating Units it requires to become the subject of a Reliability Must-Run Contract which had not previously been so contracted to the CAISO. None of the Generating Units owned by Local Publicly Owned Electric Utilities are planned to be designated as Reliability Must-Run Units by the CAISO as of the CAISO Operations Date but are expected to be operated in such a way as to maintain the safe and reliable operation of the interconnected transmission system comprising the CAISO **Balancing Authority** Area. However, in the future, Local Publicly Owned Electric Utilities may contract with the CAISO to provide Reliability Must-Run Generation.



**41.4** A **pro forma** of the Reliability Must-Run Contract is attached as Appendix G. From the CAISO Operations Date all Reliability Must-Run Units will be placed under the "As Called" conditions, but the parties may, pursuant only to the terms of the Reliability Must-Run Contract, transfer any such unit to one of the alternative forms of conditions under specific circumstances. The CAISO will review the terms of the applicable forms of agreement applying to each Reliability Must-Run Unit to ensure that the CAISO will procure Reliability Must-Run Generation from the cheapest available sources and to maintain System Reliability. The CAISO shall give notice to terminate Reliability Must-Run Contracts that are no longer necessary or can be replaced by less expensive and/or more competitive sources for maintaining the reliability of the CAISO Controlled Grid.

**41.5 RMR Dispatch.**

**41.5.1 Day-Ahead and HASP RMR Dispatch.**

RMR Dispatches will be determined in accordance with the RMR Contract, the MPM-RRD process addressed in Sections 31 and 33 and through manual RMR Dispatch Notices to meet Applicable Reliability Criteria.

The CAISO will notify Scheduling Coordinators for RMR Units of the amount and time of Energy requirements from specific RMR Units in the Trading Day prior to or at the same time as the Day-Ahead Schedules and AS and RUC Awards are published, to the extent that the CAISO is aware of such requirements, through an RMR Dispatch Notice or flagged RMR Dispatch in the IFM Day-Ahead Schedule. The CAISO may also issue RMR Dispatch Notices after Market Close of the DAM and through Dispatch Instructions flagged as RMR Dispatches in the Real-Time Market. The Energy to be delivered for each Trading Hour pursuant to the RMR Dispatch Notice an RMR Dispatch in the IFM or Real-Time shall be referred to as the RMR Energy. Scheduling Coordinators may submit Bids in the DAM or the HASP for RMR Units operating under Condition 1 of the RMR Contract in accordance with the bidding rules applicable to non-RMR Units. A Bid submitted in the DAM or the HASP for a Condition 1 RMR Unit

shall be deemed to be a notice of intent to substitute a market transaction for the amount of MWh specified in each Bid for each Trading Hour pursuant to Section 5.2 of the RMR Contract. In the event the CAISO issues an RMR Dispatch Notice or an RMR Dispatch in the IFM or Real-Time Market for any Trading Hour, any MWh quantities cleared through Competitive Constraint Run of the MPM-RRD shall be considered as a market transaction in accordance with the RMR Contract. RMR Units operating as Condition 2 RMR Units may not submit Bids until and unless the CAISO issues an RMR Dispatch Notice or issues an RMR Dispatch in the IFM, in which case a Condition 2 RMR Unit shall submit Bids in accordance with the RMR Contract in the next available market for the Trading Hours specified in the RMR Dispatch Notice or Day-Ahead Schedule.

#### **41.5.2 RMR Payments.**

RMR Units operating as Condition 1 RMR Units or Condition 2 RMR Units that receive an RMR Dispatch Notice will be paid in accordance with the RMR Contract.

#### **41.5.3 RMR Units and Ancillary Services Requirements.**

The CAISO may call upon RMR Units in any amounts that the CAISO has determined is necessary at any time after the issuance of Day-Ahead Schedules for the Trading Day if: (i) the CAISO determines that it requires more of an Ancillary Service than it has been able to procure, except that the CAISO shall not be required to accept Ancillary Services Bids that exceed the price caps specified in Section 39 or any other FERC-imposed price caps; and (ii) the CAISO has notified Scheduling Coordinators of the circumstances existing in this Section 41.5.3, and after such notice, the CAISO determines that a bid insufficiency condition in accordance with the RMR Contract exists in the HASP and the CAISO requires more of an Ancillary Service. The CAISO must provide the notice specified in sub paragraph (ii) of this Section 41.5.3 as soon as possible after the CAISO determines that additional Ancillary Services are needed for which Bids are not available. The CAISO may only determine that a Bid insufficiency exists after the Market Close of the HASP, unless an earlier determination is required in order to accommodate the RMR

Unit's operating constraints. For the purposes of this Section 41.5.3, a Bid insufficiency exists in HASP if, and only if: (i) Bids in the HASP for the particular Ancillary Service that can be used to satisfy that particular Ancillary Services requirement that remain after first procuring the megawatts of the Ancillary Service that the CAISO had notified Scheduling Coordinators it would procure in the HASP ("remaining Ancillary Services requirement") represent, in the aggregate, less than two times such remaining Ancillary Services requirement; or (ii) there are less than two unaffiliated bidders to provide such remaining Ancillary Services requirement. If the CAISO determines that a Bid insufficiency condition exists as described in this Section 41.5.3, the CAISO may nonetheless accept available Bids if it determines in its sole discretion that the prices specified in the Bids and the Energy Bid Curves created by the Bids indicate that the Scheduling Coordinators were not attempting to exercise market power.

#### **41.6 Reliability Must-Run Charge.**

The CAISO shall prepare and send to each Responsible Utility in accordance with Section 11.13, a CAISO Invoice as provided in the RMR Contract in respect of those costs incurred under each Reliability Must-Run Contract that are payable to the CAISO by such Responsible Utility or payable by the CAISO to such Responsible Utility pursuant to Section 41.7. The CAISO Invoices as provided in the RMR Contract shall reflect all reductions or credits required or allowed under or arising from the Reliability Must-Run Contract or under this Section 41.6. The CAISO Invoice as provided in the RMR Contract shall separately show the amounts due for services from each RMR Owner. Each Responsible Utility shall pay the amount due under each CAISO Invoice as provided in the RMR Contract by the due date specified in the CAISO Invoice as provided in the RMR Contract, in default of which interest shall become payable at the interest rate provided in the Reliability Must-Run Contract from the due date until the date on which the amount is paid in full. For each Reliability Must-Run Contract, the CAISO shall establish two segregated commercial bank accounts under the Facility Trust Account referred to in Section 11.13.2.1

and Article 9 of the Reliability Must-Run Contract. One commercial bank account, the RMR Owner Facility Trust Account, shall be held in trust by the CAISO for the RMR Owner. The other commercial bank account, the Responsible Utility Facility Trust Account, shall be held in trust by the CAISO for the Responsible Utility. Payments received by the CAISO from the Responsible Utility in connection with the Reliability Must-Run Contract, including payments following termination of the Reliability Must-Run Contract, will be deposited into the RMR Owner Facility Trust Account and payments from the CAISO to the RMR Owner will be withdrawn from such account, in accordance with this Section 41.6, Article 9 of the Reliability Must-Run Contract and Section 11.13. Any payments received by the CAISO from the RMR Owner in connection with the Reliability Must-Run Contract will be deposited into the Responsible Utility Facility Trust Account. Any payments due to the Responsible Utility of funds received from the RMR Owner in connection with the Reliability Must-Run Contract will be withdrawn from the Responsible Utility Facility Trust Account, in accordance with this Section 41.6, Section 11.13, and Article 9 of the Reliability Must-Run Contract. Neither the RMR Owner Facility Trust Account nor the Responsible Utility Facility Trust Account shall have other funds commingled in it at any time. The CAISO shall not modify this Section or Section 11.13 as it applies to procedures for the billing, invoicing and payment of charges under Reliability Must-Run Contracts without the Responsible Utility's consent, provided, however, that no such consent shall be required with respect to any change in the method by which costs incurred by the CAISO under RMR Contracts are allocated to or among Responsible Utilities.

**41.6.1** Except where the Responsible Utility is also the RMR Owner, the Responsible Utility's payment of the CAISO Invoice as provided in the RMR Contract shall be made without offset, recoupment or deduction of any kind whatsoever. Notwithstanding the foregoing, if the CAISO fails to deduct an amount required to be deducted under Section 41.6.2, the Responsible Utility may deduct such amount from payment otherwise due under such CAISO Invoice as provided in the RMR Contract.

**41.6.2** If the Responsible Utility disputes a CAISO Invoice as provided in the RMR Contract, Revised Estimated RMR Invoice, or Revised Adjusted RMR Invoice, or Final Invoice, it shall pay the CAISO Invoice as provided in the RMR Contract but may pay under protest and reserve its right to seek a refund, with interest, from the CAISO. If resolution of the dispute results in an amount paid by the Responsible Utility under protest being due from the CAISO to the Responsible Utility and from the RMR Owner to the CAISO, and such amount was paid to the RMR Owner by the CAISO, then such amount, with interest at the interest rate specified in the applicable Reliability Must-Run Contract from the date of payment until the date on which the amount is repaid in full, shall be refunded by the RMR Owner to the CAISO and from the CAISO to the Responsible Utility, pursuant to Article 9 of the Reliability Must-Run Contract and Section 11.13, by the RMR Owner's inclusion of such refund amount in the appropriate invoice. If the RMR Owner does not include such refund amount (including interest) in the appropriate invoice, then such refund amount shall be deducted by the CAISO from the next succeeding amounts otherwise due from the Responsible Utility to the CAISO and from the next succeeding amounts otherwise due from the CAISO to the RMR Owner with respect to the applicable Reliability Must-Run Contract or, if such RMR Contract has terminated, such amount shall be refunded by the CAISO to the Responsible Utility; provided, however, that if and to the extent that such resolution is based on an error or breach or default of the RMR Owner's obligations to the CAISO under the Reliability Must-Run Contract, then such refund obligation shall extend only to amounts actually collected by the CAISO from the RMR Owner as a result of such resolution. If resolution of the dispute requires the CAISO, but not the RMR Owner, to pay the Responsible Utility, then such award shall be recovered from any applicable insurance proceeds, provided that to the extent sufficient funds are not recoverable through insurance, the amount of the award (whether determined through settlement, or the CAISO ADR Procedures or otherwise) shall be collected by the CAISO pursuant to Section 13.5, and in any event, the award shall be paid by the CAISO to the Responsible Utility pursuant to Section 13.5.

**41.6.3** If the Responsible Utility disputes a CAISO Invoice as provided in the RMR Contract, a Revised Estimated RMR Invoice, a Revised Adjusted RMR Invoice, or a Final Invoice, or part thereof, based in whole or in part on an alleged error by the RMR Owner or breach or default of the RMR Owner's obligations to the CAISO under the Reliability Must-Run Contract, the Responsible Utility shall notify the CAISO of such dispute within twelve (12) months of its receipt of the applicable Revised Adjusted RMR Invoice or Final Invoice from the CAISO, except that the Responsible Utility may also dispute a Revised Estimated RMR Invoice, Revised Adjusted RMR Invoice, or Final Invoice for the reasons set forth above in this Section 41.6.3, within sixty (60) days from the issuance of a final report with respect to an audit of the RMR Owner's books and accounts allowed by a Reliability Must-Run Contract.

**41.6.4** If the Responsible Utility disputes a CAISO Invoice as provided in the RMR Contract, a Revised Estimated RMR Invoice, a Revised Adjusted RMR Invoice, or a Final Invoice, based in whole or in part on an alleged error by the CAISO or breach or default of the CAISO's obligations to the Responsible Utility, the Responsible Utility shall notify the CAISO of such dispute prior to the later to occur of: (i) the date twelve (12) months following the date on which the CAISO submitted such invoice to the Responsible Utility for payment or (ii) the date sixty (60) days following the date on which a final report is issued in connection with an operational compliance review, pursuant to Section 22.1.2.2, of the CAISO's performance of its obligations to Responsible Utilities under this Section 41.6.4 conducted by an independent third party selected by the CAISO Governing Board and covering the period to which such alleged dispute relates. The CAISO or any Responsible Utility shall have the right to request, but not to require, that the CAISO Governing Board arrange for such an operational compliance review at any time.

**41.6.5** Notwithstanding Section 13, any Responsible Utility dispute relating to a CAISO Invoice as provided in the RMR Contract, a Revised Estimated RMR Invoice, a Revised Adjusted RMR Invoice, a Final Invoice, or a RMR Charge, RMR Payment or RMR Refund shall be resolved through the dispute resolution process specified in the relevant RMR Contract. If the Responsible Utility fails to notify the CAISO of any dispute as provided above, it shall be deemed to have validated the invoice and waived its right to dispute such invoice.

**41.6.6** The RMR Owner shall, to the extent set forth herein, be a third party beneficiary of, and have all rights that the CAISO has under the CAISO Tariff, at law, in equity or otherwise, to enforce the Responsible Utility's obligation to pay all sums invoiced to it in the CAISO Invoices as provided in the RMR Contract but not paid by the Responsible Utility, to the extent that, as a result of the Responsible Utility's failure to pay, the CAISO does not pay the RMR Owner on a timely basis amounts due under the Reliability Must-Run Contract. The RMR Owner's rights as a third party beneficiary shall be no greater than the CAISO's rights and shall be subject to the dispute resolution process specified in the relevant RMR Contract. Either the CAISO or the RMR Owner (but not both) will be entitled to enforce any claim arising from an unpaid CAISO Invoice as provided in the RMR Contract, and only one party will be a "disputing party" under the dispute resolution process specified in the relevant RMR Contract with respect to such claim so that the Responsible Utility will not be subject to duplicative claims or recoveries. The RMR Owner shall have the right to control the disposition of claims against the Responsible Utility for non-payments that result in payment defaults by the CAISO under a Reliability Must-Run Contract. To that end, in the event of non-payment by the Responsible Utility of amounts due under the CAISO Invoice as provided in the RMR Contract, the CAISO will not take any action to enforce its rights against the Responsible Utility unless the CAISO is requested to do so by the RMR Owner. The CAISO shall cooperate with the RMR Owner in a timely manner as necessary or appropriate to most fully effectuate

#### **41.7 Responsibility for Reliability Must-Run Charge.**

#### **41.8 Responsibility for Reliability Must-Run Charges Associated with SONGS.**

#### 41.9 Exceptional Dispatch of Condition 2 RMR Units.

Issued by: Charles A. King, PE, Vice President of Market Development and Program Management  
Issued on: December 21, 2007 Effective: March 31, 2008



- (1) The CAISO projects that it will require Energy from the Condition 2 RMR Unit to
- (a) meet forecast Demand and operating reserve requirements or (b) manage
- Congestion and no other Generating Unit that is available is capable of meeting the identified requirement;

**41.9.1** Before dispatching a Condition 2 RMR Unit in accordance with this Section, the CAISO must notify Market Participants of (a) the situation for which the CAISO is contemplating dispatching a Condition 2 RMR Unit in accordance with this Section, and (b) the date and time the CAISO requires the Condition 2 RMR Unit so dispatched to be operating. The CAISO shall provide such notice as far in advance as practical and prior to directing the Condition 2 RMR Unit to Start-Up.

Notwithstanding anything to the contrary in the applicable RMR Contract, all MWh, Start-Ups and service hours provided by a Generating Unit that has currently selected Condition 2 of its RMR Contract pursuant to this Section 41.9.1 through an Exceptional Dispatch outside of the RMR Contract shall not be used to determine future "Annual Service Limits" as defined in the RMR Contract. Payment for Dispatches pursuant to this Section 41.9.1 is governed by Section 11.

**42                    Assurance of Adequate Generation and Transmission to meet Applicable Operating and Planning Reserve.**

**42.1                Generation Planning Reserve Criteria.**

Generation planning reserve criteria shall be met as follows:

**42.1.1.**            On an annual basis, the CAISO shall prepare a forecast of weekly Generation capacity and weekly peak Demand on the CAISO Controlled Grid. This forecast shall cover a period of twelve months and be posted on the CAISO Website and the CAISO may make the forecast available in other forms at the CAISO's option.

**42.1.2**            If the forecast shows that the Applicable Reliability Criteria can be met during peak Demand periods, then the CAISO shall take no further action.

**42.1.3**            If the forecast shows that the Applicable Reliability Criteria cannot be met during peak Demand periods, then the CAISO shall facilitate the development of market mechanisms to bring the CAISO Controlled Grid during peak periods into compliance with the Applicable Reliability Criteria (or such more stringent criteria as the CAISO may impose). The CAISO shall solicit Bids in the form of Ancillary Services, short-term Generation supply contracts of up to one (1) year with Generators, and Load curtailment contracts giving the CAISO the right to reduce the Demands of those parties that win the contracts when there is insufficient Generation capacity to satisfy those Demands in addition to all other Demands. The Load curtailment contracts shall provide that the CAISO's curtailment rights can only be exercised after all available Generation capacity has been fully utilized unless the exercise of such rights would allow the CAISO to satisfy the Applicable Reliability Criteria at lower cost, and the curtailment rights shall not be exercised to stabilize or otherwise influence prices for power in the Energy markets.

**42.1.4**            If Ancillary Services, short-term Generation supply contracts, or Load curtailment contracts are required to meet Applicable Reliability Criteria, the CAISO shall select the Bids that permit the satisfaction of those Applicable Reliability Criteria at the lowest cost.

**42.1.5** Notwithstanding the foregoing, if the CAISO concludes that it may be unable to comply with the Applicable Reliability Criteria, the CAISO shall, acting in accordance with Good Utility Practice, take such steps as it considers to be necessary to ensure compliance, including the negotiation of contracts through processes other than competitive solicitations. These steps can include the negotiation of contracts for Generation or Ancillary Services on a Real-Time basis.

**42.1.6** The CAISO may, in addition to the required annual forecast, publish a forecast of the peak Demands and Generation resources for two or more additional years. This forecast would be for information purposes to allow Market Participants to take appropriate steps to satisfy the Applicable Reliability Criteria, and would not be used by the CAISO to determine whether additional resources are necessary.

**42.1.7** In fulfilling its requirement to ensure that the applicable Generation planning reserve criteria are satisfied, the CAISO shall rely to the maximum extent possible on market forces.

**42.1.8** Except where and to the extent costs incurred by the CAISO for any contract entered into under Section 42.1.5 are recovered from Scheduling Coordinators pursuant to Sections 11.5.8, 11.10 or 42.1.9, all costs incurred by the CAISO in any Trading Hour shall be charged to each Scheduling Coordinator pro rata based upon the same proportion as the Scheduling Coordinator's Measured Demand bears to the total Measured Demand served in that hour.

**42.1.9** Costs incurred by the CAISO pursuant to any contract entered into under this Section for resources to meet any portion of the anticipated difference between forward Schedules and the Real-Time deviations from those Schedules shall be charged to each Scheduling Coordinator pro rata based upon the same proportion as the Scheduling Coordinator's obligation for RUC Availability Payments.

**43                    *Interim Capacity Procurement Mechanism.***

*This Section 43 shall be referred to as the Interim Capacity Procurement Mechanism (ICPM). The ICPM as well as changes made to other Sections to implement the ICPM shall expire at midnight on December 31, 2010, except that the provisions concerning compensation, cost allocation and Settlement shall remain in effect until such time as ICPM resources have been finally compensated for their services rendered under the ICPM prior to the termination of the ICPM, and the CAISO has finally allocated and recovered the costs associated with such ICPM compensation.*

**43.1                *Designation.***

*The CAISO shall have the authority to designate Eligible Capacity to provide ICPM Capacity services under the ICPM as follows:*

**43.1.1            *Scheduling Coordinator Failure to Demonstrate Sufficient Local Capacity Area Resources.***

**43.1.1.1        *Annual Resource Adequacy Plan.***

*Where a Scheduling Coordinator fails to demonstrate in an annual Resource Adequacy Plan, submitted separately for each represented LSE, procurement of each LSE's share of Local Capacity Area Resources, as determined in Section 40.3.2 for each month of the following Resource Adequacy Compliance Year, the CAISO shall have the authority to designate ICPM Capacity; provided, however, that the CAISO shall not designate ICPM Capacity under this Section 43.1.1.1 until after the Scheduling Coordinator has had the opportunity to cure the deficiency set forth in Section 40.7. The CAISO's authority to designate ICPM Capacity under this Section 43.1.1.1 is to ensure that each Local Capacity Area in a TAC Area in which the LSE serves Load has Local Capacity Area Resources in the amounts and locations necessary to comply with the Local Capacity Technical Study criteria provided in Section 40.3.1.1, after assessing the effectiveness of Generating Units under RMR Contracts, if any, and all*

*Resource Adequacy Resources reflected in all submitted annual Resource Adequacy Plans and any supplements thereto, as may be permitted by the CPUC, Local Regulatory Authority, or federal agency and provided to the CAISO in accordance with Section 40.7, whether or not such Generating Units under RMR Contracts and Resource Adequacy Resources are located in the applicable Local Capacity Area.*

**43.1.1.2 Monthly Resource Adequacy Plan.**

*Where a Scheduling Coordinator fails to demonstrate in a monthly Resource Adequacy Plan, submitted separately for each represented LSE, procurement of each LSE's share of Local Capacity Area Resources, as determined in Section 40.3.2 for the reported month, the CAISO shall have the authority to designate ICPM Capacity; provided, however, that the CAISO shall not designate ICPM Capacity under this Section 43.1.1.2 until after the Scheduling Coordinator has had the opportunity to cure the deficiency as set forth in Section 40.7. The CAISO's authority to designate ICPM Capacity under this Section 43.1.1.1 is to ensure that each Local Capacity Area in a TAC Area in which the LSE serves Load has Local Capacity Area Resources in the amounts and locations necessary to comply with the Local Capacity Technical Study criteria provided in Section 40.3.1.1, after assessing the effectiveness of Generating Units under RMR Contracts, if any, and all Resource Adequacy Resources reflected in all submitted annual and monthly Resource Adequacy Plans and any supplements thereto, as may be permitted by the CPUC, Local Regulatory Authority, or federal agency and provided to the CAISO in accordance with Section 40.7, whether or not such Generating Units under RMR Contracts and Resource Adequacy Resources are located in the applicable Local Capacity Area.*

**43.1.2 Collective Deficiency in Local Capacity Area Resources.**

The CAISO shall have the authority to designate ICPM Capacity where the Local Capacity Area Resources specified in the annual Resource Adequacy Plans of all applicable Scheduling Coordinators, after the opportunity to cure under Section 43.1.2.1 has been exhausted, fail to ensure compliance in one or more Local Capacity Areas with the Local Capacity Technical Study criteria provided in Section 40.3.1.1, regardless of whether such resources satisfy, for the deficient Local Capacity Area, the minimum amount of Local Capacity Area Resources identified in the Local Capacity Technical Study, and after assessing the effectiveness of Generating Units under RMR Contracts, if any, and all Resource Adequacy Resources reflected in all submitted annual Resource Adequacy Plans, whether or not such Generating Units under RMR Contracts and Resource Adequacy Resources are located in the applicable Local Capacity Area. The CAISO may, pursuant to this Section 43.1.2, designate ICPM Capacity in an amount and location sufficient to ensure compliance with the Reliability Criteria applied in the Local Capacity Technical Study.

**43.1.2.1 LSE Opportunity to Resolve Collective Deficiency in Local Capacity Area Resources.**

Where the CAISO determines that a need for ICPM Capacity exists under Section 43.1.2, but prior to any designation of ICPM Capacity, the CAISO shall issue a Market Notice, no later than sixty (60) days before the beginning of the Resource Adequacy Compliance Year, identifying the deficient Local Capacity Area and the quantity of capacity that would permit the deficient Local Capacity Area to comply with the Local Capacity Technical Study criteria provided in Section 40.3.1.1 and, where only specific resources are effective to resolve the Reliability Criteria deficiency, the CAISO shall provide the identity of such resources. Any Scheduling Coordinator may submit a revised annual Resource Adequacy Plan within thirty (30) days of the beginning of the Resource Adequacy Compliance Year demonstrating procurement of additional Local Capacity Area Resources consistent with the Market Notice issued under this Section.

*Any Scheduling Coordinator that provides such additional Local Capacity Area Resources consistent with the Market Notice under this Section shall have its share of any ICPM procurement costs under Section 43.7.3 reduced on a proportionate basis. If the full quantity of capacity is not reported to the CAISO under revised annual Resource Adequacy Plans in accordance with this Section, the CAISO may designate ICPM Capacity sufficient to alleviate the deficiency.*

**43.1.3      Scheduling Coordinator Failure to Demonstrate Sufficient Resource Adequacy Resources to Meet Annual and Monthly Demand and Reserve Margin Requirements.**

*The CAISO shall have the authority to designate ICPM Capacity where a Scheduling Coordinator fails to demonstrate in an annual or monthly Resource Adequacy Plan, submitted separately for each represented LSE, procurement of sufficient Resource Adequacy Resources to comply with each LSE's annual and monthly Demand and Reserve Margin requirements under Section 40; provided that the CAISO shall not designate ICPM Capacity under this Section 43.1.3 until after the Scheduling Coordinator has had the opportunity to cure the deficiency as set forth in Section 40.7.*

**43.1.4      ICPM Significant Events.**

*The CAISO may designate ICPM Capacity to provide service on a prospective basis following an ICPM Significant Event, to the extent necessary to maintain compliance with Reliability Criteria and taking into account the expected duration of the ICPM Significant Event.*

**43.2 Terms of ICPM Designation.**

**43.2.1 Term – Scheduling Coordinator Failure to Demonstrate Local Capacity Area Resources in Annual Resource Adequacy Plan.**

ICPM Capacity designated under Section 43.1.1.1 shall have a minimum commitment term of one (1) month and a maximum commitment term of one (1) year, based on the period(s) of overall shortage as reflected in the annual Resource Adequacy Plans that have been submitted. The term of the designation may not extend into a subsequent Resource Adequacy Compliance Year.

**43.2.2 Term – Scheduling Coordinator Failure to Demonstrate Local Capacity Area Resources in Monthly Resource Adequacy Plan.**

ICPM Capacity designated under Section 43.1.1.2 shall have a minimum commitment term of one (1) month. The term of the designation may not extend into a subsequent Resource Adequacy Compliance Year.

**43.2.3 Term – Insufficient Collective Local Capacity Area Resources in Annual Resource Adequacy Plans.**

ICPM Capacity designated under Section 43.1.2 shall have a minimum commitment term of one (1) month and a maximum commitment term of one year, based on the period(s) of overall shortage as reflected in the annual Resource Adequacy Plans that have been submitted. The term of the designation may not extend into a subsequent Resource Adequacy Compliance Year.



**43.2.4 Term – Scheduling Coordinator Failure to Demonstrate Sufficient Resource Adequacy Resources.**

ICPM Capacity designated under Section 43.1.3 shall: (a) have a minimum commitment term of one (1) month and a maximum commitment term equal to the maximum annual procurement period established by the Local Reliability Authority based on the period of the deficiency reflected in the annual Resource Adequacy Plan or (b) have a commitment term of one (1) month if the deficiency is in the monthly Resource Adequacy Plan. The term of the designation may not extend into a subsequent Resource Adequacy Compliance Year.

**43.2.5 Term – ICPM Significant Event.**

ICPM Capacity designated under Section 43.1.4 shall have an initial term of thirty (30) days. If the CAISO determines that the ICPM Significant Event is likely to extend beyond the thirty (30) day period, the CAISO shall extend the designation for another sixty (60) days. During this additional sixty (60) day period, the CAISO will provide Market Participants with an opportunity to provide alternative solutions to meet the CAISO's operational and reliability needs in response to the ICPM Significant Event, rather than rely on the CAISO's designation of capacity under the ICPM. The CAISO shall consider and implement, if acceptable to the CAISO in accordance with Good Utility Practice, such alternative solutions provided by Market Participants in a timely manner. If Market Participants do not submit any alternatives to the designation of ICPM capacity that are fully effective in addressing the deficiencies in Reliability Criteria resulting from ICPM Significant Event, the CAISO shall extend the term of the designation under Section 43.1.4 for the expected duration of the ICPM Significant Event.

*If the solutions offered by Market Participants are only partially effective in addressing the CAISO's operational and reliability needs resulting from the ICPM Significant Event, the CAISO shall extend the designation under Section 43.1.4 for the expected duration of the ICPM Significant Event, but only as to the amount of ICPM Capacity necessary to satisfy the CAISO's operational and reliability needs after taking into account the effective capacity provided by the alternative solution. If there is a reasonable alternative solution that fully resolves the CAISO's operational and reliability needs, the CAISO will not extend the designation under Section 43.1.4. In no event shall the term of the designation under Section 43.1.4 extend beyond midnight on December 31, 2010.*

**43.3 Selection of Eligible Capacity under the ICPM.**

*In accordance with Good Utility Practice, the CAISO shall make designations of Eligible Capacity as ICPM Capacity under Section 43.1 based on the following criteria:*

- (1) the effectiveness of the Eligible Capacity at meeting the designation criteria specified in Section 43.1;*
- (2) the capacity costs associated with the Eligible Capacity;*
- (3) the quantity of a resource's available Eligible Capacity, based on a resource's PMin, relative to the remaining amount of capacity needed; and*
- (4) for designations under Section 41.1.3, the effectiveness of the Eligible Capacity in meeting local and/or zonal constraints or other CAISO system needs.*

*In making this determination, the CAISO will attempt to designate lower cost resources that have specified a capacity price before designating resources that have not specified a capacity price, taking into account factors (1), (3) and (4) of this Section concerning the relative effectiveness of the resource and the resource's PMin. If after applying these criteria, two or more resources that are eligible for designation equally satisfy these criteria, the CAISO shall utilize a random selection method to determine the designation between those resources.*

*While the CAISO does not have to designate the full capability of a resource, the CAISO may designate under the ICPM an amount of ICPM Capacity from a resource that exceeds the amount of capacity identified to ensure compliance with the Reliability Criteria set forth in Section 40.3 due to the PMin or other operational requirements/limits of a resource that has available capacity to provide ICPM service. The CAISO shall not designate the capacity of a resource for an amount of capacity that is less than the resource's PMin.*

#### **43.4 Obligations of a Resource Designated under the ICPM.**

##### **43.4.1 Availability Obligations.**

*Capacity from resources designated under the ICPM shall be subject to all of the availability, dispatch, testing, reporting, verification and any other applicable requirements imposed under Section 40.6 on Resource Adequacy Resources identified in Resource Adequacy Plans. In accordance with those requirements, ICPM Capacity designated under the ICPM shall meet the Day-Ahead availability requirements specified in Section 40.6.1 and the Real-Time availability requirements of Section 40.6.2. Also in accordance with those requirements, Generating Units designated under the ICPM that meet the definition of Short Start Units shall have the obligation to meet the additional availability requirements of Section 40.6.3, and Generating Units designated under the ICPM that meet the definition of Long Start Units will have the rights and obligations specified in Section 40.6.7.1.*

*If the CAISO has not received an Economic Bid or a Self-Schedule for ICPM Capacity, the CAISO shall utilize a Default Energy Bid in accordance with the procedures specified in Section 40.6.8.*

*In addition to Energy Bids, resources designated under the ICPM shall submit Ancillary Service Bids for their ICPM Capacity to the extent that the resource is certified to provide the Ancillary Service.*

**43.4.2      *Obligation To Provide Capacity and Termination.***

*The decision to accept an ICPM designation shall be voluntary for the Scheduling Coordinator for any resource. If the Scheduling Coordinator for a resource accepts an ICPM designation, it shall be obligated to perform for the full quantity and full period of the designation with respect to the amount of ICPM Capacity for which it has accepted an ICPM designation. If a Participating Generator's or Participating Load's Eligible Capacity is designated under the ICPM after the Participating Generator or Participating Load has filed notice to terminate its Participating Generator Agreement or Participating Load Agreement or withdraw the Eligible Capacity from its Participating Generator Agreement or Participating Load Agreement, and the Scheduling Coordinator for the resource agrees to provide service under the ICPM, then the Scheduling Coordinator shall enter into a new Participating Generator Agreement or Participating Load Agreement, as applicable, with the CAISO.*

**43.5      *Reports.***

*The CAISO shall publish the following reports and notices.*

**43.5.1      *ICPM Significant Event Market Notice.***

*The CAISO shall issue a Market Notice within two (2) Business Days of an ICPM designation to address each ICPM Significant Event. The Market Notice shall include a preliminary description of what caused the ICPM Significant Event, the name of the resource(s) procured, the preliminary expected duration of the ICPM Significant Event, the initial designation period, and an indication that a designation report is being prepared in accordance with Section 43.5.2.*

**43.5.2 Designation of a Resource under the ICPM.**

Within thirty (30) days of procuring a resource under the ICPM, the CAISO shall post a designation report to the CAISO Website and provide a Market Notice of the availability of the report. The designation report shall include the following information:

- (1) A description of the reason for the designation (LSE procurement shortfall, Local Capacity Area Resource effectiveness deficiency, or ICPM Significant Event), and an explanation of why it was necessary for the CAISO to utilize the ICPM authority);
- (2) The following information would be reported for all backstop designations:
  - (a) the resource name;
  - (b) the amount of ICPM Capacity designated (MW);
  - (c) an explanation of why that amount of ICPM Capacity was designated;
  - (d) the date ICPM Capacity was designated;
  - (e) the duration of the designation; and
  - (f) the price for the ICPM procurement; and
- (3) If the reason for the designation is an ICPM Significant Event, the CAISO will also include:
  - (a) a discussion of the event or events that have occurred, why the CAISO has procured ICPM Capacity, and how much has been procured;
  - (b) an assessment of the expected duration of the ICPM Significant Event;
  - (c) the duration of the initial designation (thirty (30) days); and
  - (d) a statement as to whether the initial designation has been extended (such that the backstop procurement is now for more than thirty (30) days), and, if it has been extended, the length of the extension.

**43.5.3 Non-Market Commitments and Repeated Market Commitments of Non-Resource Adequacy Capacity.**

Within ten (10) calendar days after the end of each month, the CAISO shall post a report to the CAISO Website that identifies for the prior month:

- (1) Any non-market commitments of non-Resource Adequacy Capacity; and
- (2) All market commitments of non-Resource Adequacy Capacity.

The CAISO will provide a Market Notice of the availability of this report. The report will not include commitments of RMR Generation capacity, Resource Adequacy Capacity or designated ICPM Capacity.

The report shall include the following information:

- (a) the name of the resource;
- (b) the IOU Service Area and Local Capacity Area (if applicable);
- (c) the maximum capacity committed in response to the event (MW);
- (d) how capacity was procured (for example, by RUC or Exceptional Dispatch);
- (e) the reason capacity was committed; and
- (f) information as to whether or not all Resource Adequacy Resources and previously-designated ICPM Capacity were used first and, if not, why they were not.

**43.5.4 Board of Governors Report.**

The CAISO will include in the operations report provided to the CAISO Governing Board at each board meeting a summary of ICPM costs.

**43.6 Payments to Resources Designated Under the ICPM.**

Within thirty (30) days of the effective date of this Section 43, Scheduling Coordinators for Eligible Capacity may submit to the CAISO an intention to be paid a monthly ICPM Capacity Payment under Section 43.6.1 or Section 43.6.2. Scheduling Coordinators for Eligible Capacity will be able to change their selections annually within thirty (30) days of a CAISO Market Notice seeking such payment preferences. To the extent a Scheduling Coordinator for Eligible Capacity does not submit a selection to be compensated in accordance with Section 43.6.1, the Scheduling Coordinator shall be deemed to have selected to be paid on a resource-specific basis pursuant to Section 43.6.2, for purposes of the CAISO's ICPM designation determinations.

**43.6.1 Monthly ICPM Capacity Payment.**

Scheduling Coordinators representing resources receiving payment under this Section 43.6.1 shall receive a monthly ICPM Capacity Payment for each month of ICPM designation equal to the product of the amount of their ICPM Capacity, the relevant ICPM Availability Factor, as determined in accordance with Appendix F, Schedule 6, a monthly shaping factor as set forth in Appendix F, Schedule 6, and a fixed ICPM Capacity price of \$41/kW-year, so that the formula for determining the monthly ICPM Capacity Payment would be as follows:

$$\begin{aligned} & (\text{ICPM Capacity MW}) \times (\text{ICPM Availability Factor}) \times (1/12 \text{ monthly shaping factor}) \times \\ & (\$41/\text{kW-year}). \end{aligned}$$

The foregoing formula shall apply to all ICPM Capacity receiving monthly ICPM Capacity Payments under this Section 43.6.1 except for ICPM Capacity designated to respond to an ICPM Significant Event, in which case the monthly ICPM Capacity Payment shall be based proportionately on the actual number of days the resource was designated as ICPM Capacity during the month to the total number of days in the month.

*For purposes of ICPM designations, except for designations for ICPM Significant Events, the ICPM*

*Availability Factor shall be calculated as the ratio of: (1) the sum of the ICPM Capacity MW for each hour*

*of the month across all hours of the month, where the actual capacity MW available to the CAISO, if less*

*than the ICPM Capacity MW, shall be substituted for ICPM Capacity MW for each hour the resource is*

*not available and is not on an authorized Outage, to (2) the product of ICPM Capacity MW and the total*

*hours in the month.*

*For purposes of ICPM designations for ICPM Significant Events, the ICPM Availability Factor shall be*

*calculated as the ratio of: (1) the sum of the ICPM Capacity MW for each hour across all hours of the*

*month or part of the month for which a unit is designated, whichever is applicable, where the actual*

*capacity MW available to the CAISO, if less than the ICPM Capacity MW, shall be substituted for ICPM*

*Capacity MW for each hour the resource is not available and is not on an authorized Outage, to (2) the*

*product of ICPM Capacity MW and the total hours in the month or part of the month for which a unit is*

*designated, whichever is applicable.*

*For purposes of this Section 43.6.1, an authorized Outage shall be limited to a CAISO Approved*

*Maintenance Outage.*

#### **43.6.2 Resource-Specific ICPM Capacity Payment.**

*If a Scheduling Coordinator for Eligible Capacity believes that the \$41/kW-year ICPM Capacity price*

*under Section 43.6.1 will not compensate a resource for its going forward costs, as calculated in*

*accordance with the formula provided in Section 43.6.2.1, the Scheduling Coordinator may, within thirty*

*(30) days of the effective date of this Section 43 and annually thereafter in accordance with Section 43.6,*

*inform the CAISO of what proposed higher ICPM Capacity price would compensate the resource for its*

*going forward costs and which the Scheduling Coordinator is willing to have the CAISO use for purposes*



of the ICPM designation process ("going forward cost offer price"). A Scheduling Coordinator for a resource is not required to submit a specific going forward cost offer price for such resource within thirty (30) days after the effective date of Section 43 or under the process provided for in Section 43.6; however, a Scheduling Coordinator that has not previously identified the going forward cost offer price for a resource must notify the CAISO of what that price is before any CAISO designation of that resource's capacity as ICPM Capacity can become effective.

If the CAISO designates a resource that has proposed an ICPM Capacity price above \$41/kW-year, and the sales from the resource are under the jurisdiction of the FERC, the Scheduling Coordinator for the resource shall make a limited resource-specific filing before the FERC to determine the just and reasonable capacity price for the going forward costs for the resource to be used in applying the CAISO's FERC jurisdictional monthly ICPM Capacity Payment formula. If the sales from the resource are not under the jurisdiction of the FERC, the Scheduling Coordinator for the resource shall make a non-jurisdictional filing with the FERC to determine the just and reasonable capacity price for the going forward costs for the resource to be used in applying the CAISO's FERC-jurisdictional monthly ICPM Capacity Payment formula.

#### **43.6.2.1      Going Forward Cost.**

In making the cost justification filing with FERC for an ICPM Capacity price above \$41/kW-year, the Scheduling Coordinator for the resource may not propose -- and shall not get paid -- an amount higher than the going forward cost offer price that it had previously proposed to the CAISO as its going forward cost offer price under Section 43.6 or this Section 43.6.2, either prior to or at the time of ICPM designation.

Going forward costs for any resource-specific filing under this Section shall be calculated based on the following formula:

(fixed operation & maintenance costs, plus ad valorem taxes, plus administrative & general costs, plus ten percent (10%) of the foregoing amounts),

provided such costs shall be converted to a fixed \$/kW-year amount.

**43.6.2.2 Resource-Specific Monthly ICPM Capacity Payment.**

Scheduling Coordinators representing resources receiving payment under this Section 43.6.2 shall receive a monthly ICPM Capacity Payment for each month of ICPM designation equal to the product of the amount of their ICPM Capacity, the relevant ICPM Availability Factor as determined in accordance with Appendix F, Schedule 6, a monthly shaping factor as set forth in Appendix F, Schedule 6, and the resource-specific ICPM Capacity price, as determined by FERC in accordance with the following formula:

$$(\text{ICPM Capacity MW}) \times (\text{ICPM Availability Factor}) \times (1/12 \text{ monthly shaping factor}) \times (\text{the resource-specific ICPM Capacity price as determined by FERC})$$

The foregoing formula shall apply to all ICPM Capacity receiving monthly ICPM Capacity Payments under this Section 43.6.2 except for ICPM Capacity designated to respond to an ICPM Significant Event, in which case the monthly ICPM Capacity Payment shall be based proportionately on the actual number of days the resource was designated as ICPM Capacity during the month to the total number of days in the month.

*Prior to the determination by FERC of the resource-specific going forward costs for ICPM Capacity designated and paid pursuant to this Section 43.6.2, the CAISO shall proceed as follows. For the period between the CAISO's designation and the FERC's determination, the CAISO shall utilize the \$41/kW-year rate for purposes of the resource-specific monthly ICPM Capacity Payment for financial Settlement. This amount shall be subject to surcharge based on the outcome of the FERC proceeding so that the resource will receive any higher actual resource-specific payment as determined by FERC for the full period of the ICPM designation. Once approved by FERC, the CAISO shall apply the higher of \$41/kW-year or the resource-specific ICPM Capacity price as determined by the FERC.*

*For purposes of ICPM designations, except for designations for ICPM Significant Events, the ICPM Availability Factor shall be calculated as the ratio of: (1) the sum of the ICPM Capacity MW for each hour of the month across all hours of the month, where the actual capacity MW available to the CAISO, if less than the ICPM Capacity MW, shall be substituted for ICPM Capacity MW for each hour the resource is not available and is not on an authorized Outage, to (2) the product of ICPM Capacity MW and the total hours in the month.*

*For purposes of ICPM designations for ICPM Significant Events, the ICPM Availability Factor shall be calculated as the ratio of: (1) the sum of the ICPM Capacity MW for each hour across all hours of the month or part of the month for which a unit is designated, whichever is applicable, where the actual capacity MW available to the CAISO, if less than the ICPM Capacity MW, shall be substituted for ICPM Capacity MW for each hour the resource is not available and is not on an authorized Outage, to (2) the product of ICPM Capacity MW and the total hours in the month or part of the month for which a unit is designated, whichever is applicable.*

*For purposes of this Section 43.6.2, an authorized Outage shall be limited to a CAISO Approved Maintenance Outage.*

**43.6.3 Market Payments.**

*In addition to the ICPM Capacity Payment identified in Section 43.6, ICPM resources shall be entitled to retain any revenues received as a result of their selection in the CAISO Markets, provided, however, that ICPM resources are required to participate in the RUC process through submission of a zero (\$0) dollar RUC Availability Bid and are not eligible to receive compensation through the RUC process.*

**43.7 Allocation of ICPM Capacity Payment Costs.**

*For each month, the CAISO shall allocate the costs of ICPM Capacity Payments made pursuant to Section 43.6 as follows:*

**43.7.1 LSE Shortage of Local Capacity Area Resources in Annual Resource Adequacy Plan.**

*If the CAISO makes ICPM designations under Section 43.1.1.1 to address a shortage resulting from the failure of a Scheduling Coordinator for an LSE to identify sufficient Local Capacity Area Resources to meet its applicable Local Capacity Area capacity requirements in its annual Resource Adequacy Plan, then the CAISO shall allocate the total costs of the ICPM Capacity Payments for such ICPM designations (for the full term of those ICPM designations) pro rata to each Scheduling Coordinator for an LSE based on the ratio of its Local Capacity Area Resource Deficiency to the sum of the deficiency of Local Capacity Area Resources in the deficient Local Capacity Area(s) within a TAC Area. The Local Capacity Resource Deficiency under this Section shall be computed on a monthly basis and the ICPM Capacity Payments allocated based on deficiencies during the month(s) covered by the ICPM designation(s).*

**43.7.2 LSE Shortage of Local Capacity Area Resources in Monthly Resource Adequacy Plan.**

*If the CAISO makes ICPM designations under Section 43.1.1.2 to address a shortage resulting from the failure of a Scheduling Coordinator for an LSE to identify sufficient Local Capacity Area Resources to meet its applicable Local Capacity Area capacity requirements in its monthly Resource Adequacy Plan, then the CAISO shall allocate the total costs of the ICPM Capacity Payments for such ICPM designations (for the full term of those ICPM designations) pro rata to each Scheduling Coordinator for an LSE based on the ratio of its Local Capacity Area Resource Deficiency to the sum of the deficiency of Local Capacity Area Resources in the deficient Local Capacity Area(s) within a TAC Area.*

**43.7.3 Collective Deficiency in Local Capacity Area Resources.**

*If the CAISO makes designations under Section 43.1.2 the CAISO shall allocate the costs of such designations to all Scheduling Coordinators for LSEs serving Load in the TAC Area(s) in which the deficient Local Capacity Area was located. The allocation will be based on the Scheduling Coordinators' proportionate share of Load in such TAC Area(s) as determined in accordance with Section 40.3.2, excluding Scheduling Coordinators for LSEs that procured additional capacity in accordance with Section 43.1.2.1 on a proportionate basis, to the extent of their additional procurement.*

**43.7.4 LSE Shortage of Demand or Reserve Margin Requirements in Annual or Monthly Resource Adequacy Plan.**

*If the CAISO makes ICPM designations under Section 43.1.3, then the CAISO will allocate the total costs of the ICPM Capacity Payments for such ICPM designations (for the full term of those ICPM designations) pro rata to each LSE based on the proportion of its deficiency to the aggregate deficiency.*

**43.7.5 Allocation of ICPM Significant Event Costs.**

If the CAISO makes any ICPM Significant Event designations under Section 43.1.4, the CAISO shall allocate the costs of such designations to all Scheduling Coordinators for LSEs that serve Load in the TAC Area(s) in which the ICPM Significant Event caused or threatened to cause a failure to meet Reliability Criteria based on the percentage of actual Load of each LSE represented by the Scheduling Coordinator in the TAC Area(s) to total Load in the TAC Area(s) as recorded in the CAISO Settlement system for the actual days during any Settlement month period over which the designation has occurred.

**43.8 Crediting of ICPM Capacity.**

The CAISO shall credit ICPM designations to the resource adequacy obligations of Scheduling Coordinators for Load Serving Entities as follows:

- (a) To the extent the cost of ICPM designation under Section 43.1.1.1 is allocated to a Scheduling Coordinator on behalf of a LSE under Section 43.7.1, the CAISO shall provide the Scheduling Coordinator on behalf of the LSE, for the term of the designation, credit towards (1) the LSE's Local Capacity Area Resource obligation under Section 40.3.2 in an amount equal to the LSE's pro rata share of the ICPM Capacity designated under Section 43.1.1.1 and (2) the LSE's Demand and Reserve Margin requirements determined under Section 40 in an amount equal to the LSE's pro rata share of the ICPM Capacity designated under Section 43.1.1.1.

- (b) To the extent the cost of CAISO designation under Section 43.1.2 is allocated to a Scheduling Coordinator on behalf of a LSE under Section 43.7.3, the CAISO shall provide the Scheduling Coordinator on behalf of the LSE, for the term of the designation, credit towards the LSE's Demand and Reserve Margin requirements determined under Section 40 in an amount equal to the LSE's pro rata share of the ICPM Capacity designated under Section 43.1.2.
- (c) To the extent the cost of ICPM designation under Section 43.1.3 is allocated to a Scheduling Coordinator on behalf of a LSE under Section 43.7.4, and the designation is for greater than one month under Section 43.2.4, the CAISO shall provide the Scheduling Coordinator on behalf of the LSE, for the term of the designation, credit towards the LSE's Demand and Reserve Margin requirements determined under Section 40 in an amount equal to the LSE's pro rata share of the ICPM Capacity designated under Section 43.1.3.
- (d) The credit provided in this Section shall be used for determining the need for the additional designation of ICPM Capacity under Section 43.1 and for allocation of ICPM costs under Section 43.7.
- (e) For each Scheduling Coordinator that is provided credit pursuant to this Section, the CAISO shall provide information, including the quantity of capacity procured in MW, necessary to allow the CPUC, other Local Regulatory Authority, or federal agency with jurisdiction over the LSE on whose behalf the credit was provided to determine whether the LSE should receive credit toward its resource adequacy requirements adopted by such agencies or authorities.

**44 Temporary Suspension of CAISO Tariff.**

**44.1 Authority to Suspend Temporarily the Current Version of the CAISO Tariff and Reversion to Previously Effective ISO Tariff.**

If, during the thirty (30) days following the effective date of this section, the CAISO concludes that a hardware or software failure or other event has compromised the ability of the CAISO to reliably and accurately operate the CAISO Controlled Grid and CAISO Balancing Authority Area and settle the CAISO's markets in accordance with the currently-effective version of the CAISO Tariff and Business Practice Manuals, the CAISO may temporarily suspend the effectiveness of the currently-effective CAISO Tariff, or any part thereof, and operate under the terms and conditions of the ISO Tariff in effect on the day before the effective date of this section. In the event of such a suspension or partial suspension, the CAISO shall perform Settlements in accordance with a single version of the CAISO Tariff for the entire month in which the suspension occurred to the extent practicable. The CAISO shall terminate such temporary suspension immediately upon restoration of the CAISO's ability to reliably and accurately operate the CAISO Controlled Grid and CAISO Balancing Authority Area and settle the CAISO's markets.

**44.2 Notice of Effectiveness and Termination of Temporary Suspension.**

The CAISO shall issue a Market Notice announcing any temporary suspension declared under Section 44.1 and stating the reason for the suspension. The suspension shall take effect at the time and date specified by the CAISO in the Market Notice. Within five (5) Business Days after the issuance of the Market Notice announcing the temporary suspension, the CAISO shall file a report with FERC describing the reasons for the temporary suspension and the estimated time by which the suspension will be terminated. The CAISO shall issue a subsequent Market Notice announcing the time and date on which the termination of the temporary suspension will be effective.



**44.3      *Preconditions to Suspension.***

*The CAISO shall not declare a suspension under Section 44.1 unless it has determined that there are no viable automated or manual work-arounds or other options that would restore the ability of the CAISO to reliably and accurately operate the CAISO Controlled Grid and CAISO Balancing Authority Area and settle the CAISO's markets in accordance with the CAISO Tariff and Business Practice Manuals while the underlying problem is resolved.*

**CAISO Tariff Appendix A**  
**Master Definitions Supplement**

**Appendix A**  
**Master Definition Supplement**

<b>Access Charge</b>	A charge paid by all Utility Distribution Companies, Small Utility Distribution Companies, and <b>MSS</b> Operators with Gross Load in a PTO Service Territory, as set forth in Article II. The Access Charge includes the High Voltage Access Charge, the Transition Charge and the Low Voltage Access Charge. The Access Charge will recover the Participating TO's Transmission Revenue Requirement in accordance with Appendix F, Schedule 3.
<b>ACE</b>	Area Control Error
<b>ACR</b>	All Constraints Run
<b>Adjusted Load Metric</b>	A Load Serving Entity's Load Metric minus the megawatts of Load served using Existing Transmission Contracts, Converted Rights, and Transmission Ownership Rights.
<b>Adjusted RMR Invoice</b>	The monthly invoice issued by the RMR Owner to the CAISO for adjustments made to the Revised Estimated RMR Invoice pursuant to the RMR Contract reflecting actual data for the billing month.
<b>Adjusted Verified CRR Source Quantity</b>	The MW amount eligible for nomination by an LSE or Qualified <b>OB</b> ALSE in a verified tier of the CRR Allocation process, determined by reducing a Verified CRR Source Quantity to account for circumstances where the ownership or contract right to a generating resource is effective only for a portion of a particular season or month for which CRRs are being nominated.

**Administrative Price** The price set by the CAISO in place of a Locational Marginal Price when, by reason of a System Emergency, the CAISO determines that it no longer has the ability to maintain reliable operation of the CAISO Controlled Grid relying solely on the economic Dispatch of Generation. This price will remain in effect until the CAISO considers that the System Emergency has been contained and corrected.

**ADR** Alternative Dispute Resolution

**ADS** Automated Dispatch System

**Adverse System Impact** The negative effects due to technical or operational limits on conductors or equipment being exceeded that may compromise the safety and reliability of the electric system.

**Affected System** An electric system other than the CAISO Controlled Grid that may be affected by the proposed interconnection, including the Participating TOs' electric systems that are not part of the CAISO Controlled Grid.

**Affected System Operator** The entity that operates an Affected System.

**Affiliate** With respect to a corporation, partnership or other entity, each such other corporation, partnership or other entity that directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with, such corporation, partnership or other entity.

**AGC** Automatic Generation Control

**Aggregate Credit Limit** The sum of a Market Participant's or CRR Holder's Unsecured Credit Limit and its Financial Security Amount, as provided for in Section 12.

**Aggregated Participating Load** An aggregation at one or more Participating Load Locations, created by the CAISO in consultation with the relevant Participating Load, for the purposes of enabling participating of the Participating Load in the CAISO Markets like Generation by submitting Supply Bids when offering Curtailable Demand and as non-Participating Load by submitting Demand Bids to consume in the Day-Ahead Market only.

<b>Aggregated Pricing Node (Aggregated PNode)</b>	A Load Aggregation Point, Trading Hub or any group of Pricing Nodes as defined by the CAISO.
<b>Alert, Warning or Emergency (AWE) Notice</b>	A CAISO operations communication issued to Market Participants and the public, under circumstances and in a form specified in CAISO Operating Procedures, when the operating requirements of the CAISO Controlled Grid are marginal because of Demand exceeding forecast, loss of major Generation sources, or loss of transmission capacity that has curtailed imports into the CAISO Balancing Authority Area, or if insufficient Bids for the Supply of Energy and Ancillary Services have been submitted in the HASP for the CAISO Balancing Authority Area.
<b>All Constraints Run (ACR)</b>	The second optimization run of the MPM-RRD process through which all known transmission Constraints are enforced.
<b>Ancillary Service Award or AS Award</b>	The notification by the CAISO indicating that a Bid to supply an Ancillary Service has been selected to provide such service in the DAM, HASP, or RTM.
<b>Ancillary Service Bid Cost or AS Bid Cost</b>	An amount equal to the product of the AS Award from each accepted AS Bid, reduced by any applicable No Pay capacity, and the relevant AS Bid price.
<b>Ancillary Service Bid or AS Bid</b>	The Bid component that indicates the quantity in MW and a price in dollars per MW for a specific Ancillary Service, including Regulation Up, Regulation Down, Spinning Reserve and Non-Spinning Reserve, that a Scheduling Coordinator is offering to supply in a CAISO Market from a Generating Unit or System Resource, and only for Non-Spinning Reserve from the Load of a Participating Load.
<b>Ancillary Service Marginal Price (ASMP)</b>	The marginal cost of providing an Ancillary Service in the relevant resource Location (\$/MW).
<b>Ancillary Service Obligation or AS Obligation</b>	A Scheduling Coordinator's hourly obligation for Regulation Down, Regulation Up, Spinning Reserves, and Non-Spinning Reserves calculated pursuant to Section 11.10.2.1.3, 11.10.2.2.2, 11.10.3.2, and 11.10.4.2, respectively.

<b>Ancillary Service Provider</b>	A Participating Generator, System Resource operator, or Participating Load that is certified to provide an Ancillary Service.
<b>Ancillary Service Region or AS Region</b>	The System Region, the Expanded System Region, or any Sub-Region identified by the CAISO for procurement of Ancillary Services.
<b>Ancillary Service Regional Limit</b>	A maximum or a minimum, or both a maximum and a minimum, amount of (or boundary of) Ancillary Services to be obtained within an AS Region. Limits can be expressed as either megawatt amounts or percentages.
<b>Ancillary Services (AS)</b>	Regulation, Spinning Reserve, Non-Spinning Reserve, Voltage Support and Black Start together with such other interconnected operation services as the CAISO may develop in cooperation with Market Participants to support the transmission of Energy from Generation resources to Loads while maintaining reliable operation of the CAISO Controlled Grid in accordance with WECC standards and Good Utility Practice.
<b>Ancillary Service Schedule or AS Schedule</b>	The notification by the CAISO indicating that a Submission to Self-Provide an Ancillary Service has been selected to provide such service in the DAM, HASP, or RTM.
<b>Annual Peak Demand Forecast</b>	A Demand Forecast of the highest Hourly Demand in a calendar year, in MW.
<b>Applicable Reliability Criteria</b>	The Reliability Standards and reliability criteria established by NERC and WECC and Local Reliability Criteria, as amended from time to time, including any requirements of the NRC.
<b>Approved Load Profile</b>	Local Regulatory Authority approved Load profiles applied to cumulative End-Use Meter Data in order to allocate consumption of Energy to Settlement Periods.
<b>Approved Maintenance Outage</b>	A Maintenance Outage which has been approved by the CAISO through the CAISO Outage Coordination Office.
<b>ARDP</b>	Average Rating Default Probability

<b>Area Control Error (ACE)</b>	The sum of the instantaneous difference between the actual net Interchange and the scheduled net Interchange between the CAISO <b>Balancing Authority</b> Area and all interconnected <b>Balancing Authority</b> Areas, taking into account the effects of the CAISO <b>Balancing Authority</b> Area's frequency bias, correction of meter error, and time error correction obligations.
<b>AS</b>	Ancillary Services
<b>ASMP</b>	Ancillary Service Marginal Price
<b>ATC</b>	Available Transfer Capability
<b>Automated Dispatch System (ADS)</b>	The CAISO systems application to communicate Dispatch Instructions to Scheduling Coordinators.
<b>Automatic Generation Control (AGC)</b>	Generation equipment that automatically responds to signals from the CAISO's EMS control in Real-Time to control the Power output of Generating Units within a prescribed area in response to a change in system frequency, tie-line loading, or the relation of these to each other, so as to maintain the target system frequency and the established Interchange with other <b>Balancing Authority</b> Areas within the predetermined limits.
<b>Available Import Capability</b>	The Maximum Import Capability of an Intertie into the CAISO <b>Balancing Authority</b> Area in MW deliverable to the CAISO <b>Balancing Authority</b> Area based on CAISO study criteria minus the sum in MW of all Existing Contracts and Transmission Ownership Rights over that Intertie held by load serving entities that do not serve Load within the CAISO <b>Balancing Authority</b> Area.
<b>Available Transfer Capability (ATC)</b>	The available capacity of a given transmission path, in MW after allocation of rights associated with Existing Contracts and Transmission Ownership Rights, to that path's Operating Transfer Capability established consistent with CAISO and WECC transmission capacity rating guidelines, further described in Appendix L.

<b>Average Rating Default Probability (ARDP)</b>	The sum of Credit Rating Default Probabilities divided by the total number of Credit Rating Default Probabilities used.
<b>AWE Notice</b>	Alert, Warning or Emergency Notice
<b>Backup CAISO Control Center</b>	The CAISO Control Center located in Alhambra, California.
<b>Backup Meter</b>	A redundant revenue quality meter which is identical to and of equal accuracy to the primary revenue quality meter connected at the same metering point which must be certified in accordance with the CAISO Tariff.
<b>BAID</b>	Business Associate Identification
<b>Balancing Account</b>	An account set up to allow periodic balancing of financial transactions that, in the normal course of business, do not result in a zero balance of cash inflows and outflows.
<b>Balancing Authority</b>	<i>The responsible entity that integrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports Interconnection frequency in real time.</i>
<b>Balancing Authority Area</b>	<i>The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.</i>
<b>Balancing Authority Area Gross Load</b>	For the purpose of calculating and billing Minimum Load Costs, Emission Costs, and Start-Up Costs, <b>Balancing Authority</b> Area Gross Load is all Demand for Energy within the CAISO <b>Balancing Authority</b> Area. <b>Balancing Authority</b> Area Gross Load shall not include Energy consumed by: <ul style="list-style-type: none"><li>(a) Station Power that is netted pursuant to Section 10.1.3; and</li><li>(b) Load that is isolated electrically from the CAISO <b>Balancing Authority</b> Area (i.e., Load that is not synchronized with the CAISO <b>Balancing Authority</b> Area).</li></ul>
<b>Base Case</b>	The base case power flow, short circuit, and stability data bases used for the Interconnection Studies.



**BCR**

**Bid Cost Recovery**

**Bid**

An offer for the Supply or Demand of Energy or Ancillary Services, including Self-Schedules, submitted by Scheduling Coordinators for specific resources, conveyed through several components that apply differently to the different types of service offered to or demanded from any of the CAISO Markets.

**Bid Adder**

A dollar amount added to the Bid of a Frequently Mitigated Unit.

**Bid Cost Recovery (BCR)**

The CAISO settlements process through which Eligible Resources recover their Bid Costs.

**Bid Cost Recovery  
Eligible Resources (BCR  
Eligible Resources)**

Those resources eligible to participate in the Bid Cost Recovery as specified in Section 11.8, which include Generating Units, System Units, System Resources, and Participating Loads.

**Bid Costs**

The costs for resources manifested in the Bid components submitted, which include the Start-Up Cost, Minimum Load Cost, Energy Bid Cost, Pump Shut-Down Cost, Pumping Cost, Ancillary Services Bid Cost and RUC Availability Payment.

**Black Start**

The procedure by which a Generating Unit self-starts without an external source of electricity thereby restoring a source of power to the CAISO Balancing Authority Area following system or local area blackouts.

**Black Start Generator**

A Participating Generator in its capacity as party to an Interim Black Start Agreement with the CAISO for the provision of Black Start services, but shall exclude Participating Generators in their capacity as providers of Black Start services under their Reliability Must-Run Contracts.

**BPM**

**Business Practice Manual**

**BPM PRR**

**Business Practice Manual Proposed Revision Request**

**Bulk Supply Point**

A Utility Distribution Company or Small Utility Distribution Company metering point.

**Business Associate**

Any entity with whom the CAISO interacts related to the CAISO Markets.

**Business Associate  
Identification (BAID)**

Identification characters assigned to each Business Associate by the CAISO.

**Business Day**

Monday through Friday, excluding federal holidays and the day after Thanksgiving Day.

**Business Practice Manual  
Proposed Revision  
Request (BPM PRR)**

A request to make any change to a BPM, including any attachments thereto, as described in Section 22.11.1.

**Business Practice  
Manuals (BPMs)**

A collection of documents made available by the CAISO on the CAISO Website that contain the rules, policies, procedures and guidelines established by the CAISO for operational, planning, accounting and settlement requirements of CAISO Market activities, consistent with the CAISO Tariff.

**CAISO**

The California Independent System Operator Corporation, a state chartered, California non-profit public benefit corporation that operates the transmission facilities of all Participating TOs and dispatches certain Generating Units and Loads.

**CAISO Account**

The CAISO Clearing Account, the CAISO Reserve Account or such other trust accounts as the CAISO deems necessary or convenient for the purpose of efficiently implementing the funds transfer system under the CAISO Tariff.

**CAISO ADR Procedures**

The procedures for resolution of disputes or differences set out in Section 13.

**CAISO Alternative Dispute  
Resolution Committee  
(CAISO ADR Committee)**

The Committee appointed by the CAISO ADR Committee pursuant to Article IV, Section 3 of the CAISO bylaws to perform functions assigned to the CAISO ADR Committee in the ADR process in Section 13.

**CAISO Audit Committee**

A committee of the CAISO Governing Board appointed pursuant to Article IV, Section 5 of the CAISO bylaws to (1) review the CAISO's annual independent audit (2) report to the CAISO Governing Board on such audit, and (3) monitor compliance with the CAISO Code of Conduct.

<b>CAISO Authorized Inspector</b>	A person authorized by the CAISO to certify, test, inspect and audit meters and Metering Facilities in accordance with the procedures established by the CAISO pursuant to Section 10.
<b>CAISO Bank</b>	The bank appointed by the CAISO from time to time for the purposes of operating the Settlement process.
<b>CAISO CEO</b>	The Chief Executive Officer of the CAISO.
<b>CAISO Clearing Account</b>	The account in the name of the CAISO with the CAISO Bank to which payments are required to be transferred for allocation to CAISO Creditors in accordance with their respective entitlements.
<b>CAISO Code of Conduct</b>	For employees, the code of conduct for officers, employees and substantially full-time consultants and contractors of the CAISO as set out in exhibit A to the CAISO bylaws; for governors, the code of conduct for governors of the CAISO as set out in exhibit B to the CAISO bylaws.
<b>CAISO Commitment Period</b>	The portion of a Commitment Period that is not a Self-Commitment Period.
<b>CAISO Control Center</b>	The control center established by the CAISO pursuant to Section 7.1.
<b>CAISO Controlled Grid</b>	The system of transmission lines and associated facilities of the Participating TOs that have been placed under the CAISO's Operational Control.
<b>CAISO Creditor</b>	A Business Associate to which amounts are payable under the terms of the CAISO Tariff and agreements with the CAISO.
<b>CAISO Debtor</b>	A Business Associate that is required to make a payment to the CAISO under the CAISO Tariff and agreements with the CAISO.
<b>CAISO Demand</b>	Power delivered to Load internal to CAISO Balancing Authority Area.
<b>CAISO Documents</b>	The CAISO Tariff, CAISO bylaws, and any agreement entered into between the CAISO and a Scheduling Coordinator, a Participating TO or any other Market Participant pursuant to the CAISO Tariff.
<b>CAISO Emissions Cost Trust Account</b>	The CAISO Account established pursuant to Section 11.18.2.

**CAISO Financing Costs**

*The CAISO's financing costs that are approved by the CAISO Governing Board, including capital expenditures that may be financed over such period as the CAISO Governing Board shall decide. CAISO Financing Costs shall also include the CAISO Start Up and Development Costs. The amortized amount to be included in the Grid Management Charge shall be equal to the amount necessary to amortize fully all CAISO Start Up and Development Costs over a period of five (5) years, or such longer period as the CAISO Governing Board shall decide. These costs include the requirement to collect an amount in excess of the annual debt service obligations as specified in the rate covenants of the official statements for each CAISO bond offering.*

**CAISO Forecast of CAISO Demand**

The forecast of CAISO Demand made by the CAISO for use in the CAISO Markets.

**CAISO Governing Board**

The Board of Governors established to govern the affairs of the CAISO.

<b>CAISO IFM Commitment Period</b>	The portion of a Commitment Period in the IFM that is not a Self-Commitment Period.
<b>CAISO Invoice</b>	The invoices issued by the CAISO to the Responsible Utilities or RMR Owners based on the Revised Estimated RMR Invoice and the Revised Adjusted RMR Invoice.
<b>CAISO Markets</b>	Any of the markets administered by the CAISO under the CAISO Tariff, including, without limitation, the DAM, HASP, RTM, Transmission, and Congestion Revenue Rights.
<b>CAISO Markets Processes</b>	The MPM-RRD, IFM, RUC, STUC, RTUC, and RTD. HASP is an hourly run of the RTUC.
<b>CAISO Memorandum Account</b>	The memorandum account established by each California IOU pursuant to California Public Utilities Commission Order D. 96-08-038 date August 2, 1996 which records all CAISO start up and development costs incurred by that California IOU.
<b>CAISO Metered Entity</b>	<p>(a) any one of the following entities that is directly connected to the CAISO Controlled Grid:</p> <ul style="list-style-type: none"><li>i. a Generator other than a Generator that sells all of its Energy (excluding any Station Power that is netted pursuant to Section 10.1.3) and Ancillary Services to the Utility Distribution Company or Small Utility Distribution Company in whose Service Area it is located;</li><li>ii. an MSS Operator; or</li><li>iii. a Utility Distribution Company or Small Utility Distribution Company; and</li></ul> <p>(b) any one of the following entities:</p> <ul style="list-style-type: none"><li>i. a Participating Generator;</li><li>ii. a Participating TO in relation to its Tie Point Meters with other TOs or Balancing Authority Areas;</li><li>iii. a Participating Load;</li><li>iv. a Participating Intermittent Resource; or</li><li>v. a utility that requests that Unaccounted for Energy for its Service Area be calculated separately, in relation to its meters at points of connection of its Service Area with the systems of other utilities.</li></ul>

**CAISO Operating and  
Capital Reserves Account**

*The account in the name of the CAISO with the CAISO Bank to which revenues collected to fund the CAISO financial operating reserves are transferred, in accordance with Section 11.17. Such financial operating reserves shall be utilized to minimize the impact of any variance between forecast and actual costs throughout the year.*

**CAISO Operating and  
Capital Reserves Costs**

*The CAISO's annual budgeted cost of cash funded capital and project expenditures and the amount (positive or negative) sufficient to maintain the CAISO Operating and Capital Reserves Account at the level specified by (1) the rate covenants of the official statements for each CAISO bond offering, (2) the CAISO Governing Board, or (3) the FERC.*

**CAISO Operating Costs**

*The CAISO's budgeted annual operating costs, which shall include all staffing costs including remuneration of contractors and consultants, salaries, benefits and any incentive programs for employees, costs of operating, replacing and maintaining CAISO systems, lease payments on facilities and equipment necessary for the CAISO to carry out its business, and annual costs of financing the CAISO's working capital and other operating costs.*

**CAISO Operations Date**

March 31, 1998.

**CAISO Other Costs and  
Revenues**

*Other costs and revenues that are recovered through, or are offsets to, the CAISO revenue requirement, including special charges, fines, penalties, other interest expenses, reimbursements, and interest earnings.*

**CAISO Outage  
Coordination Office**

The office established by the CAISO to coordinate Maintenance Outages in accordance with Section 9.3.

**CAISO Payments  
Calendar**

A calendar published by the CAISO showing the dates on which Settlement Statements will be published by the CAISO and the Payment Dates by which invoices issued under the CAISO Tariff must be paid.

**CAISO Planning Standards**

Reliability Criteria that: (1) address specifics not covered in the NERC and WECC planning standards; (2) provide interpretations of the NERC and WECC planning standards specific to the CAISO Controlled Grid; and (3) identify whether specific criteria should be adopted that are more stringent than the NERC and WECC planning standards.

**CAISO Protocols**

The rules, protocols, procedures and standards promulgated by the CAISO (as amended from time to time) to be complied with by the CAISO, Scheduling Coordinators, Participating TOs and all other Market Participants in relation to the operation of the CAISO Controlled Grid and the participation in the markets for Energy and Ancillary Services in accordance with the CAISO Tariff.

**CAISO Register**

The register of all the transmission lines, associated facilities and other necessary components that are at the relevant time being subject to the CAISO's Operational Control.

**CAISO Reserve Account**

The account established for the purpose of holding cash deposits which may be used in or towards clearing the CAISO Clearing Account.

**CAISO Start Up and Development Costs**

*The CAISO's costs outstanding to the credit of the CAISO Memorandum Account plus any additional start up or development costs incurred after the date of Resolution E 3459 (July 17, 1996), plus any additional capital expenditure incurred by the CAISO in 1998.*

**CAISO Surplus Account**

The account established by the CAISO pursuant to Section 11.29.9.6.3.

**CAISO Tariff**

The California Independent System Operator Corporation Operating Agreement and Tariff, dated March 31, 1997, as it may be modified from time to time.

**CAISO Website**

The CAISO internet home page at <http://www.caiso.com> or such other internet address as the CAISO shall publish from time to time.

**CAISO-WECC Billing  
Services Agreement**

The agreement between the CAISO and the WECC entered into by those parties in August 2007, as it may be amended from time to time, regarding the CAISO's performance of certain billing services to facilitate the WECC's collection of NERC/WECC Charges.

**Candidate CRR Holder**

An entity that is registered and qualified by the CAISO to participate in the CRR Allocation, the CRR Auction, or the Secondary Registration System to become a CRR Holder and is a party to a fully executed CRR Entity Agreement, and therefore must comply with the requirements for Candidate CRR Holders under the CAISO Tariff.

**Capacity Benefit Margin  
(CBM)**

The factor defined in Appendix L.

**CBM**

Capacity Benefit Margin

**CCR**

Competitive Constraints Run

**CDWR-SWP**

The California Department of Water Resources, State Water Project.

**CDWR-SWP Participating  
Generating Units**

The Generating Units operated by the California Department of Water Resources, State Water Project, that are subject to a Participating Generator Agreement with the CAISO.

**CEC**

The California Energy Commission or its successor.

**Certificate of Compliance**

A certificate issued by the CAISO which states that the Metering Facilities referred to in the certificate satisfy the certification criteria for Metering Facilities contained in the CAISO Tariff.

**C.F.R.**

Code of Federal Regulations.

**Charge Code**

A numeric identifier used to specify Settlement calculations in the Business Practice Manual.

**Clean Bid**

A valid Bid submitted by a Scheduling Coordinator that requires no modification, a Default Modified Bid, or a Generated Bid deemed to be acceptable for submission to the CAISO Market applications.

**Clustering**

The process whereby a group of Interconnection Requests is studied together, instead of serially, for the purpose of conducting the Interconnection System Impact Study.

**COG**

Constrained Output Generator



<b>Commercial Operation</b>	The status of a Generating Unit at a Generating Facility that has commenced generating electricity for sale, excluding electricity generated during Trial Operation.
<b>Commercial Operation Date</b>	The date on which a Generating Unit at a Generating Facility commences Commercial Operation as agreed to by the applicable Participating TO and the Interconnection Customer pursuant to Appendix E to the Standard Large Generator Interconnection Agreement.
<b>Commitment Interval</b>	The fifteen minute period of time for which the CAISO commits units through the Real-Time Unit Commitment process.
<b>Commitment Period</b>	The consecutive Time Periods within a Trading Day with an "On" Commitment Status.
<b>Commitment Status</b>	The "On" or "Off" state for each unit in each Time Period.
<b>Competitive Constraints Run (CCR)</b>	The first optimization run of the MPM-RRD process through which all pre-designated competitive Constraints are enforced.
<b>Condition 1 RMR Unit</b>	A resource operating pursuant to Condition 1 of its RMR Contract.
<b>Condition 2 RMR Unit</b>	A resource operating pursuant to Condition 2 of its RMR Contract.
<b>Congestion</b>	A characteristic of the transmission system produced by a binding Constraint to the optimum economic dispatch to meet Demand such that the LMP, exclusive of Marginal Cost of Losses, at different Locations of the transmission system is not equal.
<b>Congestion Charge</b>	A charge attributable to the Marginal Cost of Congestion at a given pricing PNode.
<b>Congestion Data Summary</b>	A report issued by the CAISO on the schedule set forth in the Business Practice Manual that sets forth historic Congestion on the CAISO Controlled Grid.
<b>Congestion Management</b>	The alleviation of Congestion in accordance with applicable CAISO procedures, the CAISO Tariff, and Good Utility Practice.

<b>Congestion Revenue Right (CRR)</b>	A CRR Obligation or CRR Option.
<b>Connected Entity</b>	A Participating TO or any party that owns or operates facilities that are electrically interconnected with the CAISO Controlled Grid.
<b>Constrained Output Generator (COG)</b>	A Generating Unit that, due to operational characteristics, can only be dispatched in one of two states: either turned completely Off, or turned On and run at a fixed capacity level.
<b>Constraints</b>	Physical and operational limitations on the transfer of electrical power through transmission facilities.
<b>Contingency</b>	A potential Outage that is <b>unplanned</b> , viewed as possible or eventually probable, which is taken into account when considering approval of other requested Outages or while operating the CAISO <b>Balancing Authority</b> Area.
<b>Contingency Flag</b>	The daily Bid component that indicates that the Spinning Reserves and Non-Spinning Reserves being offered in the CAISO Market are <b>Contingency Only</b> reserves.
<b>Contingency Only</b>	A resource providing Operating Reserve capacity that may <b>be</b> Dispatched by the CAISO only in the event of a Contingency or System Emergency.
<b>Contract Reference Number (CRN)</b>	The Bid component that indicates the specific contract identification number issued by the CAISO to Scheduling Coordinators transactions under Existing Contracts or TORs.
<b>Control Area</b>	<b>Balancing Authority Area</b>
<b>Control Area Gross Load</b>	<b>Balancing Authority Area Gross Load</b>
<b>Control Area Operator</b>	<b>Balancing Authority</b>
<b>Converted Rights</b>	Those transmission service rights as defined in Section 4.3.1.6.
<b>Core Reliability Services – Demand Charge</b>	<b>The</b> component of the Grid Management Charge that provides for the recovery of the CAISO's costs of providing a basic, non-scalable level of reliable operation for the CAISO <b>Balancing Authority</b> Area and meeting regional and national reliability requirements. The formula for determining the Core Reliability Services – Demand Charge is set forth in Appendix F, Schedule 1, Part A.

**Core Reliability Services –  
Energy Export Charge**

*The* component of the Grid Management Charge that provides for the recovery of the CAISO's costs of providing a basic, non-scalable level of reliable operation for the CAISO *Balancing Authority* Area and meeting regional and national reliability requirements. The formula for determining the Core Reliability Services – Energy Exports Charge is set forth in Appendix F, Schedule 1, Part A.

**Core Reliability Services/  
Energy Transmission  
Services – Transmission  
Ownership Rights Charge**

*The component of the Grid Management Charge that provides for the recovery of the CAISO's costs of providing reliability services to Transmission Ownership Rights within the CAISO Balancing Authority Area. The formula for determining the Core Reliability Services/Energy Transmission Services – Transmission Ownership Rights Charge is set forth in Appendix F, Schedule 1, Part A.*

**CPUC**

The California Public Utilities Commission, or its successor.

**CPUC Load Serving Entity**

Any entity serving retail Load in the CAISO *Balancing Authority* Area under the jurisdiction of the CPUC, including an electrical corporation under section 218 of the California Public Utilities Code, an electric service provider under section 218.3 of the *California Public Utilities Code*, and a community choice aggregator under section 331.1 of the *California Public Utilities Code*.

**Credit Margin**

The quantity equal to Expected Congestion Revenue minus Fifth Percentile Congestion Revenue.

**Credit Rating Default  
Probability**

The 5 year median default probability based on a rating agency's credit rating as listed in the Credit Rating Default Probabilities table in Section A-2.2 of the *CAISO Credit Policy & Procedures Guide*.

**Critical Energy  
Infrastructure Information  
(CEII)**

Critical Energy Infrastructure Information shall have the meaning given the term in the regulations of FERC at 18 C.F.R. § 388.12, et seq.

**Critical Protective System**

Facilities and sites with protective relay systems and Remedial Action Schemes that the CAISO determines may have a direct impact on the ability of the CAISO to maintain system security and over which the CAISO exercises Operational Control.

**CRN**

Contract Reference Number

**CRR**

Congestion Revenue Rights

**CRR Allocation**

The process of nominations and awards held monthly and annually through which the CAISO will distribute CRRs to Candidate CRR Holders.

<b>CRR Annual Cycle</b>	Time period covered by all the CRRs released in an annual CRR Allocation and CRR Auction processes.
<b>CRR Auction</b>	The annual and monthly market process that will follow CRR Allocation through which the CAISO makes CRRs available to Candidate CRR Holders that submit offers to purchase CRRs.
<b>CRR Auction Price</b>	The positive or negative price to pay or be paid for a CRR at auction.
<b>CRR Balancing Account</b>	The financial account held by the CAISO for CRRs that is administered in accordance with Section 11.2.4.
<b>CRR Charge</b>	The charge assessed by the CAISO on the holder of a CRR Obligation when Congestion is in the opposite direction of the CRR Source to CRR Sink specification as described in Section 11.2.4.
<b>CRR Eligible Quantity</b>	The Seasonal CRR Eligible Quantity or the Monthly CRR Eligible Quantity.
<b>CRR Entity Agreement</b>	An agreement between the CAISO and a Candidate CRR Holder or CRR Holder that must be fully executed in order for such an entity to participate in the CRR Allocation, CRR Auction, or Secondary Registration System, a pro forma version of which is set forth in Appendix B.11.
<b>CRR Holder</b>	A Candidate CRR Holder that has acquired CRR(s) either through the CRR Allocation, the CRR Auction, or through a transaction registered in the Secondary Registration System.
<b>CRR Load Metric</b>	The Seasonal CRR Load Metric or Monthly CRR Load Metric.
<b>CRR Obligation</b>	A financial instrument that entitles the holder to a CRR Payment when Congestion is in the direction of the CRR Source to CRR Sink specification and imposes on its holder a CRR Charge when Congestion is in the opposite direction of the CRR Source to CRR Sink specification as described in Section 11.2.4.
<b>CRR Option</b>	A financial instrument that entitles its holder to a CRR Payment when Congestion is in the direction of the CRR Source to CRR Sink specification.

<b>CRR Payment</b>	A payment from the CAISO to a CRR Holder as specified in Section 11.2.4.
<b>CRR Sink</b>	A PNode or a Trading Hub specified as the point of withdrawal for a Congestion Revenue Right.
<b>CRR Source</b>	A PNode or a Trading Hub specified as the point of receipt for a Congestion Revenue Right.
<b>CRR Term</b>	Set of hours for which a given CRR is effective, based on the CRR specifications in Section 36.3, which is either the season multiplied by the time of use specifications or the month multiplied by the time of use specifications.
<b>CRR Year Four</b>	<i>Second, third and fourth quarters of calendar year 2011 and first quarter of calendar year 2012.</i>
<b>CRR Year One</b>	<i>Second, third and fourth quarters of calendar year 2008 and first quarter of calendar year 2009.</i>
<b>CRR Year Three</b>	<i>Second, third and fourth quarters of calendar year 2010 and first quarter of calendar year 2011.</i>
<b>CRR Year Two</b>	<i>Second, third and fourth quarters of calendar year 2009 and first quarter of calendar year 2010.</i>
<b>Curtable Demand</b>	Demand from a Participating Load or Aggregated Participating Load that can be curtailed at the direction of the CAISO in the Real-Time Dispatch of the CAISO Controlled Grid. Scheduling Coordinators with Curtable Demand may offer it to the CAISO to meet Non-Spinning Reserve or Imbalance Energy.
<b>Custom Load Aggregation Point (Custom LAP)</b>	An aggregation of Load PNodes created by the CAISO based on a set of custom LDFs submitted by a Scheduling Coordinator, at which such Scheduling Coordinator may submit a single Bid and settle Demand consistent with the CAISO Tariff rules, and for which the Scheduling Coordinator is required to submit to the CAISO Meter Data for the nodal Load represented in such aggregation.
<b>DAM</b>	Day-Ahead Market

<b>Day 0</b>	The Trading Day to which the Settlement Statement or Settlement calculation refers. For example "Day 41" shall mean the 41st day after that Trading Day and similar expressions shall be construed accordingly.
<b>Day-Ahead</b>	The twenty-four hour time period prior to the Trading Day.
<b>Day-Ahead Bid Awarded Energy</b>	The Day-Ahead Scheduled Energy above the Day-Ahead Total Self-Schedule and below the Day-Ahead Schedule. The Day-Ahead Bid Awarded Energy is also indexed against the relevant Day-Ahead Energy Bid and sliced by the Energy Bid price. The Day-Ahead Energy Bid Awarded Energy slices are settled as described in Section 11.2.1.1, and they are included in BCR as described in Section 11.8.2.1.5.
<b>Day-Ahead Inter-SC Trade Period</b>	The period commencing seven (7) days prior to the applicable Trading Day and ending at 12:00 p.m. noon on the day prior to that Trading Day, during which time the CAISO will accept Inter-SC Trades of Energy for the DAM from Scheduling Coordinators.
<b>Day-Ahead Market (DAM)</b>	A series of processes conducted in the Day-Ahead that includes the Market Power Mitigation-Reliability Requirement Determination, the Integrated Forward Market and the Residual Unit Commitment.
<b>Day-Ahead Minimum Load Energy</b>	Day-Ahead Scheduled Energy below the registered Minimum Load, which applies to Generating Units with non-zero Minimum Load. Day-Ahead Minimum Load Energy is settled as provided in Section 11.2.1.1, and it is included in Bid Cost Recovery (BCR) at the relevant IFM Minimum Load Cost as described in Section 11.8.2.1.2.
<b>Day-Ahead Pumping Energy</b>	Negative Day-Ahead Scheduled Energy consumed by Participating Load Pumped-Storage Hydro Units and Pumping Load scheduled in pumping mode in the IFM. When Day-Ahead Pumping Energy is present, there are no other Day-Ahead Scheduled Energy subtypes present. Day-Ahead Pumping Energy is settled as provided in Section 11.2.1.3 and it is included in BCR as described in Sections 11.8.2.1.4 and 11.8.2.2.

<b>Day-Ahead Schedule</b>	A Schedule <b>issued</b> by the CAISO one day prior to the target Trading Day indicating the levels of Supply and Demand for Energy cleared through the IFM and scheduled for each Settlement Period, for each PNode or Aggregated Pricing Node, including Scheduling Points of that Trading Day.
<b>Day-Ahead Scheduled Energy</b>	Hourly Energy that corresponds to the flat portions of the hourly Day-Ahead Schedule. It is composed of Day-Ahead Minimum Load Energy, Day-Ahead Self-Scheduled Energy, and Day-Ahead Bid Awarded Energy. It does not include the Day-Ahead Energy that corresponds to the flat schedule when a resource is committed in the Day-Ahead in pumping mode. Expected Energy committed in Day-Ahead pumping mode is accounted for as Day-Ahead Pumping Energy. Day-Ahead Scheduled Energy is settled as specified in Section 11.2.1.1.
<b>Day-Ahead Self-Scheduled Energy</b>	Day-Ahead Scheduled Energy above the registered Minimum Load and below the lower of the Day-Ahead Total Self-Schedule or the Day-Ahead Schedule. Day-Ahead Self-Scheduled Energy is settled as described in Section 11.2.1.1, and, as indicated in Section 11.8.2.1.5, it is not included in BCR.
<b>Day-Ahead Total Self-Schedule</b>	The sum of all Day-Ahead Self-Schedules (except Pumping Load Self-Schedules) in the relevant Clean Bid.
<b>Decline Monthly Charge – Exports</b>	A charge that applies to the aggregate of a Scheduling Coordinator's HASP Intertie Schedules for Energy exports that are not delivered in a Trading Month, as determined pursuant to Section 11.31.1.
<b>Decline Monthly Charge – Imports</b>	A charge that applies to the aggregate of a Scheduling Coordinator's HASP Intertie Schedules for Energy imports that are not delivered in a Trading Month, as determined pursuant to Section 11.31.1.
<b>Decline Potential Charge – Exports</b>	A potential charge that is calculated for any HASP Intertie Schedule for an Energy export when the HASP Intertie Schedule is not delivered for any reason, which potential charge and its applicability are determined pursuant to Section 11.31.

<b>Decline Potential Charge – Imports</b>	A potential charge that is calculated for any HASP Intertie Schedule for an Energy import when the HASP Intertie Schedule is not delivered for any reason, which potential charge and its applicability are determined pursuant to Section 11.31.
<b>Decline Threshold Percentage – Imports/Exports</b>	The rate at which Scheduling Coordinators may fail to deliver imports or exports in accordance with HASP Intertie Schedules without incurring Decline Monthly Charges – Imports or Decline Monthly Charges – Exports, as measured by the respective percentages of HASP Intertie Schedules for import or export MWh quantities that the Scheduling Coordinator does not deliver during a Trading Month. The Decline Threshold Percentage – Imports/Exports is ten percent (10%).
<b>Decline Threshold Quantity – Imports/Exports</b>	The MWh quantity of HASP Intertie Schedules for imports or exports of Energy that a Scheduling Coordinator may fail to deliver during a Trading Month without incurring Decline Monthly Charges – Imports or Decline Monthly Charges – Exports. The Decline Threshold Quantity – Imports/Exports is 300 MWh.
<b>Default Energy Bid</b>	The Energy Bid Curve used in Local Market Power Mitigation pursuant to Section 39.
<b>Default LAP</b>	The LAP defined for the TAC Area at which all Bids for Demand shall be submitted and settled, except as provided in Sections 27.2.1 and 30.5.3.2.
<b>Default Modified Bid</b>	A Bid that is submitted by a Scheduling Coordinator and is deemed valid and qualifies for modification under the provisions of Section 40.



<b>Deliverability Assessment</b>	An evaluation by the Participating TO, CAISO or a third party consultant for the Interconnection Customer to determine a list of facilities, the cost of those facilities, and the time required to construct these facilities, that would ensure a Generating Facility could provide Energy to the CAISO Controlled Grid at peak Load, under a variety of severely stressed conditions, such that the aggregate of Generation in the local area can be delivered to the aggregate of Load on the CAISO Controlled Grid, consistent with the CAISO's reliability criteria and procedures.
<b>Delivery Network Upgrades</b>	Transmission facilities at or beyond the Point of Interconnection, other than Reliability Network Upgrades, identified in the Interconnection Studies to relieve Constraints on the CAISO Controlled Grid.
<b>Delivery Point</b>	The point where a transaction between Scheduling Coordinators is deemed to take place. It can be either the Generation input point, a Demand Take-Out Point, or a transmission bus at some intermediate Location.
<b>Demand</b>	The instantaneous amount of Power that is delivered to Loads and Scheduling Points by Generation, transmission or distribution facilities. It is the product of voltage and the in-phase component of alternating current measured in units of watts or standard multiples thereof, e.g., 1,000W=1kW, 1,000kW=1MW, etc.
<b>Demand Bid</b>	The Bid component in a Bid submitted in the DAM that indicates the MWh of Energy the Scheduling Coordinator is willing to purchase, the price at which it is willing to purchase the specified Energy and the applicable Trading Hours for the next day.
<b>Demand Forecast</b>	An estimate of Demand over a designated period of time.
<b>Department of Market Monitoring</b>	The department of the CAISO established under Appendix P.1.

**Derate Energy**

Extra-marginal IIE, exclusive of Standard Ramping Energy, Ramping Energy Deviation, Residual Imbalance Energy, MSS Load Following Energy, and Real-Time Minimum Load Energy produced or consumed due to Minimum Load overrates or PMax derates. Derate Energy is produced above the higher of the Day-Ahead Schedule, the registered Minimum Load, or the HASP Intertie Schedule, and below the lower of the overrated Minimum Load and the Dispatch Operating Point, or consumed below the lower of the Day-Ahead Schedule or the HASP Intertie Schedule, and above the higher of the derated PMax or the Dispatch Operating Point. There could be two Derate Energy slices, one for the Minimum Load overrate, and one for the PMax derate. Derate Energy does not overlap with Standard Ramping Energy, Ramping Energy Deviation, Residual Imbalance Energy, Real-Time Minimum Load Energy, Exceptional Dispatch Energy, or Optimal Energy, but it may overlap with Day-Ahead Scheduled Energy, HASP Scheduled Energy, and MSS Load Following Energy. Derate Energy is settled as described in Section 11.5.1, and it is not included in BCR as described in Section 11.8.4.

**Direct Access End-User**

An Eligible Customer located within the Service Area of a Utility Distribution Company who purchases Energy and Ancillary Services through a Scheduling Coordinator.

**Dispatch**

The activity of controlling an integrated electric system to: i) assign specific Generating Units and other sources of supply to effect the supply to meet the relevant area Demand taken as Load rises or falls; ii) control operations and maintenance of high voltage lines, substations, and equipment, including administration of safety procedures; iii) operate interconnections; iv) manage Energy transactions with other interconnected **Balancing Authority** Areas; and v) curtail Demand.

<b>Dispatch Instruction</b>	An instruction by the CAISO for an action with respect to specific equipment, or to a resource for increasing or decreasing its Energy Supply or Demand from the Day-Ahead Schedule, RUC Schedule, and Day-Ahead AS Award to a specified Dispatch Operating Point pertaining to Real-Time operations.
<b>Dispatch Interval</b>	The Time Period, which may range between five (5) and thirty (30) minutes, over which the Real-Time Dispatch measures deviations in Generation and Demand, and selects Ancillary Service and supplemental energy resources to provide balancing Energy in response to such deviations. The Dispatch Interval shall be five (5) minutes. Following a decision by the CAISO Governing Board, the CAISO may, by seven (7) days' notice published on the CAISO Website, increase or decrease the Dispatch Interval within the range of five (5) to thirty (30) minutes.
<b>Dispatch Interval LMP</b>	The price of Imbalance Energy determined at each Dispatch Interval in accordance with Section 11.5.4.
<b>Dispatch Operating Point</b>	The expected operating point of a resource that has received a Dispatch Instruction. The resource is expected to operate at the Dispatch Operating Point after completing the Dispatch Instruction, taking into account any relevant Ramp Rate and time delays. Energy expected to be produced or consumed above or below the Day-Ahead Schedule in response to a Dispatch Instruction constitutes Instructed Imbalance Energy. For resources that have not received a Dispatch Instruction, the Dispatch Operating Point defaults to the corresponding Day-Ahead Schedule.
<b>Distribution System</b>	The distribution assets of an IOU or Local Publicly Owned Electric Utility.
<b>Distribution Upgrades</b>	The additions, modifications, and upgrades to the Participating TO's electric systems that are not part of the CAISO Controlled Grid. Distribution Upgrades do not include Interconnection Facilities.

**DSHBAOA**

***Dynamic Scheduling Host Balancing Authority Operating Agreement***

**Dynamic Resource-Specific System Resource**

A Dynamic System Resource that is a specific generation resource outside the CAISO **Balancing Authority** Area.

**Dynamic Schedule**

A telemetered reading or value which is updated in Real-Time and which is used as an **Interchange Schedule** in the CAISO Energy Management System calculation of Area Control Error and the integrated value of which is treated as an **Interchange Schedule** for Interchange accounting purposes.

**Dynamic Scheduling Host Balancing Authority Operating Agreement (DSHBAOA)**

***An agreement entered into between the CAISO and a Host Balancing Authority governing the terms of dynamic scheduling between the Host Balancing Authority and the CAISO in accordance with the Dynamic Scheduling Protocol set forth in Appendix X, a pro forma version of which agreement is set forth in Appendix B.9***

**Dynamic System Resource**

A System Resource that has satisfied the CAISO's contractual and operational requirements for submitting a Dynamic Schedule, and for which a Dynamic Schedule has been submitted, including a Dynamic Resource-Specific System Resource.

**E&P Agreement**

**Engineering & Procurement Agreement**

**Economic Bid**

A Bid that includes quantity (MWh) and price (\$) for specified Trading Hours.

**Economic Planning Study**

A study performed to provide a preliminary assessment of the potential cost effectiveness of mitigating specifically identified Congestion.

**EEP**

**Electrical Emergency Plan**

**ELC Process**

**Extremely Long-Start Commitment Process**

**Electrical Emergency Plan (EEP)**

A plan to be developed by the CAISO in consultation with Utility Distribution Companies to address situations when Energy reserve margins are forecast to be below established levels.

<b>Electric Facility</b>	An electric resource, including a Generating Unit, System Unit, or a Participating Load.
<b>Eligible Capacity</b>	<i>Capacity of Generating Units, System Units, System Resources, or Participating Load that is not already under a contract to be a Resource Adequacy Resource, is not under an RMR Contract or is not currently designated as ICPM Capacity that effectively resolves a procurement shortfall or reliability concern and thus is eligible to be designated under the ICPM in accordance with Section 43.1.</i>
<b>Eligible Customer</b>	(i) any utility (including Participating TOs, Market Participants and any power marketer), Federal power marketing agency, or any person generating Energy for sale or resale; Energy sold or produced by such entity may be Energy produced in the United States, Canada or Mexico; however, such entity is not eligible for transmission service that would be prohibited by Section 212(h)(2) of the Federal Power Act; and (ii) any retail customer taking unbundled transmission service pursuant to a state retail access program or pursuant to a voluntary offer of unbundled retail transmission service by the Participating TO.
<b>Eligible Intermittent Resource</b>	A Generating Unit that is powered solely by 1) wind, 2) solar energy, or 3) hydroelectric potential derived from small conduit water distribution facilities that do not have storage capability.
<b>ELS Resource</b>	Extremely Long-Start Resource
<b>Emissions Cost Demand</b>	The level of Demand specified in Section 11.18.3.
<b>Emissions Cost Invoice</b>	The invoice submitted to the CAISO in accordance with Section 11.18.6.
<b>Emissions Costs</b>	The mitigation fees, excluding capital costs, assessed against a Generating Unit by a state or federal agency, including air quality districts, for exceeding applicable NOx emission limitations.
<b>Emissions Eligible Generator</b>	A Generator with a Generating Unit that is a BCR Eligible Resource.
<b>EMS</b>	Energy Management System

<b>Encumbrance</b>	A legal restriction or covenant binding on a Participating TO that affects the operation of any transmission lines or associated facilities and which the CAISO needs to take into account in exercising Operational Control over such transmission lines or associated facilities if the Participating TO is not to risk incurring significant liability. Encumbrances shall include Existing Contracts and may include: (1) other legal restrictions or covenants meeting the definition of Encumbrance and arising under other arrangements entered into before the CAISO Operations Date, if any; and (2) legal restrictions or covenants meeting the definition of Encumbrance and arising under a contract or other arrangement entered into after the CAISO Operations Date.
<b>End-Use Customer or End-User</b>	A consumer of electric power who consumes such power to satisfy a Load directly connected to the CAISO Controlled Grid or to a Distribution System and who does not resell the power.
<b>End-Use Meter</b>	A metering device collecting Meter Data with respect to the Energy consumption of an End-User.
<b>End-Use Meter Data</b>	Meter Data that measures the Energy consumption in respect of End-Users gathered, edited and validated by Scheduling Coordinators and submitted to the CAISO in Settlement quality form.
<b>Energy</b>	The electrical energy produced, flowing or supplied by generation, transmission or distribution facilities, being the integral with respect to time of the instantaneous power, measured in units of watt-hours or standard multiples thereof, e.g., 1,000 Wh=1kWh, 1,000 kWh=1MWh, etc.
<b>Energy Bid</b>	A Demand Bid or an Energy Supply Bid.
<b>Energy Bid Cost</b>	An amount equal to the integral of the Energy Bid for resources that have been selected through the IFM or RTM, above PMin.

**Energy Bid Curve**

The Bid component that indicates the prices and related quantity at which a resource offers Energy in a monotonically increasing (decreasing for Participating Load) staircase function, consisting of no more than 10 segments defined by 11 pairs of MW operating points and \$/MWh, which may be different for each Trading Hour of the applicable Bid time period. If the resource has Forbidden Operating Regions, each Forbidden Operating Region must be reflected as a single, separate Energy Bid Curve segment.

**Energy Export**

For purposes of calculating the Grid Management Charge, Energy included in an Interchange Schedule submitted to the CAISO, or dispatched by the CAISO, to serve a load located outside the CAISO's **Balancing Authority** Area, whether the Energy is produced by a Generator in the CAISO **Balancing Authority** Area or a resource located outside the CAISO **Balancing Authority** Area.

**Energy Limit**

The Bid component that indicates the maximum and minimum daily Energy limits for the Generating Unit.

**Energy Management System (EMS)**

A computer control system used by electric utility dispatchers to monitor the real-time performance of the various elements of an electric system and to control Generation and transmission facilities.

**Energy Resource Area (ERA)**

A geographic region certified by the California Public Utilities Commission and the California Energy Commission as an area in which multiple LCRIGs could be located, provided that, for the interim period before those agencies certify such areas and for LCRIFs that are proposed to connect LCRIGs located outside the State of California, an Energy Resource Area shall mean a geographic region that would be connected to the CAISO Controlled Grid by an LCRIF with respect to which the CAISO Governing Board determines that all of the requirements of Section 24.1.3 are satisfied, except for the requirement that the LCRIGs to which the LCRIF would connect are located in an area certified as an ERA by those agencies.

**Energy Supply Bid**

The quantity (MWh) and a price (\$) at or above which a resource has agreed to sell the next increment of Energy for a specified interval of time.

**Energy Transmission Services – Net Energy Charge**

The component of the Grid Management Charge that provides, in conjunction with the Energy Transmission Services – Uninstructed Deviations Charge, for the recovery of the CAISO's costs of providing reliability on a scalable basis, i.e., a function of the intensity of the use of the transmission system within the **Balancing Authority** Area and the occurrence of system outages and disruptions. The formula for determining the Energy Transmission Services – Net Energy Charge is set forth in Appendix F, Schedule 1, Part A.

**Energy Transmission Services – Uninstructed Deviations Charge**

The component of the Grid Management Charge that provides, in conjunction with the Energy Transmission Services – Net Energy Charge, for the recovery of the CAISO's costs of providing reliability on a scalable basis, in particular for the costs associated with balancing transmission flows that result from **Uninstructed Imbalance Energy**. The formula for determining the Energy Transmission Services – Uninstructed Deviations Charge is set forth in Appendix F, Schedule 1, Part A.

**Engineering & Procurement (E&P) Agreement**

An agreement that authorizes the Participating TO to begin engineering and procurement of long lead-time items necessary for the establishment of the interconnection in order to advance the implementation of the Interconnection Request.

**Entitlements**

The right of a Participating TO obtained through contract or other means to use another entity's transmission facilities for the transmission of Energy.

**Environmental Dispatch**

Dispatch designed to meet the requirements of air quality and other environmental legislation and environmental agencies having authority or jurisdiction over the CAISO.



<b>ERA</b>	Energy Resource Area
<b>Estimated Aggregate Liability</b>	The sum of a Market Participant's or <b>CRR Holder's</b> known and reasonably estimated potential liabilities for a specified time period arising from charges described in the <b>CAISO</b> Tariff, as provided for in Section 12.
<b>Estimated RMR Invoice</b>	The monthly invoice issued by the RMR Owner to the <b>CAISO</b> for estimated RMR Payments or RMR Refunds pursuant to the RMR Contract.
<b>E-Tag</b>	An electronic tag associated with an Interchange schedule in accordance with the requirements of <b>WECC</b> .
<b>ETC</b>	Existing Transmission Contract
<b>ETC Self-Schedule</b>	A Self-Schedule submitted by a Scheduling Coordinator pursuant to Existing Rights as reflected in the TRTC Instructions.
<b>Exceptional Dispatch</b>	A Dispatch Instruction issued to avoid a Market Interruption for the purposes specified in Section 34.9. Energy from Exceptional Dispatches shall not set any Dispatch Interval LMP.
<b>Exceptional Dispatch Energy</b>	Extra-marginal IIE, exclusive of Standard <b>Ramping</b> Energy, Ramping Energy Deviation, Residual Imbalance Energy, MSS Load Following Energy, Real-Time Minimum Load Energy, and Derate Energy, produced or consumed due to Exceptional Dispatch Instructions that are binding in the relevant Dispatch Interval. Without MSS Load following, Exceptional Dispatch Energy is produced above the LMP index and below the lower of the Dispatch Operating Point or the Exceptional Dispatch Instruction, or consumed below the LMP index and above the higher of the Dispatch Operating Point or the Exceptional Dispatch Instruction. The LMP index is the capacity in the relevant Energy Bid that corresponds to a Bid price equal to the relevant LMP. Exceptional Dispatch Energy does not overlap with Standard Ramping Energy, Ramping Energy Deviation, Residual Imbalance Energy, Real-Time Minimum Load Energy, Derate Energy, or Optimal Energy, but it may overlap with Day-Ahead Scheduled Energy, HASP Scheduled Energy, and MSS Load Following Energy. Exceptional Dispatch Energy is settled as described in Section 11.5.6, and it is not included in BCR as described in Section 11.8.4.

<b>Exceptional Dispatch Instruction</b>	A Dispatch Instruction issued pursuant to Exceptional Dispatch.
<b>Excess Cost Payments</b>	The payments made by the CAISO for costs associated with Exceptional Dispatches for 1) emergency conditions, to avoid Market Interruption and avoid an imminent System Emergency as provided in Section 11.5.6.1.1; 2) transmission-related modeling limitations as provided in Section 11.5.6.2.3; 3) Condition 2 RMR Units as provided in Section 11.5.6.3.2; and 4) emergency Energy as provided in Section 11.5.8.1.1.
<b>Existing Contract Import Capability</b>	The quantity of Available Import Capability reserved for Existing Contracts and Transmission Ownership Rights held by Load Serving Entities that serve Load within the CAISO <b>Balancing Authority</b> Area under Step 3 of Section 40.4.6.2.
<b>Existing High Voltage Facility</b>	A High Voltage Transmission Facility of a Participating TO that was placed in service on or before the TAC Transition Date described in Section 4.2 of Schedule 3 of Appendix F.
<b>Existing QF Contract</b>	An agreement for the sale of capacity, Energy, and/or Ancillary Services by a Participating Generator to an electric utility from a Qualifying Facility that became effective on or prior to December 20, 1995 or, in the case of a Participating Generator employing landfill gas technology, on or prior to December 31, 1996.
<b>Existing Rights</b>	The transmission service rights and obligations of non-Participating TOs under Existing Contracts, including all terms, conditions, and rates of the Existing Contracts, as they may change from time to time under the terms of the Existing Contracts.
<b>Existing Transmission Contracts (ETC) or Existing Contracts</b>	The contracts which grant transmission service rights in existence on the CAISO Operations Date (including any contracts entered into pursuant to such contracts) as may be amended in accordance with their terms or by agreement between the parties thereto from time to time.
<b>Existing Zone</b>	A region formerly referred to as NP15, SP15, or ZP26 prior to implementation of the CAISO LMP market design.

<b>Existing Zone Generation Trading Hub</b>	Trading Hubs specifically developed to represent the average price paid to generation resources within Existing Zones.
<b>Expanded System Region</b>	The System Region and Intertie Scheduling Points with interconnected Balancing Authority Areas.
<b>Expected Congestion Revenue</b>	The mean value based on the probability distribution of the historic Congestion revenue of a CRR.
<b>Expected Energy</b>	The total Energy that is expected to be generated or consumed by a resource, based on the Dispatch of that resource, as calculated by the Real-Time Market (RTM), and as finally modified by any applicable Dispatch Operating Point corrections. Expected Energy includes the Energy scheduled in the IFM, and it is calculated the applicable Trading Day. Expected Energy is calculated for Generating Units, System Resources, Resource-Specific System Resources, and Participating Loads. The calculation is based on the Day-Ahead Schedule and the Dispatch Operating Point trajectory for the three-hour period around the target Trading Hour (including the previous and following hours), the applicable Real-Time LMP for each Dispatch Interval of the target Trading Hour, and any Exceptional Dispatch Instructions. Expected Energy is used as the basis for Settlements.
<b>Export Bid</b>	A Demand Bid submitted to a CAISO Market at a Scheduling Point.
<b>Exporting Participating Intermittent Resource</b>	A Participating Intermittent Resource with a PIR Export Percentage greater than zero (0).
<b>Extremely Long-Start Commitment Process (ELC Process)</b>	The CAISO process for Unit Commitment for Extremely Long-Start Resources, as set forth in Section 31.7.
<b>Extremely Long-Start Resource (ELS Resource)</b>	A Generating Unit that has a Start-Up Time greater than 18 hours or a System Resource that is either: 1) a non-Resource-Specific System Resource with contractual limitations that require the Energy be transacted (i.e., committed) prior to the publishing time of the Day-Ahead Market results (1300 hours on the day before the Trading Day) or 2) a Resource-Specific System Resource that has a Start-Up Time greater than 18 hours.

<b>Facility Study</b>	An engineering study conducted by a Participating TO to determine required modifications to the Participating TO's transmission system, including the cost and scheduled completion date for such modifications that will be required to provide needed services.
<b>Facility Study Agreement</b>	An agreement between a Participating TO and either a Market Participant, Project Sponsor, or identified principal beneficiaries pursuant to which the Market Participants, Project Sponsor, and identified principal beneficiaries agree to reimburse the Participating TO for the cost of a Facility Study.
<b>Facility Trust Account</b>	For each RMR Contract, the account established and operated by the CAISO to and from which all payments under Section 11.13 shall be made. Each Facility Trust Account will have two segregated commercial bank accounts, an RMR Owner Facility Trust Account and a Responsible Utility Facility Trust Account.
<b>Fast Start Unit</b>	A Generating Unit that has a Start-Up Time less than two hours and can be committed in the RTUC and STUC.
<b>Feasibility Index</b>	A test used to evaluate whether a supplier or set of suppliers is pivotal in relieving congestion on a transmission path for the purposes of determining if a path is deemed to be competitive.
<b>Fed-Wire</b>	The Federal Reserve Transfer System for electronic funds transfer.
<b>FERC</b>	The Federal Energy Regulatory Commission or its successor.
<b>FERC Annual Charge Recovery Rate</b>	The rate to be paid by Scheduling Coordinators for recovery of FERC Annual Charges assessed against the CAISO for transactions on the CAISO Controlled Grid.
<b>FERC Annual Charges</b>	Those charges assessed against a public utility by the FERC pursuant to 18 C.F.R. § 382.201 and any related statutes or regulations, as they may be amended from time to time.
<b>FERC Annual Charge Trust Account</b>	An account to be established by the CAISO for the purpose of maintaining funds collected from Scheduling Coordinators for FERC Annual Charges and disbursing such funds to the FERC.

<b>Fifth Percentile Congestion Revenue</b>	The fifth percentile value based on the probability distribution of the historic Congestion revenue of a CRR.
<b>Final Approval</b>	A statement of consent by the CAISO Control Center to initiate a scheduled Outage.
<b>Final Invoice</b>	The invoice due from a RMR Owner to the CAISO at termination of the RMR Contract.
<b>Final NERC/WECC Charge Invoice</b>	A final invoice issued by the CAISO that reflects an allocation of NERC/WECC Charges to a Scheduling Coordinator based on the Final NERC/WECC Charge Rate for the NERC/WECC Charge Assessment Year.
<b>Final NERC/WECC Charge Rate</b>	The rate to be paid by Scheduling Coordinators for NERC/WECC Charges based on the WECC invoice to the CAISO for NERC/WECC Charges for a given year and on the NERC/WECC Metered Demand for the NERC/WECC Charge Assessment Year.
<b>Final Settlement Statement</b>	The restatement or recalculation of the Preliminary Settlement Statement by the CAISO following the issue of that Preliminary Settlement Statement.
<b>Financial Security</b>	Any of the types of financial instruments listed in Section 12 that are posted by a Market Participant, CRR Holder or Candidate CRR Holder.
<b>Financial Security Amount</b>	The level of Financial Security posted in accordance with Section 12 by a Market Participant, Candidate CRR Holder or CRR Holder.
<b>Firm Liquidated Damages Contract</b>	A contract utilizing or consistent with Service Schedule C of the Western Systems Power Pool Agreement or the Firm Liquidated Damages product of the Edison Electric Institute pro forma agreement, or any other similar firm Energy contract that does not require the seller to source the Energy from a particular unit, and specifies a delivery point internal to the CAISO <b>Balancing Authority</b> Area.

**Fixed CRRs**

Congestion Revenue Rights that are used in the running of an SFT to represent known encumbrances on the transmission system and which may include some or all of the following: previously allocated or awarded Monthly CRRs, Seasonal CRRs, Long Term CRRs, and Merchant Transmission CRRs, Existing Transmission Contracts, and Converted Rights.

**FNM**

**Full Network Model**

**Forbidden Operating Region**

A pair of lower and higher operating levels between which a resource cannot operate stably. The Forbidden Operating Regions lie between a resource's Minimum Operating Limit and Maximum Operating Limit and cannot overlap.

**Forced Outage**

An Outage for which sufficient notice cannot be given to allow the Outage to be factored into the Day-Ahead Market, HASP or RTM bidding processes.

**Forecast Fee**

The charge imposed on a Participating Intermittent Resource pursuant to the terms of Appendix F, Schedule 4.

**Forward Scheduling Charge**

The component of the Grid Management Charge that provides for the recovery of the CAISO's costs, including, but not limited to the costs of providing the ability to Scheduling Coordinators to submit a Bid for Energy and Ancillary Services and the cost of processing accepted Ancillary Services Bids. The formula for determining the Forward Scheduling Charge is set forth in Appendix F, Schedule 1, Part A.

<b>FPA</b>	Parts II and III of the Federal Power Act, 16 U.S.C. § 824 et seq., as they may be amended from time to time.
<b>Frequently Mitigated Unit</b>	A Generating Unit that is eligible for a Bid Adder pursuant to Section 39.8.
<b>Full Network Model (FNM)</b>	A computer-based model that includes all CAISO <b>Balancing Authority</b> Area transmission network (Load and Generating Unit) busses, transmission Constraints, and Intertie busses between the CAISO <b>Balancing Authority</b> Area and interconnected <b>Balancing Authority</b> Areas. The FNM models the transmission facilities internal to the CAISO <b>Balancing Authority</b> Area as elements of a looped network and models the CAISO <b>Balancing Authority</b> Area Interties with interconnected <b>Balancing Authority</b> Areas in a radial fashion.
<b>GADS</b>	Generating Availability Data System
<b>GDF</b>	Generation Distribution Factor
<b>Generated Bid</b>	A post-market Clean Bid generated by the CAISO in accordance with the provisions of Section 40 or other applicable provisions of the CAISO Tariff when a Bid is not submitted by the Scheduling Coordinator and is required for a resource adequacy requirement, an Ancillary Services Award, a RUC Award or a Day-Ahead Schedule.
<b>Generation</b>	Energy delivered from a Generating Unit.
<b>Generation Distribution Factor (GDF)</b>	The Bid template component that indicates the proportions of how the Bid is distributed for the resources participating in Physical Scheduling Plants or System Units.
<b>Generating Facility</b>	An Interconnection Customer's Generating Unit(s) used for the production of electricity identified in the Interconnection Request, but shall not include the Interconnection Customer's Interconnection Facilities.

**Generating Facility  
Capacity**

The **net** capacity of the Generating Facility and the aggregate net capacity of the Generating Facility where it includes multiple energy production devices.

**Generating Unit**

An individual electric generator and its associated plant and apparatus whose electrical output is capable of being separately identified and metered or a Physical Scheduling Plant that, in either case, is:

- (a) located within the CAISO **Balancing Authority** Area;
- (b) connected to the CAISO Controlled Grid, either directly or via interconnected transmission, or distribution facilities; and
- (c) that is capable of producing and delivering net Energy (Energy in excess of a generating station's internal power requirements).

**Generator**

The seller of Energy or Ancillary Services produced by a Generating Unit.

**GMC**

**Grid Management Charge**

**Good Utility Practice**

Any of the practices, methods, and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods, and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety, and expedition. Good Utility Practice is not intended to be limited to any one of a number of the optimum practices, methods, or acts to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region, including those practices required by Federal Power Act section 215(a)(4).



**Grid Management Charge  
(GMC)**

The CAISO monthly charge on all Scheduling Coordinators that provides for the recovery of the CAISO's costs listed in Section 11.22.2 through the service charges described in Section 11.22.2.5 calculated in accordance with the formula rate set forth in Appendix F, Schedule 1, Part A. The charges that comprise the Grid Management Charge consist of: 1) the Core Reliability Services – Demand Charge, 2) the Core Reliability Services – Energy Exports Charge, 3) the Energy Transmission Services – Net Energy Charge, 4) the Energy Transmission Services – Uninstructed Deviations Charge, 5) the **Core Reliability Services/Energy Transmission Services – Transmission Ownership Rights Charge**, 6) the Forward Scheduling Charge, 7) the Market Usage Charge, and 8) the Settlements, Metering, and Client Relations Charge.

**Gross Load**

For the purposes of calculating the transmission Access Charge, Gross Load is all Energy (adjusted for distribution losses) delivered transmission facilities or directly connected to the Distribution System of a Utility Distribution Company or **MSS** Operator located in a PTO Service Territory. Gross Load shall exclude (1) Load with respect to which the Wheeling Access Charge is payable, (2) Load that is exempt from the Access Charge pursuant to Section 4.1, Appendix I, and the portion of the Load of an individual retail customer of a Utility Distribution Company, Small Utility Distribution Company or **MSS** Operator that is served by a Generating Unit that: (a) is located on the customer's site or provides service to the customers site through arrangements as authorized by Section 218 of the California Public Utilities Code; (b) is a qualifying small power production facility or qualifying cogeneration facility, as those terms are defined in the FERC's regulations implementing Section 201 of the Public Utility Regulatory Policies Act of 1978; and (c) secures Standby Service from a Participating TO under terms approved by a Local Regulatory Authority or FERC, as applicable, or can be curtailed concurrently with an **O**utage of the Generating Unit serving the Load. Gross Load forecasts consistent with filed Transmission Revenue Requirements will be provided by each Participating TO to the CAISO.

<b>HASP</b>	Hour-Ahead Scheduling Process
<b>HASP Advisory Schedule</b>	The non-binding output of the HASP as it pertains to the Real-Time Market.
<b>HASP and RTM Congestion Credit</b>	A credit provided to Scheduling Coordinators to offset any HASP and RTM Congestions Charges that would otherwise be applied to the valid and balanced portions of any ETC or TOR Self-Schedules in the HASP and the Real-Time Market as provided in Section 11.5.7.
<b>HASP AS Award</b>	Awards for Imports of Ancillary Services established through the HASP.
<b>HASP Bid</b>	A Bid received in HASP that can be used in the MPM-RRD conducted in HASP, the RTUC, STUC, or the RTD.
<b>HASP Inter-SC Trade Period</b>	The period commencing at midnight (0000 hours) on the applicable Trading Day and ending at forty-five (45) minutes prior to the start of the applicable Operating Hour, during which time the CAISO will accept from Scheduling Coordinators Inter-SC Trades of Energy for the HASP, Inter-SC Trades of Ancillary Services, and Inter-SC Trades of IFM Load Uplift Obligations.
<b>HASP Intertie LMP</b>	The average of four (4) 15-minute interval LMPs over a Trading Hour.
<b>HASP Intertie Schedule</b>	The binding output of the HASP including accepted Bids for imported Energy or Ancillary Services and associated LMPs and ASMPs.

**HASP Scheduled Energy**

IIE from a Non-Dynamic System Resource, exclusive of Real-Time Pumping Energy and Real-Time Minimum Load Energy, produced or consumed due to hourly scheduling in the HASP. HASP Scheduled Energy is produced above the higher of the Day-Ahead Schedule or the Minimum Load, and below the HASP Intertie Schedule, or consumed below the Day-Ahead Schedule and above the HASP Intertie Schedule. In the latter case, HASP Scheduled Energy overlaps with Day-Ahead Scheduled Energy; HASP Scheduled Energy does not overlap with Real-Time Pumping Energy or Real-Time Minimum Load Energy, but it may overlap with other IIE subtypes. HASP Scheduled Energy is indexed against the relevant Energy Bid and sliced by service type, depending on the Ancillary Services capacity allocation on the Energy Bid, and by Energy Bid price. HASP Scheduled Energy slices are settled as described in Section 11.4, and they are included in BCR as reflected in Section 11.8.4; provided that if any HASP Scheduled Energy slice below or above the Energy Bid has no associated Energy Bid price, it is not included in BCR as described in Section 11.8.4. For Non-Dynamic System Resources that are designated as MSS Load following resources, HASP Scheduled Energy is considered as MSS Load Following Energy.

**Henry Hub**

*The pricing point for natural gas futures contracts traded on the New York Mercantile Exchange (NYMEX).*

**High Priority Economic Planning Study**

An Economic Planning Study performed by the CAISO for inclusion in the Transmission Plan and for which the CAISO assumes cost responsibility.

**High Voltage Access Charge (HVAC)**

The Access Charge applicable under Section 26.1 to recover the High Voltage Transmission Revenue Requirements of each Participating TO in a Transmission Access Charge Area.

**High Voltage  
Transmission Facility**

A transmission facility that is owned by a Participating TO or to which a Participating TO has an Entitlement that is represented by a Converted Right, that is under the CAISO Operational Control, and that operates at a voltage at or above 200 kilovolts, and supporting facilities, and the costs of which are not directly assigned to one or more specific customers, provided that the High Voltage Transmission Facilities of a Participating TO shall include any Location Constrained Resource Interconnection Facility of that Participating TO that has been turned over to the CAISO's Operational Control.

**High Voltage  
Transmission Revenue  
Requirement (HVTRR)**

The portion of a Participating TO's Transmission Revenue Requirement associated with and allocable to the Participating TO's High Voltage Transmission Facilities and Converted Rights associated with High Voltage Transmission Facilities that are under the CAISO Operational Control.

**High Voltage Utility  
Specific Rate**

A Participating TO's High Voltage Transmission Revenue Requirement divided by such Participating TO's forecasted Gross Load.

**High Voltage Wheeling  
Access Charge**

The Wheeling Access Charge associated with the recovery of a Participating TO's High Voltage Transmission Revenue Requirements in accordance with Section 26.1.

**Historical Expected Value**

*The expected value of a CRR, as calculated by the CAISO, based on monthly historical market operation data for the applicable month. Such values will be established based on at least one (1) year and up to three (3) years of historical market operations data.*

**Host Balancing Authority**

*The Balancing Authority for a Host Balancing Authority Area.*

**Host Balancing Authority  
Area**

The *Balancing Authority* Area in which a System Resource subject to this CAISO Tariff is connected to the electric grid. The Host *Balancing Authority* Area may, or may not, be directly interconnected with the CAISO *Balancing Authority* Area.

**Hour-Ahead Scheduling  
Process (HASP)**

The process conducted by the CAISO beginning at seventy-five minutes prior to the Trading Hour through which the CAISO conducts the following activities: 1) accepts Bids for Supply of Energy, including imports, exports and Ancillary Services imports to be supplied during the next Trading Hour that apply to the MPM-RRD, RTUC, STUC, and RTD; 2) conducts the MPM-RRD on the Bids that apply to the RTUC, STUC, and RTD; and 3) conducts the RTUC for the hourly pre-dispatch of Energy and Ancillary Services.

**Hourly Demand**

The average of the instantaneous Demand integrated over a single clock hour, in MWh.

**Hourly Real-Time LAP  
Price**

The load deviation weighted average of the hourly average of the Dispatch Interval LMPs for the LAP in the relevant Trading Hour used for the settlement of UIE.

**HVAC**

High Voltage Access Charge

**HVTRR**

High Voltage Transmission Revenue Requirement

**Hydro Spill Generation**

Hydro-electric Generation in existence prior to the CAISO Operations Date that: i) has no storage capacity and that, if backed down, would spill; ii) has exceeded its storage capacity and is spilling even though the generators are at full output; iii) has inadequate storage capacity to prevent loss of hydro-electric Energy either immediately or during the forecast period, if hydro-electric Generation is reduced; or iv) has increased regulated water output to avoid an impending spill.

**IBAA**

Integrated Balancing Authority Area

**IBAAOA**

Interconnected Balancing Authority Area Operating Agreement

**ICAOA**

Interconnected Control Area Operating Agreement

**ICPM**

Interim Capacity Procurement Mechanism

**ICPM Availability Factor**

A factor as set forth in Appendix F, Schedule 6 that is used in calculating a resource's monthly ICPM Capacity Payment.

**ICPM Capacity**

*Capacity of Generating Units, System Units, System Resources, or Participating Load that is designated under the ICPM in accordance with Section 43 during the term of the designation.*

**ICPM Capacity Payment**

*The payment provided pursuant to Section 43.6.*

**ICPM Significant Event**

*A substantial event, or a combination of events, that is determined by the CAISO to either result in a material difference from what was assumed in the resource adequacy program for purposes of determining the Resource Adequacy Capacity requirements, or produce a material change in system conditions or in CAISO Controlled Grid operations, that causes, or threatens to cause, a failure to meet Reliability Criteria absent the recurring use of a non-Resource Adequacy Resource(s) on a prospective basis.*

**Identification Code**

An identification number assigned to each Scheduling Coordinator by the CAISO.

**IFM**

**Integrated Forward Market**

**IFM Bid Cost**

The sum of a BCR Eligible Resource's IFM Start-Up Cost, IFM Minimum Load Cost , IFM Pump Shut-Down Cost, IFM Pumping Cost, IFM Energy Bid Cost, and IFM AS Bid Cost.

**IFM Bid Cost Shortfall**

For each Settlement Interval, for any BCR Eligible Resource, the positive amount resulting from the difference between the IFM Bid Cost and the IFM Market Revenue.

**IFM Bid Cost Surplus**

For each Settlement Interval, for any BCR Eligible Resource, the negative amount resulting from the difference between the IFM Bid Cost and the IFM Market Revenue.

**IFM Bid Cost Uplift**

The system-wide net of the IFM Bid Cost Shortfalls and IFM Bid Cost Surpluses for a Settlement Interval of all BCR Eligible Resources with Unrecovered Bid Cost Uplift Payments. This amount will be netted according to Section 11.8.6.2 to calculate the Net IFM Bid Cost Uplift before allocation to Scheduling Coordinators.

**IFM Commitment Period**

A Commitment Period determined by the IFM.

**IFM Congestion Charge**

The Congestion Charge calculated by the CAISO for each Settlement Period of the IFM as the IFM MCC for Demand minus the IFM MCC for Supply.

**IFM Congestion Credit**

A credit provided to Scheduling Coordinators to offset any IFM Congestions Charges that would otherwise be applied to the valid and balanced portions of any ETC, TOR or Converted Rights Self-Schedule in the IFM as provided in Section 11.2.1.5.

**IFM Congestion Fund**

The funds the CAISO shall have available in each Settlement Period from which the CAISO will pay CRR Holders for the CRR(s) they hold in any Settlement Period, which shall determined as provided in Section 11.2.4.1.2.

**IFM Load Uplift Obligation**

The obligation of a Scheduling Coordinator to pay its share of unrecovered IFM Bid Costs paid to resources through Bid Cost Recovery.

**IFM Marginal Cost of  
Losses Credit for Eligible  
TOR Self-Schedules**

A credit provided to Scheduling Coordinators pursuant to Section 17.3.3 to offset any IFM Marginal Cost of Losses that would otherwise be applied to the valid and balanced portions of any TOR Self-Schedule in the IFM as provided in Section 11.2.1.5.

**IFM Marginal Losses  
Surplus**

For each Settlement Period of the IFM the CAISO, the IFM Marginal Losses Surplus is the difference between: (1) the Net Hourly Energy Charge; and (2) the total IFM Congestion Charges which do not include Congestion Charges Credits collected by the CAISO as specified in Section 11.2.1.5.

**IFM Marginal Losses  
Surplus Credit**

The amount of money distributed to Scheduling Coordinators in the allocation of IFM Marginal Losses Surplus in proportion to Scheduling Coordinator's Measured Demand in accordance with Section 11.2.1.6.

**IFM Market Revenue**

The amount received by BCR Eligible Resource from Energy scheduled and Ancillary Services awarded in the IFM for the purposes of Bid Cost Recovery, as calculated pursuant to Section 11.8.2.2.

**IFM MSS Price**

Either (1) The IFM LAP price for the MSS when the MSS scheduled internal Demand exceeds the MSS scheduled internal Supply; or (2) the weighted average of the IFM LMPs for all applicable PNodes within the relevant MSS when MSS scheduled internal Supply exceeds MSS scheduled internal Demand where weighting factors for computing the weighted average are based on the scheduled Supply at the corresponding PNodes.

**IFM Pumping Bid Cost**

For the applicable Settlement Interval, the Pumping Cost submitted to the CAISO in the IFM divided by the number of Settlement Intervals in a Trading Hour as further provided in Section 11.8.2.1.4.

**IFM Self-Commitment  
Period**

A Time Period determined by the CAISO pursuant to the rules in Section 11.8.1.1 for the purposes of deriving any Bid Cost Recovery amounts, related to the IFM.



**IIE**

**Instructed Imbalance Energy**

**IIE Settlement Amount**

The payment due a Scheduling Coordinator for positive Instructed Imbalance Energy or the charge assessed on a Scheduling Coordinator for negative Instructed Imbalance Energy, as calculated pursuant to Section 11.5.1.

**Imbalance Energy**

The deviation of Supply or Demand from Day-Ahead Schedule, positive or negative, as measured by metered Generation, metered Load, or Real-Time Interchange Schedules.

**Import Bid**

A Supply Bid submitted to a CAISO Market at a Scheduling Point.

**Import Capability Load Share**

A Load Serving Entity's proportionate share of the forecasted Resource Adequacy Compliance Year coincident peak Demand for the CAISO **Balancing Authority** Area relative to the total coincident peak Demand for the CAISO **Balancing Authority** Area as determined by the California Energy Commission.

**Import Capability Load Share Ratio**

A Load Serving Entity's Import Capability Load Share divided by the sum of the Import Capability Load Shares of all Load Serving Entities with unfulfilled requests for Available Import Capability on a particular Intertie.

**Import Capability Transfer Registration Process**

The electronic means by which Load Serving Entities and Market Participants must register with the CAISO any bilateral transfers of Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability.

**Incremental Change**

The change in dollar value of a specific Charge Code from the Initial Settlement Statement T+33BD to the Initial Settlement Statement, Reissue or Recalculation Settlement Statement including any new Charge Codes or Trading Day charges appearing for the first time on the Initial Settlement Statement, Reissue or Recalculation Settlement Statement.

<b>Independent Entity</b>	The entity, not affiliated with the CAISO or any Market Participant, that assists the CAISO in the determination of reference prices.
<b>Independent System Operator (ISO)</b>	See California Independent System Operator Corporation.
<b>Information System (OASIS)</b>	CAISO maintains on the CAISO Website that allows all transmission customers to view the data simultaneously.
<b>Initial Settlement Statement Reissue</b>	The reissue of an Initial Settlement Statement T+38BD by the CAISO on the fifty-first (51st) Business Day from the relevant Trading Day (T+51BD) if T+51BD falls on a calendar day that is on or before the day the Invoice or Payment Advice for the bill period containing the relevant Trading Day is scheduled to publish.
<b>Initial Settlement Statement T+38BD</b>	A Settlement Statement generated by the CAISO for the calculation of Settlements for a given Trading Day, which is published on the thirty-eight Business Day from the relevant Trading Day (T+38BD) and is prior to the Invoice or Payment Advice published for the relevant bill period.
<b>In-Service Date</b>	The date upon which the Interconnection Customer reasonably expects it will be ready to begin use of the Participating TO Interconnection Facilities to obtain back feed power.
<b>Instructed Imbalance Energy (IIE)</b>	The portion of Imbalance Energy resulting from Dispatch Instructions and HASP Intertie Schedules.
<b>Integrated Balancing Authority Area (IBAA)</b>	<i>A Balancing Authority Area as provided in Section 27.5.3 that has been determined to have one or more direct interconnections with the CAISO Balancing Authority Area, such that power flows within the IBAA significantly affect power flows within the CAISO Balancing Authority Area, and whose network topology is therefore modeled in further detail in the CAISO's Full Network Model beyond the simple radial modeling of interconnections between the IBAA and the CAISO Balancing Authority Area.</i>
<b>Integrated Forward Market (IFM)</b>	The pricing run conducted by the CAISO using SCUC in the Day-Ahead Market, after the MPM-RRD process, which includes Unit Commitment, Ancillary Service procurement, Congestion Management and Energy procurement based on Supply and Demand Bids.
<b>Interchange</b>	Imports and exports between the CAISO <i>Balancing Authority</i> Area and other <i>Balancing Authority</i> Areas.
<b>Interchange Schedule</b>	A final agreed-upon schedule of Energy to be transferred between the CAISO Control Balancing Authority Area and another Balancing Authority Area.

**Interconnected Balancing  
Authority Area Operating  
Agreement (IBAAOA)**

*An agreement entered into between the CAISO and a Balancing Authority of a Balancing Authority Area interconnected to the CAISO Balancing Authority Area to govern operation of their interconnected electric systems, a pro forma version of which has been accepted by FERC as a CAISO rate schedule in 87 FERC ¶ 61,231 (1999).*

**Interconnected Control  
Area Operating  
Agreement (ICAOA)**

Operator of a Control Area interconnected to the CAISO Area to govern operation of their interconnected electric systems, a *pro forma* version of which has been accepted by FERC as a CAISO rate schedule in 87 FERC ¶ 61,231 (1999).

**Interconnection**

Transmission facilities, other than additions or replacements to existing facilities that: i) connect one system to another system where the facilities emerge from one and only one substation of the two systems and are functionally separate from the CAISO Controlled Grid facilities such that the facilities are, or can be, operated and planned as a single facility; or ii) are identified as radial transmission lines pursuant to contract; or iii) produce Generation at a single point on the CAISO Controlled Grid; provided that such interconnection does not include facilities that, if not owned by the Participating TO, would result in a reduction in the CAISO's Operational Control of the Participating TO's portion of the CAISO Controlled Grid.

**Interconnection  
Agreement**

A contract between a party requesting interconnection and the Participating TO that owns the transmission facility with which the requesting party wishes to interconnect.

**Interconnection Customer**

Any entity, including a Participating TO or any of its Affiliates or subsidiaries, that proposes to interconnect its Generating Facility with the CAISO Controlled Grid.

**Interconnection  
Customer's  
Interconnection Facilities**

All facilities and equipment, as identified in Part A of the Standard Large Generator Interconnection Agreement, that are located between the Generating Facility and the Point of Change of Ownership, including any modification, addition, or upgrades to such facilities and equipment necessary to physically and electrically interconnect the Generating Facility to the CAISO Controlled Grid. Interconnection Customer's Interconnection Facilities are sole use facilities.

**Interconnection Facilities**

The Participating TO's Interconnection Facilities and the Interconnection Customer's Interconnection Facilities. Collectively, Interconnection Facilities include all facilities and equipment between the Generating Facility and the Point of Interconnection, including any modification, additions or upgrades that are necessary to physically and electrically interconnect the Generating Facility to the CAISO Controlled Grid. Interconnection Facilities are sole use facilities and shall not include Distribution Upgrades, Stand Alone Network Upgrades or Network Upgrades.

**Interconnection Facilities  
Study**

A study conducted by the Participating TO(s), CAISO, or a third party consultant for the Interconnection Customer to determine a list of facilities (including the Participating TO's Interconnection Facilities, Network Upgrades, and Distribution Upgrades), the cost of those facilities, and the time required to interconnect the Generating Facility with the CAISO Controlled Grid. The scope of the study is defined in Section 8 of the Standard Large Generator Interconnection Procedures.

**Interconnection Facilities  
Study Agreement**

The form of agreement accepted by FERC and posted on the CAISO Website for conducting the Interconnection Facilities Study.

**Interconnection Feasibility  
Study**

A preliminary evaluation conducted by the Participating TO(s), CAISO, or a third party consultant for the Interconnection Customer of the system impact and cost of interconnecting the Generating Facility to the CAISO Controlled Grid, the scope of which is described in Section 6 of the Standard Large Generator Interconnection Procedures.

<b>Interconnection Feasibility Study Agreement</b>	The form of agreement accepted by FERC and posted on the CAISO Website for conducting the Interconnection Feasibility Study.
<b>Interconnection Handbook</b>	A handbook, developed by the Participating TO and posted on the Participating TO's website or otherwise made available by the Participating TO, describing technical and operational requirements for wholesale generators and loads connected to the Participating TO's portion of the CAISO Controlled Grid, as such handbook may be modified or superseded from time to time. Participating TO's standards contained in the Interconnection Handbook shall be deemed consistent with Good Utility Practice and Applicable Reliability Criteria. In the event of a conflict between the terms of the LGIP or SGIP and the terms of the Participating TO's Interconnection Handbook, the terms in the LGIP or SGIP shall apply.
<b>Interconnection Request</b>	An Interconnection Customer's request, in the form of Part 1 to the Standard Large Generator Interconnection Procedures or Attachment 2 to the Small Generator Interconnection Procedures, in accordance with Section 25.1.
<b>Interconnection Service</b>	The service provided by the Participating TO and CAISO associated with interconnecting the Interconnection Customer's Generating Facility to the CAISO Controlled Grid and enabling it to receive electric Energy and capacity from the Generating Facility at the Point of Interconnection, pursuant to the terms of the Standard Large Generator Interconnection Agreement, the Participating TO's TO Tariff, and the CAISO Tariff.
<b>Interconnection Study</b>	Any of the following studies: the Interconnection Feasibility Study, the Interconnection System Impact Study, and the Interconnection Facilities Study described in the Standard Large Generator Interconnection Procedures.

**Interconnection System  
Impact Study**

An engineering study conducted by the Participating TO(s), CAISO, or a third party consultant for the Interconnection Customer that evaluates the impact of the proposed interconnection on the safety and reliability of the CAISO Controlled Grid and, if applicable, an Affected System. The study shall identify and detail the system impacts that would result if the Generating Facility were interconnected without project modifications or system modifications, focusing on the Adverse System Impacts identified in the Interconnection Feasibility Study, or to study potential impacts, including but not limited to those identified in the Scoping Meeting as described in the Standard Large Generator Interconnection Procedures.

**Interconnection System  
Impact Study Agreement**

The form of agreement accepted by FERC and posted on the CAISO Website for conducting the Interconnection System Impact Study.

**Interest**

Interest shall be calculated in accordance with the methodology specified for interest on refunds in the regulations of FERC at 18 C.F.R. §35.19(a)(2)(iii) (1996). Interest on delinquent amounts shall be calculated from the due date of the bill to the date of payment, except as provided in Section 11.29.13.1. When payments are made by mail, bills shall be considered as having been paid on the date of receipt.

**Interim Black Start  
Agreement**

An agreement entered into between the CAISO and a Participating Generator (other than a Reliability Must-Run Agreement) for the provision by the Participating Generator of Black Start capability and Black Start Energy on an interim basis until the introduction by the CAISO of its Black Start auction (or until terminated earlier by either party in accordance with its terms).

**Interim Capacity  
Procurement Mechanism  
(ICPM)  
Intermediary Balancing  
Authority**

*The Interim Capacity Procurement Mechanism, as set forth in Section 43.*

*The Balancing Authority that operates an Intermediary Balancing Authority Area.*

<b>Intermediary Balancing Authority Area</b>	Any <b>Balancing Authority</b> Area between a Host <b>Balancing Authority</b> Area and the CAISO <b>Balancing Authority</b> Area. An Intermediary <b>Balancing Authority</b> Area may, or may not, be directly interconnected with the CAISO <b>Balancing Authority</b> Area.
<b>Interruptible Imports</b>	Non-firm Energy sold by a Generator or resource located outside the CAISO Controlled Grid which by contract can be interrupted or reduced at the discretion of the seller. Interruptible Imports must be submitted through Self-Schedules in the Day-Ahead Market.
<b>Inter-SC Trade</b>	A trade between Scheduling Coordinators of Energy, Ancillary Services, or IFM Load Uplift Obligation in accordance with the CAISO Tariff.
<b>Intertie</b>	A Scheduling Point at a point of interconnection between the CAISO <b>Balancing Authority</b> Area and an interconnected <b>Balancing Authority</b> Area.
<b>Intertie Block Bid</b>	A Bid from a System Resource in the DAM that offers the same quantity of Energy, RUC Availability, or Ancillary Services across multiple, contiguous hours of the Trading Day.
<b>Invoice</b>	A document published as a result of an invoicing run pursuant to the CAISO Payments Calendar in which a Business Associate's current net financial obligation is a positive Settlement amount.
<b>IOU</b>	An investor owned electric utility.
<b>ISO</b>	Independent System Operator
<b>Joint Powers Agreement</b>	An agreement governing a Joint Powers Authority that is subject to the California Joint Exercise of Powers Act (California Government Code, Section 6500, <i>et seq.</i> ).
<b>Joint Powers Authority</b>	An authority authorized by law through which two or more public entities jointly exercise their powers.
<b>LAP</b>	Load Aggregation Point
<b>LAP Price</b>	The marginal price for a particular LAP, calculated as a weighted average of the nodal LMPs at the associated PNodes pursuant to Section 27.2.2.

<b>Large Generating Facility</b>	A Generating Facility having a Generating Facility Capacity of more than 20 MW.
<b>Large Generator Interconnection Agreement (LGIA)</b>	Standard Large Generator Interconnection Agreement
<b>Large Generator Interconnection Procedures (LGIP)</b>	Standard Large Generator Interconnection Procedures
<b>LCRIF</b>	Location Constrained Resource Interconnection Facility
<b>LCRIG</b>	Location Constrained Resource Interconnection Generator
<b>LDF</b>	Load Distribution Factor
<b>LFDP</b>	Load Following Deviation Penalty
<b>LGIA</b>	Standard Large Generator Interconnection Agreement or Large Generator Interconnection Agreement
<b>LGIP</b>	Standard Large Generator Interconnection Procedures or Large Generator Interconnection Procedures
<b>Line Loss Correction Factor</b>	The line loss correction factor as set forth in the Technical Specifications.
<b>LMP</b>	Locational Marginal Price
<b>LMPM</b>	Local Market Power Mitigation
<b>LMP Option</b>	A method of calculating Default Energy Bids based on Locational Marginal Prices.
<b>Load</b>	An end-use device of an End-Use Customer that consumes Power. Load should not be confused with Demand, which is the measure of Power that a Load receives or requires.
<b>Load Aggregation Point (LAP)</b>	A set of Pricing Nodes as specified in Section 27.2 that are used for the submission of Bids and Settlement of Demand.



<b>Load Distribution Factor (LDF)</b>	A number that reflects the relative amount of Load at each PNode within a Load Aggregation Point. Load Distribution Factors determine how the aggregated Load at a given LAP is distributed to the associated power system Nodes. The sum of all Load Distribution Factors for a single Load Aggregation Point equals one.
<b>Load Following Deviation Penalty (LFDP)</b>	The penalty assignable to an MSS Operator for deviations from Expected Energy outside the MSS Deviation Band.
<b>Load Metric</b>	A Load Serving Entity's level of Load in megawatts for a defined time period that is exceeded in only 0.5% of the hours of that time period based on historical or forecast Load data.
<b>Load Migration</b>	The transfer of the responsibility to serve Load from one Load Serving Entity to another.
<b>Load Serving Entity (LSE)</b>	Any entity (or the duly designated agent of such an entity, including, e.g. a Scheduling Coordinator), including a load aggregator or power marketer, that (a) (i) serves End Users within the CAISO <b>Balancing Authority</b> Area and (ii) has been granted authority or has an obligation pursuant to California state or local law, regulation, or franchise to sell electric energy to End Users located within the CAISO <b>Balancing Authority</b> Area; (b) is a federal power marketing authority that serves End Users; or (c) is the State Water Resources Development System commonly known as the State Water Project of the California Department of Water Resources.
<b>Load Share Quantity</b>	The product of Total Import Capability and Import Capability Load Share.
<b>Load Shedding</b>	The systematic reduction of system Demand by temporarily decreasing the Supply of Energy to Loads in response to transmission system or area capacity shortages, system instability, or voltage control considerations.
<b>Local Capacity Area</b>	Transmission constrained area as defined in the study referenced in Section 40.3.1.

**Local Capacity Area  
Resource Deficiency**

*The monthly difference in MW between any applicable Local Capacity Area Resource requirements for an LSE as established pursuant to Section 40.3.2 and the quantity of monthly MW shown in the LSE's Resource Adequacy Plan.*

**Local Capacity Area  
Resources**

Resource Adequacy Capacity from a Generating Unit listed in the technical study or Participating Load that is located within a Local Capacity Area capable of contributing toward the amount of capacity required in a particular Local Capacity Area.

**Local Capacity Technical  
Study**

The study performed by the CAISO pursuant to Section 40.3.

**Local Furnishing Bond**

Tax-exempt bonds utilized to finance facilities for the local furnishing of electric energy, as described in section 142(f) of the Internal Revenue Code, 26 U.S.C. § 142(f).

**Local Furnishing  
Participating TO**

Any Tax-Exempt Participating TO that owns facilities financed by Local Furnishing Bonds.

**Local Market Power  
Mitigation (LMPM)**

The mitigation of market power that could be exercised by an entity when it is needed for local reliability services due to its location on the grid and a lack of competitive supply at that location pursuant to Section 39.7.

**Local Publicly Owned  
Electric Utility**

A municipality or municipal corporation operating as a public utility furnishing electric services, a municipal utility district furnishing electric services, a public utility district furnishing electric services, an irrigation district furnishing electric services, a state agency or subdivision furnishing electric services, a rural cooperative furnishing electric services, or a Joint Powers Authority that includes one or more of these agencies and that owns Generation or transmission facilities, or furnishes electric services over its own or its members' electric Distribution System.

**Local Regulatory  
Authority (LRA)**

The state or local governmental authority, or the board of directors of an electric cooperative, responsible for the regulation or oversight of a utility.

<b>Local Reliability Criteria</b>	Reliability Criteria unique to the transmission systems of each of the Participating TOs established at the later of: (1) CAISO Operations Date, or (2) the date upon which a New Participating TO places its facilities under the control of the CAISO.
<b>Location</b>	A reference to either a PNode or an Aggregated Pricing Node.
<b>Location Code</b>	The code assigned by the CAISO to Generation input points, and Demand Take-Out Points from the CAISO Controlled Grid, and transaction points from trades between Scheduling Coordinators. This will be the information used by the CAISO Controlled Grid, and transaction points for trades between Scheduling Coordinators. This will be the information used by the CAISO to determine the location of the input, output, and trade points of Energy Schedules. Each Generation input and Demand Take-Out Point will have a designated Location Code identification.
<b>Location Constrained Resource Interconnection Facility (LCRIF)</b>	A High Voltage Transmission Facility that has been determined by the CAISO to satisfy all of the requirements of Section 24.1.3.
<b>Location Constrained Resource Interconnection Generator (LCRIG)</b>	A Generating Unit that (a) uses a primary fuel source or source of energy that is in a fixed location and cannot practicably be transported from that location; and (b) is located in an Energy Resource Area. Generating Units meeting criterion (a) shall include, but not be limited to, wind, solar, geothermal, hydroelectric, digester gas, landfill gas, ocean wave and ocean thermal tidal current Generating Units.
<b>Locational Marginal Price (LMP)</b>	The marginal cost (\$/MWh) of serving the next increment of Demand at that PNode consistent with existing transmission facility Constraints and the performance characteristics of resources.
<b>Long Start Unit</b>	A Generating Unit that requires <b>between</b> five and 18 hours to Start-Up and synchronize to the grid.

**Long Term Congestion  
Revenue Right (Long  
Term CRR)**

A Congestion Revenue Right differentiated by season and time-of-use period (on-peak and off-peak) with a term of ten years.

**Low Voltage Access  
Charge (LVAC)**

The Access Charge applicable under Section 26.1 to recover the Low Voltage Transmission Revenue Requirement of a Participating TO.

**Low Voltage  
Transmission Facility**

A transmission facility owned by a Participating TO or to which a Participating TO has an Entitlement that is represented by a Converted Right, which is not a High Voltage Transmission Facility, that is under the CAISO Operational Control.

**Low Voltage  
Transmission Revenue  
Requirement (LVTRR)**

The portion of a Participating TO's TRR associated with and allocable to the Participating TO's Low Voltage Transmission Facilities and Converted Rights associated with Low Voltage Transmission Facilities that are under the CAISO Operational Control.

**Low Voltage Wheeling  
Access Charge**

The Wheeling Access Charge associated with the recovery of a Participating TO's Low Voltage Transmission Revenue Requirement in accordance with Section 26.1.

**LRA**

Local Regulatory Authority

**LSE**

Load-Serving Entity

**LVAC**

Low Voltage Access Charge

**LVTRR**

Low Voltage Transmission Revenue Requirement

**Maintenance Outage**

A period of time during which an Operator (i) takes its transmission facilities out of service for the purposes of carrying out routine planned maintenance, or for the purposes of new construction work or for work on de-energized and live transmission facilities (e.g., relay maintenance or insulator washing) and associated equipment; or (ii) limits the capability of or takes its Generating Unit or System Unit out of service for the purposes of carrying out routine planned maintenance, or for the purposes of new construction work.

<b>Manual RMR Dispatch</b>	An RMR Dispatch Notice issued by the CAISO other than as a result of the MPM-RRD process.
<b>Marginal Cost of Congestion (MCC)</b>	The component of LMP at a PNode that accounts for the cost of congestion, as measured between that Node and a Reference Bus.
<b>Marginal Cost of Losses (MCL)</b>	The component of LMP at a PNode that accounts for the marginal real power losses, as measured between that Node and a Reference Bus.
<b>Marginal Losses</b>	The transmission system marginal real power losses that arise from changes in demand at a Node which are served by changes in generation at a Reference Bus.
<b>Market Behavior Rules</b>	Those rules established by FERC under Docket No. EL01-118.
<b>Market Clearing</b>	The act of conducting any of the process used by the CAISO to determine LMPs, Day-Ahead Schedules, RUC Awards or AS Awards, HASP Intertie Schedules and Dispatch Instructions based on Supply Bids and Demand Bids or CAISO Demand Forecast.
<b>Market Clearing Price</b>	The price in a market at which supply equals demand. All demand prepared to pay at least this price has been satisfied and all supply prepared to operate at or below this price has been purchased.
<b>Market Close</b>	The time after which the CAISO is no longer accepting Bids for its CAISO Markets which: 1) for the DAM is 10:00 A.M. Pacific Time of the Day-Ahead; and 2) for the HASP and the RTM is approximately seventy-five minutes prior to the Operating Hour.
<b>Market Disruption</b>	An action or event that causes a failure of the normal operation of any of the CAISO Markets.
<b>Market Efficiency Enhancement Agreement (MEEA)</b>	<i>An agreement between the CAISO and the Balancing Authority of an IBAA, or any entity or group of entities that use the transmission system of an IBAA, which provides for an alternative modeling and pricing arrangement to the default IBAA modeling and pricing provisions provided in Section 27.5.3. The CAISO may enter into such an agreement provided that there is a demonstrable benefit to the CAISO Markets resulting from such alternative arrangements. Creation and modification of such an agreement will be pursuant to the process set forth in Section 27.5.3.2 and will be posted on the CAISO Website.</i>

**Market Interruption**

The disruption of the normal operations of a CAISO Market.

**Market Intervention**

An action taken by the CAISO to override or augment the operation of a CAISO Market.

**Market Manipulation**

Has the meaning set forth in Section 37.7.

**Market Monitoring Unit**

The component of the CAISO organization (currently the "Department of Market Monitoring") that is assigned responsibility in the first instance for the functions of a Market Monitoring Unit, as that term is used in Docket No. EL01-118.

**Market Notice**

An electronic notice issued by the CAISO that the CAISO posts on the CAISO Website and provides by e-mail to those registered with the CAISO to receive CAISO e-mail notices.

**Market Participant**

An entity, including a Scheduling Coordinator, who either: (1) participates in the CAISO Markets through the buying, selling, transmission, or distribution of Energy, Capacity, or Ancillary Services into, out of, or through the CAISO Controlled Grid; or (2) is a CRR Holder or Candidate CRR Holder.

**Market Power Mitigation-  
Reliability Requirement  
Determination (MPM-RRD)**

The two-optimization run process conducted in both the Day-Ahead Market and the HASP that determines the need for the CAISO to employ market power mitigation measures or Dispatch RMR Units.

**Market Surveillance  
Committee (MSC)**

The committee established under Appendix P.2.

**Market Usage Charge**

The component of the Grid Management Charge that provides for the recovery of the CAISO's costs, including, but not limited to the costs for processing *Day-Ahead, Hour-Ahead Scheduling Process and Real-Time* Bids, maintaining the Open Access Same-Time Information System, monitoring market performance, ensuring generator compliance with market rules as defined in the CAISO Tariff and the Business Practice Manuals, and determining LMPs. The formula for determining the Market Usage Charge is set forth in Appendix F, Schedule 1, Part A.

**Master File**

A file containing information regarding Generating Units, Loads and other resources, or its successor.

**Material Change in Financial Condition**

A change in or potential threat to the financial condition of a Market Participant or CRR Holder that increases the risk that the Market Participant or CRR Holder will be unlikely to meet some or all of its financial obligations. The types of Material Change in Financial Condition include but are not limited to the following:

- (a) a credit agency downgrade;
- (b) being placed on a credit watch list by a major rating agency;
- (c) a bankruptcy filing;
- (d) insolvency;
- (e) the filing of a material lawsuit that could significantly and adversely affect past, current, or future financial results; or
- (f) any change in the financial condition of the Market Participant or CRR Holder which exceeds a five percent (5%) reduction in the Market Participant's or CRR Holder's Tangible Net Worth or Net Assets for the Market Participant or CRR Holder's preceding fiscal year, calculated in accordance with generally accepted accounting practices.

**Material Modification**

A modification that has a material impact on the cost or timing of any Interconnection Request or any other valid interconnection request with a later queue priority date.

**Maximum Daily Start-Ups**

The maximum number of times a Generating Unit can be started up within one day, due to environmental or physical operating constraints.

**Maximum Import Capability**

A quantity in MW determined by the CAISO for each Intertie into the CAISO Balancing Authority Area to be deliverable to the CAISO Balancing Authority Area based on CAISO study criteria.

**Maximum Net Dependable Capacity (MNDC)**

A term defined in and used in association with an RMR Contract.

**Maximum Operating Limit (MOL<sub>max</sub>)**

The lower of the maximum allowable output when the resource is operating or the upper bound of the Regulating Range if the resource is providing Regulation service.



<b>MCC</b>	Marginal Cost of Congestion
<b>MCL</b>	Marginal Cost of Losses
<b>MDT</b>	Minimum Down Time
<b>Measured Demand</b>	The metered CAISO Demand plus Real-Time Interchange Export Schedules.
<b>Medium Start Unit</b>	A Generating Unit that requires between two and five hours to Start-Up and synchronize to the grid.
<b>MEEA</b>	<i>Market Efficiency Enhancement Agreement</i>
<b>Merchant Transmission CRRs</b>	Incremental CRRs that are created by the addition of a Merchant Transmission Facility. Merchant Transmission CRRs are effective for thirty (30) years or for the pre-specified intended life of the facility, whichever is less.
<b>Merchant Transmission Facility</b>	A transmission facility or upgrade that is part of the CAISO Controlled Grid and whose costs are paid by a Project Sponsor that does not recover the cost of the transmission investment through the CAISO's Access Charge or WAC or other regulatory cost recovery mechanism.
<b>Meter Data</b>	Energy usage data collected by a metering device or as may be otherwise derived by the use of Approved Load Profiles.
<b>Meter Data Exchange Format</b>	A format for submitting Meter Data to the CAISO which will be published by the CAISO on the CAISO Website or available on request.

**Metered Balancing  
Authority Area Load**

*For purposes of calculating and billing the Grid Management Charge, Metered Balancing Authority Area Load is:*

*(a) all metered Demand for Energy of Scheduling Coordinators for the supply of Loads in the CAISO's Balancing Authority Area, plus (b) all Energy for exports by Scheduling Coordinators from the CAISO Balancing Authority Area; less (c) Energy associated with the Load of a retail customer of a Scheduling Coordinator, Utility Distribution Company, Small Utility Distribution Company or Metered Subsystem that is served by a Generating Unit that: (i) is located on the same site as the customer's Load or provides service to the customer's Load through arrangements as authorized by Section 218 of the California Public Utilities Code; (ii) is a qualifying small power production facility or qualifying cogeneration facility, as those terms are defined in FERC's regulations implementing Section 201 of the Public Utility Regulatory Policies Act of 1978; and (iii) the customer secures Standby Service from a Participating TO under terms approved by a Local Regulatory Authority or FERC, as applicable, or the customer's Load can be curtailed concurrently with an Outage of the Generating Unit.*

**Metered Control Area  
Load**

*Metered Balancing Authority Area Load.*

**Metered Quantities**

For each Direct Access End-User, the actual metered amount of MWh and MW; for each Participating Generator the actual metered amounts of MWh, MW, MVar and MVarh.

**Metered Subsystem (MSS)**

A geographically contiguous system located within a single zone which has been operating as an electric utility for a number of years prior to the CAISO Operations Date as a municipal utility, water district, irrigation district, state agency or federal power marketing authority subsumed within the CAISO **Balancing Authority** Area and encompassed by CAISO certified revenue quality meters at each interface point with the CAISO Controlled Grid and CAISO certified revenue quality meters on all Generating Units or, if aggregated, each individual resource and Participating Load internal to the system, which is operated in accordance with a MSS Agreement described in Section 4.9.1.

<b>Metered Subsystem Agreement (MSS Agreement)</b>	A negotiated agreement between the CAISO and an MSS Operator regarding the operation of an MSS in relation to the CAISO entered into pursuant to Section 4.9, which MSS Agreement will incorporate the provision of Section 4.9, unless otherwise agreed.
<b>Metering Facilities</b>	Revenue quality meters, instrument transformers, secondary circuitry, secondary devices, meter data servers, related communication facilities and other related local equipment.
<b>Meter Points</b>	Locations on the CAISO Controlled Grid at which the CAISO requires the collection of Meter Data by a metering device.
<b>Meter Service Agreement for CAISO Metered Entities (MSA CAISOME)</b>	An agreement entered into between the CAISO and a CAISO Metered Entity consistent with the provisions of Section 10, a <i>pro forma</i> version of which is set forth in Appendix B.6.
<b>Meter Service Agreement for Scheduling Coordinators (MSA SC)</b>	An agreement entered into between the CAISO and a Scheduling Coordinator consistent with the provisions of Section 10, a <i>pro forma</i> version of which is set forth in Appendix B.7.
<b>Minimum Down Time (MDT)</b>	The minimum amount of time that a Generating Unit must stay off-line after being Shut-Down, due to physical operating constraints.
<b>Minimum Load</b>	For a Generating Unit, the minimum sustained operating level at which it can operate at a continuous sustained level. For a Participating Load, the Operating Level at reduced consumption pursuant to a Dispatch Instruction.
<b>Minimum Load Bid</b>	The Bid component that indicates the Minimum Load Cost for the Generating Unit or Participating Load, specified by a non-negative number in dollars per hour, which applies for the entire Trading Day for which it is submitted.
<b>Minimum Load Costs</b>	The costs a Generating Unit or a Participating Load incurs operating at Minimum Load, which in the case of Participating Load may not be negative.
<b>Minimum Load Energy</b>	The product of the relevant Minimum Load and the duration of the Settlement Interval.

<b>Minimum Operating Limit (MOL<sub>min</sub>)</b>	The greater of the Minimum Load or the lower bound of the Regulating Range if the resource offers Regulation service.
<b>Minimum Run Time</b>	The minimum amount of time that a Generating Unit must stay on-line after being started-up prior to being Shut-Down, due to physical operating constraints.
<b>Mitigation Frequency</b>	The percent of the Generating Unit's run hours where the unit had one or more Bid segments mitigated under the CAISO Local Market Power Mitigation.
<b>Mitigation Measures</b>	The CAISO market power mitigation measures under the CAISO Tariff.
<b>MKMV Default Probability</b>	A calculated result of Moody's KMV CreditEdge or RiskCalc software products.
<b>MNDC</b>	Maximum Net Dependable Capacity
<b>Modified Reserve Sharing LSE</b>	A Load Serving Entity whose Scheduling Coordinator has informed the CAISO in accordance with Section 40.1 of its election to be a Modified Reserve Sharing LSE.
<b>MOL<sub>max</sub></b>	Maximum Operating Limit
<b>MOL<sub>min</sub></b>	Minimum Operating Limit
<b>Monthly Available CRR Capacity</b>	The upper limit of network capacity that will be used in the monthly CRR Allocation and monthly CRR Auctions calculated by using OTC adjusted for Outages, derates, and Transmission Ownership Rights for the relevant month in accordance with Section 36.4.
<b>Monthly CRR</b>	A Congestion Revenue Right whose term is one calendar month in length and distributed in the monthly CRR Allocation and monthly CRR Auction.
<b>Monthly CRR Eligible Quantity</b>	The MW quantity of CRRs a CRR Holder or Candidate CRR Holder is eligible to nominate for the relevant month in a monthly CRR Allocation.
<b>Monthly CRR Load Metric</b>	<i>The load metric used for determining eligibility for CRR Allocation as provided in Section 36.8.2.2.</i>
<b>MORC</b>	Minimum Operating Reliability Criteria

<b>MPM-RRD</b>	Market Power Mitigation-Reliability Requirement Determination
<b>MSA CAISOME</b>	Metered Service Agreement for CAISO Metered Entities
<b>MSA SC</b>	Metered Service Agreement for Scheduling Coordinators
<b>MSC</b>	Market Surveillance Committee
<b>MSS</b>	Metered Subsystem
<b>MSS Aggregation</b>	Either (1) a Metered Subsystem or (2) a collection of Metered Subsystems represented by a single MSS Aggregator.
<b>MSS Aggregation Net Measured Demand</b>	The sum of the net metered CAISO Demand from all the Net-Load MSSs in the MSS Aggregation plus any exports out of the CAISO <b>Balancing Authority</b> Area from the MSS Aggregation. Net metered CAISO Demand of a MSS is defined as the algebraic difference between the CAISO Demand and Generation internal to the MSS.
<b>MSS Aggregation Net Non-ETC/TOR Measured Demand</b>	The sum of the net metered non-ETC/TOR CAISO Demand from all of the non-ETC/TOR Net-Load MSSs in the MSS Aggregation plus any non-ETC/TOR exports out of the CAISO <b>Balancing Authority</b> Area from the MSS Aggregation. Net metered non-ETC/TOR CAISO Demand of an MSS is defined as the algebraic difference between the non-ETC/TOR CAISO Demand and the non-ETC/TOR Generation within the MSS.
<b>MSS Aggregator</b>	An entity that has executed an agreement with the CAISO that enables it to represent individual MSS Operators in the CAISO Markets on an aggregated basis, which agreement has been accepted by FERC.
<b>MSS Aggregator CRR Entity Agent Agreement</b>	An agreement between the CAISO and an MSS Aggregator by which the MSS Aggregator commits to act as agent for aggregation of MSS Operators in the CRR Allocation, CRR Auction, and Secondary Registration System process, a pro forma version of which is set forth in Appendix B.12.

<b>MSS Demand</b>	CAISO Demand specified in an MSS Agreement as being within the MSS.
<b>MSS Deviation Band</b>	The amount by which a Load following MSS Operator can deviate from Expected Energy without incurring a Load Following Deviation Penalty, equal to three percent (3%) of an MSS Operator's metered Demand in the MSS and exports from the MSS, adjusted for Forced Outages and any CAISO directed firm Load Shedding for the MSS's portfolio as a whole.
<b>MSS Load Following Energy</b>	IIE, exclusive of Standard Ramping Energy, Ramping Energy Deviation, and Residual Imbalance Energy, produced or consumed due to Load following by an MSS. MSS Load Following Energy is the IIE that corresponds to the algebraic Qualified Load Following Instruction, relative to the Day-Ahead Schedule. MSS Load Following Energy does not coexist with HASP Scheduled Energy, and it does not overlap with Standard Ramping Energy, Ramping Energy Deviation, or Residual Imbalance Energy, but it may overlap with Day-Ahead Scheduled Energy, Derate Energy, Exceptional Dispatch Energy, Real-Time Self-Scheduled Energy, and Optimal Energy. MSS Load Following Energy is settled as provided in Section 11.5.1, and it is not included in BCR as described in Section 11.8.4.
<b>MSS Operator</b>	An entity that owns an MSS and has executed a MSS Agreement.
<b>MSS Supply</b>	Supply specified in an MSS Agreement as supplying an MSS.
<b>Multi-Point CRR</b>	A CRR Obligation specified according to one or more CRR Sources and one or more CRR Sinks and a flow from the CRR Source(s) to the CRR Sink(s), provided that at least the CRR Sink or the CRR Source identifies more than one point.

<b>Municipal Tax Exempt Debt</b>	An obligation the interest on which is excluded from gross income for federal tax purposes pursuant to Section 103(a) of the Internal Revenue Code of 1986 or the corresponding provisions of prior law without regard to the identity of the holder thereof. Municipal Tax Exempt Debt does not include Local Furnishing Bonds.
<b>Must-Take/Must-Run Generation</b>	The Bid component that identifies Generating Units that are Regulatory Must-Take Generation or Regulatory Must-Run Generation.
<b>Nationally Recognized Statistical Rating Organizations (NRSRO)</b>	National credit rating agencies as designated by the U.S. Securities & Exchange Commission.
<b>Native Load</b>	Load required to be served by a utility within its Service Area pursuant to applicable law, franchise, or statute.
<b>Negative Operating Reserve Obligation Credit Adjustment Factor (NOROCFAF)</b>	The adjustment factor specified in Section 11.10.5.
<b>Negotiated Rate Option</b>	A method of calculating Default Energy Bids based on a negotiation with the CAISO or the Independent Entity.
<b>NERC</b>	The North American Electric Reliability Corporation or its successor.
<b>NERC Generating Availability Data System (GADS)</b>	The NERC standard for determination of generation resource net dependable capacity.
<b>NERC Reliability Standards for Modeling, Data and Analysis (NERC MOD Standards)</b>	A set of NERC Reliability Standards applicable to the transmission planning process.
<b>NERC/WECC Charge Assessment Year</b>	A given year for which NERC/WECC Charges will be assessed by the WECC based on data from the calendar year two years prior to the year of the NERC/WECC Charge assessment.

**NERC/WECC Charges**

The charges approved by FERC, pursuant to Section 215 of the FPA and FERC issuances related thereto, that provide funding for the statutory-related functions performed by NERC, the WECC, and regional advisory bodies that serve the WECC, or their successors or assignees.

**NERC/WECC Charge Trust Account**

An account to be established by the CAISO for the purpose of maintaining funds collected from Scheduling Coordinators and disbursing such funds to the WECC.

**NERC/WECC Metered Demand**

For purposes of calculating NERC/WECC Charges, a Scheduling Coordinator's net metered CAISO Demand plus Unaccounted for Energy for net metered CAISO Demand and Transmission Losses for metered CAISO Demand. A Scheduling Coordinator's net metered CAISO Demand equals the Scheduling Coordinator's metered CAISO Demand (which adds Energy associated with imports from and subtracts Energy associated with exports to other Balancing Authority Areas), less metered CAISO Demand for Station Power and for Energy required for storage at electric energy storage facilities, such as pumped storage. For purposes of calculating NERC/WECC Metered Demand, Unaccounted for Energy and Transmission Losses allocable to net metered CAISO Demand will be allocated pro rata to each Scheduling Coordinator based on the Scheduling Coordinator's net metered CAISO Demand.

**Net Assets (NA)**

For governmental and not-for-profit entities, defined as total assets minus total liabilities.

**Net Hourly Energy Charge**

Total Charges to all Demand minus total Payments to all Supply both based on the product of MWh amounts specified in all Day-Ahead Schedules and the relevant LMPs at the applicable PNodes or Aggregated Pricing Node.



<b>Net IFM Bid Cost Uplift</b>	The amount of IFM-related Bid Costs resulting from the sequential netting in Section 11.8.6.2 and allocated to Scheduling Coordinators in accordance with Section 11.8.6.4.
<b>Net-Load MSS</b>	An MSS with positive net metered CAISO Demand of the MSS within the MSS Aggregation.
<b>Net Negative CAISO Demand Deviation</b>	The difference between metered CAISO Demand and the total CAISO Demand scheduled in the Day-Ahead Schedule, if positive.
<b>Net Negative Uninstructed Deviation</b>	The real-time change in Generation or Demand associated with underscheduled Demand (i.e., Demand that appears unscheduled in Real-Time) and overscheduled Generation (i.e., Generation that is scheduled in the DAM and does not appear in Real-Time), which are netted for each Settlement Interval, apply to a Scheduling Coordinator's entire portfolio, and include Demand, Generation, imports and exports.
<b>Net Output</b>	The gross Energy output from a Generating Unit less the Station Power requirements for such Generating Unit during the Netting Period, or the Energy available to provide Remote Self-Supply from a generating facility in another <b>Balancing Authority</b> Area during the Netting Period.
<b>Net Procurement</b>	The awarded amount (MWs) of a given Ancillary Service in the Day-Ahead, HASP, and Real-Time Markets, minus, (ii) the amount of that Ancillary Service associated with payments rescinded pursuant to any of the provisions of Section 8.10.2.
<b>Net Qualifying Capacity</b>	Qualifying Capacity reduced, as applicable, based on: (1) testing and verification; (2) application of performance criteria; and (3) deliverability restrictions. The Net Qualifying Capacity determination shall be made by the CAISO pursuant to the provisions of this CAISO Tariff and the applicable Business Practice Manual.

<b>Net RTM Bid Cost Uplift</b>	The amount of RTM-related Bid Costs resulting from the sequential netting in Section 11.8.6.2 and allocated to Scheduling Coordinators in accordance with Section 11.8.6.6.
<b>Net RUC Bid Cost Uplift</b>	The amount of RUC-related Bid Costs resulting from the sequential netting in Section 11.8.6.2 and allocated to Scheduling Coordinators in accordance with Section 11.8.6.5.
<b>Net Scheduled QF</b>	A Qualifying Facility identified in a QF PGA operated as a single unit such that the Energy bid or self-scheduled with the CAISO is the net value of the aggregate electrical net output of the Qualifying Facility and the Self-provided Load.
<b>Netting Period</b>	A calendar month, representing the interval over which the Net Output of one or more generating resources in a Station Power Portfolio is available to be attributed to the self-supply of Station Power in that Station Power Portfolio.
<b>Network Upgrades</b>	The additions, modifications, and upgrades to the CAISO Controlled Grid required at or beyond the Point of Interconnection to accommodate the interconnection of the Generating Facility to the CAISO Controlled Grid. Network Upgrades shall consist of Delivery Network Upgrades and Reliability Network Upgrades. Network Upgrades do not include Distribution Upgrades.
<b>New High Voltage Facility</b>	A High Voltage Transmission Facility of a Participating TO that is placed in service after the beginning of the TAC Transition Period described in Section 4 of Schedule 3 of Appendix F, or a capital addition made and placed in service after the beginning of the TAC Transition Period described in Section 4.2 of Schedule 3 of Appendix F to an Existing High Voltage Facility.

<b>New Participating TO</b>	A Participating TO that is not an Original Participating TO.
<b>New Responsible Utility</b>	A Responsible Utility that executes a TCA after April 1, 1998.
<b>Node</b>	A point in the Full Network Model representing a physical location within the CAISO <b>Balancing Authority</b> Area or the CAISO Controlled Grid, which includes the Load and Generating Unit busses in the CAISO <b>Balancing Authority</b> Area and at the Intertie busses between the CAISO <b>Balancing Authority</b> Area and interconnected <b>Balancing Authority</b> Areas.
<b>Nomogram</b>	A set of operating or scheduling rules which are used to ensure that simultaneous operating limits are respected, in order to meet NERC and WECC <b>Reliability Standards</b> and operating criteria.
<b>Non-CPUC Load Serving Entity</b>	Any entity serving retail Demand in the CAISO <b>Balancing Authority</b> Area not within the jurisdiction of the CPUC, including (i) a local publicly owned electric utility under section 9604 of the <b>California Public Utilities Code</b> and (ii) any federal entities, including but not limited to federal power marketing authorities, that serve retail Load.
<b>Non-Dispatchable Use-Limited Resource</b>	A Use-Limited Resource that cannot be increased or curtailed at the direction of the CAISO in the Real-Time Dispatch of the CAISO <b>Balancing Authority</b> Area to Supply or consume Energy, such as certain Qualifying Facilities.
<b>Non-Dynamic Resource-Specific System Resource</b>	A Non-Dynamic System Resource that is a specific generation resource outside the CAISO <b>Balancing Authority</b> Area.
<b>Non-Dynamic System Resource</b>	A System Resource that is not capable of submitting a Dynamic Schedule, or for which a Dynamic Schedule has not be submitted, which may be a Non-Dynamic Resource-Specific System Resource.
<b>Non-Load-Serving Participating TO</b>	A Participating TO that (1) is not a UDC, MSS Operator or Scheduling Coordinator serving End-Use Customers and (2) does not have Gross Load in accordance with Section 9 of Schedule 3 of Appendix F.

<b>Non-Overlapping Optimal Energy</b>	The portions of Optimal Energy that are not Overlapping Optimal Energy, which are indexed against the relevant Energy Bid and sliced by Energy Bid price.
<b>Non-Participating TO</b>	A TO that is not a party to the Transmission Control Agreement or, for the purposes of Section 16.1, the holder of transmission service rights under an Existing Contract that is not a Participating TO.
<b>Non-Spinning Reserve</b>	The portion of generating capacity that is capable of being synchronized and Ramping to a specified load in ten minutes (or Load that is capable of being interrupted in ten minutes) and that is capable of running (or being interrupted).
<b>Non-Spinning Reserve Cost</b>	The revenues paid to the suppliers of the total awarded Non-Spinning Reserve capacity in the Day-Ahead Market, HASP, and Real-Time Market, minus, (ii) the payments rescinded due to either the failure to conform to CAISO Dispatch Instructions or the unavailability of the Non-Spinning Reserves under Section 8.10.8.
<b>Non-Spinning Reserve Obligation</b>	The obligation of a Scheduling Coordinator to pay its share of costs incurred by the CAISO in procuring Non-Spinning Reserve.
<b>No Pay</b>	The rescission of a payment made for provision of Spinning Reserve and/or Non-Spinning Reserve when, subsequent to the AS Award for such Ancillary Service and payment, the Ancillary Service becomes Undispatchable Capacity, Unavailable Capacity, Undelivered Capacity, or, in certain circumstances, unsynchronized capacity.
<b>NOROCAP</b>	Negative Operating Reserve Obligation Credit Adjustment Factor
<b>NRC</b>	The Nuclear Regulatory Commission or its successor.
<b>NRC Standards</b>	The reliability standards published by the NRC from time to time.
<b>OASIS</b>	Open Access Same-Time Information System

**OBAALSE**

Out-of-**Balancing Authority** Area Load Serving Entity

**Off**

A unit is Off when it is offline or in the process of starting up or shutting down.

**Offsetting CRR**

One of the pair of new equal and opposite CRRs created and allocated by the CAISO to reflect Load Migration between two LSEs pursuant to the provisions in Section 36.8.5, which is allocated to the Load losing LSE and is opposite in direction to the corresponding CRR previously allocated to that LSE and is denominated in a MW quantity that reflects the net amount of Load Migration between the two LSEs.

**On**

A unit is On when it is online, synchronized with the grid, and available for Dispatch.

**On-Site Self-Supply**

Energy from a Generating Unit that is deemed to have self-supplied all or a portion of its associated Station Power Load without use of the CAISO Controlled Grid during the Netting Period.

**Open Access Same-Time Information System (OASIS)**

The electronic posting system for transmission access data that the CAISO maintains on the CAISO Website that allows all Market Participants to view the data simultaneously.

**Operating Day**

The day when the Real-Time Market runs and Energy is supplied to Load.

**Operating Hour**

The hour during the day when the Real-Time Market runs and Energy is supplied to Load.

**Operating Procedures**

Procedures governing the operation of the CAISO Controlled Grid as the CAISO may from time to time develop, and/or procedures that Participating TOs currently employ which the CAISO adopts for use.

**Operating Reserve**

The combination of Spinning and Non-Spinning Reserve required to meet WECC and NERC Reliability Standards and requirements for reliable operation of the CAISO **Balancing Authority** Area.

<b>Operating Reserve Obligation</b>	The obligation of a Scheduling Coordinator to pay its share of costs incurred by the CAISO in procuring Operating Reserves.
<b>Operating Reserve Ramp Rate</b>	A single number included in Ancillary Service Bids and Submissions to Self-Provide Ancillary Services for Spinning Reserve and Non-Spinning Reserve that represent the Ramp Rate of a resource used in the procurement of Operating Reserve capacity.
<b>Operating Transfer Capability (OTC)</b>	The maximum capability of a transmission path to transmit real power, expressed in MW, at a given point in time, as further defined in Appendix L.
<b>Operational Adjustment</b>	The difference between the Energy scheduled in the Balancing Authority Area check-out process for Non-Dynamic System Resources and the sum of Dispatch Interval IIE.
<b>Operational Control</b>	The rights of the CAISO under the Transmission Control Agreement and the CAISO Tariff to direct Participating TOs how to operate their transmission lines and facilities and other electric plant affecting the reliability of those lines and facilities for the purpose of affording comparable non-discriminatory transmission access and meeting Applicable Reliability Criteria.
<b>Operational Ramp Rates</b>	A staircase function of up to 4 segments (in addition to Ramp Rate segments needed for modeling Forbidden Operating Regions). Operational Ramp Rates are submitted with Energy Bid data.
<b>Operator</b>	The operator of facilities that comprise the CAISO Controlled Grid or a Participating Generator.

<b>Optimal Energy</b>	Any remaining IIE after accounting for all other IIE subtypes. Optimal Energy does not overlap with Standard Ramping Energy, Ramping Energy Deviation, Residual Imbalance Energy, Real-Time Minimum Load Energy, Derate Energy, and Exceptional Dispatch Energy, but it may overlap with Day-Ahead Scheduled Energy, HASP Scheduled Energy, and MSS Load Following Energy. Optimal Energy is indexed against the relevant Energy Bid and sliced by service type, depending on the AS capacity allocation on the Energy Bid. Optimal Energy is also divided into Overlapping Optimal Energy and Non-Overlapping Optimal Energy. Any Optimal Energy slice below or above the Energy Bid has no associated Energy Bid price, and it is not included in BCR as described in Section 11.5.1.1.
<b>Optional Interconnection Study</b>	A sensitivity analysis based on assumptions specified by the Interconnection Customer in the Optional Interconnection Study Agreement.
<b>Optional Interconnection Study Agreement</b>	The form of agreement accepted by FERC and posted on the CAISO Website for conducting the Optional Interconnection Study.
<b>Order No. 888</b>	The final rule issued by FERC entitled "Promoting Wholesale Competition through Open Access Non-discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities," 61 Fed. Reg. 21,540 (May 10, 1996), FERC Stats. & Regs., Regulations Preambles [1991-1996] ¶ 31,036 (1996), Order on Rehearing, Order No. 888-A, 78 FERC ¶ 61,220 (1997), as it may be amended from time to time
<b>Order No. 889</b>	The final rule issued by FERC entitled "Open Access Same-Time Information System (formerly Real Time Information Networks) and Standards of Conduct," 61 Fed. Reg. 21,737 (May 10, 1996), FERC Stats. & Regs., Regulations Preambles [1991-1996] ¶ 31,035 (1996), Order on Rehearing, Order No. 889-A, 78 FERC ¶ 61,221 (1997), as it may be amended from time to time.

<b>Original Participating TO</b>	A Participating TO that was a Participating TO as of January 1, 2000.
<b>OTC</b>	Operating Transfer Capability
<b>Outage</b>	Disconnection, separation or reduction in capacity, planned or forced, of one or more elements of an electric system.
<b>Out-of-Balancing Authority Area Load Serving Entity (OBAALSE)</b>	An entity serving end-users located outside the CAISO Balancing Authority Area and that has been granted authority or has an obligation pursuant to federal, state or local law, or under contracts to provide electric service to such end-users located outside the CAISO Balancing Authority Area.
<b>Overgeneration</b>	A condition that occurs when total Supply exceeds total Demand in the CAISO Balancing Authority Area.
<b>Overlapping Optimal Energy</b>	The portion of Optimal Energy that overlaps with MSS Load Following Energy.
<b>Partial Resource Adequacy Resource</b>	A Resource Adequacy Resource that has capacity that is designated by its Scheduling Coordinator as Resource Adequacy Capacity in its monthly or annual Resource Adequacy Plan and has a related availability obligation to the CAISO, but also has capacity that is not committed to meet a resource adequacy obligation in the CAISO Balancing Authority Area.
<b>Participating Generator</b>	A Generator or other seller of Energy or Ancillary Services through a Scheduling Coordinator over the CAISO Controlled Grid from a Generating Unit with a rated capacity of 1 MW or greater, or from a Generating Unit providing Ancillary Services and/or submitting Energy Bids through an aggregation arrangement approved by the CAISO, which has undertaken to be bound by the terms of the CAISO Tariff, in the case of a Generator through a Participating Generator Agreement.



<b>Participating Generator Agreement (PGA)</b>	An agreement between the CAISO and a Participating Generator, a <i>pro forma</i> version of which is set forth in Appendix B.2.
<b>Participating Intermittent Resource</b>	One or more Eligible Intermittent Resources that meets the requirements of the technical standards for Participating Intermittent Resources adopted by the CAISO and published on the CAISO Website.
<b>Participating Intermittent Resource Export Fee</b>	Fee based on Schedule 4 of Appendix F and Section 5.3 of Appendix Q.
<b>Participating Intermittent Resource Fees</b>	Fees set forth in Section 11.2.4.5.4.
<b>Participating Load</b>	An entity, including an entity with Pumping Load or Aggregated Participating Load, providing Curtailable Demand, which has undertaken in writing by execution of a Participating Load Agreement to comply with all applicable provisions of the CAISO Tariff.
<b>Participating Load Agreement (PLA)</b>	An agreement between the CAISO and a Participating Load, a <i>pro forma</i> version of which is set forth in Appendix B.4.
<b>Participating TO or Participating Transmission Owner (PTO)</b>	A party to the Transmission Control Agreement whose application under Section 2.2 of the Transmission Control Agreement has been accepted and who has placed its transmission assets and Entitlements under the CAISO's Operational Control in accordance with the Transmission Control Agreement. A Participating TO may be an Original Participating TO or a New Participating TO.
<b>Participating TO Service Territory</b>	The area in which an IOU, a Local Public Owned Electric Utility, or federal power marketing authority that has turned over its transmission facilities and/or Entitlements to CAISO Operational Control is obligated to provide electric service to Load. A PTO Service Territory may be comprised of the Service Areas of more than one Local Publicly Owned Electric Utility, if they are operating under an agreement with the CAISO for aggregation of their MSS and their MSS Operator is designated as the Participating TO.

**Participating TO's  
Interconnection Facilities**

All facilities and equipment owned, controlled, or operated by the Participating TO from the Point of Change of Ownership to the Point of Interconnection as identified in Part A to the Standard Large Generator Interconnection Agreement, including any modifications, additions or upgrades to such facilities and equipment. Participating TO's Interconnection Facilities are sole use facilities and shall not include Distribution Upgrades, Stand Alone Network Upgrades or Network Upgrades.

**Path 15 Upgrade**

The upgraded transmission facilities on Path 15 that have been turned over to CAISO Operational Control.

**Payment Advice**

A document published as a result of an invoicing run pursuant to the CAISO Payments Calendar in which a Business Associate's current net financial obligation is a negative Settlement Amount.

**Payment Date**

The date by which invoiced amounts are to be paid under the terms of the CAISO Tariff.

**PGA**

Participating Generator Agreement

**Physical Scheduling Plant** A group of two or more related Generating Units, each of which is individually capable of producing Energy, but which either by physical necessity or operational design must be operated as if they were a single Generating Unit and any Generating Unit or Units containing related multiple generating components which meet one or more of the following criteria: i) multiple generating components are related by a common flow of fuel which cannot be interrupted without a substantial loss of efficiency of the combined output of all components; ii) the Energy production from one component necessarily causes Energy production from other components; iii) the operational arrangement of related multiple generating components determines the overall physical efficiency of the combined output of all components; iv) the level of coordination required to schedule individual generating components would cause the CAISO to incur scheduling costs far in excess of the benefits of having scheduled such individual components separately; or v) metered output is available only for the combined output of related multiple generating components and separate generating component metering is either impractical or economically inefficient.

**Physical Trade** An Inter-SC Trade of Energy at an individual PNode of Generating Units that is submitted to the CAISO for Settlement through the CAISO Market and is subject to physical validation.

**PIR Export Percentage** The PIR Export Percentage will be calculated for each Participating Intermittent Resource as the ratio of the Participating Intermittent Resource's P<sub>Max</sub> in the CAISO Master File minus the MW subject to an exemption under Section 5.3.2 of the EIRP in Appendix Q on a MW basis to the Participating Intermittent Resource's P<sub>Max</sub> in the CAISO Master File.

<b>PLA</b>	Participating Load Agreement
<b>Planning Standards Committee</b>	The committee appointed under Section 24.2.1.
<b>PMax</b>	The maximum normal capability of the Generating Unit. PMax should not be confused as an emergency rating of the Generating Unit.
<b>PMin</b>	The minimum normal capability of the Generating Unit.
<b>PMS</b>	Power Management System
<b>PNode</b>	Pricing Node
<b>PNP</b>	Priority Nomination Process
<b>PNP Eligible Quantity</b>	The maximum MW quantity of CRRs an LSE is eligible to nominate in the Priority Nomination Process of the CRR Allocation.
<b>POD</b>	Point(s) of Delivery
<b>Point of Change of Ownership</b>	The point, as set forth in Part A to the Standard Large Generator Interconnection Agreement, where the Interconnection Customer's Interconnection Facilities connect to the Participating TO's Interconnection Facilities.
<b>Point of Demarcation</b>	For a Net Scheduled QF, the point (1) where the electrical conductors from the Net Scheduled QF contact an electric utility system or the CAISO Controlled Grid; or (2) if dedicated utility distribution facilities are employed, where the dedicated facilities contact the electric utility system or the CAISO Controlled Grid.
<b>Point of Interconnection</b>	The point, as set forth in Part A to the Standard Large Generator Interconnection Agreement or Attachment 3 to the Small Generator Interconnection Agreement, where the Interconnection Facilities connect to the CAISO Controlled Grid.
<b>Point(s) of Delivery or Withdrawal (POD or Point(s) of Withdrawal)</b>	Point(s) within the CAISO <b>Balancing Authority</b> Area where Energy and Ancillary Services are made available to a receiving party under this CAISO Tariff.

<b>Point(s) of Receipt or Injection (POR or Point(s) or Injection)</b>	Point(s) within the CAISO <b>Balancing Authority</b> Area where Energy and Ancillary Services are made available by a delivering party under this CAISO Tariff.
<b>Point-to-Point CRR</b>	A CRR Option or CRR Obligation with a single CRR Source to a single CRR Sink.
<b>POR</b>	Point(s) of Receipt
<b>Power</b>	The electrical work produced by a Generating Unit that is absorbed by the resistive components of Load or other network components, measured in units of watts or standard multiples thereof, e.g., 1,000 Watt = 1 kW; 1,000 kW = 1 MW, etc.
<b>Power Flow Model</b>	A network model used by the CAISO to model the voltages, power injections and power flows on the CAISO Controlled Grid and adjacent <b>Balancing Authority</b> Areas.
<b>Power Management System (PMS)</b>	The CAISO computer control system used to monitor the real-time performance of the various elements of the CAISO Controlled Grid, control Generation, and perform operational power flow studies.
<b>Power System Stabilizers (PSS)</b>	An electronic control system applied on a Generating Unit that helps to damp out dynamic oscillations on a power system. The Power System Stabilizers senses Generator variables, such as voltage, current and shaft speed, processes this information and sends control signals to the Generator voltage regulator.
<b>Power Transfer Distribution Factor (PTDF)</b>	The percentage of a power transfer that flows on a transmission facility as a result of the injection of power at a specific bus and the withdrawal of power at another bus or a Reference Bus.

**Preliminary  
NERC/WECC Charge  
Invoice**

An initial invoice issued by the CAISO that reflects an allocation of NERC/WECC Charges to a Scheduling Coordinator for a NERC/WECC Charge Assessment Year based on (i) the Scheduling Coordinator's NERC/WECC Metered Demand for the NERC/WECC Charge Assessment Year as described in Section 11.20.4, multiplied by (ii) the Preliminary NERC/WECC Charge Rate for the NERC/WECC Charge Assessment Year.

**Preliminary NERC/WECC  
Charge Rate**

The preliminary rate to be paid by Scheduling Coordinators for NERC/WECC Charges for a NERC/WECC Charge Assessment Year based on (i) the portions of the proposed budgets of NERC, WECC, and regional advisory bodies that serve the WECC that the WECC notifies the CAISO in writing are allocable to the CAISO for the NERC/WECC Charge Assessment Year or, alternatively, if the WECC does not provide such written notification to the CAISO in accordance with the CAISO-WECC Billing Services Agreement, the portions of the budgets of NERC, WECC, and regional advisory bodies that serve that WECC that the WECC informed the CAISO were allocable to the CAISO for the immediately preceding NERC/WECC Charge Assessment Year divided by (ii) the total of all Scheduling Coordinators' NERC/WECC Metered Demand for the NERC/WECC Charge Assessment Year as described in Section 11.20.4, including any adjustments to the calculation of NERC/WECC Metered Demand, as reported to the WECC pursuant to Section 11.20.4(b), and including any additional adjustments to the calculation of NERC/WECC Metered Demand, based on decisions by the WECC to permit such adjustments, that the WECC provides to the CAISO in a written statement in accordance with the CAISO-WECC Billing Services Agreement.

**Pre-RA Import  
Commitment**

Any power purchase agreement, ownership interest, or other commercial arrangement entered into on or before March 10, 2006, by a Load Serving Entity serving Load in the CAISO **Balancing Authority** Area for the procurement of Energy or capacity from a resource or resources located outside the CAISO **Balancing Authority** Area. The Pre-RA Import Commitment shall be deemed to terminate upon the expiration of the initial term of the Pre-RA Import Commitment, notwithstanding any "evergreen" or other renewal provision exercisable at the option of the Load Serving Entity.

**Pre-RA Import  
Commitment Capability**

The quantity in MW assigned to a particular Intertie into the CAISO **Balancing Authority** Area based on a Pre-RA Import Commitment.

**Previously-Released  
CRRs**

*CRRs that were released based on a CRR FNM that did not include a particular IBAA change and that will continue to be in effect, either as active financial instruments or as allocated CRRs eligible for renewal nomination in the Priority Nomination Process, when the particular IBAA change is implemented in the CAISO Markets.*

**Price Taker**

A quantity only Energy Bid with no associated price.

**Pricing Node (PNode)**

A single network Node or subset of network Nodes where a physical injection or withdrawal is modeled and for which a Locational Marginal Price is calculated and used for financial settlements.

**Primary CAISO Control  
Center**

The CAISO Control Center located in Folsom, California.

**Priority Nomination  
Process (PNP)**

The step in an annual CRR Allocation in years beyond CRR Year One through which CRR Holders re-nominate (1) Seasonal CRRs they were allocated in the prior year, (2) Long Term CRRs that are expiring, and (3) Existing Transmission Contracts and Converted Rights that are expiring.

**Priority Type**

The Bid component that indicates if applicable the scheduling priority for the Settlement Period for Reliability Must-Run Generation, if applicable.

**Prior Period Change**

Any correction, surcharge, credit, refund or other adjustment pertaining to a billing month pursuant to an RMR Contract which is discovered after the Revised Adjusted RMR Invoice for such billing month has been issued.

**Prior Period Change Worksheet**

A worksheet prepared by the RMR Owner and submitted to the CAISO following discovery of a necessary change to an RMR Invoice after the Revised Adjusted RMR Invoice for the billing month has been issued.

**Projected Proxy Cost**

*A calculation of a resource's Start-Up Costs and Minimum Load Costs for a prospective six-month period used to determine the maximum Registered Cost for the resource. Projected Proxy Costs will be calculated whenever a Scheduling Coordinator elects the Registered Cost option. For natural gas fired resources, the Projected Proxy Cost will be based on applying the highest average price for monthly forward gas contracts at Henry Hub for the six-month period during which the Registered Cost option is in effect to the fuel consumption parameters used for calculating the Proxy Cost, as set forth in a Business Practice Manual. For non-gas fired resources, the Projected Proxy Costs for Start-Up Costs and Minimum Load Costs will be calculated using the information contained in the Master File used for calculating the Proxy Cost, as set forth in the Business Practice Manual.*

**Project Sponsor**

A Market Participant or group of Market Participants or a Participating TO that proposes the construction of a transmission addition or upgrade in accordance with Section 24.

**Proposal for Installation**

A written proposal submitted by a CAISO Metered Entity to the CAISO describing a proposal for the installation of additional Metering Facilities.

**Proxy Cost**

The cost basis of a generating resource for which the operating cost is calculated as an approximation of the actual operating cost pursuant to Section 30.4(1).

**PSS**

Power System Stabilizers

**PTDF**

Power Transfer Distribution Factor

**PTO**

Participating TO or Participating Transmission Owner



<b>PTO Service Territory</b>	The area in which an IOU, a Local Public Owned Electric Utility, or federal power marketing authority that has turned over its transmission facilities and/or Entitlements to CAISO Operational Control is obligated to provide electric service to Load. A PTO Service Territory may be comprised of the Service Areas of more than one Local Publicly Owned Electric Utility, if they are operating under an agreement with the CAISO for aggregation of their MSS and their MSS Operator is designated as the Participating TO.
<b>Public Utility Regulatory Policies Act (PURPA)</b>	The Public Utility Regulatory Policies Act of 1978, incorporated in relevant part into the Federal Power Act.
<b>Pumped-Storage Hydro Unit</b>	A hydroelectric dam with the capability to produce electricity and the ability to pump water between reservoirs at different elevations to store such water for the production of electricity.
<b>Pumping Cost</b>	The hourly cost of pumping, expressed in \$/hour, submitted by a Participating Load.
<b>Pumping Load</b>	A hydro pumping resource that is capable of responding to Dispatch Instructions by ceasing to pump.
<b>Pump Ramping Conversion Factor</b>	A Master File entry submitted by Scheduling Coordinators that allows the Scheduling Coordinator to indicate the ratio of Energy expended to pump water into storage that can be used to produce Energy. A zero percent Pump Ramping Conversion Factor implies that no amount of Energy production capability is produced as a result of pumping water and the CAISO shall not use such unavailable Energy in its CAISO Markets optimization. A hundred percent Pump Ramping Conversion Factor indicates all the Energy expended to pump water is available for Generation and the CAISO shall use only the available portions in its CAISO Markets optimization. The Pump Ramping Conversion Factor submitted in the Master File need not be based on physical characteristics of the resource and is adjustable by the Scheduling Coordinator.

<b>Pump Shut-Down Costs</b>	A Bid Component submitted by Scheduling Coordinators for resources that are registered as a <b>Participating Load</b> that indicates the \$/MWh that the Scheduling Coordinator is willing to be paid to not pump.
<b>PURPA</b>	Public Utility Regulatory Policies Act
<b>QF</b>	Qualifying Facility
<b>QF PGA</b>	Qualifying Facility Participating Generator Agreement
<b>Qualified Load Following Instruction</b>	The MSS Load following instruction that is limited by the qualified Load following up or down capacity. The qualified Load following up and down capacity is the Load following capacity that is qualified and limited by whether the resource is derated or is limited by the <b>Regulation Limits</b> if the resource is providing Regulation.
<b>Qualified <b>OBA</b>ALSE</b>	An <b>OBA</b> ALSE which the CAISO has certified has met all the requirements for eligibility for CRR Allocation in accordance with Section 39.
<b>Qualifying Capacity</b>	The maximum capacity of a Resource Adequacy Resource. The criteria for calculating Qualifying Capacity from Resource Adequacy Resources may be established by the CPUC or other applicable Local Regulatory Authority and provided to the CAISO.
<b>Qualifying Facility (QF)</b>	A qualifying cogeneration <b>facility</b> or small <b>qualifying</b> power production facility, as defined in the Code of Federal Regulations, Title 18, Part 292 (18 C.F.R § 292).
<b>Qualifying Facility Participating Generator Agreement (QF PGA)</b>	An agreement between the CAISO and a Generator with a QF Generating Unit, a <i>pro forma</i> version of which is set forth in Appendix B.3.

<b>Queue Position</b>	The order of a valid Interconnection Request, relative to all other pending valid Interconnection Requests, that is established based upon the date and time of receipt of the valid Interconnection Request by the CAISO.
<b>Ramping</b>	Changing the loading level of a Generating Unit in a constant manner over a fixed time (e.g., Ramping up or Ramping down). Such changes may be directed by a computer or manual control.
<b>Ramping Energy Deviation</b>	The portion of Imbalance Energy produced or consumed due to deviation from the Standard Ramp because of ramp constraints, Start-Up, or Shut-Down. Ramping Energy Deviation may overlap with Standard Ramping Energy, and both Standard Ramping Energy and Ramping Energy Deviation may overlap with Day-Ahead Scheduled Energy, but with no other IIE subtype. Ramping Energy Deviation may be composed of two parts: a) the part that overlaps with Standard Ramping Energy whenever the DOP crosses the Standard Ramping Energy region; and b) the part that does not overlap with Standard Ramping Energy. The latter part of Ramping Energy Deviation consists only of extra-marginal IIE contained within the hourly schedule change band and not attributed to Exceptional Dispatch or derates. Ramping Energy Deviation does not apply to Non-Dynamic System Resources (including Resource-Specific System Resources). Ramping Energy Deviation is settled as described in Section 11.5.1, and it is included in BCR only for market revenue calculations as provided in Section 11.8.1.4.5.
<b>Ramp Rate</b>	The Bid component that indicates the operational Ramp Rate, Regulation Ramp Rate, and Operating Reserve Ramp Rate for a Generating Unit, and the Load drop rate and Load pick-up rate for Participating Loads, for which the Scheduling Coordinator is submitting Energy Bids or Ancillary Services Bids.

**RAS**

**Remedial Action Schemes**

**Rated Governmental Entity**

A municipal utility or state or federal agency that holds an issuer, counterparty, or underlying credit rating by a Nationally Recognized Statistical Rating Organization.

**Rated Public/Private Corporation**

An investor-owned or privately held entity that holds an issuer, counterparty, or underlying credit rating by a Nationally Recognized Statistical Rating Organization.

**Real-Time**

The period of time during the Operating Hour. Any time period during the twenty-four Operating Hours of any given day.

**Real-Time Congestion Fund**

For each Settlement Period of the HASP and RTM, the CAISO shall calculate the Real-Time Congestion Fund as the difference of 1) the sum of the products of the RTM or HASP MCC for Demand and the Demand Imbalance Energy at the relevant Location; and 2) the sum of the products of RTM or HASP MCC for Supply and the Supply Imbalance Energy at the relevant Location; including also the sum of RTM and HASP Congestion Charges for Intertie Ancillary Services Awards.

**Real-Time Congestion Offset**

A component of the neutrality adjustments as provided in Section 11.5.4.2 to account for the non-assessment Marginal Cost of Congestion to Measured Demand for ETCs and TOR Self-Schedules in the Real-Time as provided in Section 11.5.7.

**Real-Time Contingency Dispatch (RTCD)**

The mode of the Real-Time Dispatch that will be invoked when a transmission or generation Contingency occurs and will include all Contingency Only Operating Reserves in the optimization.

**Real-Time Dispatch (RTD)**

The SCED and SCUC software used by the CAISO to determine which Ancillary Service and Imbalance Energy resources to Dispatch and to calculate LMPs.

**Real-Time Economic  
Dispatch (RTED)**

The mode of the Real-Time Dispatch that will optimally dispatch resources based on their Energy Bids, excluding Contingency Only Operating Reserves except when needed to avoid an imminent System Emergency.

**Real-Time Interchange  
Export Schedule**

A final agreed-upon schedule of Energy to be transferred from the CAISO **Balancing Authority** Area to another **Balancing Authority** Area based on agreed-upon size (megawatts), start and end time, beginning and ending ramp times and rate, and type required for delivery and receipt of power and Energy between the source and sink **Balancing Authority** Areas involved in the transaction.

**Real-Time Manual  
Dispatch (RTMD)**

The mode of the Real-Time Dispatch that will be invoked as a fall-back mechanism only when the RTED or RTCD fails to provide a feasible Dispatch.

**Real-Time Marginal Cost  
of Losses Offset**

A component of the neutrality adjustments as provided in Section 11.5.4.2 to account for the non-assessment of Marginal Cost of Losses Charges to Measured Demand for TOR Self-Schedules eligible for the Real-Time Marginal Cost of Losses Credit as provided in Section 11.5.7.2.

**Real-Time Market (RTM)**

The spot market conducted by the CAISO using SCUC and SCED in the Real-Time, after the HASP is completed, which includes the RTUC, STUC and the RTD for the purpose of Unit Commitment, Ancillary Service procurement, Congestion Management and Energy procurement based on Supply Bids and CAISO Forecast of CAISO Demand.

**Real-Time Market  
Pumping Bid Cost**

For the applicable Settlement Interval, the Pumping Cost submitted to the CAISO in the HASP or RTM divided by the number of Settlement Intervals in a Trading Hour, as further provided in Section 11.8.4.1.4.

**Real-Time Minimum Load Energy**

IIE, exclusive of Standard Ramping Energy, Ramping Energy Deviation, and Residual Imbalance Energy, produced due to the Minimum Load of a Generating Unit that is committed in the RUC or the RTM and does not have a Day-Ahead Schedule or of a Constrained Output Generator (COG) that is committed in the IFM with a Day-Ahead Schedule below the registered Minimum Load. If the resource is committed in RTM for Load following by an MSS Operator, the Real-Time Minimum Load Energy is accounted as MSS Load Following Energy instead. Real-Time Minimum Load Energy is IIE above the Day-Ahead Schedule (or zero if there is no Day-Ahead Schedule of Energy) and below the registered Minimum Load. Real-Time Minimum Load Energy does not overlap with any other Expected Energy type. Real-Time Minimum Load Energy is settled as described in Section 11.5.1, and it is included in BCR as described in Section 11.8.4.1.2. IIE that is consumed when a resource that is scheduled in the DAM is shut down in the RTM is accounted as HASP Scheduled Energy or Optimal Energy and not as Real-Time Minimum Load Energy.

**Real-Time Pumping Energy**

IIE from a Participating Load Pumped-Storage Hydro Unit or Pumping Load, exclusive of Standard Ramping Energy and Ramping Energy Deviation, consumed below the Day-Ahead Schedule when dispatched in pumping mode, or produced from pumping operation due to pumping level reduction in Real-Time, including pump shut-down. Real-Time Pumping Energy does not overlap with any other Expected Energy type. Real-Time Pumping Energy is settled as described in Section 11.5.1, and it is included in BCR as described in Section 11.8.4.1.2.

<b>Real-Time Self-Scheduled Energy</b>	The slice of Non-Overlapping Optimal Energy that corresponds to the Real-Time total Self-Schedule.
<b>Real-Time Settlement Interval MSS Price</b>	1) The Real-Time LAP price for the MSS when the MSS internal metered Demand exceeds the MSS internal measured Generation; or 2) the weighted average of the Real-Time LMPs for all applicable PNodes within the relevant MSS when MSS internal measured Generation exceeds MSS internal Measured Demand where weighting factors for computing the weighted average are based on the measured Energy of all Generation at the corresponding PNodes.
<b>Real-Time Unit Commitment (RTUC)</b>	An application of the RTM that runs every 15 minutes and commits Fast Start Units and Medium Start Units using the SCUC to adjust from Day-Ahead Schedules and HASP Intertie Schedules.
<b>Recalculation Settlement Statement</b>	The reissue of an Initial Settlement Statement T+38BD by the CAISO on the fifty-first (51st) Business Day from the relevant Trading Day (T+51BD) if T+51BD falls on a calendar day that is after the day the Invoice or Payment Advice for the bill period containing the relevant Trading Day is scheduled to publish.
<b>Recalculation Settlement Statement T+76BD</b>	The reissue of an Initial Settlement Statement Reissue or the Recalculation Settlement Statement by the CAISO on the seventy-sixth (76th) Business Day from the relevant Trading Day (T+76BD).
<b>Redispatch</b>	The readjustment of scheduled Generation or Demand side management measures, to relieve Congestion or manage Energy imbalances.
<b>Reference Bus</b>	The Location(s) on the CAISO Controlled Grid relative to which mathematical quantities relating to powerflow solution will be calculated.
<b>Registered Cost</b>	The cost basis of a generating resource for which the operating cost is determined from registered values pursuant to Section 30.4(2).

**Registered Data**

Those items of technical data and operating characteristics relating to Generation, transmission or distribution facilities which are identified to the owners of such facilities as being information, supplied in accordance with the CAISO Tariff, to assist the CAISO to maintain reliability of the CAISO Controlled Grid and to carry out its functions.

**Regulating Range**

The operating level range within which a generating resource may provide Regulation.

**Regulation**

The service provided either by Generating Units certified by the CAISO as equipped and capable of responding to the CAISO's direct digital control (AGC) signals, or by System Resources that have been certified by the CAISO as capable of delivering such service to the CAISO **Balancing Authority** Area, in an upward and downward direction to match, on a Real-Time basis, Demand and resources, consistent with established NERC and WECC Reliability Standards and operating criteria. Regulation is used to control the Power output of electric generators within a prescribed area in response to a change in system frequency, tie line loading, or the relation of these to each other so as to maintain the target system frequency and/or the established Interchange with other **Balancing Authority** Areas within the predetermined Regulation Limits. Regulation includes both the increase of output by a Generating Unit or System Resource (Regulation Up) and the decrease in output by a Generating Unit or System Resource (Regulation Down). Regulation Up and Regulation Down are distinct capacity products, with separately stated requirements and ASMPs in each Settlement Period.



**Regulation Down or  
Regulation Down Reserve**

Regulation reserve provided by a resource that can decrease its actual operating level in response to a direct electronic (AGC) signal from the CAISO to maintain standard frequency in accordance with established Reliability Criteria.

**Regulation Down Reserve  
Cost**

The revenues paid to the suppliers of the total awarded Regulation Down Reserve capacity in the Day-Ahead, HASP, and Real-Time Markets for the Settlement Period, minus the payments rescinded in the Settlement Period due to the unavailability of the Regulation Down under any of the provisions of Section 8.10.8.

**Regulation Limits**

The MW limits, up and down, set by a Generator for a Generating Unit's operation on Automatic Generation Control.

**Regulation Up or  
Regulation Up Reserve**

Regulation provided by a resource that can increase its actual operating level in response to a direct electronic (AGC) signal from the CAISO to maintain standard frequency in accordance with established Reliability Criteria.

**Regulation Up Reserve  
Obligation**

The obligation of a Scheduling Coordinator to pay its share of costs incurred by the CAISO in procuring Regulation Up Reserves.

**Regulatory Must-Run  
Generation**

Hydro Spill Generation and Generation which is required to run by applicable federal or California laws, regulations, or other governing jurisdictional authority. Such requirements include but are not limited to hydrological flow requirements, environmental requirements, such as minimum fish releases, fish pulse releases and water quality requirements, irrigation and water supply requirements of solid waste Generation, or other Generation contracts specified or designated by the jurisdictional regulatory authority as it existed on December 20, 1995, or as revised by federal or California law or Local Regulatory Authority.

**Regulatory Must-Take  
Generation**

Those Generation resources identified by CPUC, or a Local Regulatory Authority, the operation of which is not subject to competition. These resources will be scheduled by the relevant Scheduling Coordinator directly with the CAISO on a must-take basis. Regulatory Must-Take Generation includes Generation from Qualifying Facility Generating Units subject to a mandatory purchase obligation as defined by federal law, nuclear units and pre-existing power purchase contracts with minimum Energy take requirements.

**Reliability Coordinator**

The entity designated by WECC as responsible for reliability coordination in Real-Time for the area defined by WECC.

**Reliability Criteria**

Pre-established criteria that are to be followed in order to maintain desired performance of the CAISO Controlled Grid under Contingency or steady state conditions.

**Reliability Must-Run  
Charge (RMR Charge)**

The sum payable by a Responsible Utility to the CAISO pursuant to Section 41 for the costs, net of all applicable credits, incurred under the Reliability Must-Run Contract.

**Reliability Must-Run  
Contract (RMR Contract)**

A Must-Run Service Agreement between the owner of a Reliability Must-Run Unit and the CAISO.

**Reliability Must-Run  
Generation (RMR  
Generation)**

Generation that the CAISO determines is required to be on line to meet Applicable Reliability Criteria requirements. This includes i) Generation constrained on line to meet NERC and WECC reliability criteria for interconnected systems operation; ii) Generation needed to meet Load demand in constrained areas; and iii) Generation needed to be operated to provide voltage or security support of the CAISO or a local area.

**Reliability Must-Run Unit  
(RMR Unit)**

A Participating Generator which is the subject of a Reliability Must-Run Contract.

**Reliability Network  
Upgrades**

The transmission facilities at or beyond the Point of Interconnection necessary to interconnect a Large Generating Facility safely and reliably to the CAISO Controlled Grid, which would not have been necessary but for the interconnection of the Large Generating Facility, including Network Upgrades necessary to remedy short circuit or stability problems resulting from the interconnection of the Large Generating Facility to the CAISO Controlled Grid. Reliability Network Upgrades also include, consistent with WECC practice, the facilities necessary to mitigate any adverse impact the Large Generating Facility's interconnection may have on a path's WECC rating.

**Reliability Requirement  
Determination (RRD)**

The reliability process conducted by the CAISO during the DAM, prior to the IFM, and in the HASP, prior to the RTUC, to determine whether unit(s) subject to a contract with the CAISO to provide local reliability services, which includes Reliability Must-Run and any successor instrument determined are necessary to meet local reliability needs for the CAISO **Balancing Authority** Area.

**Reliability Services Costs**

The costs associated with services provided by the CAISO: 1) that are deemed by the CAISO as necessary to maintain reliable electric service in the CAISO **Balancing Authority** Area; and 2) whose costs are billed by the CAISO to the Participating TO pursuant to the CAISO Tariff. Reliability Services Costs include costs charged by the CAISO to a Participating TO associated with service provided under an Reliability Must-Run Contract, Exceptional Dispatches and Minimum Load Costs associated with units committed for local reliability requirements.

**Reliability Standard**

A requirement approved by FERC under Section 215 of the Federal Power Act to provide for reliable operation of the bulk power system. The term includes requirements for the operation of existing bulk power system facilities, including cyber security protection, and the design of planned additions or modifications to such facilities to the extent necessary for reliable operation of the bulk power system; but the term does not include any requirement to enlarge such facilities or to construct new transmission capacity or generation capacity.

**Remaining Import Capability**

The quantity in MW of Total Import Capability assigned to a Load Serving Entity up to its Load Share Quantity after the assignment of Existing Contract Import Capability and Pre-RA Import Commitment. Capability.

**Remedial Action Schemes (RAS)**

Protective systems that typically utilize a combination of conventional protective relays, computer-based processors, and telecommunications to accomplish rapid, automated response to unplanned power system events. Also, details of RAS logic and any special requirements for arming of RAS schemes, or changes in RAS programming, that may be required. Remedial Action Schemes are also referred to as Special Protection Systems.

**Remote Self-Supply**

Positive Net Output from generating resources in the Station Power Portfolio that is deemed to have self-supplied Station Power Load of other Generating Units in the Station Power Portfolio during the Netting Period, where such self-supply requires use of the CAISO Controlled Grid.

**Request Window**

The period of time as set forth in the Business Practice Manual during which transmission additions or upgrades, requests for Economic Planning Studies, and other transmission related information is submitted to the CAISO in accordance with Section 24.2.2.

<b>Reserve Margin</b>	The amount of Resource Adequacy Capacity that a Scheduling Coordinator is required to maintain in accordance with Section 40.
<b>Reserve Sharing LSE</b>	A Load Serving Entity whose Scheduling Coordinator has informed the CAISO in accordance with Section 40.1 of its election to be a Reserve Sharing LSE.
<b>Residual Imbalance Energy</b>	Extra-marginal IIE produced or consumed at the start or end of a Trading Hour outside the hourly schedule-change band and not attributed to Exceptional Dispatch. Residual Imbalance Energy is due to a Dispatch Instruction in the previous Trading Hour or a Dispatch Instruction in the next Trading Hour. Residual Imbalance Energy may overlap only with Day-Ahead Scheduled Energy. Residual Imbalance Energy does not apply to Non-Dynamic System Resources (including Resource-Specific System Resources). Residual Imbalance Energy is settled as bid, based on the Real-Time Energy Bid of the reference hour, as described in Section 11.5.1 and it is not included in BCR as described in Section 11.8.4. The reference hour is the previous Trading Hour, if Residual Imbalance Energy occurs at the start of a Trading Hour, or the next Trading Hour, if Residual Imbalance Energy occurs at the end of a Trading Hour.
<b>Residual Unit Commitment (RUC)</b>	The process conducted by the CAISO in the Day-Ahead Market after the IFM has been executed to ensure sufficient Generating Units, System Units, System Resources and Participating Loads are committed to meet the CAISO Forecast of CAISO Demand.
<b>Resource Adequacy Capacity or RA Capacity</b>	The generation capacity of a Resource Adequacy Resource listed on a Resource Adequacy Plan and a Supply Plan.
<b>Resource Adequacy Compliance Year</b>	A calendar year from January 1 through December 31.

**Resource Adequacy Plan** A submission by a Scheduling Coordinator for a Load Serving Entity in the form required by the Business Practice Manual to satisfy the requirements of Section 40.

**Resource Adequacy Resource** A resource that is required to offer Resource Adequacy Capacity. The criteria for determining the types of resources that are eligible to provide Qualifying Capacity may be established by the CPUC or other applicable Local Regulatory Authority and provided to the CAISO.

**Resource ID** A resource that is required to offer Resource Adequacy Capacity. The criteria for determining the types of resources that are eligible to provide Qualifying Capacity may be established by the CPUC or other applicable Local Regulatory Authority and provided to the CAISO.

**Resource Location** The Resource ID for a Generating Unit, Participating Load or System Resource.

**Resource-Specific ASMP** The Ancillary Services Marginal Price as determined pursuant to Section 11.10.

**Resource-Specific Settlement Interval LMP** The LMP at a PNode used for settlement of IIE, calculated as the IIE-weighted average, excluding the IIE weight for Residual Imbalance Energy, Energy from HASP Intertie Schedules, and Energy from Black Start and Voltage Support, of the individual LMPs for Dispatch Intervals within the given Settlement Interval for a resource, and if there is no Instructed Imbalance Energy, then it is calculated as the simple average of the individual LMPs for the Dispatch Intervals within the given Settlement Interval for a resource.

**Resource-Specific System Resource** A Dynamic or Non-Dynamic Resource-Specific System Resource.

**Resource-Specific Tier 1 UIE Settlement Interval Price** The price used to settle Tier 1 UIE as calculated pursuant to Section 11.5.2.1.

**Responsible Participating  
Transmission Owner (or  
Responsible Participating  
TO or Responsible PTO)**

The party providing transmission service under an Existing Contract listed in Appendix A of a Responsible Participating Transmission Owner Agreement and that is the Scheduling Coordinator for each Existing Right holder listed in Appendix A of that RPTOA, unless that Scheduling Coordinator responsibility is transferred pursuant to the provisions of the RPTOA.

**Responsible Participating  
Transmission Owner  
Agreement (RPTOA)**

An agreement between the CAISO and a Responsible Participating Transmission Owner, a *pro forma* version of which has been accepted by FERC as a CAISO rate schedule in 88 FERC ¶ 61,077.

**Responsible Utility**

The utility which is a party to the Transmission Control Agreement in whose PTO Service Territory the Reliability Must-Run Unit is located or whose PTO Service Territory is contiguous to the PTO Service Territory in which a Reliability Must-Run Unit owned by an entity outside of the CAISO Controlled Grid is located.

**Responsible Utility  
Facility Trust Account**

A segregated commercial bank account under the Facility Trust Account containing funds held in trust for the Responsible Utility under an RMR Contract.

**Revenue Meter Data  
Acquisition and  
Processing System  
(RMDAPS)**

A collective name for the set of CAISO systems used to collect, validate, edit and report on Revenue Quality Meter Data.

**Revenue Quality Meter  
Data**

Meter data meeting the standards and requirements established and maintained by the CAISO.

**Revenue Requirement**

The revenue level required by a utility to cover expenses made on an investment, while earning a specified rate of return on the investment.

**Revised Adjusted RMR  
Invoice**

The monthly invoice issued by the Reliability Must-Run Owner to the CAISO pursuant to the Reliability Must-Run Contract reflecting any appropriate revisions to the Adjusted Reliability Must-Run Invoice based on the CAISO's validation and actual data for the billing month.

**Revised Estimated RMR Invoice**

The monthly invoice issued by the Reliability Must-Run Owner to the CAISO pursuant to the Reliability Must-Run Contract reflecting appropriate revisions to the Estimated Reliability Must-Run Invoice based on the CAISO's validation of the Estimated Reliability Must-Run Invoice.

**RMDAPS**

Revenue Meter Data Acquisition and Processing System

**RMR**

Reliability Must-Run

**RMR Charge**

Reliability Must-Run Charge

**RMR Contract**

Reliability Must-Run Contract

**RMR Default Amount**

Any amount due to be remitted to the relevant Facility Trust Account by the RMR Owner or the Responsible Utility in accordance with an RMR Contract.

**RMR Dispatch**

The quantity of Energy or Ancillary Services that is mandated by the CAISO to be delivered in a given market for a resource by an RMR Unit under an RMR Contract.

**RMR Dispatch Notice**

Notice received by an RMR Unit from the CAISO containing an RMR Dispatch.

**RMR Energy**

Total Expected Energy under RMR Dispatch. RMR Energy is calculated independent of other Expected Energy types and it may overlap with any other Expected Energy type. It is used for RMR Contract based settlement as provided in Section 11.13.

**RMR Generation**

Reliability Must-Run Generation

**RMR Invoice**

Any Estimated RMR Invoice, Revised Estimated RMR Invoice, Adjusted RMR Invoice, or Revised Adjusted RMR Invoice under an RMR Contract.

**RMR Owner**

The provider of services under a Reliability Must-Run Contract.



<b>RMR Owner Facility Trust Account</b>	The commercial bank account held in trust by the CAISO for the benefit of the owner of an RMR Unit subject to an RMR Contract as required and specified in Section 9.2 of the <i>pro forma</i> RMR Contract.
<b>RMR Payment</b>	Any amounts which the CAISO is obligated to pay to RMR Owners under the RMR Contracts, net of any applicable credits under the RMR Contracts.
<b>RMR Payments Calendar</b>	The payment calendar issued by the CAISO pursuant to Section 11.13.
<b>RMR Proxy Bid</b>	For Condition 1 RMR Units, an amount calculated based on the hourly variable costs as defined in Schedule C of the applicable RMR Contract in the form of a monotonically increasing function consistent with the bidding rules in Section 30, which is used in the MPM-RRD process described in Section 31.2. For Condition RMR 2 Units, the Energy Bid defined in Schedule M of the RMR Contract, which is used in the MPM-RRD process described in Section 31.2.
<b>RMR Refund</b>	Any amounts which RMR Owners are obligated to pay to the CAISO and the CAISO is obligated to pay to the Responsible Utilities under the RMR Contracts, or resulting from any order by the FERC, for deposit into the Responsible Utility Facility Trust Account.
<b>RMR Security</b>	The form of security provided by a Responsible Utility to cover its liability under Section 11.13.
<b>RMR Unit</b>	Reliability Must-Run Unit
<b>RPTOA</b>	Responsible Participating Transmission Owner Agreement
<b>RRD</b>	Reliability Requirement Determination
<b>RTCD</b>	Real-Time Contingency Dispatch
<b>RTD</b>	Real-Time Dispatch
<b>RTED</b>	Real-Time Economic Dispatch

<b>RTM</b>	Real-Time Market
<b>RTM AS Bid Cost</b>	The Bid Cost of a BCR Eligible Resource for Ancillary Service capacity in the RTM.
<b>RTM Bid Cost</b>	The total of a resource's RTM Start-Up Cost, RTM Minimum Load Cost, RTM Pump Shut-Down Cost, RTM Pumping Cost, RTM Energy Bid Cost, and RTM AS Bid Cost.
<b>RTM Bid Cost Shortfall</b>	For each Settlement Interval, for any BCR Eligible Resource, the negative amount resulting from the difference between its RTM Bid Cost and its RTM Market Revenue.
<b>RTM Bid Cost Surplus</b>	For each Settlement Interval, for any BCR Eligible Resource, the positive amount, if any, resulting from the difference between its RTM Bid Cost and its RTM Market Revenue.
<b>RTM Bid Cost Uplift</b>	The system-wide net of the RTM Bid Cost Shortfalls and RTM Bid Cost Surpluses for a Settlement Interval of all BCR Eligible Resources with Unrecovered Bid Cost Uplift Payments. This amount will be netted according to Section 11.8.6.2 to calculate the Net RTM Bid Cost Uplift before allocation to Scheduling Coordinators.
<b>RTM Commitment Period</b>	A Commitment Period determined by the RTM; provided that if the RTM changes the Commitment Status of units scheduled in the IFM or committed in the RUC, an RTM Commitment Period may or may not partially overlap with IFM Commitment Period and RUC Commitment Period.
<b>RTMD</b>	Real-Time Manual Dispatch
<b>RTM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules</b>	A credit provided to Scheduling Coordinators pursuant to Section 17.3.3 to offset any HASP and RTM Marginal Cost of Losses that would otherwise be applied to the valid and balanced portions of any TOR Self-Schedule in the IFM as provided in Section 11.5.7.2.

<b>RTM Market Revenue</b>	The amount received by BCR Eligible Resource from Energy scheduled and Ancillary Services awarded in the RTM for the purposes of Bid Cost Recovery.
<b>RTM Self-Commitment Period</b>	A time period determined by the CAISO for the purposes of deriving any Bid Cost Recovery amounts, related to the RTM.
<b>RTUC</b>	Real-Time Unit Commitment
<b>RUC</b>	Residual Unit Commitment
<b>RUC Availability Bid</b>	The quantity (MW) and price (\$/MW per hour) at or above which a Generating Unit, System Resource, System Unit or Participating Load has agreed to sell capacity for a specified interval of time to the CAISO to meet the Residual Unit Commitment requirement.
<b>RUC Availability Bid Cost</b>	As provided in Section 11.8.3.1.3, the product of the RUC Award and the relevant RUC Availability Bid price, divided by the number of Settlement Intervals in a Trading Hour.
<b>RUC Availability Payment</b>	The payment made for the RUC Availability Quantity as specified in Section 11.2.2.1.
<b>RUC Availability Quantity</b>	A RUC Award (MW) excluding any RUC Capacity that is actually unavailable due to a unit derate or Outage.
<b>RUC Award</b>	The portion of the RUC Capacity from resources eligible to receive RUC Availability Payments, exclusive of Minimum Load, capacity designated as RMR, and capacity under resource adequacy requirements as specified in Section 40.
<b>RUC Bid Cost</b>	The total Bid Costs associated with commitment by the CAISO through the RUC process used for determination of Unrecovered Bid Cost Uplift Payments and RUC Bid Cost Uplift allocation.

<b>RUC Bid Cost Shortfall</b>	For each Settlement Interval, for any BCR Eligible Resource, the negative amount, if any, resulting from the difference between its RUC Bid Cost and its RUC Market Revenue.
<b>RUC Bid Cost Surplus</b>	For each Settlement Interval, for any BCR Eligible Resource, the positive amount, if any, resulting from the difference between its RUC Bid Cost and its RUC Market Revenue.
<b>RUC Bid Cost Uplift</b>	The system-wide net of the RUC Bid Cost Shortfalls and RUC Bid Cost Surpluses for a Settlement Interval for all BCR Eligible Resources with Unrecovered Bid Cost Uplift Payments. This amount will be netted according to Section 11.8.6.2 to calculate the Net RUC Bid Cost Uplift before allocation to Scheduling Coordinators.
<b>RUC Capacity</b>	The positive difference between the RUC Schedule and the greater of the Day-Ahead Schedule and the Minimum Load level of a resource.
<b>RUC Commitment Period</b>	A Commitment Period determined by the RUC; provided that because the RUC may not decommit units scheduled in the IFM, if the unit is scheduled by the IFM within that Time Period an IFM Commitment Period is always within a RUC Commitment Period; and a RUC Commitment Period may start earlier and/or may end later than an IFM Commitment Period if RUC issues an earlier Start-Up Instruction and/or later Shut-Down Instruction than the IFM, respectively.
<b>RUC Compensation</b>	The payment to Scheduling Coordinators with RUC Awards, calculated as the sum of RUC Availability Payment and RUC Unrecovered Bid Costs.
<b>RUC Compensation Cost</b>	As provided in Section 11.8.6.5, for each Trading Hour of the RUC, the sum of the RUC Availability Payment and the hourly Net RUC Bid Cost Uplift, which is allocated as provided in Section 11.8.6.5.3.

<b>RUC Market Revenues</b>	The sum of a resource's RUC Availability Payment for a Trading Hour divided by the number of Settlement Intervals in a Trading Hour or the purposes of calculating Bid Cost Recovery for RUC.
<b>RUC Price</b>	The price calculated by the RUC optimization for each Trading Hour of the next Trading Day which reflects the price (\$/MW per hour) for the next increment of RUC Capacity at a specified PNode for each Trading Hour.
<b>RUC Schedule</b>	The total MW per hour amount of capacity committed by RUC including the MW per hour amounts committed in the Day-Ahead Schedule.
<b>RUC Zone</b>	A forecast region representing a UDC or MSS Service Area, Local Capacity Area, or other collection of Nodes for which the CAISO has developed sufficient historical CASIO Demand and relevant weather data to perform a Demand Forecast for such area, for which as further provided in Section 31.5.3.7 the CAISO may adjust the CAISO Forecast of CAISO Demand to ensure that the RUC process produces adequate local capacity procurement.
<b>Rules of Conduct</b>	The rules set forth in Sections 37.2 through 37.7.
<b>Sanction</b>	A consequence specified in Section 37 for the violation of a Rule of Conduct, which may include a) a warning letter notifying the Market Participant of the violation and future consequences specified under Section 37 if the behavior is not corrected, or b) financial penalties. Neither referral to FERC nor rescission of payment for service not provided shall constitute a Sanction.
<b>SC</b>	Scheduling Coordinator
<b>SCA</b>	Scheduling Coordinator Agreement
<b>SCADA</b>	Supervisory Control and Data Acquisition
<b>SCED</b>	Security Constrained Economic Dispatch

<b>Schedule</b>	A Day-Ahead Schedule, a HASP Advisory Schedule, or a HASP Intertie Schedule.
<b>Scheduled Demand</b>	The MW of Energy of Demand cleared through the IFM and set in the Day-Ahead Schedule for the next Trading Day.
<b>Scheduled Generation</b>	The MW of Energy of Generation cleared through the IFM and set in the Day-Ahead Schedule for the next Trading Day.
<b>Scheduling and Logging system for the CAISO (SLIC)</b>	A logging application that allows Market Participants to notify the CAISO when a Generating Unit's properties change due to physical problems. Users can modify the maximum and minimum output of a unit, as well as the Ramping capability of the unit.
<b>Scheduling Coordinator (SC)</b>	An entity certified by the CAISO for the purposes of undertaking the functions specified in Section 4.5.3.
<b>Scheduling Coordinator Agreement (SCA)</b>	An agreement between a Scheduling Coordinator and the CAISO whereby the Scheduling Coordinator agrees to comply with all CAISO rules, protocols and instructions, as those rules, protocols and instructions may be amended from time to time, a <i>pro forma</i> version of which is set forth in Appendix B.1.
<b>Scheduling Coordinator Applicant</b>	An applicant for certification by the CAISO as a Scheduling Coordinator.
<b>Scheduling Coordinator Application Form</b>	The form specified by the CAISO from time to time in which a Scheduling Coordinator Applicant must apply to the CAISO for certification as a Scheduling Coordinator.
<b>Scheduling Coordinator Customer</b>	A customer of the Scheduling Coordinator Applicant or a Scheduling Coordinator for whom the Scheduling Coordinator provides services relevant to the CAISO Controlled Grid.

**Scheduling Coordinator  
ID Code (SCID)**

The Bid component that indicates the individual identification Code provided by the CAISO to the Scheduling Coordinator.

**Scheduling Coordinator  
Metered Entity**

A Generator, Eligible Customer or End-User that is not a CAISO Metered Entity.

**Scheduling Point**

A location at which the CAISO Controlled Grid is connected, by a group of transmission paths for which a physical, non-simultaneous transmission capacity rating has been established for Congestion Management, to transmission facilities that are outside the CAISO's Operational Control.

**SCID**

Scheduling Coordinator ID Code

**Scoping Meeting**

The meeting among representatives of the Interconnection Customer, the applicable Participating TO, and the CAISO conducted for the purpose of discussing alternative interconnection options, to exchange information including any transmission data and earlier study evaluations that would be reasonably expected to impact such interconnection options, to analyze such information, and to determine the potential feasible Points of Interconnection.

**SCUC**

Security Constrained Unit Commitment

**Seasonal Available CRR  
Capacity**

The upper limit of network capacity that will be used in the annual CRR Allocation and annual CRR Auction calculated by effectively reducing OTC for Transmission Ownership Rights as if all lines will be in service for the relevant year in accordance with Section 36.4.

**Seasonal CRR**

A Congestion Revenue Right that is valid for one season and one time-of-use period in a given year.

**Seasonal CRR Eligible  
Quantity**

The MW quantity of CRRs a CRR Holder or Candidate CRR Holder is eligible to nominate for a specific season and time of use period in the annual CRR Allocation.

<b>Seasonal CRR Load Metric</b>	The MW level of Load that is exceeded only in .05 percent of the hours for each season and time of use period based on the LSE's historical Load.
<b>Secondary Registration System</b>	The computer interface through which CRR Holders and Candidate CRR Holders register any bilateral CRR transactions with the CAISO.
<b>Security Constrained Economic Dispatch (SCED)</b>	An algorithm performed by a computer program that simultaneously clears Energy Supply Bids, including Self-Schedules, against Demand Forecast to determine Dispatch Instructions.
<b>Security Constrained Unit Commitment (SCUC)</b>	An algorithm performed by a computer program over a multi-hour Time Horizon that determines the Commitment Status and Day-Ahead Schedules, AS Awards, RUC Awards, HASP Intertie Schedules and Dispatch Instructions for selected resources and minimizes production costs (Start-Up, Minimum Load and Energy Bid Costs in IFM, HASP and RTM; Start-Up, Minimum Load and RUC Availability Bid Costs) while respecting the physical operating characteristics of selected resources and transmission Constraints.
<b>Security Monitoring</b>	The real-time assessment of the CAISO Controlled Grid that is conducted to ensure that the system is operating in a secure state, and in compliance with all Applicable Reliability Criteria.
<b>Self-Commitment Period</b>	The portion of a Commitment Period of a unit with an Energy Self-Schedule or a Submission to Self-Provide an Ancillary Services, except for Non-Spinning Reserve self-provision by a Fast Start Unit. The Self-Commitment Period may include Time Periods without Energy Self-Schedules or AS self-provision if it is determined by inference that the unit must be on due to Minimum Run Time, Minimum Down Time, or Maximum Daily Start-Up constraints.



**Self-Provided Ancillary Services**

A Submission to Self-Provide Ancillary Services in the Day-Ahead Market, HASP, or Real-Time Market that has been accepted by the CAISO. Acceptance will occur prior to Ancillary Service Bid evaluation in the relevant market and indicates that the CAISO has determined the submission is feasible with regard to resource operating characteristics and regional constraints and is qualified to provide the Ancillary Service in the market for which it was submitted. Self-Provided Ancillary Services consist of self-provided Regulation Up reserves, self-provided Regulation Down reserves, self provided Spinning Reserves, and self-provided Non-Spinning Reserves.

**Self-provided Load**

The portion of Load that is served by a Net Scheduled QF listed in a QF PGA, consistent with Section 218(b) of the California Public Utilities Code.

**Self-Schedule**

The Bid component that indicates the quantities in MWhs with no specification of a price that the Scheduling Coordinator is submitting to the CAISO, which indicates that the Scheduling Coordinator is a Price Taker, Regulatory Must-Run Generation or Regulatory Must-Take Generation, which includes ETC and TOR Self-Schedules and Self-Schedules for Converted Rights.

**Service Area**

An area in which an IOU or a Local Publicly Owned Electric Utility is obligated to provide electric service to End-Use Customers.

**Set Point**

Scheduled operating level for each Generating Unit or other resource scheduled to run in the HASP Schedule and HASP Awards.

**Settlement**

Process of financial settlement for products and services purchased and sold undertaken by the CAISO under Section 11. Each Settlement will involve a price and a quantity.

<b>Settlement Account</b>	An account held at a bank situated in California, designated by a Scheduling Coordinator, a CRR Holder or a Participating TO pursuant to the Scheduling Coordinator's Scheduling Coordinator Agreement, the CRR Holder's CRR Entity Agreement or in the case of a Participating TO, Section 2.2.1 of the Transmission Control Agreement, to which the CAISO shall pay amounts owing to the Scheduling Coordinator, the CRR Holder or the Participating TO under the CAISO Tariff.
<b>Settlement Interval</b>	The time period equal to or a multiple of the Dispatch Interval, over which the CAISO settles cost compensation amounts or deviations in Generation and Demand in CAISO Markets.
<b>Settlement Interval Penalty Location Real- Time LMP</b>	The optimal Instructed Imbalance Energy weighted average of the individual Dispatch Interval Real-Time LMPs for the resources in a UDP Aggregation established pursuant to Appendix R.
<b>Settlement Period</b>	For all CAISO transactions the period beginning at the start of the hour, and ending at the end of the hour. There are twenty-four Settlement Periods in each Trading Day, with the exception of a Trading Day in which there is a change to or from daylight savings time.
<b>Settlement Quality Meter Data</b>	Meter Data gathered, edited, validated, and stored in a settlement-ready format, for Settlement and auditing purposes.
<b>Settlement Quality Meter Data Systems</b>	A collective name for the set of CAISO systems used to accept, analyze and report on Settlement Quality Meter Data.

**Settlements, Metering,  
and Client Relations  
Charge**

The component of the Grid Management Charge that provides for the recovery of the CAISO's costs, including, but not limited to the costs of maintaining customer account data, providing account information to customers, responding to customer inquiries, calculating market charges, resolving customer disputes, and the costs associated with the CAISO's Settlement, billing, and metering activities. Because this is a fixed charge per Scheduling Coordinator ID, costs associated with activities listed above also are allocated to other charges under the Grid Management Charge according to formula set forth in Appendix F, Schedule 1, Part A.

**Settlement Statement**

Any one of the following: Initial Settlement Statement T+38BD, Initial Settlement Statement Reissue, Recalculation Settlement Statement and Recalculation Settlement Statement T+76BD.

**Settlement Statement Re-  
run**

The re-calculation of a Settlement Statement in accordance with the provisions of the CAISO Tariff.

**SFT**

Simultaneous Feasibility Test

**Shadow Price**

The marginal value of relieving a particular Constraint.

**Short Start Unit**

A Generating Unit that has a cycle time less than five hours (Start-Up Time plus Minimum Run Time is less than five hours), has a Start-Up Time less than two hours, and can be fully optimized with respect to this cycle time.

**Short-Term Unit  
Commitment (STUC)**

The Unit Commitment procedure run at approximately T-52.5 minutes for a Time Horizon of approximately five (5) hours. The STUC determines whether some Medium Start Units need to be started early enough to meet the Demand within the STUC Time Horizon using the CAISO Forecast of CAISO Demand. The STUC produces a Unit Commitment solution for every 15-minute interval within the STUC Time Horizon and issues binding Start-Up Instructions only as necessary.

<b>Shut-Down</b>	A Commitment Status transition <b>from</b> On to Off.
<b>Shut-Down Cost</b>	The Bid Component submitted by the Scheduling Coordinator indicating a single price at which the resource is willing to Shut-Down.
<b>Shut-Down Instruction</b>	An instruction issued by the CAISO to a resource to Shut-Down.
<b>Simultaneous Feasibility Test (SFT)</b>	The process that the CAISO will conduct to ensure that allocated and auction CRRs do not exceed relevant transmission system <b>C</b> onstraints as described in Section 36.4.2 and further described in the Business Practice Manuals.
<b>Site Control</b>	Documentation reasonably demonstrating: (1) ownership of, a leasehold interest in, or a right to develop a site for the purpose of constructing the Generating Facility; (2) an option to purchase or acquire a leasehold site for such purpose; or (3) an exclusivity or other business relationship between Interconnection Customer and the entity having the right to sell, lease or grant Interconnection Customer the right to possess or occupy a site for such purpose.
<b>SLIC</b>	<b>Scheduling and Logging system for the CAISO</b>
<b>Small Generating Facility</b>	A Generating Facility that has a Generating Facility Capacity of no more than 20 MW.
<b>Small Utility Distribution Company (SUDC)</b>	<p>An entity that owns a Distribution System that is capable of transmitting or delivery of Energy to and/or from the <b>CAISO</b> Controlled Grid that provides retail electric service to End-Use Customers, and has the following characteristics:</p> <ol style="list-style-type: none"><li>1. Annual peak Demand is 25 MW or less;</li><li>2. The Distribution System is not in a local reliability area defined by the <b>CAISO</b>; and</li><li>3. Good Utility Practice was used in designing all substation facilities that are owned or operated by the entity and interconnected to the <b>CAISO</b> Controlled Grid, and none of those substations have transmission circuit breakers.</li></ol>

<b>Small Utility Distribution Company Operating Agreement (SUDC Operating Agreement)</b>	An agreement between the CAISO and an SUDC, a pro forma version of which is set forth in Appendix B.10.
<b>SMEC</b>	System Marginal Energy Cost
<b>Special Protection System (SPS)</b>	An automatic protection system designed to detect abnormal or predetermined system conditions, and take corrective actions other than and/or in addition to the isolation of faulted components to maintain System Reliability. Such action may include changes in Demand, Generation (MW and MVar), or system configuration to maintain system stability, acceptable voltage, or power flows. An SPS does not include (a) Underfrequency Load Shedding or undervoltage Load Shedding or (b) fault conditions that must be isolated or (c) out-of-step relaying (not designed as an integral part of an SPS). An SPS is also sometimes called a Remedial Action Scheme.
<b>Spinning Reserve</b>	The portion of unloaded synchronized generating capacity that is immediately responsive to system frequency and that is capable of being loaded in ten minutes, and that is capable of running for at least two hours.
<b>Spinning Reserve Cost</b>	The revenues paid to the suppliers of the total awarded Spinning Reserve capacity in the Day-Ahead Market, HASP, and Real-Time Market for the Settlement Period, minus the payments rescinded in the Settlement Period due to the unavailability of the Spinning Reserve under any of the provisions of Section 8.10.2.
<b>Spinning Reserve Obligations</b>	The obligation of a Scheduling Coordinator to pay its share of costs incurred by the CAISO in procuring Spinning Reserve.
<b>SPS</b>	Special Protection System

**Stand Alone Network Upgrades**

Network Upgrades that an Interconnection Customer may construct without affecting day-to-day operations of the CAISO Controlled Grid or Affected Systems during their construction. The Participating TO, the CAISO, and the Interconnection Customer must agree as to what constitutes Stand Alone Network Upgrades and identify them in Appendix A to the Standard Large Generator Interconnection Agreement.

**Standard Large Generator Interconnection Agreement (LGIA)**

The form of interconnection agreement applicable to an Interconnection Request pertaining to a Large Generating Facility, a *pro forma* version of which is set forth in Appendix V.

**Standard Large Generator Interconnection Procedures (LGIP)**

The interconnection procedures applicable to an Interconnection Request pertaining to a Large Generating Facility that is set forth in Appendix U.

**Standard Ramp (-ing)**

A ramp calculated from two consecutive Day-Ahead Schedules that results in a straight trajectory between 10 minutes before the start of a Trading Hour to 10 minutes after the start of the Trading Hour.

**Standard Ramping Energy**

Imbalance Energy produced or consumed in the first two and the last two Dispatch Intervals due to hourly schedule changes. Standard Ramping Energy is a schedule deviation along a linear symmetric twenty (20)-minute ramp (Standard Ramp) across hourly boundaries. Standard Ramping Energy is always present when there is an hourly schedule change, including resource Start-Ups and Shut-Downs. Standard Ramping Energy does not apply to Non-Dynamic System Resources (including Resource-Specific System Resources) and is not subject to Settlement as described in Section 11.5.1.

<b>Standby Rate</b>	A rate assessed a Standby Service Customer by the Participating TO that also provides retail electric service, as approved by the Local Regulatory Authority, or FERC, as applicable, for Standby Service which compensates the Participating TO, among other things, for costs of High Voltage Transmission Facilities.
<b>Standby Service</b>	Service provided by a Participating TO that also provides retail electric service, which allows a Standby Service Customer, among other things, access to High Voltage Transmission Facilities for the delivery of backup power on an instantaneous basis to ensure that Energy may be reliably delivered to the Standby Service Customer in the event of an Outage of a Generating Unit serving the customer's Load.
<b>Standby Service Customer</b>	A retail End-Use Customer of a Participating TO that also provides retail electric service that receives Standby Service and pays a Standby Rate.
<b>Standby Transmission Revenue</b>	The transmission revenues, with respect to cost of both High Voltage Transmission Facilities and Low Voltage Transmission Facilities, collected directly from Standby Service Customers through charges for Standby Service.
<b>Start-Up</b>	A Commitment Status transition from Off to On.
<b>Start-Up Bid</b>	The Bid component that indicates the Start-Up Time and Start-Up Cost curves for the Generating Unit, which applies for the entire Trading Day for which it is submitted. Start-Up Cost curves are strictly monotonically increasing non-negative staircase curves, up to three segments, which represent a function of Start-Up Cost versus down time.
<b>Start-Up Cost</b>	The cost incurred by a particular Generating Unit during Start-Up from the time of first fire, the time of receipt of a CAISO Dispatch Instruction, or the time the unit was last synchronized to the grid, whichever is later, until the time the Generating Unit reaches its minimum operating level.
<b>Start-Up Instruction</b>	An instruction issued by the CAISO to a resource to Start-Up.

<b>Start-Up Time</b>	The time period required for a resource to go from Off to its Minimum Load.
<b>State Estimator</b>	A computer software program that provides the CAISO with a near Real-Time assessment of system conditions within the CAISO <b>Balancing Authority</b> Area, including portions of the CAISO <b>Balancing Authority</b> Area where Real-Time information is unavailable.
<b>Station Power</b>	Energy for operating electric equipment, or portions thereof, located on the Generating Unit site owned by the same entity that owns the Generating Unit, which electrical equipment is used exclusively for the production of Energy and any useful thermal energy associated with the production of Energy by the Generating Unit; and for the incidental heating, lighting, air conditioning and office equipment needs of buildings, or portions thereof, that are owned by the same entity that owns the Generating Unit; located on the Generating Unit site; and used exclusively in connection with the production of Energy and any useful thermal energy associated with the production of Energy by the Generating Unit. Station Power includes the Energy associated with motoring a hydroelectric Generating Unit to keep the unit synchronized at zero real power output to provide Regulation or Spinning Reserve. Station Power does not include any Energy used to power synchronous condensers; used for pumping at a pumped storage facility; or provided during a Black Start procedure. Station Power does not include Energy to serve loads outside the CAISO <b>Balancing Authority</b> Area.
<b>Station Power Portfolio</b>	One or more generating resources eligible to self-supply Station Power, including Generating Units in the CAISO <b>Balancing Authority</b> Area, and generating facilities outside the CAISO <b>Balancing Authority</b> Area, all of which are owned by the same entity.



**STUC**

**Short-Term Unit Commitment**

**Study Plan**

The plan to be developed pursuant to Section 24.4.3, which sets forth the technical studies to be performed during the annual Transmission Planning Process.

**Sub-LAP**

A CAISO defined subset of PNodes within a Default LAP.

**Submission to Self-  
Provide an Ancillary  
Service**

A submission to the CAISO containing all of the bidding requirements for an Ancillary Service with the exception of price information.

**Sub-Region**

A region identified by the CAISO for procurement of Ancillary Services within the System Region.

**SUDC**

Small Utility Distribution Company.

**SUDC Operating  
Agreement**

Small Utility Distribution Company Operating Agreement

**Supervisory Control and  
Data Acquisition (SCADA)**

A computer system that allows an electric system operator to remotely monitor and control elements of an electric system.

**Supply**

The Energy delivered from a Generating Unit, System Unit, Physical Scheduling Plant, System Resource or the Curtailable Demand provided by a Participating Load.

**Supply Plan**

A submission by a Scheduling Coordinator for a Resource Adequacy Resource in order to satisfy the requirements of Section 40.

**System Emergency**

Conditions beyond the normal control of the CAISO that affect the ability of the CAISO **Balancing Authority** Area to function normally including any abnormal system condition which requires immediate manual or automatic action to prevent loss of Load, equipment damage, or tripping of system elements which might result in cascading Outages or to restore system operation to meet the minimum operating reliability criteria.

<b>System Marginal Energy Cost (SMEC)</b>	The component of the LMP <b>that</b> reflects the marginal cost of providing Energy from a designated reference <b>Location</b> .
<b>System Planning Studies</b>	Reports summarizing studies performed to assess the adequacy of the CAISO Controlled Grid as regards conformance to Reliability Criteria.
<b>System Region</b>	The CAISO <b>Balancing Authority</b> Area.
<b>System Reliability</b>	A measure of an electric system's ability to deliver uninterrupted service at the proper voltage and frequency.
<b>System Resource</b>	A group of resources, single resource, or a portion of a resource located outside of the CAISO <b>Balancing Authority</b> Area, or an allocated portion of a <b>Balancing Authority</b> Area's portfolio of generating resources that are either a static Interchange schedule or directly responsive to that <b>Balancing Authority</b> Area's Automatic Generation Control (AGC) capable of providing Energy and/or Ancillary Services to the CAISO <b>Balancing Authority</b> Area, provided that if the System Resource is providing Regulation to the CAISO it is directly responsive to AGC.
<b>System Unit</b>	One or more individual Generating Units and/or Loads within a Metered Subsystem controlled so as to simulate a single resource with specified performance characteristics, as mutually determined and agreed to by the MSS Operator and the CAISO. The Generating Units and/or Loads making up a System Unit must be in close physical proximity to each other such that the operation of the resources comprising the System Unit does not result in significant differences in flows on the CAISO Controlled Grid.
<b>TAC</b>	Transmission Access Charge
<b>TAC Benefit</b>	The amount, if any, for each year by which the cost of Existing High Voltage Transmission Facilities associated with deliveries of Energy to Gross Loads in the PTO Service Territory is reduced by the implementation of the High Voltage Access Charge described in Schedule 3 to Appendix F. The TAC Benefit of a New Participating TO shall not be less than zero.

<b>TAC Transition Date</b>	January 1, 2001, the date described in Section 4.2 of Appendix F, Schedule 3, when the first New Participating TO's execution of the Transmission Control Agreement took effect, which established the start of the TAC Transition Period for the calculation of the Access Charge.
<b>TAC Transition Period</b>	The 10-year transition period for the CAISO's Access Charge methodology commencing January 1, 2001 through December 31, 2010.
<b>Take-Out Point</b>	The metering points at which a Scheduling Coordinator Metered Entity or CAISO Metered Entity takes delivery of Energy.
<b>Tangible Net Worth (TNW)</b>	Total assets minus intangibles (e.g., good will) minus total liabilities.
<b>Tax Exempt Debt</b>	Municipal Tax Exempt Debt or Local Furnishing Bonds.
<b>Tax Exempt Participating TO</b>	A Participating TO that is the beneficiary of outstanding Tax Exempt Debt issued to finance any electric facilities, or rights associated therewith, which are part of an integrated system including transmission facilities the Operational Control of which is transferred to the CAISO pursuant to the Transmission Control Agreement.
<b>TCA</b>	Transmission Control Agreement
<b>TEA</b>	Transmission Exchange Agreement
<b>Third Party Supply</b>	Energy that is deemed to have been purchased from third parties to supply Station Power Load during the Netting Period.
<b>Tie Point Meter</b>	A revenue meter, which is capable of providing Settlement Quality Meter Data, at a Scheduling Point or at a boundary between Utility Distribution Companies within the CAISO Controlled Grid.
<b>Tier 1 UIE</b>	The quantity of Uninstructed Deviation from the resource's Instructed Imbalance Energy.
<b>Tier 2 UIE</b>	The quantity of Uninstructed Deviation from the resource's Day-Ahead Schedule.

<b>Tier LT</b>	The tier of the annual CRR Allocation process through which the CAISO allocates Long Term CRRs.
<b>Time Horizon</b>	The time period to which a given CAISO Market optimization process applies. For the IFM and RUC the Time Horizon consists of each Trading Hour of the next Trading Day. For the HASP, the Time Horizon is 1.75 Trading Hours in fifteen-minute increments. For STUC the Time Horizon is 4.25 Trading Hours in fifteen-minute increments. For RTUC the Time Horizon is a variable number of fifteen-minute intervals that runs every fifteen minutes and covers 4 to 7 intervals. For the RTD, the Time Horizon is seven five-minute intervals span over thirty-five minutes.
<b>Time Period</b>	The period of time for Scheduling or Dispatch activities, which is a Trading Hour in the DAM and a Dispatch Interval in the RTM.
<b>TNW</b>	Tangible Net Worth
<b>TO</b>	Transmission Owner

**Tolerance Band**

The permitted area of variation for performance requirements of resources used for various purposes as further provided in the CAISO Tariff. The Tolerance Band is expressed in terms of Energy (MWh) for Generating Units, System Units and imports from Dynamic System Resources for each Settlement Interval and equals the greater of the absolute value of: (1) five (5) MW divided by number of Settlement Intervals per Settlement Period or (2) three percent (3%) of the relevant Generating Unit's, Dynamic System Resource's or System Unit's maximum output (P<sub>Max</sub>), as registered in the Master File, divided by number of Settlement Intervals per Settlement Period. The maximum output (P<sub>Max</sub>) of a Dynamic System Resource will be established by agreement between the CAISO and the Scheduling Coordinator representing the Dynamic System Resource on an individual case basis, taking into account the number and size of the generating resources, or allocated portions of generating resources, that comprise the Dynamic System Resource.

The Tolerance Band is expressed in terms of Energy (MWh) for Participating Loads for each Settlement Interval and equals the greater of the absolute value of: (1) five (5) MW divided by number of Settlement Intervals per Settlement Period or (2) three percent (3%) of the applicable HASP Intertie Schedule or CAISO Dispatch amount divided by number of Settlement Intervals per Settlement Period.

The Tolerance Band shall not be applied to Non-Dynamic System Resources.

**TOR**

**Transmission Ownership Right**

**TOR Self-Schedule**

A Self-Schedule submitted by a Scheduling Coordinator pursuant to Transmission Ownership Rights as reflected in the TRTC Instructions.

**Total CAISO Markets Uplift**

The sum of the Net IFM Bid Cost Uplift, the Net RUC Bid Cost Uplift, and the Net RTM Bid Cost Uplift, for all Settlement Intervals in the IFM, RUC and RTM.

**Total Import Capability**

The aggregate Maximum Import Capability of all Interties into the CAISO **Balancing Authority** Area in MW deliverable to the CAISO **Balancing Authority** Area based on CAISO study criteria minus the aggregate sum in MW of all Existing Contracts and Transmission Ownership Rights held by load serving entities that do not serve Load within the CAISO **Balancing Authority** Area.

**Total Positive CAISO Markets Uplift**

The sum of the positive IFM Bid Cost Uplift, positive RUC Bid Cost Uplift and positive RTM Bid Cost Uplift, for all Settlement Intervals in the IFM, RUC and RTM.

**Total Transfer Capability (TTC)**

The amount of power that can be transferred over an interconnected transmission network in a reliable manner while meeting all of a specific set of defined pre Contingency and post Contingency system conditions.

**Trading Day**

The twenty-four hour period for which any given DAM or RTM is executed and settled, beginning at the start of the hour ending 0100 and ending at the end of the hour ending 2400 daily, except where there is a change to and from daylight savings time. For any given DAM, the Trading Day will be the next Operating Day following the Operating Day during which that DAM is executed. For any given RTM, the Trading Day will be the same Operating Day during which that RTM is executed.

**Trading Hour**

Any hour during which trades are conducted in a CAISO Market.

<b>Trading Hub</b>	An aggregation of network Pricing Nodes, such as Existing Zone Generation Trading Hubs, maintained and calculated by the CAISO for settlement and trading purposes posted by the CAISO on its CAISO Website.
<b>Trading Interval</b>	A Settlement Period.
<b>Trading Month</b>	The period beginning at the start of the hour ending 0100 and ending at the end of the hour ending 2400 for each calendar month, except where there is a change to and from daylight savings time on the first or last day of a month.
<b>Transformer and Line Loss Correction Factor</b>	The transformer and line loss correction factor as set forth in the applicable Business Practice Manual or Technical Specifications to be applied to revenue quality meters of CAISO Metered Entities which are installed on the low voltage side of step-up transformers.
<b>Transition Charge</b>	The component of the Access Charge collected by the CAISO with the High Voltage Access Charge in accordance with Section 5.7 of Appendix F, Schedule 3.
<b>Transmission Access Charge (TAC)</b>	Access Charge
<b>Transmission Access Charge Area (TAC Area)</b>	A portion of the CAISO Controlled Grid with respect to which Participating TOs' High Voltage Transmission Revenue Requirements are recovered through a High Voltage Access Charge. TAC Areas are listed in Section 3 of Schedule 3 of Appendix F.3.
<b>Transmission Control Agreement (TCA)</b>	The agreement between the CAISO and Participating TOs establishing the terms and conditions under which TOs will become Participating TOs and how the CAISO and each Participating TO will discharge their respective duties and responsibilities, as may be modified from time to time.

<b>Transmission Exchange Agreement (TEA)</b>	The agreement among the CAISO, Western Area Power Administration and Pacific Gas and Electric Company establishing the terms and conditions of the treatment of Western Area Power Administration's interests in the Pacific AC Intertie, which agreement was originally accepted by FERC in Docket No. ER04-688.
<b>Transmission Interface</b>	A CAISO-defined set of transmission facilities that comprise an important transmission corridor for Energy or capacity.
<b>Transmission Losses</b>	Energy that is lost as a natural part of the process of transmitting Energy from Generation to Load delivered at the CAISO/Utility Distribution Company boundary or <b>Balancing Authority</b> Area boundary.
<b>Transmission Losses Charge</b>	The charge for Transmission Losses based on the Marginal Cost of Losses at the Pricing Node.
<b>Transmission Owner (TO)</b>	An entity owning transmission facilities or having firm contractual rights to use transmission facilities.
<b>Transmission Ownership Right (TOR)</b>	The ownership or joint ownership right to transmission facilities within the CAISO <b>Balancing Authority</b> Area of a Non-Participating TO that has not executed the Transmission Control Agreement, which transmission facilities are not incorporated into the CAISO Controlled Grid.
<b>Transmission Owner Tariff (TO Tariff)</b>	A tariff setting out a Participating TO's rates and charges for transmission access to the CAISO Controlled Grid and whose other terms and conditions are the same as those contained in the document referred to as the Transmission Owners Tariff approved by FERC as it may be amended from time to time.
<b>Transmission Plan</b>	The report prepared by the CAISO on annual basis pursuant to Section 24, which documents the outcome of the Transmission Planning Process as defined in the Study Plan.
<b>Transmission Planner</b>	A designation by NERC regarding responsibility to perform specified transmission planning functions in accordance with the NERC Reliability Standards.
<b>Transmission Planning Process</b>	The process by which the CAISO assesses the CAISO Controlled Grid as set forth in Section 24.



**Transmission Reliability  
Margin (TRM)**

A factor described in Appendix L.

**Transmission Revenue  
Balancing Account  
(TRBA)**

A mechanism to be established by each Participating TO which will ensure that all Transmission Revenue Credits and other credits specified in Sections 6, 8, and 13 of Appendix F, Schedule 3, flow through to transmission customers.

**Transmission Revenue  
Credit**

For an Original Participating TO, the proceeds received from the CAISO for Wheeling service, CRR Auction revenue and Congestion Charges, plus (a) the revenues received from any LCRIG with respect to an LCRIF, unless FERC has approved an alternative mechanism to credit such revenues against the Original Participating TO's TRR, and (b) the shortfall or surplus resulting from any cost differences between Transmission Losses and Ancillary Service requirements associated with Existing Rights and the CAISO's rules and protocols, minus any Low Voltage Access Charge amounts paid for the use of the Low Voltage Transmission Facilities of a Non-Load-Serving Participating TO pursuant to Section 26.1 and Appendix F, Schedule 3, Section 13. For a New Participating TO during the 10-year TAC Transition Period described in Section 4 of Schedule 3 of Appendix F, the revenues received from the CAISO for Wheeling service and IFM Congestion Credit pursuant to Section 4.3.1.2, plus (a) the revenues received from any LCRIG with respect to an LCRIF, unless FERC has approved an alternative mechanism to credit such revenues against the New Participating TO's TRR, and (b) the shortfall or surplus resulting from any cost differences between Transmission Losses and Ancillary Service requirements associated with Existing Rights and the CAISO's rules and protocols, minus any Low Voltage Access Charge amounts paid for the use of the Low Voltage Transmission Facilities of a Non-Load-Serving Participating TO pursuant to Section 26.1 and Appendix F, Schedule 3, Section 13. After the 10-year TAC Transition Period, the New Participating TO Transmission Revenue Credit shall be calculated the same as the Transmission Revenue Credit for the Original Participating TO.

**Transmission Revenue Requirement (TRR)**

The Transmission Revenue Requirement is the total annual authorized revenue requirements associated with transmission facilities and Entitlements turned over to the Operational Control of the CAISO by a Participating TO. The costs of any transmission facility turned over to the Operational Control of the CAISO shall be fully included in the Participating TO's Transmission Revenue Requirement. The Transmission Revenue Requirement includes the costs of transmission facilities and Entitlements and deducts Transmission Revenue Credits and credits for Standby Transmission Revenue and the transmission revenue expected to be actually received by the Participating TO for Existing Rights and Converted Rights.

**Transmission Rights and Transmission Curtailment (TRTC) Instructions**

Operational directives developed (i) between Existing Rights holders, and holders of Converted Rights and the Participating TO, submitted to the CAISO by the Participating TO, unless otherwise agreed to by the Participating TO and the Existing Rights holder and (ii) by TOR holders to facilitate the accommodation of Existing Rights and TORs in the CAISO Markets.

**TRBA**

**Transmission Revenue Balancing Account**

**Trial Operation**

The period during which Interconnection Customer is engaged in on-site test operations and commissioning of a Generating Unit prior to Commercial Operation.

**TRM**

**Transmission Reliability Margin**

**TRR**

**Transmission Revenue Requirement**

**TRTC Instructions**

**Transmission Rights and Transmission Curtailment Instructions**

**Trustee**

The trustee of the California Independent System Operator trust established by order of the California Public Utilities Commission on August 2, 1996 Decision No. 96-08-038 relating to the Ex Parte Interim Approval of a Loan Guarantee and Trust Mechanism to Fund the Development of an Independent System Operator (ISO) and a Power Exchange (PX) pursuant to Decision 95-12-063 as modified.

<b>TTC</b>	Total Transfer Capability
<b>UDC</b>	Utility Distribution Company
<b>UDCOA</b>	Utility Distribution Company Operating Agreement
<b>UDP</b>	Uninstructed Deviation Penalty
<b>UDP Aggregation</b>	Two or more units scheduled by the same Scheduling Coordinator with the same Resource ID that are to be considered interchangeable for calculating the Uninstructed Deviation Penalty.
<b>UFE</b>	Unaccounted for Energy
<b>UIE</b>	Uninstructed Imbalance Energy
<b>UIE Settlement Amount</b>	The payment due a Scheduling Coordinator for positive Uninstructed Imbalance Energy or the charge assessed on a Scheduling Coordinator for negative Uninstructed Imbalance Energy, calculated pursuant to Section 11.5.2.
<b>Unaccounted for Energy (UFE)</b>	The difference in Energy, for each utility Service Area and Settlement Period, between the net Energy delivered into the utility Service Area, adjusted for utility Service Area Transmission Losses and the total Metered Demand within the utility Service Area adjusted for distribution losses using Distribution System loss factors approved by the Local Regulatory Authority. This difference is attributable to meter measurement errors, power flow modeling errors, energy theft, statistical Load profile errors, and distribution loss deviations.
<b>Unavailable Capacity</b>	Ancillary Services capacity that receives an AS Award and Self-Provided Ancillary Services capacity that was not dispatched by the CAISO but where all or a portion of the capacity was not available for Dispatch to provide in Real-Time.

<b>Uncontrollable Force</b>	Any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm, flood, earthquake, explosion, any curtailment, order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities or any other cause beyond the reasonable control of the CAISO or Market Participant which could not be avoided through the exercise of Good Utility Practice.
<b>Undelivered Capacity</b>	Ancillary Services capacity that receives an AS Award and Self-Provided Ancillary Services capacity, or capacity committed in RUC that was dispatched by the CAISO to provide Energy but where a certain percentage or more of the Expected Energy was not provided in Real-Time, which percentage is determined as specified in the applicable Business Practice Manual.
<b>Underfrequency Load Shedding (UFLS)</b>	Automatic Load Shedding, accomplished by the use of such devices as underfrequency relays, intended to arrest frequency decline and assure continued operation within anticipated islands.
<b>Undispatchable Capacity</b>	<p>Ancillary Services capacity that receives an AS Award and Self-Provided Ancillary Services capacity, or capacity committed in RUC, that is not available for use due to a derate or Outage of the resource.</p> <p>Undispatchable Capacity includes AS Awards for Spinning Reserve and Non-Spinning Reserve capacity that are not available for use due to Ramp Rate constraints (e.g., operational Ramping ability is lower than Operating Reserve Ramp Rate).</p>
<b>Unified Planning Assumptions</b>	The assumptions to be developed pursuant to Section 24.4.3 and used, to the maximum extent possible, in performing technical studies identified in the Study Plan as part of the annual Transmission Planning Process.
<b>Uninstructed Deviation</b>	A deviation from the resources' Dispatch Operating Point.

<b>Uninstructed Deviation Penalty (UDP)</b>	The penalty as set forth in Section 11.23.
<b>Uninstructed Imbalance Energy (UIE)</b>	The portion of Imbalance Energy that is not Instructed Imbalance Energy.
<b>Unit Commitment</b>	The process of determining which Generating Units will be committed (started) to meet Demand and provide Ancillary Services in the near future (e.g., the next Trading Day).
<b>Unrated Governmental Entity</b>	A municipal utility or state or federal agency that does not hold an issuer, counterparty, or underlying credit rating by a Nationally Recognized Statistical Rating Organization.
<b>Unrated Public/Private Corporation</b>	An investor-owned or privately held entity that does not hold an issuer, counterparty, or underlying credit rating by a Nationally Recognized Statistical Rating Organization.
<b>Unrecovered Bid Cost Uplift Payment</b>	A payment made to Scheduling Coordinators for any Bid Costs in the IFM, RUC, and RTM not recovered by IFM, RUC, or RTM Market Revenues as provided in Section 11.8.5.
<b>Unsecured Credit Limit</b>	The level of credit established for a Market Participant or CRR Holder that is not secured by any form of Financial Security, as provided for in Section 12.
<b>Upgrade</b>	The required additions and modifications to the CAISO Controlled Grid and the Distribution System at or beyond the Point of Interconnection. Upgrades may be Network Upgrades or Distribution Upgrades. Upgrades do not include Interconnection Facilities.
<b>Use-Limited Resource</b>	A resource that, due to design considerations, environmental restrictions on operations, cyclical requirements, such as the need to recharge or refill, or other non-economic reasons, is unable to operate continuously on a daily basis, but is able to operate for a minimum set of consecutive Trading Hours each Trading Day.

**Utility Distribution  
Company (UDC)**

An entity that owns a Distribution System for the delivery of Energy to and from the CAISO Controlled Grid, and that provides regulated retail electric service to Eligible Customers, as well as regulated procurement service to those End-Use Customers who are not yet eligible for direct access, or who choose not to arrange services through another retailer.

**Utility Distribution  
Company Operating  
Agreement (UDCOA)**

An agreement between the CAISO and a Utility Distribution Company, a *pro forma* version of which is set forth in Appendix B.8.

**Validation, Estimation and  
Editing (VEE)**

The procedures set forth in Section 10 that the CAISO applies to Revenue Quality Meter Data in order to develop Settlement Quality Meter Data.

**Variable Cost**

The cost associated with fuel cost and variable operations and maintenance costs.

**Variable Cost Option**

A method of calculation Default Energy Bids based on fuel costs and variable operations and maintenance costs.

**VEE**

Validation, Estimation and Editing

**Verified CRR Source  
Quantity**

The MW amount corresponding to a verified CRR Source and the LSE or **OB**ALSE that submitted that verified CRR Source to the CAISO, as described in Section 36.8.3.4.

**Voltage Limits**

For all substation busses, the normal and post Contingency Voltage Limits (kV). The bandwidth for normal Voltage Limits must fall within the bandwidth of the post Contingency Voltage Limits. Special voltage limitations for abnormal operating conditions such as heavy or light Demand may be specified.

**Voltage Support**

Services provided by Generating Units or other equipment such as shunt capacitors, static var compensators, or synchronous condensers that are required to maintain established grid voltage criteria. This service is required under normal or System Emergency conditions.

**WAC**

Wheeling Access Charge

**WECC**

Western Electricity Coordinating Council

**Weekly Peak Demand Forecast**

Demand Forecast of the highest Hourly Demand in a period beginning at the start of the hour ending 0100 on Sunday and ending at the end of the hour ending 2400 the following Saturday, in MW.

**Western Electricity Coordinating Council (WECC)**

The Western Electricity Coordinating Council or its successor.

**Western Interconnection**

The network of transmission lines embodied within the WECC region.

**Western Systems Coordinating Council (WSCC)**

The Western Systems Coordinating Council or its successor, the WECC.

**Western Systems Power Pool**

An organization of participants in the electricity markets that have developed and maintain the Western Systems Power Pool Agreement.

**Western Systems Power Pool Agreement**

A standardized power sales agreement developed and maintained as a FERC rate schedule by the Western Systems Power Pool.

**Western Path 15**

The Western Area Power Administration, Sierra Nevada Region (or its successor) with respect solely to its rights and interests in the Path 15 Upgrade.

**Wheeling**

Wheeling Out or Wheeling Through.

**Wheeling Access Charge (WAC)**

The charge assessed by the CAISO that is paid by a Scheduling Coordinator for Wheeling in accordance with Section 26.1. Wheeling Access Charges shall not apply for Wheeling under a bundled non-economy Energy coordination agreement of a Participating TO executed prior to July 9, 1996. The Wheeling Access Charge may consist of a High Voltage Wheeling Access Charge and a Low Voltage Wheeling Access Charge.

<b>Wheeling Out</b>	Except for Existing Rights exercised under an Existing Contract in accordance with Section 16.1, the use of the CAISO Controlled Grid for the transmission of Energy from a Generating Unit located within the CAISO Controlled Grid to serve a Load located outside the transmission and Distribution System of a Participating TO.
<b>Wheeling Through</b>	Except for Existing Rights exercised under an Existing Contract in accordance with Section 16.1, the use of the CAISO Controlled Grid for the transmission of Energy from a resource located outside the CAISO Controlled Grid to serve a Load located outside the transmission and Distribution System of a Participating TO.
<b>Wholesale Customer</b>	A person wishing to purchase Energy and Ancillary Services at a Bulk Supply Point or a Scheduling Point for resale.
<b>Wholesale Sales</b>	The sale of Energy and Ancillary Services at a Bulk Supply Point or a Scheduling Point for resale.
<b>WSCC</b>	<u>Western Systems Coordinating Council</u>
<b>WSCC Reliability Criteria Agreement</b>	The Western Systems Coordinating Council Reliability Criteria Agreement dated June 18, 1999 among the WSCC and certain of its Member transmission operators, as such may be amended from time to time.



**CAISO TARIFF APPENDIX B**  
**Pro Forma Agreements**

**CAISO TARIFF APPENDIX B.1**  
**Scheduling Coordinator Agreement**

**Scheduling Coordinator Agreement**

**THIS AGREEMENT** is made this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ and is entered into, by and between:

- (1) **[Full legal name]** having a registered or principal executive office at **[address]** (the "Scheduling Coordinator")

and

- (2) **CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**, a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate (the "CAISO").

The Scheduling Coordinator and the CAISO are hereinafter referred to as the "Parties".

Whereas:

- A. The Scheduling Coordinator has applied for certification by the CAISO under the certification procedure referred to in Section 4.5.1 of the CAISO Tariff.
- B. The Scheduling Coordinator wishes to submit Bids for Energy and Ancillary Services on the CAISO Controlled Grid under the terms and conditions set forth in the CAISO Tariff.

**NOW IT IS HEREBY AGREED as follows:**

**1. Definitions and Interpretation.**

**1.1 Master Definitions Supplement.** Terms and expressions used in this Agreement shall have the same meanings as those contained in the Master Definitions Supplement to the CAISO Tariff.

**1.2 Rules of Interpretation.** The following rules of interpretation and conventions shall apply to this Agreement:

- (a) if there is any inconsistency between this Agreement and the CAISO Tariff, the CAISO Tariff will prevail to the extent of the inconsistency;
- (b) the singular shall include the plural and vice versa;
- (c) the masculine shall include the feminine and neutral and vice versa;
- (d) "includes" or "including" shall mean "including without limitation";
- (e) references to a Section, Article or Schedule shall mean a Section, Article or a Schedule of this Agreement, as the case may be, unless the context otherwise requires;

- (f) a reference to a given agreement or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented or restated through the date as of which such reference is made;
- (g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced or restated from time to time;
- (h) unless the context otherwise requires, any reference to a "person" includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization or other entity, in each case whether or not having separate legal personality;
- (i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;
- (j) any reference to a day, week, month or year is to a calendar day, week, month or year; and
- (k) the captions and headings in this Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Agreement.

## **2. Covenant of the Scheduling Coordinator.**

### **2.1 The Scheduling Coordinator agrees that:**

- 2.1.1** The CAISO Tariff governs all aspects of bidding and scheduling of Energy and Ancillary Services on the CAISO Controlled Grid, including (without limitation), the financial and technical criteria for Scheduling Coordinators, bidding, Settlement, information reporting requirements and confidentiality restrictions;
- 2.1.2** It will abide by, and will perform all of the obligations under the CAISO Tariff placed on Scheduling Coordinators in respect of all matters set forth therein including, without limitation, all matters relating to the bidding and scheduling of Energy and Ancillary Services on the CAISO Controlled Grid, obligations regarding Resource Adequacy Plans and other requirements of Section 40 of the CAISO Tariff applicable to Scheduling Coordinators for affected Load Serving Entities, ongoing obligations in respect of scheduling, Settlement, system security policy and procedures to be developed by the CAISO from time to time, billing and payments, confidentiality and dispute resolution;
- 2.1.3** It shall ensure that each UDC, over whose Distribution System Energy or Ancillary Services are to be transmitted in accordance with Bids submitted to the CAISO by the Scheduling Coordinator, enters into a UDC Operating Agreement in accordance with Section 4.4 of the CAISO Tariff;
- 2.1.4** It shall ensure that each Generator for which it submits Bids enters into a Participating Generator Agreement in accordance with Section 4.6 of the CAISO Tariff;
- 2.1.5** It shall have the primary responsibility to the CAISO, as principal, for all Scheduling Coordinator payment obligations under the CAISO Tariff;
- 2.1.6** Its status as a Scheduling Coordinator is at all times subject to the CAISO Tariff.

**3. Term and Termination.**

**3.1** This Agreement shall commence on the later of (a) \_\_\_\_\_ or (b) the date the Scheduling Coordinator is certified by the CAISO as a Scheduling Coordinator.

**3.2** This Agreement may be terminated in accordance with the provisions of Section 4.5.4.4 and 4.5.4.5 of the CAISO Tariff; provided, however, any outstanding financial right or obligation or any other right or obligation under the CAISO Tariff of the Scheduling Coordinator that may have arisen under this Agreement, and any provision of this Agreement necessary to give effect to such right or obligation, shall survive such termination until satisfied. The CAISO shall timely file any notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC rules regarding termination.

**4. Settlement Account.**

**4.1** The Scheduling Coordinator shall maintain at all times an account with a bank capable of Fed-Wire transfer to which credits or debits shall be made in accordance with the billing and Settlement provisions of Section 11 of the CAISO Tariff. Such account shall be the account as notified by the Scheduling Coordinator to the CAISO from time to time by giving at least 20 days written notice before the new account becomes operational, together with all information necessary for the CAISO's processing of a change in that account.

**5. Agreement to be bound by CAISO Tariff.**

**5.1** The CAISO Tariff is incorporated herein and made a part hereof. In the event of a conflict between the terms and conditions of this Agreement and any other terms and conditions set forth in the CAISO Tariff, the terms and conditions of the CAISO Tariff shall prevail.

**6. Electronic Contracting.**

**6.1** All submitted applications, schedules, Bids, confirmations, changes to information on file with the CAISO and other communications conducted via electronic transfer (e.g. direct computer link, FTP file transfer, bulletin board, e-mail, facsimile or any other means established by the CAISO) shall have the same legal rights, responsibilities, obligations and other implications as set forth in the terms and conditions of the CAISO Tariff as if executed in written format.

**7. Penalties and Sanctions.**

**7.1** The Scheduling Coordinator shall be subject to all penalties made applicable to Scheduling Coordinators set forth in the CAISO Tariff.

**8. Costs.**

**8.1** The Scheduling Coordinator shall be responsible for all its costs incurred for the purpose of meeting its obligations under this Agreement.

**9. Dispute Resolution.**

- 9.1** The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that any reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to the Scheduling Coordinator and references to the CAISO Tariff shall be read as references to this Agreement.

**10. Representation and Warranties.**

- 10.1** Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.

**11. Liability.**

- 11.1** The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to the Scheduling Coordinator and references to the CAISO Tariff shall be read as references to this Agreement.

**12. Uncontrollable Forces.**

- 12.1** Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Agreement except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as a reference to the Scheduling Coordinator and references to the CAISO Tariff shall be read as references to this Agreement.

**13. Miscellaneous.**

- 13.1 Assignments.** Either Party may assign or transfer any or all of its rights and/or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff. Such consent shall not be unreasonably withheld. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest was an original Party to this Agreement.
- 13.2 Notices.** Any notice, demand or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff, provided that all references in Section 22.4 of the CAISO Tariff to Market Participants shall be read as a reference to the Scheduling Coordinator and references to the CAISO Tariff shall be read as references to this Agreement, and unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 1. A Party must update the information in Schedule 1 of this Agreement as information changes. Such changes shall not constitute an amendment to this Agreement.

- 13.3 Waivers.** Any waiver at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.
- 13.4 Governing Law and Forum.** This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in accordance with, the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement to which the CAISO ADR Procedures do not apply, shall be brought in any of the following forums, as appropriate: any court of the State of California, any federal court of the United States of America located in the State of California, or, where subject to its jurisdiction, before the Federal Energy Regulatory Commission.
- 13.5 Consistency with Federal Laws and Regulations.** This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.
- 13.6 Merger.** This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.
- 13.7 Severability.** If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.
- 13.8 Amendments.** This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. Nothing contained herein shall be construed as affecting in any way the right of the CAISO to unilaterally make application to FERC for a change in the rates, terms and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder, and the Scheduling Coordinator shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to Section 206 or any other applicable provision of the FPA and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.
- 13.9 Counterparts.** This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their respective authorized officials.

**California Independent System Operator Corporation**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**[Name of Scheduling Coordinator]**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



**SCHEDULE 1**

**NOTICES**

**[Section 7.1]**

**Scheduling Coordinator**

Name of Primary  
Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax No: \_\_\_\_\_

Name of Alternative  
Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax No: \_\_\_\_\_

**CAISO**

Name of Primary  
Representative:

Title:

Address:

City/State/Zip Code:

Email address:

Phone:

Fax:

Name of Alternative  
Representative:

Title:

Address:

City/State/Zip Code:

Email address:

Phone:

Fax:

**CAISO TARIFF APPENDIX B.2**  
**Participating Generator Agreement**

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR**

**AND**

**[PARTICIPATING GENERATOR]**

**PARTICIPATING GENERATOR AGREEMENT**

**PARTICIPATING GENERATOR AGREEMENT (PGA)**

**THIS AGREEMENT** is dated this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ and is entered into, by and between:

(1) **[Full Legal Name]** having its registered and principal place of business located at **[Address]** (the "Participating Generator");

and

(2) **California Independent System Operator Corporation**, a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate, initially 151 Blue Ravine Road, Folsom, California 95630 (the "CAISO").

The Participating Generator and the CAISO are hereinafter referred to as the "Parties".

**Whereas:**

- A.** The CAISO Tariff provides that the CAISO shall not accept Bids for Energy or Ancillary Services generated by any Generating Unit interconnected to the CAISO Controlled Grid, or to the Distribution System of a Participating TO or of a UDC otherwise than through a Scheduling Coordinator.
- B.** The CAISO Tariff further provides that the CAISO shall not be obliged to accept Bids relating to Generation from any Generating Unit interconnected to the CAISO Controlled Grid unless the relevant Generator undertakes in writing to the CAISO to comply with all applicable provisions of the CAISO Tariff.
- C.** The Participating Generator wishes to be able to submit Bids to the CAISO through a Scheduling Coordinator and, therefore, wishes to undertake to the CAISO that it will comply with the applicable provisions of the CAISO Tariff.
- D.** The Parties are entering into this Agreement in order to establish the terms and conditions on which the CAISO and the Participating Generator will discharge their respective duties and responsibilities under the CAISO Tariff.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, **THE PARTIES AGREE** as follows:

## ARTICLE I

### DEFINITIONS AND INTERPRETATION

**1.1 Master Definitions Supplement.** All terms and expressions used in this Agreement shall have the same meaning as those contained in the Master Definitions Supplement to the CAISO Tariff.

**1.2 Rules of Interpretation.** The following rules of interpretation and conventions shall apply to this Agreement:

- (a) if there is any inconsistency between this Agreement and the CAISO Tariff, the CAISO Tariff will prevail to the extent of the inconsistency;
- (b) the singular shall include the plural and vice versa;
- (c) the masculine shall include the feminine and neutral and vice versa;
- (d) "includes" or "including" shall mean "including without limitation";
- (e) references to a Section, Article or Schedule shall mean a Section, Article or a Schedule of this Agreement, as the case may be, unless the context otherwise requires;
- (f) a reference to a given agreement or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented or restated through the date as of which such reference is made;
- (g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced or restated from time to time;
- (h) unless the context otherwise requires, any reference to a "person" includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization or other entity, in each case whether or not having separate legal personality;
- (i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;
- (j) any reference to a day, week, month or year is to a calendar day, week, month or year; and
- (k) the captions and headings in this Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Agreement.

## ARTICLE II

### ACKNOWLEDGEMENTS OF PARTICIPATING GENERATOR AND CAISO

- 2.1 CAISO Responsibility.** The Parties acknowledge that the CAISO is responsible for the efficient use and reliable operation of the CAISO Controlled Grid consistent with achievement of planning and Operating Reserve criteria no less stringent than those established by the Western Electricity Coordinating Council and the North American Electric Reliability Corporation and further acknowledges that the CAISO may not be able to satisfy fully these responsibilities if the Participating Generator fails to fully comply with all of its obligations under this Agreement and the CAISO Tariff.
- 2.2 Scope of Application to Parties.** The Participating Generator and CAISO acknowledge that all Generators, except those specified in Section 2.2.1 of this Agreement, wishing to submit Bids to the CAISO through a Scheduling Coordinator must sign this Agreement in accordance with Section 4.6 of the CAISO Tariff.
- 2.2.1 Exemption for Certain Generators.** The Generator with an existing power purchase agreement with a UDC is not required to sign a Participating Generator Agreement if: (a) the Generator sells all of its Energy (excluding any Energy consumed by auxiliary Load equipment electrically connected to that Generator's Generating Unit at the same point) and Ancillary Services to the UDC; (b) the Generator sells any Energy through "over the fence" arrangements as authorized under Section 218(b) of the California Public Utilities Code; or (c) the Generator employs landfill gas technology for the generation of electricity as authorized under 218(c) of the California Public Utilities Code. With respect to subsections (a) and (b), an existing power purchase agreement shall mean an agreement which has been entered into and is effective as of December 20, 1995. With respect to subsection (c), an existing power purchase agreement shall mean an agreement which has been entered into and is effective as of December 31, 1996.

## ARTICLE III

### TERM AND TERMINATION

- 3.1 Effective Date.** This Agreement shall be effective as of the later of the date it is executed by the Parties or the date accepted for filing and made effective by FERC, if such FERC filing is required, and shall remain in full force and effect until terminated pursuant to Section 3.2 of this Agreement.
- 3.2 Termination**
- 3.2.1 Termination by CAISO.** Subject to Section 5.2, the CAISO may terminate this Agreement by giving written notice of termination in the event that the Participating Generator commits any material default under this Agreement and/or the CAISO Tariff which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given, to the Participating Generator, written notice of the default, unless excused by reason of Uncontrollable Forces in accordance with

Article X of this Agreement. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement was filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the filing of the notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within sixty (60) days after issuance of the notice of default; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if filed with FERC, or thirty (30) days after the date of the CAISO's notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

**3.2.2 Termination by Participating Generator.** In the event that the Participating Generator no longer wishes to submit Bids and transmit Energy over the CAISO Controlled Grid, it may terminate this Agreement, on giving the CAISO not less than ninety (90) days written notice, provided, however, that in accordance with Section 4.1.3, the Participating Generator may modify Schedule 1 to eliminate Generating Units which it no longer owns or no longer has contractual entitlement to and such modification shall be effective upon receipt by the CAISO. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the request to file a notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within thirty (30) days of receipt of such request; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if such notice is required to be filed with FERC, or upon ninety (90) days after the CAISO's receipt of the Participating Generator's notice of termination, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

## ARTICLE IV

### GENERAL TERMS AND CONDITIONS

#### 4.1 Generating Units

**4.1.1 Identification of Generating Units.** The Participating Generator has identified the Generating Units that it owns, operates or has a contractual entitlement to in Schedule 1, as required by Section 4.6.4 of the CAISO Tariff.

**4.1.2 Technical Characteristics.** The Participating Generator has provided to the CAISO in Schedule 1 the required information regarding the capacity and operating characteristics of each of the Generating Units listed in that schedule. Pursuant to Sections 8.9 and 8.10 of the CAISO Tariff, the CAISO may verify, inspect and test the capacity and operating characteristics provided in Schedule 1.



- 4.1.3 Notification of Changes.** Sixty (60) days prior to changing any technical information in Schedule 1, the Participating Generator shall notify the CAISO of the proposed changes. Pursuant to Sections 8.9 and 8.10 of the CAISO Tariff, the CAISO may verify, inspect and test the capacity and operating characteristics provided in the revised Schedule 1. The CAISO shall post on the CAISO Website a schedule showing, for at least one year in advance: (i) the proposed dates on which the CAISO's Master File will be updated, which dates shall occur at least every three months; (ii) the dates on which the information contained in the revised Master File will become effective; and (iii) the deadlines by which changed technical information must be submitted to the CAISO in order to be tested and included in the next scheduled update of the CAISO's Master File. Unless the Participating Generator fails to test at the values in the proposed change(s), the change will become effective upon the effective date for the next scheduled update of the Master File, provided the Participating Generator submits the changed information by the applicable deadline and is tested by the deadline. Subject to such notification this Agreement shall not apply to any generating unit identified in Schedule 1 which the Participating Generator no longer owns or no longer has contractual entitlement to.
- 4.2 Agreement Subject to CAISO Tariff.** The Parties will comply with all applicable provisions of the CAISO Tariff. This Agreement shall be subject to the CAISO Tariff which shall be deemed to be incorporated herein.
- 4.3 Obligations Relating to Ancillary Services**
- 4.3.1 Submission of Bids.** When the Scheduling Coordinator on behalf of the Participating Generator submits a Bid, the Participating Generator will, by the operation of this Section 4.3.1, warrant to the CAISO that it has the capability to provide that service in accordance with the CAISO Tariff and that it will comply with CAISO Dispatch Instructions for the provision of the service in accordance with the CAISO Tariff.
- 4.3.2 Certification.** The Participating Generator shall not use a Scheduling Coordinator to submit a Bid for the provision of an Ancillary Service or submit a Submission to Self-Provide an Ancillary Service unless the Scheduling Coordinator serving that Participating Generator is in possession of a current certificate pursuant to Sections 8.3.4 and 8.4 of the CAISO Tariff.
- 4.4 Obligations relating to Major Incidents**
- 4.4.1 Major Incident Reports.** The Participating Generator shall promptly provide such information as the CAISO may reasonably request in relation to major incidents, in accordance with Section 4.6.7.3 of the CAISO Tariff.

## ARTICLE V

### PENALTIES AND SANCTIONS

- 5.1 Penalties.** If the Participating Generator fails to comply with any provisions of this Agreement, the CAISO shall be entitled to impose penalties and sanctions on the Participating Generator. No penalties or sanctions may be imposed under this Agreement unless a Schedule or CAISO Tariff

provision providing for such penalties or sanctions has first been filed with and made effective by FERC. Nothing in the Agreement, with the exception of the provisions relating to the CAISO ADR Procedures, shall be construed as waiving the rights of the Participating Generator to oppose or protest any penalty proposed by the CAISO to the FERC or the specific imposition by the CAISO of any FERC-approved penalty on the Participating Generator.

- 5.2 Corrective Measures.** If the Participating Generator fails to meet or maintain the requirements set forth in this Agreement and/or the CAISO Tariff, the CAISO shall be permitted to take any of the measures, contained or referenced in the CAISO Tariff, which the CAISO deems to be necessary to correct the situation.

## ARTICLE VI

### COSTS

- 6.1 Operating and Maintenance Costs.** The Participating Generator shall be responsible for all its costs incurred in connection with operating and maintaining the Generating Units identified in Schedule 1 for the purpose of meeting its obligations under this Agreement.

## ARTICLE VII

### DISPUTE RESOLUTION

- 7.1 Dispute Resolution.** The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that any reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to the Participating Generator and references to the CAISO Tariff shall be read as references to this Agreement.

## ARTICLE VIII

### REPRESENTATIONS AND WARRANTIES

- 8.1 Representation and Warranties.** Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.
- 8.2 Necessary Approvals.** The Participating Generator represents that all necessary leases, approvals, permits, licenses, easements, rights of way or access to install, own and/or operate its Generating Units have been or will be obtained by the Participating Generator prior to the effective date of this Agreement.

## ARTICLE IX

### LIABILITY

- 9.1 Liability.** The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to the Participating Generator and references to the CAISO Tariff shall be read as references to this Agreement.

## ARTICLE X

### UNCONTROLLABLE FORCES

- 10.1 Uncontrollable Forces Tariff Provisions.** Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Agreement except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as a reference to the Participating Generator and references to the CAISO Tariff shall be read as references to this Agreement.

## ARTICLE XI

### MISCELLANEOUS

- 11.1 Assignments.** Either Party may assign or transfer any or all of its rights and/or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff. Such consent shall not be unreasonably withheld. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest was an original Party to this Agreement.
- 11.2 Notices.** Any notice, demand or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff, provided that all references in Section 22.4 of the CAISO Tariff to Market Participants shall be read as a reference to the Participating Generator and references to the CAISO Tariff shall be read as references to this Agreement, and unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 3. A Party must update the information in Schedule 3 of this Agreement as information changes. Such changes shall not constitute an amendment to this Agreement.
- 11.3 Waivers.** Any waiver at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.

- 11.4 Governing Law and Forum.** This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in accordance with, the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement to which the CAISO ADR Procedures do not apply, shall be brought in any of the following forums, as appropriate: any court of the State of California, any federal court of the United States of America located in the State of California, or, where subject to its jurisdiction, before the Federal Energy Regulatory Commission.
- 11.5 Consistency with Federal Laws and Regulations.** This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.
- 11.6 Merger.** This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.
- 11.7 Severability.** If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.
- 11.8 [NOT USED]**
- 11.9 Amendments.** This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. Nothing contained herein shall be construed as affecting in any way the right of the CAISO to unilaterally make application to FERC for a change in the rates, terms and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder, and the Participating Generator shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to Section 206 or any other applicable provision of the FPA and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.
- 11.10 Counterparts.** This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.

**IN WITNESS WHEREOF**, the Parties hereto have caused this Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date hereinabove written.

**California Independent System Operator Corporation**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**[NAME OF PARTICIPATING GENERATOR]**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**[The following page is a placeholder for Schedule 1, Section 1.]**

**[The following page is a placeholder for Schedule 1, Section 2.]**

**SCHEDULE 2**

**CAISO IMPOSED PENALTIES AND SANCTIONS**

**Section 5.1**

**TO BE INSERTED UPON FERC APPROVAL**



**SCHEDULE 3**

**NOTICES**

**Section 11.2**

**Participating Generator**

Name of Primary

Representative:

Title:

Company:

Address:

City/State/Zip Code:

Email Address:

Phone:

Fax No:

Name of Alternative

Representative:

Title:

Company:

Address:

City/State/Zip Code:

Email Address:

Phone:

Fax No:

**CAISO**

Name of Primary

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax No: \_\_\_\_\_

Name of Alternative

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax No: \_\_\_\_\_

**CAISO TARIFF APPENDIX B.3**  
**Qualifying Facility Participating Generator Agreement**

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR**

**AND**

**[name of QF PARTICIPATING GENERATOR]**

**QUALIFYING FACILITY PARTICIPATING GENERATOR AGREEMENT**

**QUALIFYING FACILITY PARTICIPATING GENERATOR AGREEMENT (QF PGA)**

**THIS AGREEMENT** is dated this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_ and is entered into, by and between:

- (1) **[Full Legal Name]**, having its registered and principal place of business located at **[Address]** (the "Participating Generator");

and

- (2) **California Independent System Operator Corporation**, a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate, initially 151 Blue Ravine Road, Folsom, California 95630 (the "CAISO").

The Participating Generator and the CAISO are hereinafter referred to as the "Parties".

**Whereas:**

- A.** The CAISO Tariff provides that the CAISO shall not accept Bids for Energy or Ancillary Services generated by any Generating Unit interconnected to the CAISO Controlled Grid, or to the Distribution System of a Participating TO or of a UDC or MSS Operator otherwise than through a Scheduling Coordinator.
- B.** The CAISO Tariff further provides that the CAISO shall not be obliged to accept Bids relating to Generation from any Generating Unit interconnected to the CAISO Controlled Grid unless the relevant Generator undertakes in writing to the CAISO to comply with all applicable provisions of the CAISO Tariff.
- C.** The Participating Generator wishes to be able to submit Bids, from a Qualifying Facility Net Scheduled QF to the CAISO through a Scheduling Coordinator and, therefore, wishes to undertake to the CAISO that it will comply with the applicable provisions of the CAISO Tariff, except as otherwise specified in this Agreement.
- D.** It is the intent of the Parties that this Agreement will harmonize the special operational characteristics of the Participating Generator's Qualifying Facility with the CAISO's grid operation function. Nothing in this Agreement is intended to limit or restrict the rights of the Participating Generator under Section 4.6.3.2 of the CAISO Tariff.
- E.** The Parties are entering into this Agreement in order to establish the terms and conditions on which the CAISO and the Participating Generator will discharge their respective duties and responsibilities under the CAISO Tariff.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, **THE PARTIES AGREE** as follows:

## **ARTICLE I**

### **DEFINITIONS AND INTERPRETATION**

- 1.1 Master Definitions Supplement.** Unless defined in this Agreement, all capitalized terms and expressions used in this Agreement shall have the same meaning as those contained in the Master Definitions Supplement to the CAISO Tariff.
- 1.2 Rules of Interpretation.** The following rules of interpretation and conventions shall apply to this Agreement:
- (a) if there is any inconsistency between this Agreement and the CAISO Tariff, the CAISO Tariff will prevail to the extent of the inconsistency, except as expressly provided otherwise in this Agreement;
  - (b) the singular shall include the plural and vice versa;
  - (c) the masculine shall include the feminine and neutral and vice versa;
  - (d) "includes" or "including" shall mean "including without limitation";
  - (e) references to a Section, Article or Schedule shall mean a Section, Article or a Schedule of this Agreement, as the case may be, unless the context otherwise requires;
  - (f) a reference to a given agreement or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented or restated through the date as of which such reference is made;
  - (g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced or restated from time to time;
  - (h) unless the context otherwise requires, any reference to a "person" includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization or other entity, in each case whether or not having separate legal personality;
  - (i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;
  - (j) any reference to a day, week, month or year is to a calendar day, week, month or year; and
  - (k) the captions and headings in this Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Agreement.

## ARTICLE II

### ACKNOWLEDGEMENTS OF PARTICIPATING GENERATOR AND CAISO

- 2.1 CAISO Responsibility.** The Parties acknowledge that the CAISO is responsible for the efficient use and reliable operation of the CAISO Controlled Grid consistent with achievement of planning and Operating Reserve criteria no less stringent than those established by the Western Electricity Coordinating Council and the North American Electric Reliability Corporation and further acknowledges that the CAISO may not be able to satisfy fully these responsibilities if the Participating Generator fails to fully comply with all of its obligations under this Agreement.
- 2.2 Scope of Application to Parties.** The Participating Generator and CAISO acknowledge that all Qualifying Facility Generators, except those specified in Section 2.2.1 of this Agreement, wishing to submit Bids, to the CAISO through a Scheduling Coordinator shall first execute this Agreement or the standard Participating Generator Agreement applicable to non-QF Generators. The Parties acknowledge that execution of this Agreement by the Participating Generator satisfies the requirement of a written agreement as set forth in Section 4.6 of the CAISO Tariff.
- 2.2.1 Exemption for Certain Generators.** The Generator with a Net Scheduled QF with an existing power purchase agreement with a UDC is not required to sign a QF Participating Generator Agreement if: (a) the Generator sells all of its Energy (excluding any Energy consumed by auxiliary Load equipment electrically connected to that Net Scheduled QF at the same point) and Ancillary Services to the UDC; (b) the Generator sells any Energy through "over the fence" arrangements as authorized under Section 218(b) of the California Public Utilities Code; or (c) the Generator employs landfill gas technology for the generation of electricity as authorized under 218(c) of the California Public Utilities Code. With respect to subsections (a) and (b), an existing power purchase agreement shall mean an agreement which has been entered into and is effective as of December 20, 1995. With respect to subsection (c), an existing power purchase agreement shall mean an agreement which has been entered into and is effective as of December 31, 1996.

## ARTICLE III

### TERM AND TERMINATION

- 3.1 Effective Date.** This Agreement shall remain in full force and effect until terminated pursuant to Section 3.2 of this Agreement and shall be effective as of the later of: (1) the date the Agreement is executed by the Parties; or (2) where the Participating Generator is a party to an existing Participating Generator Agreement, the date upon which termination of the existing Participating Generator Agreement is accepted for filing and made effective by FERC, if such FERC filing is required; or (3) where the Participating Generator is a party to an existing Participating Generator Agreement and this Agreement is required to be filed with FERC for acceptance, the later of the date upon which termination of the existing Participating Generator Agreement is accepted for filing and made effective by FERC, or the date this Agreement is accepted for filing and made effective by FERC.

### **3.2 Termination**

**3.2.1 Termination by CAISO.** Subject to Section 5.2, the CAISO may terminate this Agreement by giving written notice of termination in the event that the Participating Generator commits any material default under this Agreement and/or the CAISO Tariff which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given, to the Participating Generator, written notice of the default, unless excused by reason of Uncontrollable Forces in accordance with Article X of this Agreement. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement was filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the filing of the notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within sixty (60) days after issuance of the notice of default; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if filed with FERC, or thirty (30) days after the date of the CAISO's notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

**3.2.2 Termination by Participating Generator.** In the event that the Participating Generator no longer wishes to submit Bids and transmit Energy or provide Ancillary Services through a Scheduling Coordinator over the CAISO Controlled Grid, it may terminate this Agreement, on giving the CAISO not less than ninety (90) days written notice, provided, however, that in accordance with Section 4.1.3, the Participating Generator may modify Schedule 1 to eliminate generating resources which it no longer owns or no longer has contractual entitlement to and such modification shall be effective upon receipt by the CAISO. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the request to file a notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within thirty (30) days of receipt of such request; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if such notice is required to be filed with FERC, or upon ninety (90) days after the CAISO's receipt of the Participating Generator's notice of termination, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

## **ARTICLE IV**

### **GENERAL TERMS AND CONDITIONS**

#### **4.1 Net Scheduled QFs**

**4.1.1 Identification of Net Scheduled QF.** The Participating Generator has identified the Net Scheduled QF that it owns, operates or has a contractual entitlement to, in Schedule 1, as required by Section 4.6.4 of the CAISO Tariff.



- 4.1.2 Technical Characteristics.** The Participating Generator shall provide to the CAISO the required information regarding operating contacts, rated capacity, and operating characteristics of the Net Scheduled QF. Pursuant to Sections 8.9 and 8.10 of the CAISO Tariff, and the Existing QF Contract, if any, associated with that Net Scheduled QF, the CAISO may verify, inspect and test the capacity and operating characteristics of the Net Scheduled QF. The performance of such inspection or test shall be conducted at a time mutually agreed upon by the Parties, which agreement shall not unreasonably be withheld.
- 4.1.3 Notification of Changes.** Sixty (60) days prior to changing any technical information in Schedule 1, the Participating Generator shall notify the CAISO of the proposed changes. Pursuant to Sections 8.9 and 8.10 of the CAISO Tariff, the CAISO may verify, inspect and test the capacity and operating characteristics; provided that the performance of such inspection or test is conducted at a time mutually agreed upon by the Parties, which agreement shall not unreasonably be withheld. The CAISO shall post on the CAISO Website a schedule showing, for at least one year in advance: (i) the proposed dates on which the CAISO's Master File will be updated, which dates shall occur at least every three months; (ii) the dates on which the information contained in the revised Master File will become effective; and (iii) the deadlines by which changed technical information must be submitted to the CAISO in order to be tested and included in the next scheduled update of the CAISO's Master File. Unless the Participating Generator fails to test at the values in the proposed change(s), the change will become effective upon the effective date for the next scheduled update of the Master File, provided the Participating Generator submits the changed information by the applicable deadline. Subject to such notification this Agreement shall not apply to any Net Scheduled QF identified in Schedule 1 which the Participating Generator no longer owns nor has contractual entitlement.
- 4.2 Agreement Subject to CAISO Tariff.** The Parties will comply with all applicable provisions of the CAISO Tariff except as expressly provided in Sections 4.2.1 through 4.2.5 of this Agreement.
- 4.2.1 Net Generation Metering.** Notwithstanding Section 10.1.3 of the CAISO Tariff, the Participating Generator may net the value for the Generation produced by each Net Scheduled QF listed in Schedule 1 and the value for the Demand of the Self-provided Load that is (i) served by the Net Scheduled QF and (ii) electrically located on the same side of the Point of Demarcation.
- 4.2.2 Meter and Telemetry Location.** The Participating Generator may satisfy the provisions of the CAISO Tariff for the installation of meters and telemetry by installing at the Point of Demarcation meters and telemetry for the purpose of recording the net impact of the Net Scheduled QF upon the CAISO Controlled Grid; provided that the installed meters and telemetry satisfy the technical functional and performance requirements for meters and telemetry set forth in the CAISO Tariff.
- 4.2.3 Scheduling, Billing and Settlement.** For scheduling, billing, and settlement purposes regarding Net Scheduled QF Self-provided Load, measurements shall be made at the Point of Demarcation.
- 4.2.4 Operating Limitations.** Net Scheduled QF operating limitations shall be set forth in Schedule 1 of this Agreement, the resource data template used for transmittal of Participating Generator technical data to the CAISO pursuant to the CAISO Tariff, or as otherwise mutually agreed to by the Parties.

**4.2.5 Limitations on CAISO Operating Orders.** The CAISO will not knowingly issue an operating order that: (1) requires the Participating Generator to reduce its Generation below the delineated Minimum Operating Limit, other than in a System Emergency; (2) conflicts with operating instructions provided by the Participating Generator; or (3) results in damage to the Participating Generator's equipment, provided that any such equipment limitation has been provided to the CAISO and incorporated in the Participating Generator's operating instructions to the CAISO. If the Participating Generator: (1) receives a Schedule which requires operation below the Minimum Operating Limit, and (2) deviates from that Schedule to continue to operate at the Minimum Operating Limit, it will not be subject to any penalties or sanctions as a result of operating at the Minimum Operating Limit. The Participating Generator's consequences for deviating from Schedules in Real-Time will be governed by the CAISO Tariff.

### **4.3 Obligations Relating to Ancillary Services**

**4.3.1 Submission of Bids.** When the Scheduling Coordinator on behalf of the Participating Generator submits a Bid for Ancillary Services, the Participating Generator will, by the operation of this Section 4.3.1, warrant to the CAISO that it has the capability to provide that service in accordance with the CAISO Tariff and that it will comply with CAISO Dispatch Instructions for the provision of the service in accordance with the CAISO Tariff.

**4.3.2 Certification.** The Participating Generator shall not use a Scheduling Coordinator to submit a Bid for the provision of an Ancillary Service or submit a Submission to Self-Provide an Ancillary Service unless the Scheduling Coordinator serving that Participating Generator is in possession of a current certificate pursuant to Sections 8.3.4 and 8.4 of the CAISO Tariff.

### **4.4 Obligations relating to Major Incidents**

**4.4.1 Major Incident Reports.** The Participating Generator shall promptly provide such information as the CAISO may reasonably request in relation to major incidents, in accordance with Section 4.6.7.3 of the CAISO Tariff.

**4.5 Dispatch and Curtailment.** The CAISO shall only dispatch or curtail a Net Scheduled QF of the Participating Generator: (a) to the extent the Participating Generator bids Energy or Ancillary Services from the Net Scheduled QF into the CAISO's markets or the Energy is otherwise available to the CAISO under Section 40 or 43 of the CAISO Tariff; or (b) if the CAISO must dispatch or curtail the Net Scheduled QF in order to respond to an existing or imminent System Emergency or condition that would compromise CAISO Balancing Authority Area integrity or reliability as provided in Sections 7 and 7.6.1 of the CAISO Tariff.

**4.6 Information to Be Provided by Participating Generator.** The Participating Generator shall provide to the CAISO (a) a copy of the FERC order providing Qualifying Facility status to the Net Scheduled QF listed in Schedule 1, (b) a copy of any existing power purchase agreement with a UDC for the Net Scheduled QF listed in Schedule 1, and (c) a copy or a summary of the primary terms of any agreement for standby service with a UDC or MSS Operator. The Participating Generator shall notify the CAISO promptly of any change in the status of any of the foregoing.

## ARTICLE V

### PENALTIES AND SANCTIONS

- 5.1 Penalties.** If the Participating Generator fails to comply with any provisions of this Agreement, the CAISO shall be entitled to impose penalties and sanctions on the Participating Generator. No penalties or sanctions may be imposed under this Agreement unless a Schedule or CAISO Tariff provision providing for such penalties or sanctions has first been filed with and made effective by FERC. Nothing in the Agreement, with the exception of the provisions relating to the CAISO ADR Procedures, shall be construed as waiving the rights of the Participating Generator to oppose or protest any penalty proposed by the CAISO to the FERC or the specific imposition by the CAISO of any FERC-approved penalty on the Participating Generator.
- 5.2 Corrective Measures.** If the Participating Generator fails to meet or maintain the requirements set forth in this Agreement and/or in the CAISO Tariff as limited by the provisions of this Agreement, the CAISO shall be permitted to take any of the measures, contained or referenced in the CAISO Tariff, which the CAISO deems to be necessary to correct the situation.

## ARTICLE VI

### COSTS

- 6.1 Operating and Maintenance Costs.** The Participating Generator shall be responsible for all its costs incurred in connection with operating and maintaining the Net Scheduled QF identified in Schedule 1 for the purpose of meeting its obligations under this Agreement.

## ARTICLE VII

### DISPUTE RESOLUTION

- 7.1 Dispute Resolution.** The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that any reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to the Participating Generator and references to the CAISO Tariff shall be read as references to this Agreement.

## ARTICLE VIII

### REPRESENTATIONS AND WARRANTIES

- 8.1 Representation and Warranties.** Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.
- 8.2 Necessary Approvals.** The Participating Generator represents that all necessary leases, approvals, permits, licenses, easements, rights of way or access to install, own and/or operate its Net Scheduled QF have been or will be obtained by the Participating Generator prior to the effective date of this Agreement.
- 8.3 Specific Warranty.** The Participating Generator represents and warrants that: (1) the Net Scheduled QF listed in Schedule 1 is a Qualifying Facility or is operated as an integral part of a Qualifying Facility and (2) the Self-provided Load of the Participating Generator that is served by the Net Scheduling QF either has contracted for and continues through the term of this Agreement to have secured standby service from a UDC or MSS Operator under terms approved by the Local Regulatory Authority or the Federal Energy Regulatory Commission, as applicable, or that the Self-provided Load shall be curtailed concurrently with any Outage of the Generation serving that Self-provided Load in an amount sufficient to cover that Outage.

## ARTICLE IX

### LIABILITY

- 9.1 Liability.** The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to the Participating Generator and references to the CAISO Tariff shall be read as references to this Agreement.

## ARTICLE X

### UNCONTROLLABLE FORCES

- 10.1 Uncontrollable Forces Tariff Provisions.** Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Agreement except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as a reference to the Participating Generator and references to the CAISO Tariff shall be read as references to this Agreement.

## ARTICLE XI

### MISCELLANEOUS

- 11.1 Assignments.** Either Party may assign or transfer any or all of its rights and/or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff. Such consent shall not be unreasonably withheld. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest was an original Party to this Agreement.
- 11.2 Notices.** Any notice, demand or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff, provided that all references in Section 22.4 of the CAISO Tariff to Market Participants shall be read as a reference to the Participating Generator and references to the CAISO Tariff shall be read as references to this Agreement, and unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 3. A Party must update the information in Schedule 3 of this Agreement as information changes. Such changes shall not constitute an amendment to this Agreement.
- 11.3 Waivers.** Any waiver at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.
- 11.4 Governing Law and Forum.** This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in accordance with, the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement to which the CAISO ADR Procedures do not apply, shall be brought in any of the following forums, as appropriate: any court of the State of California, any federal court of the United States of America located in the State of California, or, where subject to its jurisdiction, before the Federal Energy Regulatory Commission.
- 11.5 Consistency with Federal Laws and Regulations.** This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.
- 11.6 Merger.** This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.

- 11.7 Severability.** If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.
- 11.8 [NOT USED]**
- 11.9 Amendments.** This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. If the amendment does not require FERC approval, the amendment will be filed with FERC for information. Nothing contained herein shall be construed as affecting in any way the right of the CAISO to unilaterally make application to FERC for a change in the rates, terms and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder, and the Participating Generator shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to Section 206 or any other applicable provision of the FPA and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.
- 11.10 Counterparts.** This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.
- 11.11 Rights Reserved.** Execution of this Agreement does not deprive the Participating Generator of any unexpressed legal right, either under law or under an existing power purchase agreement.

**IN WITNESS WHEREOF**, the Parties hereto have caused this Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date hereinabove written.

**California Independent System Operator Corporation**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**[NAME OF PARTICIPATING GENERATOR]**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**[The following page is a placeholder for Schedule 1, Section 1.]**



**SCHEDULE 2**

**CAISO IMPOSED PENALTIES AND SANCTIONS**

**[Section 5.1]**

**TO BE INSERTED UPON FERC APPROVAL**

**SCHEDULE 3**

**NOTICES**  
**(Section 11.2)**

**Participating Generator**

Name of Primary

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax No: \_\_\_\_\_

Name of Alternative

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax No: \_\_\_\_\_

**CAISO**

Name of Primary

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax No: \_\_\_\_\_

Name of Alternative

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax No: \_\_\_\_\_

**CAISO TARIFF APPENDIX B.4**  
**Participating Load Agreement**

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR**

**AND**

**[PARTICIPATING LOAD]**

**PARTICIPATING LOAD AGREEMENT**

**PARTICIPATING LOAD AGREEMENT (PLA)**

**THIS AGREEMENT** is dated this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ and is entered into, by and between:

- (1) **[Full legal name]**, having its registered and principal place of business located at [legal address]  
(the "Participating Load");

and

- (2) **California Independent System Operator Corporation**, a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate, initially 151 Blue Ravine Road, Folsom, California 95630 (the "CAISO").

The Participating Load and the CAISO are hereinafter referred to as the "Parties".

**Whereas:**

- A.** The CAISO Tariff provides that the CAISO shall not accept Bids for Ancillary Services from a Load interconnected to the CAISO Controlled Grid, or to the Distribution System of a Participating TO or of a UDC otherwise than through a Scheduling Coordinator.
- B.** The CAISO Tariff further provides that Curtailable Demand services shall be provided by Participating Loads.
- C.** The Participating Load desires to provide Curtailable Demand services, intends to submit Bids to the CAISO through a Scheduling Coordinator and, therefore, represents to the CAISO that it will comply with the applicable provisions of the CAISO Tariff.
- D.** The Parties are entering into this Agreement in order to establish the terms and conditions on which the CAISO and the Participating Load will discharge their respective duties and responsibilities under the CAISO Tariff.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, **THE PARTIES AGREE** as follows:

## ARTICLE I

### DEFINITIONS AND INTERPRETATION

- 1.1 Master Definitions Supplement.** All terms and expressions used in this Agreement shall have the same meaning as those contained in the Master Definitions Supplement to the CAISO Tariff.
- 1.2 Rules of Interpretation.** The following rules of interpretation and conventions shall apply to this Agreement:
- (a) if there is any inconsistency between this Agreement and the CAISO Tariff, the CAISO Tariff will prevail to the extent of the inconsistency;
  - (b) the singular shall include the plural and vice versa;
  - (c) the masculine shall include the feminine and neutral and vice versa;
  - (d) "includes" or "including" shall mean "including without limitation";
  - (e) references to a Section, Article or Schedule shall mean a Section, Article or a Schedule of this Agreement, as the case may be, unless the context otherwise requires;
  - (f) a reference to a given agreement or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented or restated through the date as of which such reference is made;
  - (g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced or restated from time to time;
  - (h) unless the context otherwise requires, any reference to a "person" includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization or other entity, in each case whether or not having separate legal personality;
  - (i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;
  - (j) any reference to a day, week, month or year is to a calendar day, week, month or year; and
  - (k) the captions and headings in this Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Agreement.

## ARTICLE II

### ACKNOWLEDGEMENTS OF PARTICIPATING LOAD AND CAISO

- 2.1 CAISO Responsibility.** The Parties acknowledge that the CAISO is responsible for the efficient use and reliable operation of the CAISO Controlled Grid consistent with achievement of planning and Operating Reserve criteria no less stringent than those established by the Western Electricity Coordinating Council and the North American Electric Reliability Corporation and further acknowledge that the CAISO may not be able to satisfy fully these responsibilities if the Participating Load fails to fully comply with all of its obligations under this Agreement and the CAISO Tariff.
- 2.2 Scope of Application to Parties.** The Participating Load and CAISO acknowledge that all Loads which desire to submit Bids to the CAISO through a Scheduling Coordinator must be included in Schedule 1 to this Agreement. The Participating Load warrants that it owns, operates, or has sufficient contractual entitlement to provide Curtailable Demand services from such Loads in accordance with the CAISO Tariff.

## ARTICLE III

### TERM AND TERMINATION

- 3.1 Effective Date.** This Agreement shall be effective as of the later of the date it is executed by the Parties or the date accepted for filing and made effective by FERC, if such FERC filing is required, and shall remain in full force and effect until terminated pursuant to Section 3.2 of this Agreement.
- 3.2 Termination**
- 3.2.1 Termination by CAISO.** Subject to Section 5.2, the CAISO may terminate this Agreement by giving written notice of termination in the event that the Participating Load commits any material default under this Agreement and/or the CAISO Tariff which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given, to the Participating Load, written notice of the default, unless excused by reason of Uncontrollable Forces in accordance with Article X of this Agreement. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement was filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the filing of the notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within sixty (60) days after issuance of the notice of default; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if filed with FERC, or thirty (30) days after the date of the CAISO's notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.



**3.2.2 Termination by Participating Load.** In the event that the Participating Load no longer wishes to submit Bids or transmit Energy over the CAISO Controlled Grid, it may terminate this Agreement, on giving the CAISO not less than ninety (90) days written notice, provided, however, that in accordance with Section 4.4, the Participating Load may modify Schedule 1 to eliminate Load which it no longer provides for and such modification shall be effective upon receipt by the CAISO. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the request to file a notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within thirty (30) days of receipt of such request; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if such notice is required to be filed with FERC, or upon ninety (90) days after the CAISO's receipt of the Participating Load's notice of termination, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

## ARTICLE IV

### GENERAL TERMS AND CONDITIONS

#### 4.1 Technical Characteristics.

**4.1.1 Curtailable Demand.** As required by Sections 8.3.4 and 8.4 of the CAISO Tariff, the Participating Load shall provide the CAISO with all technical and operational information requested in Schedule 1 for each Curtailable Demand that it owns, operates, or has a contractual entitlement to. For those Loads designated by the Participating Load as providing Curtailable Demand, Schedule 1 requires the Participating Load to indicate in Schedule 1 whether the Load can be scheduled or bid as Non-Spinning Reserve. Pursuant to Sections 8.9 and 8.10 of the CAISO Tariff, the CAISO may verify, inspect and test the capacity and operating characteristics provided in Schedule 1 for Curtailable Demands.

#### 4.2 Metering and Communication.

**4.2.1 Curtailable Demand.** Pursuant to Sections 8.4.5 and 8.4.6 of the CAISO Tariff, Curtailable Demand that is scheduled or bid as Non-Spinning Reserve is required to comply with the CAISO's communication and metering requirements.

**4.3 UDC Interruptible Load Programs.** Due to the CAISO's reliance on interruptible Loads to relieve System Emergencies and its contractual relationship with each UDC, the CAISO will not accept, and the Participating Load shall not submit Bids, from interruptible Loads which are subject to curtailment criteria established under existing retail tariffs, except under such conditions as may be specified in the CAISO Tariff.

- 4.4 Notification of Changes.** Sixty (60) days prior to changing any technical information in Schedule 1, the Participating Load shall notify the CAISO of the proposed change(s). Pursuant to Sections 8.9 and 8.10 of the CAISO Tariff, the CAISO may verify, inspect and test the capacity and operating characteristics provided in the revised Schedule 1. The CAISO shall post on the CAISO Website a schedule showing, for at least one year in advance: (i) the proposed dates on which the CAISO's Master File will be updated; (ii) the dates on which the information contained in the revised Master File will become effective; and (iii) the deadlines by which changed technical information must be submitted to the CAISO in order to be tested and included in the next scheduled update of the CAISO's Master File. Unless the Load fails to test at the values in the proposed change(s), the Participating Load's proposed change(s) will become effective upon the effective date for the next scheduled update of the Master File, provided that the Participating Load submits the changed information by the applicable deadline and is tested by the deadline. Subject to such notification this Agreement shall not apply to any Loads identified in Schedule 1 which the Participating Load no longer owns or no longer has a contractual entitlement to.
- 4.5 Agreement Subject to CAISO Tariff.** The Parties will comply with all applicable provisions of the CAISO Tariff. This Agreement shall be subject to the CAISO Tariff, which shall be deemed to be incorporated herein.
- 4.6 Obligations Relating to Ancillary Services**
- 4.6.1 Submission of Bids and Self-provided Schedules.** When the Scheduling Coordinator on behalf of the Participating Load submits a Bid the Participating Load will, by the operation of this Section 4.6.1, warrant to the CAISO that it has the capability to provide that service in accordance with the CAISO Tariff and that it will comply with CAISO Dispatch Instructions for the provision of the service in accordance with the CAISO Tariff.
- 4.6.2 Certification.** The Participating Load shall not use a Scheduling Coordinator to submit a Bid for the provision of an Ancillary Service or submit a Submission to Self-Provide an Ancillary Service unless the Scheduling Coordinator serving that Participating Load is in possession of a current Ancillary Service certificate pursuant to Sections 8.3.4 and 8.4 of the CAISO Tariff.
- 4.7 Obligations relating to Major Incidents.** The Participating Load shall promptly provide such information as the CAISO may reasonably require in relation to the CAISO's investigations of operating situations or events, or for the CAISO's reporting to the authorities such as the FERC, California Public Utilities Commission, Western Electricity Coordinating Council, or North American Electric Reliability Corporation.

## ARTICLE V

### PENALTIES AND SANCTIONS

- 5.1 Penalties.** If the Participating Load fails to comply with any provisions of this Agreement, the CAISO shall be entitled to impose penalties and sanctions on the Participating Load, including the penalties set forth in Sections 8.9.7 and 8.10.7 of the CAISO Tariff. No penalties or sanctions may be imposed under this Agreement unless a Schedule or CAISO Tariff provision providing for such penalties or sanctions has first been filed with and made effective by FERC. Nothing in this

Agreement, with the exception of the provisions relating to the CAISO ADR Procedures, shall be construed as waiving the rights of the Participating Load to oppose or protest any penalty proposed by the CAISO to the FERC or the specific imposition by the CAISO of any FERC-approved penalty on the Participating Load.

- 5.2 Corrective Measures.** If the Participating Load fails to meet or maintain the requirements set forth in this Agreement and/or the CAISO Tariff, the CAISO shall be permitted to take any of the measures, contained or referenced in the CAISO Tariff, which the CAISO deems to be necessary to correct the situation.

## ARTICLE VI

### COSTS

- 6.1 Operating and Maintenance Costs.** The Participating Load shall be responsible for all its costs incurred in meeting its obligations under this Agreement for the Load identified in Schedule 1.

## ARTICLE VII

### DISPUTE RESOLUTION

- 7.1 Dispute Resolution.** The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that any reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to the Participating Load and references to the CAISO Tariff shall be read as references to this Agreement.

## ARTICLE VIII

### REPRESENTATIONS AND WARRANTIES

- 8.1 Representation and Warranties.** Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.
- 8.2 Necessary Approvals.** The Participating Load represents that all necessary leases, approvals, permits, licenses, easements, rights of way or access to install, own and/or operate its Load have been or will be obtained by the Participating Load prior to the effective date of this Agreement.

## ARTICLE IX

### LIABILITY

- 9.1 Liability.** The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to the Participating Load and references to the CAISO Tariff shall be read as references to this Agreement.

## ARTICLE X

### UNCONTROLLABLE FORCES

- 10.1 Uncontrollable Forces Tariff Provisions.** Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Agreement except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as a reference to the Participating Load and references to the CAISO Tariff shall be read as references to this Agreement.

## ARTICLE XI

### MISCELLANEOUS

- 11.1 Assignments.** Either Party may assign or transfer any or all of its rights and/or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff. Such consent shall not be unreasonably withheld. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest was an original Party to this Agreement.
- 11.2 Notices.** Any notice, demand, or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff, provided that all references in Section 22.4 of the CAISO Tariff to Market Participants shall be read as a reference to the Participating Load and references to the CAISO Tariff shall be read as references to this Agreement, and unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 3. A Party must update the information in Schedule 3 of this Agreement as information changes. Such changes shall not constitute an amendment to this Agreement.
- 11.3 Waivers.** Any waiver at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.

- 11.4 Governing Law and Forum.** This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in accordance with, the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement to which the CAISO ADR Procedures do not apply, shall be brought in any of the following forums, as appropriate: any court of the State of California, any federal court of the United States of America located in the State of California, or, where subject to its jurisdiction, before the Federal Energy Regulatory Commission.
- 11.5 Consistency with Federal Laws and Regulations.** This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.
- 11.6 Merger.** This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.
- 11.7 Severability.** If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.
- 11.8 [NOT USED]**
- 11.9 Amendments.** This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. Nothing contained herein shall be construed as affecting in any way the right of the CAISO to unilaterally make application to the Federal Energy Regulatory Commission for a change in the rates, terms and conditions under section 205 of the Federal Power Act and pursuant to the Commission's Rules and Regulations promulgated thereunder, and the Participating Load shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to Section 206 or any other applicable provision of the FPA and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.
- 11.10 Counterparts.** This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.

**IN WITNESS WHEREOF**, the Parties hereto have caused this Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date hereinabove written.

**California Independent System Operator Corporation**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**Participating Load**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**SCHEDULE 1**

**Technical Characteristics of Individual or Aggregated Loads Participating under Participating Load Agreement**

<b>Name of ALMDS Facility or Individual Load</b>	<b>CAISO Resource ID</b>	<b>Present Scheduling Point  (i.e. PNode, LAP, or Custom LAP )</b>	<b>Capacity Available<sup>1</sup>  (MW)</b>	<b>Minimum Operating Level<sup>1</sup>  (MW)</b>	<b>Maximum Operating Level<sup>1,2</sup>  (MW)</b>	<b>Decremental Ramp Rate<sup>1,2</sup>  (MW/min )</b>	<b>Ancillary Service Provider  (Yes or No)</b>	<b>Participant in UDC Interruptible Program  (Yes or No)</b>	<b>Limitations<sup>3</sup>  (Yes or No)</b>

<sup>1</sup> Current effective values for purposes of bidding to provide Energy and/or Ancillary Services in CAISO markets may differ from those set forth in this Schedule 1, depending on the results of CAISO performance testing pursuant to Sections 8.9 and 8.10 of the CAISO Tariff.

<sup>2</sup> These values are subject to certification by the CAISO in accordance with Section 4.6.2 of the Participating Load Agreement.

<sup>3</sup> If "Yes," limitations should be specified in the Participating Load's implementation plan.

**SCHEDULE 2**

**CAISO IMPOSED PENALTIES AND SANCTIONS**

**[Section 5.1]**

**TO BE INSERTED UPON FERC APPROVAL**



**SCHEDULE 3**

**NOTICES**  
**(Section 11.2)**

**Participating Load**

Name of Primary

Representative:

Title:

Address:

City/State/Zip Code

Email Address:

Phone:

Fax No:

Name of Alternative

Representative:

Title:

Address:

City/State/Zip Code

Email Address:

Phone:

Fax No:

**CAISO**

Name of Primary

Representative:

Title:

Address:

City/State/Zip Code

Email Address:

Phone:

Fax No:

Name of Alternative

Representative:

Title:

Address:

City/State/Zip Code

Email Address:

Phone:

Fax No:

**CAISO TARIFF APPENDIX B.5**  
**Dynamic Scheduling Agreement for Scheduling Coordinators**

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR**

**AND**

**[SCHEDULING COORDINATOR]**

**DYNAMIC SCHEDULING AGREEMENT FOR SCHEDULING COORDINATORS**

**DYNAMIC SCHEDULING AGREEMENT FOR SCHEDULING COORDINATORS**

**THIS AGREEMENT** is dated this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ and is entered into, by and between:

- (1) **[Full Legal Name]** having its registered and principal place of business located at **[Address]** (the "Scheduling Coordinator");

and

- (2) **California Independent System Operator Corporation**, a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate, initially 151 Blue Ravine Road, Folsom, California 95630 (the "CAISO").

The Scheduling Coordinator and the CAISO are hereinafter referred to as the "Parties".

**Whereas:**

- A.** The CAISO Tariff provides that a Scheduling Coordinator may submit Dynamic Schedules to the CAISO from System Resources.
- B.** The Scheduling Coordinator is currently Scheduling Coordinator for a System Resource associated with a power plant(s) interconnected in a Balancing Authority Area other than the CAISO Balancing Authority Area (the "Host Balancing Authority Area").
- C.** The Scheduling Coordinator wishes to implement and operate a dynamic functionality that allows bidding dynamically from a System Resource into the CAISO Balancing Authority Area from the Host Balancing Authority Area and, therefore, wishes to undertake to the CAISO that it will comply with the applicable provisions of the CAISO Tariff.

- D.** The Parties are entering into this Agreement in order to establish the terms and conditions on which the CAISO and the Scheduling Coordinator will discharge their respective duties and responsibilities under the CAISO Tariff.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, **THE PARTIES AGREE** as follows:

## **ARTICLE I**

### **DEFINITIONS AND INTERPRETATION**

- 1.1 Master Definitions Supplement.** All terms and expressions used in this Agreement shall have the same meaning as those contained in the Master Definitions Supplement to the CAISO Tariff.
- 1.2 Rules of Interpretation.** The following rules of interpretation and conventions shall apply to this Agreement:
- (a) if there is any inconsistency between this Agreement and the CAISO Tariff, the CAISO Tariff will prevail to the extent of the inconsistency;
  - (b) the singular shall include the plural and vice versa;
  - (c) the masculine shall include the feminine and neutral and vice versa;
  - (d) "includes" or "including" shall mean "including without limitation";
  - (e) references to a Section, Article or Schedule shall mean a Section, Article or a Schedule of this Agreement, as the case may be, unless the context otherwise requires;
  - (f) a reference to a given agreement or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented or restated through the date as of which such reference is made;
  - (g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced or restated from time to time;
  - (h) unless the context otherwise requires, any reference to a "person" includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization or other entity, in each case whether or not having separate legal personality;
  - (i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;
  - (j) any reference to a day, week, month or year is to a calendar day, week, month or year; and
  - (k) the captions and headings in this Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Agreement.

## ARTICLE II

### ACKNOWLEDGEMENTS OF SCHEDULING COORDINATOR AND CAISO

- 2.1 CAISO Responsibility.** The Parties acknowledge that the CAISO is responsible for the efficient use and reliable operation of the CAISO Controlled Grid consistent with achievement of planning and Operating Reserve criteria no less stringent than those established by the Western Electricity Coordinating Council and the North American Electric Reliability Corporation and further acknowledges that the CAISO may not be able to satisfy fully these responsibilities if the Scheduling Coordinator fails to fully comply with all of its obligations under this Agreement and the CAISO Tariff.

## ARTICLE III

### TERM AND TERMINATION

- 3.1 Effective Date.** This Agreement shall be effective as of the date set forth above, unless accepted for filing and made effective by FERC on some other date, if FERC filing is required, and shall remain in full force and effect until terminated pursuant to Section 3.2 of this Agreement.
- 3.2 Termination**
- 3.2.1 Termination by CAISO.** Subject to Section 3.2.2, the CAISO may terminate this Agreement by giving written notice of termination in the event that the CAISO's agreement with the Host Balancing Authority has terminated or the Scheduling Coordinator commits any material default under this Agreement and/or the CAISO Tariff which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given, to the Scheduling Coordinator, written notice of the default, unless excused by reason of Uncontrollable Forces in accordance with Article X of this Agreement. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the filing of the notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within sixty (60) days after issuance of the notice of default; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if filed with FERC, or thirty (30) days after the date of the CAISO's notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.
- 3.2.2 Limitation on CAISO Termination.** Notwithstanding the provisions of Section 3.2.1, in the event of noncompliance with the provisions of the CAISO Dynamic Scheduling Protocol, set forth in Appendix X of the CAISO Tariff, the CAISO shall have the right to terminate this Agreement after three (3) instances of noncompliance. In the event that the CAISO determines that the Scheduling Coordinator has failed to comply with the CAISO Dynamic Scheduling Protocol, the CAISO will provide written notice to that effect to the Scheduling Coordinator, and the Scheduling Coordinator

shall have seven (7) days to correct the non-compliant condition(s). If the CAISO determines that Scheduling Coordinator has not corrected the non-compliant condition(s) within seven (7) days after the third notice of noncompliance, the CAISO may, by further written notice to the Scheduling Coordinator, terminate this Agreement and the existing functionality and arrangements described herein pursuant to Section 3.2.1, but without providing for the additional thirty (30)-day cure period otherwise provided in Section 3.2.1.

**3.2.3 Termination by Scheduling Coordinator.** In the event that the Scheduling Coordinator no longer wishes to submit dynamic Bids to the CAISO, it may terminate this Agreement, on giving the CAISO not less than ninety (90) days written notice. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the request to file a notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within thirty (30) days of receipt of such request; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if such notice is required to be filed with FERC, or upon ninety (90) days after the CAISO's receipt of the Scheduling Coordinator's notice of termination, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

## ARTICLE IV

### GENERAL TERMS AND CONDITIONS

#### 4.1 Dynamic Scheduling Requirements and Obligations

- 4.1.1** The dynamic functionality established under this Agreement shall be implemented and operated in accordance with CAISO Tariff Section 4.5.4.3, other applicable provisions of the CAISO Tariff, all applicable NERC and WECC policies, requirements, and provisions, and the CAISO Dynamic Scheduling Protocol.
- 4.1.2** The maximum allowable dynamic power transfer (in MW) from the Scheduling Coordinator's System Resource(s) shall be as set forth in Schedule 1 and will be referred to as "PMax" in all CAISO scheduling and control systems.
- 4.1.3** The Scheduling Coordinator warrants that the power plant(s) listed in Schedule 1 is interconnected within the Host Balancing Authority Area specified in Schedule 1, placing both the plant(s) as well as the associated System Resource under the operational jurisdiction of the Host Balancing Authority.
- 4.1.4** The CAISO Intertie associated with the System Resource(s) is set forth in Schedule 1. The Scheduling Coordinator may request, and the CAISO may agree, at its sole discretion, to change the foregoing CAISO Intertie association, subject to any limitations set forth in the CAISO Dynamic Scheduling Protocol.
- 4.1.5** Unless explicitly agreed otherwise, dynamic functionalities implemented between the CAISO and the Scheduling Coordinator may provide only for imports from the System Resource(s) listed in Schedule 1 to the CAISO.



**4.1.6 Identification of System Resources.** The Scheduling Coordinator has identified the System Resources that it represents in Schedule 1.

**4.1.7 Notification of Changes.** Sixty (60) days prior to changing any technical information in Schedule 1, the Scheduling Coordinator shall notify the CAISO of the proposed changes. Pursuant to Sections 8.9 and 8.10 of the CAISO Tariff, the CAISO may verify, inspect and test the capacity and operating characteristics provided in the revised Schedule 1. Unless the Scheduling Coordinator fails to test at the values in the proposed change(s), the change will become effective upon the effective date for the next scheduled update of the CAISO's Master File, provided the Scheduling Coordinator submits the changed information by the applicable deadline and is tested by the deadline.

**4.2 Agreement Subject to CAISO Tariff.** The Parties will comply with all applicable provisions of the CAISO Tariff, including Sections 4.5.4.3 and 8.4.5. This Agreement shall be subject to the CAISO Tariff, which shall be deemed to be incorporated herein.

### **4.3 Obligations Relating to Ancillary Services**

**4.3.1 Submission of Bids.** When the Scheduling Coordinator submits a Bid for Ancillary Services, the Scheduling Coordinator will, by the operation of this Section 4.3.1, warrant to the CAISO that it has the capability to provide that service in accordance with the CAISO Tariff and that it will comply with CAISO Dispatch Instructions for the provision of the service in accordance with the CAISO Tariff.

## **ARTICLE V**

### **PENALTIES AND SANCTIONS**

**5.1 Uninstructed Deviations.** Except for operating emergency situations, Real-Time Energy transfers may not vary from the Day-Ahead Schedule as adjusted by any Dispatch Instructions by more than the greater of five (5) MW or three percent (3%) of the net dependable capacity (PMax) of the System Resource, integrated across a ten-minute interval. If such defined performance band is exceeded by any amount in more than five percent (5%) of the ten-minute intervals on three successive days, then such deviations shall constitute one event of non-compliance with the CAISO Dynamic Scheduling Protocol pursuant to Section 3.2.2. Deviations from Dynamic Schedules of Energy will also be subject to Uninstructed Deviation Penalties pursuant to Section 11.23 and related provisions of the CAISO Tariff.

**5.2 General.** The Scheduling Coordinator shall be subject to all penalties made applicable to dynamic imports from System Resources set forth in the CAISO Tariff.

## ARTICLE VI

### COSTS

- 6.1 Operating and Maintenance Costs.** The Scheduling Coordinator shall be responsible for all its costs incurred in connection with dynamic scheduling and compliance by the System Resources identified in Schedule 1 for the purpose of meeting its obligations under this Agreement.

## ARTICLE VII

### DISPUTE RESOLUTION

- 7.1 Dispute Resolution.** The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that any reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to the Scheduling Coordinator and references to the CAISO Tariff shall be read as references to this Agreement.

## ARTICLE VIII

### REPRESENTATIONS AND WARRANTIES

- 8.1 Representation and Warranties.** Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.

## ARTICLE IX

### LIABILITY

- 9.1 Liability.** The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to the Scheduling Coordinator and references to the CAISO Tariff shall be read as references to this Agreement.

## ARTICLE X

### UNCONTROLLABLE FORCES

- 10.1 Uncontrollable Forces Tariff Provisions.** Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Agreement except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as a reference to the Scheduling Coordinator and references to the CAISO Tariff shall be read as references to this Agreement.

## ARTICLE XI

### MISCELLANEOUS

- 11.1 Assignments.** Either Party may assign or transfer any or all of its rights and/or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff. Such consent shall not be unreasonably withheld. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest was an original Party to this Agreement.
- 11.2 Notices.** Any notice, demand or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff, provided that all references in Section 22.4 of the CAISO Tariff to Market Participants shall be read as a reference to the Scheduling Coordinator and references to the CAISO Tariff shall be read as references to this Agreement, and unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 2. A Party must update the information in Schedule 2 of this Agreement as information changes. Such changes shall not constitute an amendment to this Agreement.
- 11.3 Waivers.** Any waiver at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.
- 11.4 Governing Law and Forum.** This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in accordance with, the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement to which the CAISO ADR Procedures do not apply, shall be brought in any of the following forums, as appropriate: any court of the State of California, any federal court of the United States of America located in the State of California, or, where subject to its jurisdiction, before the Federal Energy Regulatory Commission.
- 11.5 Consistency with Federal Laws and Regulations.** This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.
- 11.6 Merger.** This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.

- 11.7 Severability.** If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.
- 11.8 [NOT USED]**
- 11.9 Amendments.** This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. Nothing contained herein shall be construed as affecting in any way the right of the CAISO to unilaterally make application to FERC for a change in the rates, terms and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder, and the Scheduling Coordinator shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to Section 206 or any other applicable provision of the FPA and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.
- 11.10 Counterparts.** This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.

**IN WITNESS WHEREOF**, the Parties hereto have caused this Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date hereinabove written.

**California Independent System Operator Corporation**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**NAME OF SCHEDULING COORDINATOR**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**SCHEDULE 1**

**SYSTEM RESOURCES AND BALANCING AUTHORITY AREA INFORMATION**

**[Sections 4.1.2, 4.1.3, 4.1.4, 4.1.5, 4.1.7]**

**Description of System Resource(s), including Associated Power Plants and PMax Values:**

**CAISO Intertie:**

**Host Balancing Authority Area:**

**Intermediary Balancing Authority Areas:**

**SCHEDULE 2**

**NOTICES**

**[Section 11.2]**

**Scheduling Coordinator**

Name of Primary

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax No: \_\_\_\_\_

Name of Alternative

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax No: \_\_\_\_\_

**CAISO**

Name of Primary

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax No: \_\_\_\_\_

Name of Alternative

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax No: \_\_\_\_\_



**CAISO TARIFF APPENDIX B.6**  
**Meter Service Agreement for CAISO Metered Entities**

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR**

**AND**

**[CAISO METERED ENTITY]**

**METER SERVICE AGREEMENT  
FOR CAISO METERED ENTITIES**

**METER SERVICE AGREEMENT  
FOR CAISO METERED ENTITIES**

**THIS AGREEMENT** is dated this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_ and is entered into, by and between:

- (1) **[Full legal name]** having its registered and principal place of business located at **[Address]**  
(the "CAISO Metered Entity");

and

- (2) **California Independent System Operator Corporation**, a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate, initially 151 Blue Ravine Road, Folsom, California 95630 (the "CAISO").

The CAISO Metered Entity and the CAISO are hereinafter referred to as the "Parties".

**Whereas:**

- A.** Section 10 of the CAISO Tariff requires the CAISO to establish meter service agreements with CAISO Metered Entities for the collection and transfer of Meter Data.
- B.** Section 10 of the CAISO Tariff further provides that a CAISO Metered Entity shall certify its revenue quality meters and Section 10 provides that CAISO Metered Entities shall make Meter Data available to RMDAPS.
- C.** The Parties are entering into this Agreement in order to establish the terms and conditions upon which the CAISO and the CAISO Metered Entity shall discharge their respective duties and responsibilities pursuant to this Agreement, and the CAISO Tariff.
- D.** All obligations and responsibilities included in this Agreement may be set forth in further detail in the CAISO Tariff.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, **THE PARTIES AGREE** as follows:

**ARTICLE I**

- 1.1 Master Definitions Supplement.** Unless defined in Section 1.2 of this Agreement, all terms and expressions used in this Agreement shall have the same meaning as those contained in the Master Definitions Supplement to the CAISO Tariff.

**1.2 Special Definitions for this Agreement.** In this Agreement, the following words and expressions shall have the meanings set forth below:

**1.2.1 "Authorized Users"** means users authorized by the CAISO Metered Entity to access the Meter Data of that CAISO Metered Entity held by the CAISO.

**1.3 Rules of Interpretation.** The following rules of interpretation and conventions shall apply to this Agreement:

- (a) if there is any inconsistency between this Agreement and the CAISO Tariff, the CAISO Tariff will prevail to the extent of the inconsistency;
- (b) the singular shall include the plural and vice versa;
- (c) the masculine shall include the feminine and neutral and vice versa;
- (d) "includes" or "including" shall mean "including without limitation";
- (e) references to a section, article or schedule shall mean a section, article or a schedule of this Agreement, as the case may be, unless the context otherwise requires;
- (f) a reference to a given agreement or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented or restated through the date as of which such reference is made;
- (g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced or restated from time to time;
- (h) unless the context otherwise requires, any reference to a "person" includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization or other entity, in each case whether or not having separate legal personality;
- (i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;
- (j) any reference to a day, week, month or year is to a calendar day, week, month or year;
- (k) the captions and headings in this Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Agreement; and
- (l) references to the CAISO Tariff and other CAISO Documents shall be interpreted in accordance with any exceptions or exemptions to such as may have been granted by the CAISO.

## ARTICLE II

### TERM AND TERMINATION

- 2.1 Effective Date.** This Agreement shall be effective as of the later of the date of execution of this Agreement, or the date it is accepted and made effective by FERC, if such FERC filing is required, and shall remain in full force and effect until terminated by operation of law or pursuant to Section 2.2 of this Agreement.
- 2.2 Termination**
- 2.2.1 Termination by CAISO.** Subject to Section 4.2, the CAISO may terminate this Agreement by giving written notice of termination in the event that the CAISO Metered Entity commits any default under this Agreement and/or the CAISO Tariff which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given it written notice of the default, unless excused by reason of Uncontrollable Force in accordance with Section 14.1 of the CAISO Tariff. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement was filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the filing of the notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within sixty (60) days after issuance of the notice of default; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such notice of termination, if filed with FERC, or thirty (30) days after the date of the CAISO's notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.
- 2.2.2 Termination by CAISO Metered Entity.** In the event that the CAISO Metered Entity wishes to terminate this Agreement, the CAISO Metered Entity shall give the CAISO not less than ninety (90) days written notice. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the request to file a notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within thirty(30) days of receipt of such request; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such notice of termination, if such notice is required to be filed with FERC, or upon ninety (90) days after the CAISO's receipt of the CAISO Metered Entity's notice of termination, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

## ARTICLE III

### GENERAL TERMS AND CONDITIONS

- 3.1 Agreement Subject to CAISO Tariff.** This Agreement shall be subject to the provisions of the CAISO Tariff which shall be deemed to be incorporated herein, as the same may be changed or superseded from time to time. The Parties agree that they will comply with the provisions of Section 10 and all other applicable provisions of the CAISO Tariff and the applicable Business Practice Manual implementing Section 10 of the CAISO Tariff.

**3.2 Obligations and Rights of the CAISO Metered Entity.**

**3.2.1 Submission of Meter Data through RMDAPS.** The CAISO Metered Entity agrees to make available to the CAISO through RMDAPS its Meter Data in accordance with the CAISO Tariff. The CAISO's requirements regarding the frequency with which it requires Meter Data to be made available to it through RMDAPS by the CAISO Metered Entity are referred to in the CAISO Tariff.

**3.2.2 Meter Information.** The CAISO Metered Entity shall provide in the format prescribed by Schedule 1 to this Agreement the required information with respect to all of its meters used to provide Meter Data to the CAISO. The CAISO Metered Entity must immediately notify the CAISO of any changes to the information provided to the CAISO in accordance with this Section 3.2.2 and provide the CAISO with any information in relation to such change as reasonably requested by the CAISO. The CAISO Metered Entity shall have the right to modify Schedule 1, which modification shall not constitute an amendment to this Agreement. Such modification shall be effective upon receipt of notice by the CAISO.

**3.2.3 Transformer and Line Loss Correction Factors.** If the CAISO Metered Entity uses low voltage side metering or metering connected to the Distribution System, it shall use the CAISO approved Transformer and Line Loss Correction Factor referred to in the CAISO Tariff and in the applicable Business Practice Manual.

**3.2.4 Rights to Access Metering Facilities.** The CAISO Metered Entity shall use its best efforts to procure any rights necessary for the CAISO to access all Metering Facilities of the CAISO Metered Entity to fulfill its obligations under the CAISO Tariff and its obligations under this Agreement. If, after using its best efforts, the CAISO Metered Entity is unable to provide the CAISO with such access rights, the CAISO Metered Entity shall ensure that one of its employees is a CAISO Authorized Inspector and such employee undertakes, at the CAISO's request, the certification, testing, inspection and/or auditing of those Metering Facilities in accordance with the procedures established pursuant to the CAISO Tariff, including the requirement to complete and provide to the CAISO all necessary documentation. The CAISO acknowledges that it will not be prevented from fulfilling its obligations under the CAISO Tariff or this Agreement by reason of the fact that it is provided with escorted access to the Metering Facilities of the CAISO Metered Entity.

**3.2.5 Security and Validation Procedures.** The security measures and the validation, editing and estimation procedures that the CAISO will apply to Meter Data made available to the CAISO by the CAISO Metered Entity shall be as referred to in the CAISO Tariff.

**3.3 Obligations and Rights of the CAISO.**

**3.3.1 Direct Polling of RMDAPS.** The CAISO shall allow the Scheduling Coordinator representing the CAISO Metered Entity and all Authorized Users to directly poll RMDAPS for the Meter Data relating to the CAISO Metered Entity in accordance with the procedures referred to in the CAISO Tariff.

**3.3.2 CAISO as Third-Party Beneficiary.** The CAISO shall be a third-party beneficiary to any future agreement between the CAISO Metered Entity and any other party relating to the Metering Facilities of the CAISO Metered Entity for the purpose of granting the CAISO access to any relevant information, records and facilities as needed by the CAISO to fulfill its obligations under the CAISO Tariff and its obligations under this Agreement.

- 3.3.3 Remote and Local Access to Metering Data.** The CAISO shall provide the CAISO Metered Entity any password or other requirements necessary for the CAISO Metered Entity to access its Meter Data remotely or locally at the meter.
- 3.4 Exemptions Granted by the CAISO.** Any exemptions provided for under the CAISO Tariff that are granted by the CAISO shall be set forth in Schedule 2 of this Agreement. Any amendment or addition to Schedule 2 shall not constitute an amendment to this Agreement.

## ARTICLE IV

### PENALTIES AND SANCTIONS

- 4.1 Penalties.** If a CAISO Metered Entity provides inaccurate or incorrect Meter Data or fraudulent Meter Data to the CAISO, the CAISO shall be entitled to impose penalties and sanctions, including but not limited to suspension of trading rights following 14 days written notice to the CAISO Metered Entity. Fraudulent Meter Data means any Meter Data provided to the CAISO by the CAISO Metered Entity that it knows to be false, incorrect or incomplete at the time it provided that Meter Data to the CAISO. All penalties and sanctions shall be set forth in Schedule 4 Part A to this Agreement or in the CAISO Tariff. No penalties or sanctions, including suspension of trading rights, may be imposed under this Agreement unless a Schedule or CAISO Tariff provision providing for such penalties or sanctions has first been filed with and made effective by FERC. Nothing in the Agreement, with the exception of the provisions relating to the CAISO ADR Procedures, shall be construed as waiving the rights of the CAISO Metered Entity to oppose or protest any penalty proposed by the CAISO to the FERC or the specific imposition by the CAISO of any FERC-approved penalty on the CAISO Metered Entity.
- 4.2 Corrective Measures.** If the CAISO Metered Entity fails to meet or maintain the standards for Metering Facilities or comply with the audit or test procedures as referred to in the CAISO Tariff, the CAISO shall be permitted to take corrective measures. The corrective measures and rights the CAISO may exercise upon any failure by any entity to meet those standards for Metering Facilities or to comply with the audit or test procedures shall be set forth in Schedule 4 Part B or in the CAISO Tariff.

## ARTICLE V

### ACCESS TO METERING DATA

- 5.1 Authorized Users.** In addition to the persons referred to in the CAISO Tariff, including the CAISO Metered Entity and the relevant Scheduling Coordinator, as being entitled to access Meter Data on RMDAPS, the CAISO Metered Entity may set forth in Schedule 3 of this Agreement any additional Authorized Users that shall be entitled to access the CAISO Metered Entity's Settlement Quality Meter Data held by the CAISO. The CAISO Metered Entity shall include in Schedule 3 as Authorized Users the relevant UDCs and TOs. The CAISO shall provide the Authorized Users with any password or other information necessary to access the CAISO Metered Entity's Settlement Quality Metered Data held by the CAISO on RMDAPS. Any amendment or addition to Schedule 3 shall not constitute an amendment to this Agreement.

## ARTICLE VI

### COSTS

- 6.1 Certification, Inspection and Auditing of Meters.** The CAISO Metered Entity shall be responsible for all reasonable costs incurred by the CAISO or a CAISO Authorized Inspector in connection with them carrying out the certification, inspection, testing or auditing of the meters identified in Schedule 1 from which the CAISO Metered Entity provides Meter Data to the CAISO. The CAISO or CAISO Authorized Inspector will furnish the CAISO Metered Entity, upon request, an itemized bill for such costs.

## ARTICLE VII

### DISPUTE RESOLUTION

- 7.1 Dispute Resolution.** The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that all reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to the CAISO Metered Entities and references to the CAISO Tariff shall be read as references to this Agreement.

## ARTICLE VIII

### REPRESENTATIONS AND WARRANTIES

- 8.1 Representations and Warranties.** Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.
- 8.2 Necessary Approvals.** The CAISO Metered Entity represents that all necessary approvals, permits, licenses, easements, right of way or access to install, own and operate its meters have been or will be obtained by the CAISO Metered Entity prior to the effective date of this Agreement.

## ARTICLE IX

### LIABILITY AND INDEMNIFICATION

- 9.1 Liability and Indemnification.** The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to the CAISO Metered Entity and references to the CAISO Tariff shall be read as references to this Agreement.



## ARTICLE X

### UNCONTROLLABLE FORCES

- 10.1 Uncontrollable Forces Tariff Provisions.** Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Agreement except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as references to the CAISO Metered Entity and all references to the CAISO Tariff shall be read as references to this Agreement.

## ARTICLE XI

### MISCELLANEOUS

- 11.1 Assignments.** Either Party may assign or transfer any or all of its rights and/or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff. Such consent shall not be unreasonably withheld. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest was an original Party to this Agreement.
- 11.2 Notices.** Any notice, demand or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff, provided that all references in Section 22.4 of the CAISO Tariff to Market Participants shall be read as a reference to the CAISO Metered Entity and references to the CAISO Tariff shall be read as references to this Agreement, and unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 5. A Party must update the information in Schedule 5 as information changes. Such changes shall not constitute an amendment to this Agreement.
- 11.3 Waivers.** Any waiver at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.
- 11.4 Governing Law and Forum.** This Agreement shall be deemed to be a contract made under and for all purposes shall be governed by and construed in accordance with the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement to which the CAISO ADR Procedures do not apply shall be brought in any of the following forums, as appropriate: any court of the State of California, any federal court of the United States of America located in the State of California or, where subject to its jurisdiction, before the Federal Energy Regulatory Commission.
- 11.5 Consistency with Federal Laws and Regulations.** This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.

- 11.6 Merger.** This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.
- 11.7 Severability.** If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.
- 11.8 Amendments.** This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that are subject to FERC approval shall not take effect until FERC has accepted such amendments for filing and has made them effective. Nothing contained herein shall be construed as affecting in any way the right of the CAISO to unilaterally make application to FERC for a change in the rates, terms and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder, and the CAISO Metered Entity shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to Section 206 or any other applicable provision of the FPA and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.
- 11.9 Counterparts.** This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.

**IN WITNESS WHEREOF,** the Parties hereto have caused this Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date hereinabove written.

**California Independent System Operator Corporation**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**Full legal name of CAISO Metered Entity**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**SCHEDULE 1**  
**METER INFORMATION**  
**[Section 3.2.2]**

Resource ID/Meter Number \_\_\_\_\_  
Name of the Facility \_\_\_\_\_  
Location (address if applicable) \_\_\_\_\_  
Point of Delivery to the CAISO \_\_\_\_\_  
Controlled Grid for Meter Compensation: \_\_\_\_\_

**SCHEDULE 2**

**EXEMPTIONS FROM METERING STANDARDS AND OTHER REQUIREMENTS**

**[Section 3.4]**

**SCHEDULE 3**

**ACCESS TO METER DATA**

**AND**

**AUTHORIZED USERS**

**[Section 5.1]**

List authorized users and any restrictions or limitations placed on them.

**SCHEDULE 4**

**PART A**

**CAISO IMPOSED PENALTIES AND SANCTIONS**

**[Section 4.1]**

**TO BE INSERTED UPON FERC APPROVAL**

**PART B**

**CORRECTIVE MEASURES**

**[SECTION 4.2]**

**TO BE DEVELOPED**

**SCHEDULE 5**

**NOTICE**

**[Section 11.2]**

Name of Primary

Representative:

Title:

Company:

Address:

City/State/Zip Code:

Email address:

Phone:

Fax:

Name of Alternative

Representative:

Title:

Company:

Address:

City/State/Zip Code:

Email address:

Phone:

Fax:



**CAISO:**

Name of Primary

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

Name of Alternative

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

**CAISO TARIFF APPENDIX B.7**  
**Meter Service Agreement for Scheduling Coordinators**

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR**

**AND**

**[SC]**

**METER SERVICE AGREEMENT  
FOR SCHEDULING COORDINATORS**

**METER SERVICE AGREEMENT  
FOR SCHEDULING COORDINATORS**

**THIS AGREEMENT** is dated this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_ and is entered into, by and between:

(1) **[Full legal name]** having its registered and principal place of business located at **[Address]**  
(the "SC");

and

(2) **California Independent System Operator Corporation**, a California non-profit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate, initially 151 Blue Ravine Road, Folsom, California 95630 (the "CAISO").

The Scheduling Coordinator and the CAISO are hereinafter referred to as the "Parties".

**Whereas:**

- A.** Section 10 of the CAISO Tariff requires the CAISO to enter into a meter service agreement with each Scheduling Coordinator responsible for providing Settlement Quality Meter Data for Scheduling Coordinator Metered Entities that it represents.
- B.** Section 10 of the CAISO Tariff requires Scheduling Coordinators to ensure that the Scheduling Coordinator Metered Entities that they represent adhere to the requirements and standards for Metering Facilities set forth in Section 10.3.
- C.** The Parties are entering into this Agreement in order to establish the terms and conditions upon which the CAISO and the Scheduling Coordinator shall discharge their respective duties and responsibilities pursuant to this Agreement and the CAISO Tariff.
- D.** All obligations and responsibilities included in this Agreement may be set forth in further detail in the CAISO Tariff.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, **THE PARTIES AGREE** as follows:

## ARTICLE I

### DEFINITIONS AND INTERPRETATION

**1.1 Master Definitions Supplement.** All terms and expressions used in this Agreement shall have the same meaning as those contained in the Master Definitions Supplement to the CAISO Tariff.

**1.2 Rules of Interpretation.** The following rules of interpretation and conventions shall apply to this Agreement:

- (a) if there is any inconsistency between this Agreement and the CAISO Tariff, the CAISO Tariff will prevail to the extent of the inconsistency;
- (b) the singular shall include the plural and vice versa;
- (c) the masculine shall include the feminine and neutral and vice versa;
- (d) "includes" or "including" shall mean "including without limitation";
- (e) references to a section, article or schedule shall mean a section, article or a schedule of this Agreement, as the case may be, unless the context otherwise requires;
- (f) a reference to a given agreement or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented or restated through the date as of which such reference is made;
- (g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced or restated from time to time;
- (h) unless the context otherwise requires, any reference to a "person" includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization or other entity, in each case whether or not having separate legal personality;
- (i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;
- (j) any reference to a day, week, month or year is to a calendar day, week, month or year;
- (k) the captions and headings in this Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Agreement; and
- (l) references to the CAISO Tariff and other CAISO Documents shall be interpreted in accordance with any exceptions or exemptions to such as may have been granted by the CAISO.

## ARTICLE II

### TERM AND TERMINATION

**2.1 Effective Date.** This Agreement shall be effective as of the later of the date of execution of this Agreement, or the date it is accepted and made effective by FERC, if such FERC filing is required, and shall remain in full force and effect until terminated by operation of law or pursuant to Section 2.2 of this Agreement.

### 2.2 Termination

**2.2.1 Termination by CAISO.** Subject to Section 4.2 the CAISO may terminate this Agreement by giving written notice of termination in the event that the Scheduling Coordinator commits any default under this Agreement and/or the CAISO Tariff which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given it written notice of the default, unless excused by reason of Uncontrollable Force in accordance with Section 14.1 of the CAISO Tariff. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement was filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the filing of the notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within sixty (60) days after issuance of the notice of default; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such notice of termination, if filed with FERC, or thirty (30) days after the date of the CAISO's notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

**2.2.2 Termination by SC.** In the event that the Scheduling Coordinator wishes to terminate this Agreement, the Scheduling Coordinator shall give the CAISO not less than ninety (90) days written notice. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the request to file a notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within thirty (30) days of receipt of such request; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if such notice is required to be filed with FERC, or upon ninety (90) days after the CAISO's receipt of the Scheduling Coordinator's notice of termination, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

### ARTICLE III

#### GENERAL TERMS AND CONDITIONS

- 3.1 Agreement Subject to CAISO Tariff.** This Agreement shall be subject to the provisions of the CAISO Tariff which shall be deemed to be incorporated herein, as the same may be changed or superseded from time to time. The Parties agree that they will comply with the provisions of Section 10 and all other applicable provisions of the CAISO Tariff.
- 3.2 Requirements and Standards for Metering Facilities.** The Scheduling Coordinator shall ensure that the Scheduling Coordinator Metered Entities it represents shall adhere to the requirements and standards for Metering Facilities of its Local Regulatory Authority. If that Scheduling Coordinator Metered Entity's Local Regulatory Authority has not set any requirements or standards in relation to any of its Metering Facilities, the Scheduling Coordinator representing that Scheduling Coordinator Metered Entity must comply with the requirements and standards for those Metering Facilities as set forth in this Agreement and the CAISO Tariff.
- 3.3 Obligations and Rights of the Scheduling Coordinator.**
- 3.3.1 Meter Information.** If the CAISO so requests, the Scheduling Coordinator shall provide in the format prescribed by Schedule 1 to this Agreement the required information with respect to the meters for all Scheduling Coordinator Metered Entities it represents including the reference to specific distribution loss factors or methodology it proposes to use as determined by the relevant UDC and approved by the relevant Local Regulatory Authority. The Scheduling Coordinator must immediately notify the CAISO of any changes to the information provided to the CAISO in accordance with this Section 3.3.1 and provide the CAISO with any information in relation to such change as reasonably requested by the CAISO. Any amendments or additions to Schedule 1 shall not constitute an amendment to this Agreement.
- 3.3.2 Assistance and Cooperation of Scheduling Coordinator.** The Scheduling Coordinator shall ensure that the CAISO shall, upon reasonable notice, have access to the entire Metering Facilities of the Scheduling Coordinator Metered Entities that it represents from the meter data server to the Metering Facilities in order to inspect, test or otherwise audit those Metering Facilities.
- 3.3.3 Profiled and Cumulative Meter Data.** The Scheduling Coordinator shall provide the CAISO with any applicable Approved Load Profile for each Scheduling Coordinator Metered Entity that it represents that is load profiled in accordance with the CAISO Tariff. The Scheduling Coordinator shall provide a copy of the Approved Load Profile applicable to each Scheduling Coordinator Metered Entity (if any) that it represents, which shall be set forth in Schedule 2 to this Agreement. The Scheduling Coordinator must immediately notify the CAISO of any changes to the Approved Load Profiles referred to in Schedule 2 to this Agreement and provide the CAISO with a copy of the new or amended Approved Load Profile. Such change to Schedule 2 shall not constitute an amendment to this Agreement.
- 3.3.4 Security and Validation Procedures.** The Scheduling Coordinator shall apply to the Meter Data of the Scheduling Coordinator Metered Entities that it represents the security and validation procedures prescribed by the relevant Local Regulatory Authority. If the relevant Local Regulatory Authority has not prescribed any such procedures, the Scheduling Coordinator shall apply the procedures set forth in the CAISO Tariff. Meter Data submitted by a Scheduling Coordinator for Scheduling Coordinator Metered Entities shall conform to these standards unless the CAISO has, at its discretion, exempted the Scheduling Coordinator from these standards.

### **3.4 Obligations and Rights of the CAISO.**

**3.4.1 Exemptions Granted by CAISO.** Any exemptions provided for under the CAISO Tariff that are granted by the CAISO shall be set forth in Schedule 3 to this Agreement. Any amendment or addition to Schedule 3 shall not constitute an amendment to this Agreement.

**3.4.2 CAISO as Third-Party Beneficiary.** The CAISO shall be a third-party beneficiary to the agreements between the Scheduling Coordinator and Scheduling Coordinator Metered Entities that the Scheduling Coordinator represents. Such agreements shall grant the CAISO access to any relevant information, records and facilities of the Scheduling Coordinator Metered Entity as needed for the CAISO to fulfill its obligations under this Agreement and the CAISO Tariff.

## **ARTICLE IV**

### **PENALTIES & SANCTIONS**

**4.1 Penalties.** If the Scheduling Coordinator provides inaccurate or incorrect Settlement Quality Meter Data or fraudulent Meter Data to the CAISO, the CAISO shall be entitled to impose penalties and sanctions, including but not limited to suspension of trading rights following 14 days written notice to the Scheduling Coordinator. Fraudulent Meter Data means any data provided to the CAISO by the Scheduling Coordinator that the Scheduling Coordinator knows to be false, incorrect or incomplete at the time it provided it to the CAISO. All penalties and sanctions shall be set forth in Schedule 4 Part A or in the CAISO Tariff. No penalties or sanctions, including the suspension of trading rights, may be imposed under this Agreement unless a Schedule or CAISO Tariff provision providing for such penalties or sanctions has first been filed with and made effective by FERC. Nothing in the Agreement, with the exception of the provisions relating to the CAISO ADR Procedures, shall be construed as waiving the rights of the Scheduling Coordinator to oppose or protest any penalty proposed by the CAISO to the FERC or the specific imposition by the CAISO of any FERC-approved penalty on the Scheduling Coordinator. The CAISO will provide notice to all Scheduling Coordinators of any filing of proposed penalties or sanctions with the FERC. The CAISO shall notify the Scheduling Coordinator of those approved penalties within 14 days of their approval by the FERC.

**4.2 Corrective Measures.** If the Scheduling Coordinator or any Scheduling Coordinator Metered Entity that it represents fails to meet or maintain the standards for Metering Facilities or comply with the audit or test procedures as set forth in the CAISO Tariff, the CAISO shall be permitted to take corrective measures. Details of the corrective measures and rights the CAISO may exercise upon any failure by any entity to meet those standards for Metering Facilities or to comply with the audit or test procedures shall be set forth in Schedule 4 Part B or in the CAISO Tariff.



## ARTICLE V

### ACCESS TO METER DATA

- 5.1 Third Parties.** Third parties that are authorized by the Scheduling Coordinator to access the Meter Data of a Scheduling Coordinator Metered Entity held by the CAISO and that are entitled to such Meter Data shall be identified in Schedule 5 to this Agreement. The Scheduling Coordinator shall not provide a third party access to Meter Data of a Scheduling Coordinator Metered Entity unless the Scheduling Coordinator has permission from that Scheduling Coordinator Metered Entity to provide that access. The relevant UDCs and TOs shall be included in Schedule 5 provided that the Scheduling Coordinator Metered Entity has granted those UDCs and TOs access to its Meter Data. Any amendment or addition to Schedule 5 shall not constitute an amendment to this Agreement. The Scheduling Coordinator shall, on request by the Scheduling Coordinator Metered Entity, access the Meter Data held by the CAISO relating to that Scheduling Coordinator Metered Entity and provide that Meter Data to the Scheduling Coordinator Metered Entity in a timely manner.

## ARTICLE VI

### COSTS

- 6.1 Certification, Inspection and Auditing of Meters.** The Scheduling Coordinator shall be responsible for all reasonable costs incurred by the CAISO or a CAISO Authorized Inspector in connection with them carrying out the certification, inspection, testing or auditing of the meters identified in Schedule 1 from which the Scheduling Coordinator provides Meter Data to the CAISO. The CAISO or CAISO Authorized Inspector will furnish the Scheduling Coordinator, upon request, an itemized bill for such costs.

## ARTICLE VII

### DISPUTE RESOLUTION

- 7.1 Dispute Resolution.** The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that all reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to the Scheduling Coordinator Metered Entity and references to the CAISO Tariff shall be read as references to this Agreement.

## ARTICLE VIII

### REPRESENTATIONS AND WARRANTIES

- 8.1 Representations and Warranties.** Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.

- 8.2 Necessary Authority.** The Scheduling Coordinator represents and warrants that all of the entities which it identifies on Schedule 1 as Scheduling Coordinator Metered Entities that it represents have granted it all necessary authority to enable it to carry out its obligations under this Agreement and the CAISO Tariff, and, subject to the execution and delivery by the CAISO, this Agreement will be enforceable against the Scheduling Coordinator in accordance with its terms.
- 8.3 Meter Data Access.** The Scheduling Coordinator represents and warrants that all third parties referred to in Schedule 5 to this Agreement have been authorized by the relevant Scheduling Coordinator Metered Entity as having access to its Settlement Quality Meter Data.

## ARTICLE IX

### LIABILITY AND INDEMNIFICATION

- 9.1 Liability and Indemnification.** The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Agreement except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to the Scheduling Coordinator and references in the CAISO Tariff shall be read as references to this Agreement.

## ARTICLE X

### UNCONTROLLABLE FORCES

- 10.1 Uncontrollable Forces.** Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Agreement except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as references to the Scheduling Coordinator and all references to the CAISO Tariff shall be read as references to this Agreement.

## ARTICLE XI

### MISCELLANEOUS

- 11.1 Assignments.** Either Party may assign or transfer any or all of its rights and/or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff. Such consent shall not be unreasonably withheld. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest was an original Party to this Agreement.
- 11.2 Notices.** Any notice, demand or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with the Scheduling Coordinator's Scheduling Coordinator Agreement and in accordance with Section 22.4 of the CAISO Tariff, provided that all references in Section 22.4 of the CAISO Tariff to Market Participants shall be read as a reference to the Scheduling Coordinator and references to the CAISO Tariff shall be read as references to this Agreement, and unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 6. A Party must update the information in Schedule 6 as information changes. Such changes shall not constitute an amendment to this Agreement.

- 11.3 Waivers.** Any waiver at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay short of the statutory period of limitations in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.
- 11.4 Governing Law and Forum.** This Agreement shall be deemed to be a contract made under and for all purposes shall be governed by and construed in accordance with the laws of the State of California, except its conflict of law provisions. The Scheduling Coordinator irrevocably consents that any legal action or proceeding arising under or relating to this Agreement to which the CAISO ADR Procedures do not apply shall be brought in any of the following forums, as appropriate: any court of the State of California, any federal court of the United States of America located in the State of California or, where subject to its jurisdiction, before the Federal Energy Regulatory Commission.
- 11.5 Consistency with Federal Laws and Regulations.** This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.
- 11.6 Merger.** This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.
- 11.7 Severability.** If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.
- 11.8 Amendments.** This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that are subject to FERC approval shall not take effect until FERC has accepted such amendments for filing and has made them effective. Nothing contained herein shall be construed as affecting in any way the right of the CAISO to unilaterally make application to FERC for a change in the rates, terms and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder, and the Scheduling Coordinator shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to Section 206 or any other applicable provision of the FPA and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.
- 11.9 Counterparts.** This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.

**IN WITNESS WHEREOF**, the Parties hereto have caused this Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date hereinabove written.

**California Independent System Operator Corporation**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**Full legal name of SC**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**SCHEDULE 1**

**METER INFORMATION**

**[Section 3.3.1]**

Meter Number

Name of the Facility

Contact details for Scheduling Coordinator Metered Entity Representative

**SCHEDULE 2**

**APPROVED LOAD PROFILE**

**[Section 3.3.3]**

Attach details of each Approved Load Profile used by the Scheduling Coordinator Metered Entities represented by the Scheduling Coordinator, the names of the Scheduling Coordinator Metered Entities that use each of those Approved Load Profiles and the name of the Local Regulatory Authority that approved each of those Approved Load Profiles.

**SCHEDULE 3**

**EXEMPTIONS FROM METERING STANDARDS AND OTHER REQUIREMENTS**

**[Section 3.4.1]**

Exemption

Attach variation with an explanation.

Name of the relevant Local Regulatory Authority which sets security and validation standards for the Scheduling Coordinator Metered Entity.

Other Exemptions

**SCHEDULE 4**

**PART A**

**CAISO IMPOSED PENALTIES AND SANCTIONS**

**[Section 4.1]**

**TO BE INSERTED UPON FERC APPROVAL**

**PART B**

**CORRECTIVE MEASURES**

**[Section 4.2]**

**TO BE DEVELOPED**



**SCHEDULE 5**

**ACCESS TO METER DATA**

**[Section 5.1]**

List the third parties authorized by each Scheduling Coordinator Metered Entity represented by the Scheduling Coordinator to access that Scheduling Coordinator Metered Entity's Settlement Quality Meter Data.

**SCHEDULE 6**

**NOTICE**

**[Section 11.2]**

Name of Primary

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

Name of Alternative

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

**CAISO:**

Name of Primary

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

Name of Alternative

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

**CAISO TARIFF APPENDIX B.8**  
**Utility Distribution Company Operating Agreement**

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR**

**AND**

**[UTILITY DISTRIBUTION COMPANY]**

**UTILITY DISTRIBUTION COMPANY OPERATING AGREEMENT**

**UTILITY DISTRIBUTION COMPANY**

**OPERATING AGREEMENT**

**THIS OPERATING AGREEMENT** is dated this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_ and is entered into, by and between:

- (1) **[Full legal name of UDC]** having its registered and principal place of business located at **[Address]** (the "UDC");  
  
and
- (2) **California Independent System Operator Corporation**, a California non-profit public benefit corporation having its principal place of business located in such place in the State of California as the CAISO Governing Board may from time to time designate, initially 151 Blue Ravine Road, Folsom, California 95630 (the "CAISO").

The UDC and the CAISO are hereinafter referred to as the "Parties".

**Whereas:**

- A. The purpose of this Operating Agreement is to establish the rights and obligations of the UDC and the CAISO with respect to the UDC's Interconnection with the CAISO Controlled Grid and the UDC's cooperation and coordination with the CAISO to aid the reliability and the Operational Control of the CAISO Controlled Grid and the UDC's Distribution System.
- B. The UDC owns and operates a Distribution System within the CAISO Balancing Authority Area subject to the authority of a Local Regulatory Authority.
- C. The UDC wishes to transmit Energy and/or supply Ancillary Services to or from the CAISO Controlled Grid under the terms and conditions set forth in the CAISO Tariff. The UDC also wishes to support and be part of the coordinated response to System Emergencies and to System Reliability concerns relating to the CAISO Controlled Grid.
- D. The CAISO has certain statutory obligations under California law to maintain the reliability of the CAISO Controlled Grid.
- E. This Operating Agreement obligates the UDC and the CAISO to comply with the relevant sections of the CAISO Tariff, the CAISO Operating Procedures and the CAISO Specifications.
- F. The UDC and the Participating TO with which it is interconnected intend to coordinate the planning and implementation of any expansions or modifications of the UDC's or Participating TO's systems that will affect their transmission interconnection, the CAISO Controlled Grid or the transmission services to be required by the UDC.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, **THE PARTIES AGREE** as follows:

## ARTICLE I

### DEFINITIONS AND INTERPRETATION

**1.1 Master Definitions Supplement.** Unless defined in Section 1.2 of this Operating Agreement, all terms and expressions used in this Operating Agreement shall have the same meaning as those contained in the Master Definitions Supplement to the CAISO Tariff.

**1.2 Special Definitions for this Operating Agreement.** In this Operating Agreement, the following words and expressions shall have the meanings set opposite them:

**“CAISO Specifications”** means those standards pertaining to the areas of operation listed in Article IV of this Operating Agreement, approved by the CAISO to establish detailed technical performance and reliability parameters at the CAISO Controlled Grid and UDC Interconnection, associated with the CAISO Tariff, as those standards may be amended from time to time.

**“CAISO Operating Procedures”** means those procedures pertaining to the areas of operation listed in Article IV of this Operating Agreement, created by the CAISO to establish detailed operating practices at the CAISO Controlled Grid and UDC Interconnection, associated with general provisions required in the CAISO Tariff, as those standards may be amended from time to time.

**1.3 Rules of Interpretation.** The following rules of interpretation and conventions shall apply to this Operating Agreement:

- (a) if there is any inconsistency between this Operating Agreement and the CAISO Tariff, the CAISO Tariff will prevail to the extent of the inconsistency;
- (b) the singular shall include the plural and vice versa;
- (c) the masculine shall include the feminine and neutral and vice versa;
- (d) “includes” or “including” shall mean “including without limitation”;
- (e) references to a Section, Article or Schedule shall mean a Section, Article or a Schedule of this Operating Agreement, as the case may be, unless the context otherwise requires;
- (f) a reference in this Operating Agreement to a given agreement, instrument or the CAISO Tariff shall be a reference to that agreement, instrument or the CAISO Tariff as modified, amended, supplemented or restated through the date as of which such reference is made;
- (g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced or restated from time to time;

- (h) unless the context otherwise requires, any reference to a "person" includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization or other entity, in each case whether or not having separate legal personality;
- (i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;
- (j) any reference to a day, week, month or year is to a calendar day, week, month or year; and
- (k) the captions and headings in this Operating Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Operating Agreement.

## ARTICLE II

### TERM AND TERMINATION

- 2.1 Effective Date.** This Operating Agreement shall be effective as of the later of the date it is executed by the Parties or the date accepted for filing and made effective by the FERC, if such FERC filing is required, and shall remain in full force and effect until the earlier of the termination date, the termination of the TCA or such other date as the Parties shall mutually agree. With respect to any such termination, the CAISO must file a timely notice of termination with FERC, if such FERC filing is required, and this Operating Agreement shall terminate upon acceptance by FERC of such a notice of termination, if such FERC filing is required.
- 2.2 Termination Date.** Either Party (the terminating Party) may terminate this Operating Agreement by giving written notice in the event that the other Party (the defaulting Party) commits any default under this Operating Agreement and/or the CAISO Tariff which, if capable of being remedied, is not remedied within 30 days after the terminating Party has given the defaulting Party written notice of the default, unless excused by reason of Uncontrollable Forces under Article X of this Operating Agreement. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Operating Agreement was filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the filing of the notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within sixty (60) days after issuance of the notice of default; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Operating Agreement shall terminate upon acceptance by FERC of such a notice of termination, if filed with FERC, or thirty (30) days after the date of the notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.
- 2.3 Termination Pursuant to the TCA.** If the UDC is a party to the Transmission Control Agreement ("TCA"), this Operating Agreement shall terminate upon the effective date of the UDC's withdrawal from the TCA in accordance with Section 3.3 of the TCA, provided, however, that first the CAISO shall have filed a timely notice of termination with FERC, if such FERC filing is required, and FERC shall have accepted such notice of termination, if such FERC filing is required, or the CAISO must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The



filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the request to file a notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within sixty (60) days of receipt of such request; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001.

### ARTICLE III

#### GENERAL TERMS AND CONDITIONS

- 3.1.1 Facilities Under CAISO Operational Control.** Parties shall identify on Schedule 1 those facilities of the UDC that the Parties mutually agree will be placed under the CAISO's Operational Control pursuant to the CAISO Tariff. In the event that a Party invokes the dispute resolution provision identified in Section 7.1 of this Operating Agreement, such dispute shall be resolved based upon whether the CAISO's control over such disputed facilities is essential to meeting the Applicable Reliability Criteria, as defined in the CAISO Tariff. With respect to each facility identified in Schedule 1, the Parties shall negotiate the extent of the CAISO's Operational Control in order to meet said standard.
- 3.1.2 Facilities Financed by Local Furnishing Bonds or Other Tax-Exempt Bonds.** This Section 3.1.2 applies only to facilities which are under the Operational Control of the CAISO and are owned by a UDC with Local Furnishing Bonds or other tax-exempt bonds. Nothing in this Operating Agreement shall compel (and the CAISO is not authorized to request) any UDC with Local Furnishing Bonds, or other tax-exempt bonds, to violate restrictions applicable to facilities which are part of a system that was financed in whole or part with Local Furnishing Bonds or other tax-exempt bonds. The UDC shall cooperate with and provide all necessary assistance to the CAISO in developing specific schedules to be included in executed Operating Agreements with such UDC to meet the intent of Section 3.1.1 of this Operating Agreement.
- 3.2 Agreement Subject to CAISO Tariff.** This Operating Agreement shall be subject to the provisions of the CAISO Tariff which shall be deemed to be incorporated by reference herein, as the same may be changed or superseded from time to time pursuant to Sections 22.10 and 22.4.3 of the CAISO Tariff. The Parties agree that they will comply with Section 4.4, and any other applicable provisions, of the CAISO Tariff.
- 3.3 Operation of CAISO Controlled Grid.** The CAISO shall operate the CAISO Controlled Grid in accordance with the CAISO Tariff and the Transmission Control Agreement to which it is a party.
- 3.4.1 Compliance with CAISO Specifications and CAISO Operating Procedures.** The UDC will abide by and will perform all of the obligations under the CAISO Specifications and the CAISO Operating Procedures placed on UDCs in respect of all matters set forth therein as the same may be changed or superseded from time to time pursuant to the procedures set forth in Sections 22.10 and 22.4.3 of the CAISO Tariff. In the event of any conflict or dispute over interpretation, the CAISO Tariff shall, at all times, take precedence over the CAISO Specifications and CAISO Operating Procedures. The CAISO shall not implement any reliability requirements, operating

requirements or performance standards that would impose increased costs on the UDC without giving due consideration to whether the benefits of such requirements or standards are sufficient to justify such increased costs. In any proceeding concerning the cost recovery by the UDC of capital and operation and maintenance costs incurred to comply with CAISO Specifications and Operating Procedures, the CAISO shall, at the request of the UDC, provide specific information regarding the nature of, and need for, the CAISO-imposed requirements or standards to enable the UDC to use this information in support of cost recovery through rates and tariffs.

- 3.4.2 Review of Specifications and Operating Procedures.** The CAISO shall periodically review with the UDC the CAISO Specifications and Operating Procedures and, through the process specified in the CAISO Tariff, shall modify the specifications and/or Operating Procedures as necessary.
- 3.4.3 Periods When Compliance is Required.** While awaiting dispute resolution or regulatory review, the UDC shall not be required to comply with changes to the CAISO Specifications and/or Operating Procedures, except where compliance is necessary in order to prevent or remedy an imminent System Emergency.
- 3.5 Scheduling Coordinator Certification.** The UDC shall ensure that any Scheduling Coordinator through which it submits Bids for Energy and Ancillary Services to or from the CAISO Controlled Grid is appropriately certified in accordance with Section 4.5.1 of the CAISO Tariff in accordance with the list of Scheduling Coordinators established by the CAISO on the CAISO Website.
- 3.6 Single Point of Contact.** The CAISO and the UDC shall each provide a single point of contact on a 24-hour, 7-day basis for the exchange of operational procedures and information. In the case of a UDC that is also a Participating TO, there may be only one single point of contact required and, in the reasonable discretion of the CAISO, duplicative reporting requirements and functions may be waived. Details of requirements relating to and the identity of the initial points of contact are set forth in Schedule 2.
- 3.7 Delegated Operational Responsibilities.** The UDC undertakes to perform all operational responsibilities delegated to the UDC by the CAISO in accordance with Section 4.4.1.2 of the CAISO Tariff and described in Schedule 3.

## ARTICLE IV

### OPERATIONAL COORDINATION

The Parties will perform the operational coordination obligations and responsibilities assigned to them under the CAISO Tariff, the CAISO Operating Procedures, and the CAISO Specifications. The obligations and responsibilities include:

#### **4.1 Maintenance Coordination**

- 4.1.1 Maintenance Coordination for Facilities under CAISO Control.** The UDC shall schedule with the CAISO on an annual basis any maintenance Outages of the equipment included in Schedule 1 pursuant to Schedule 4 in compliance with the CAISO Tariff and shall coordinate its Outage requirements with the Participating TO with which it is interconnected.

- 4.1.2 Maintenance Coordination for Other Facilities.** With respect to other facilities which may affect the reliability of the UDC Interconnection, the UDC shall coordinate its Outage requirements with the Participating TO with which it is interconnected.
- 4.2 System Emergencies.** The responsibilities of the Parties in relation to System Emergencies are stated in the CAISO Tariff and in Schedule 5. The CAISO shall adopt fair and non-discriminatory procedures among the UDCs to ensure that no UDC bears a disproportionate share of the CAISO's Load Shedding program.
- 4.2.1 Underfrequency Load Shedding (UFLS).** The responsibilities of the Parties in relation to UFLS are stated in Section 7.7.8 of the CAISO Tariff, the CAISO Operating Procedures, the CAISO Specifications and in Schedule 6.
- 4.2.2 Other Automatic Load Shedding.** The responsibilities of the Parties in relation to automatic Load Shedding as a function of voltage and other parameters are stated in the CAISO Operating Procedures, the CAISO Specifications and in Schedule 7.
- 4.2.3 Manual Load Shedding.** The responsibilities of the Parties to direct and to accept direction for manual disconnection of Load, under EEP, Load curtailment programs or other emergency plans, are stated in Section 7, including Section 7.7.11.3, of the CAISO Tariff, the CAISO Operating Procedures, the CAISO Specifications and in Schedule 8.
- 4.3 Electrical Emergency Plan (EEP).** The responsibilities of the Parties in relation to the EEP are stated in Section 7.7.5.1 of the CAISO Tariff, the CAISO Operating Procedures, the CAISO Specifications and in Schedule 9.
- 4.4 Load Restoration.** The responsibilities of the Parties for restoring Load following a system disturbance are stated in Section 7.7.11.3 of the CAISO Tariff, the CAISO Operating Procedures, the CAISO Specifications and in Schedule 10.
- 4.5 Records, Information and Reports.** The Parties are required to maintain such records, to share information, and to make such reports as are stated in Section 4.4.1, 4.4.3, and 4.4.5 of the CAISO Tariff, the CAISO Operating Procedures, the CAISO Specifications, and in Schedule 11. Additionally, the Parties shall jointly perform a review following a major Outage as provided in Section 7.7.13.1 of the CAISO Tariff.
- 4.6 Interconnection Operation Standards.** The CAISO and UDC shall maintain stable established operating parameters and control power and reactive flow within standards stated in the CAISO Specifications and in Schedule 12.
- 4.7 Critical Protective Systems.** The UDC shall (in accordance with Section 11.2 of this Operating Agreement) notify the CAISO as soon as is reasonably practicable of any condition that it becomes aware of that may compromise the CAISO Controlled Grid Critical Protective Systems in accordance with Section 4.4.2 of the CAISO Tariff and Schedule 13.
- 4.8 UDC Distribution Systems.** The CAISO shall (in accordance with Section 11.2 of this Operating Agreement) notify the UDC as soon as is reasonably practicable of any condition which the CAISO becomes aware that may compromise the operation and reliability of the UDC Distribution System.

## ARTICLE V

### ACCESS TO FACILITIES

- 5.1 Access Rights.** Pursuant to Section 4.4.6 of the CAISO Tariff and Schedule 14 of this Operating Agreement, the CAISO and the UDC shall each have the right to install or to have installed equipment or other facilities, including metering equipment, on the electric utility property of the other necessary for the implementation of this Operating Agreement. The CAISO's installation of equipment on the property of the UDC shall comply with Local Regulatory Authority regulations, except where compliance with Local Regulatory Authority regulations would cause the CAISO to violate the CAISO Tariff, and with all relevant safety standards. In such case, the UDC and CAISO will work together to resolve the conflict between the Local Regulatory Authority regulations and the CAISO Tariff.
- 5.2 Meter Testing.** The UDC shall, at the request of the CAISO and upon reasonable notice, provide access to its facilities necessary to permit the CAISO or a CAISO-approved meter inspector to perform such testing as necessary in accordance with Section 4.4.6 of the CAISO Tariff and the procedures set forth in Schedule 14.
- 5.3 Emergency Access Rights.** Section 4.4.6.3 of the CAISO Tariff shall govern the CAISO's right to access the UDC's equipment or other facilities during a System Emergency or where access is needed in connection with an audit function. In a System Emergency, the UDC shall have a right of access to CAISO equipment on UDC property and UDC equipment on CAISO property without notice.

## ARTICLE VI

### COSTS

- 6.1 UDC Operating and Maintenance Costs.** The UDC shall be responsible for all costs incurred in connection with procuring, installing, operating and maintaining its facilities identified in Schedule 1 for the purpose of meeting its obligations under this Operating Agreement.
- 6.2 CAISO Operating and Maintenance Costs.** The CAISO shall be responsible for the procurement, installation, operation and maintenance costs of CAISO equipment set out in Article V of this Operating Agreement installed on UDC property.

## ARTICLE VII

### DISPUTE RESOLUTION

- 7.1 Alternative Dispute Resolution.** The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Operating Agreement. In the event any dispute is not settled, the Parties shall adhere to the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that all reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to the UDC and references to the CAISO Tariff shall be read as references to this Operating Agreement.

## ARTICLE VIII

### REPRESENTATIONS AND WARRANTIES

- 8.1 Representations and Warranties.** Each Party represents and warrants that its execution, delivery and performance of this Operating Agreement has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.
- 8.2 Necessary Approvals.** Each Party represents that all necessary approvals, permits, licenses, easements, right of way or access to install, own and operate its facilities subject to this Operating Agreement have been obtained prior to the effective date of this Operating Agreement.

## ARTICLE IX

### LIABILITY

- 9.1 Extent of Liability.** The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Operating Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to the UDC and references to the CAISO Tariff shall be read as references to this Operating Agreement.

## ARTICLE X

### UNCONTROLLABLE FORCES

- 10.1 Uncontrollable Forces Tariff Provisions.** Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Operating Agreement, except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as a reference to the UDC and references to the CAISO Tariff shall be read as references to this Operating Agreement.

## ARTICLE XI

### MISCELLANEOUS

- 11.1 Assignments.** Either Party may assign its obligations under this Operating Agreement, with the other Party's prior written consent, in accordance with Section 22.2 of the CAISO Tariff, which is incorporated by reference into this Operating Agreement. Such consent shall not be unreasonably withheld.

- 11.2 Notices.** Any notice, demand or request which may be given to or made upon either Party regarding this Operating Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff, which is incorporated by reference, except that all reference in Section 22.4 of the CAISO Tariff to Market Participants shall be read as a reference to the UDC and references to the CAISO Tariff shall be read as references to this Operating Agreement, and unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 2. A Party must update the information relating to its address as that information changes in accordance with Section 22.4 of the CAISO Tariff. Such changes will not constitute an amendment to this Operating Agreement.
- 11.3 Waivers.** Any waiver at any time by either Party of its rights with respect to any default under this Operating Agreement, or with respect to any other matter arising in connection with this Operating Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or matter arising in connection with this Operating Agreement. Any delay short of the statutory period of limitations, in asserting or enforcing any right under this Operating Agreement, shall not constitute or be deemed a waiver of such right.
- 11.4 Governing Law and Forum.** This Operating Agreement shall be deemed to be a contract made under and for all purposes shall be governed by and construed in accordance with the laws of the State of California except in its conflict of laws provisions. The Parties irrevocably consent that any legal action or proceeding arising under or in relation to this Operating Agreement to which the CAISO ADR Procedures do not apply, shall be brought in any of the following forums, as appropriate: any court of the State of California, any federal court of the United States of America located in the State of California or, where subject to its jurisdiction, before the Federal Energy Regulatory Commission.
- 11.5 Consistency with Federal Laws and Regulations.**
- (a) Nothing in this Operating Agreement shall compel any person or federal entity to: (1) violate federal statutes or regulations; or (2) in the case of a federal agency, to exceed its statutory authority, as defined by any applicable federal statutes, regulations, or orders lawfully promulgated thereunder. If any provision of this Operating Agreement is inconsistent with any obligation imposed on any person or federal entity by federal law or regulation to that extent, it shall be inapplicable to that person or federal entity. No person or federal entity shall incur any liability by failing to comply with this Operating Agreement that is inapplicable to it by reason of being inconsistent with any federal statutes, regulations, or orders lawfully promulgated thereunder; provided, however, that such person or federal entity shall use its best efforts to comply with the CAISO Tariff to the extent that applicable federal laws, regulations, and orders lawfully promulgated thereunder permit it to do so.
  - (b) If any provision of this Operating Agreement requiring any person or federal entity to give an indemnity or impose a sanction on any person is unenforceable against a federal entity, the CAISO shall submit to the Secretary of Energy or other appropriate Departmental Secretary a report of any circumstances that would, but for this provision, have rendered a federal entity liable to indemnify any person or incur a sanction and may request the Secretary of Energy or other appropriate Departmental Secretary to take such steps as are necessary to give effect to any provisions of this Operating Agreement that are not enforceable against the federal entity.

- 11.6 Integration.** This Operating Agreement constitutes the full agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.
- 11.7 Severability.** If any term, covenant, or condition of this Operating Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Operating Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Operating Agreement.
- 11.8 Penalties.** Any penalties to be levied under this Operating Agreement shall be established in accordance with the CAISO Tariff after consultation between the UDC and the CAISO, and approval by the FERC, and shall be set out in Schedule 15 or a provision of the CAISO Tariff. No penalties or sanctions may be imposed under this Operating Agreement unless a Schedule or CAISO Tariff provision providing for such penalties or sanctions has first been filed with and made effective by FERC. Nothing in this Operating Agreement, with the exception of the provisions relating to the CAISO ADR Procedures, shall be construed as waiving the rights of the UDC to oppose or protest any penalty proposed by the CAISO to the FERC or the specific imposition by the CAISO of any FERC-approved penalty on the UDC.
- 11.9 [NOT USED]**
- 11.10 Amendments.** This Operating Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. Nothing contained herein shall be construed as affecting in any way the right of the CAISO to unilaterally make application to FERC for a change in the rates, terms and conditions of this Operating Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder, and the UDC shall have the right to make a unilateral filing with FERC to modify this Operating Agreement pursuant to Section 206 or any other applicable provision of the FPA and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Operating Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.
- 11.11 Counterparts.** This Operating Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Operating Agreement.

**IN WITNESS WHEREOF**, the Parties hereto have caused this Operating Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date hereinabove written.

**California Independent System Operator Corporation**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**Full Name of UDC**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



**SCHEDULE 1**

**FACILITIES UNDER CAISO CONTROL**

The UDC will supply a list of UDC facilities that are placed under the Operational Control of the CAISO in Schedule 1.

There are no UDC facilities to be listed here at present.

**SCHEDULE 2**

**OPERATIONAL CONTACT**

**CAISO:**

Transmission Dispatcher

(Folsom):

Transmission Dispatcher

(Alhambra):

Shift Supervisor:

Director of Grid Operations:

City/State/Zip Code

Other CAISO Dispatch Operations Phones:

Generation Dispatcher

(Folsom)

Generation Dispatcher

(Alhambra)

WECC Reliability Coordinator

**UDC:**

Name of Primary

Representative: \_\_\_\_\_

Name of Alternative

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code \_\_\_\_\_

Email address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

**CONTACTS FOR NOTICES**

**UDC**

Name of Primary  
Representative: \_\_\_\_\_  
Title: \_\_\_\_\_  
Address: \_\_\_\_\_  
City/State/Zip Code: \_\_\_\_\_  
Email Address: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax No: \_\_\_\_\_

Name of Alternative  
Representative: \_\_\_\_\_  
Title: \_\_\_\_\_  
Address: \_\_\_\_\_  
City/State/Zip Code: \_\_\_\_\_  
Email Address: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax No: \_\_\_\_\_

**CAISO**

Name of Primary  
Representative: \_\_\_\_\_  
Title: \_\_\_\_\_  
Address: \_\_\_\_\_  
City/State/Zip Code: \_\_\_\_\_  
Email Address: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax No: \_\_\_\_\_

Name of Alternative  
Representative: \_\_\_\_\_  
Title: \_\_\_\_\_  
Address: \_\_\_\_\_  
City/State/Zip Code: \_\_\_\_\_  
Email Address: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax No: \_\_\_\_\_

**SCHEDULE 3**

**DELEGATED OPERATIONAL RESPONSIBILITIES**

Currently the CAISO has not delegated any operational responsibilities to the UDC in accordance with Section 4.4.1 of the CAISO Tariff. If such a delegation occurs, they will be identified in this Schedule 3.

**SCHEDULE 4**

**MAINTENANCE COORDINATION**

By October 1st of each year, the UDC will exchange with the CAISO a provisional planned Outage program for all lines and equipment in Schedule 1. That document will be updated quarterly or as changes occur to the proposed schedule.

The CAISO will approve all Outages on equipment and lines transferred to CAISO Operational Control.

Applications for scheduled work will be submitted to the CAISO by \_\_\_\_\_'s Grid Operations group via means to be agreed to by both Parties. The UDC documents will record the details for all work and become the data base for reporting and recording Outage information.

**SCHEDULE 5**

**SYSTEM EMERGENCIES**

The CAISO will notify the UDC's operational contact (Operations Shift Supervisor - Grid Control), as identified in Schedule 2, of the emergency, including information regarding the cause, nature, extent, and potential duration of the emergency. The Operations Shift Supervisor will add any relevant data and will notify Distribution Operations. Distribution Operations will make the appropriate notifications within the UDC organization. The Operations Shift Supervisor and Distribution Control Shift Supervisor will then take such actions as are appropriate for the emergency.

The UDC will make requests for information from the CAISO regarding emergencies through the Operations Shift Supervisor, or the UDC Communication Coordinator may coordinate public information with the CAISO Communication Coordinator.

The UDC is required to estimate service restoration by geographic areas, and will use its call center and the media to communicate with customers during service interruptions. The UDC is also required to communicate the same information to appropriate state and local governmental entities. For transmission system caused outages the Operations Shift Supervisor will notify Distribution Operations Control Center of any information related to the outage such as cause, nature, extent, potential duration and customers affected.

Distribution Control and Grid Control Center logs, Electric Switching Orders and Energy Management System temporal data base will be used in preparation of outage reviews. These documents are defined as the chronological record of the operation of the activities which occur with the portion of the electrical system assigned to that control center. The log shall contain all pertinent information, including orders received and transmitted, relay operations, messages, clearances, accidents, trouble reports, daily switching program, etc.

The UDC will retain records in accordance with its record retention policy or practice, provided the records associated with this Operating Agreement are retained for a minimum of six years.

**SCHEDULE 6**

**UNDERFREQUENCY LOAD SHEDDING**

The objective of the Underfrequency Load Shedding (UFLS) program is to provide security and protection to the interconnected bulk power network by arresting frequency decay during periods of insufficient resources.

This plan establishes Underfrequency Load Shedding objectives consistent with the Load Shedding policies of the Western Electricity Coordinating Council, the North American Electric Reliability Corporation and the UDC. The UDC's Load Shedding program will be in accordance with the WECC Off-nominal Frequency Report requirements.



**SCHEDULE 7**

**OTHER AUTOMATIC LOAD SHEDDING**

In addition to underfrequency relay load reduction, any undervoltage relay protection that is utilized in the UDC will be identified in the Attachment to this Schedule 7.

**SCHEDULE 8**

**MANUAL LOAD SHEDDING**

[Note: Schedule 8 will detail the criteria governing the implementation of manual Load Shedding and/or interruptible Loads, and will describe the UDC's means of effecting Load Shedding and the estimated associated MW values of various UDC Loads to be shed. For Load curtailment programs Schedule 8 will also contain the UDC's capabilities until October 1 and thereafter annually.]

**SCHEDULE 8A**

**ROTATING LOAD CURTAILMENT PROCEDURES**

**SCHEDULE 8B**

**INTERRUPTIBLE LOAD**

**SCHEDULE 9**

**ELECTRICAL EMERGENCY PLAN**

The CAISO Specifications will outline the basic criteria for the development, coordination, and implementation of the UDC EEP and the requirements for coordination with the CAISO EEP. Schedule 9 will include the UDC EEP as coordinated with the CAISO EEP.

**SCHEDULE 10**

**LOAD RESTORATION**

The UDC will follow the procedures set forth below in this Schedule 10 in promoting orderly, coordinated restoration of electric systems after a major system disturbance has occurred which resulted in Load Shedding by frequency relays in California.

1. Immediately after Load Shedding by frequency relay has occurred in the UDC, the UDC will remain in contact with its respective Participating Transmission Owner (PTO) Area Control Center (ACC) until normal frequency has been restored throughout the CAISO Balancing Authority Area or the CAISO Shift Supervisor has concluded that such full-time communications can be terminated. Emergency communications over the California ACC Hot-line will be under the direction of the CAISO Shift Supervisor and the senior dispatcher present at the affected PTO ACC(s).
2. Manual Load restoration will not normally be initiated until the California ACC Hot Line is attended. No Load is to be manually restored unless directed by the CAISO after the frequency has recovered and there is indication that the frequency can be maintained. The UDC will await direction from its respective PTO ACC who will be in contact with the CAISO Shift Supervisor. The CAISO Shift Supervisor will determine whether adequate generation resources are available on line to support the Load to be restored.
3. Any UDC automatic Load restoration will be consistent with the WECC Coordinated Off-Nominal Frequency Load Shedding and Restoration Plan.
4. If the CAISO cannot meet the WECC and NERC Balancing Authority Area Disturbance Control Standard or the Control Performance Standard post disturbance, no manual Load restoration will be permitted. If the frequency is such that automatic Load restoration occurs under these conditions, the UDC(s) which has restored Load automatically will manually shed an equivalent amount of Load to offset the Load which was automatically restored.
5. Restoration of ties and off-site power supply to nuclear generating facilities should be given top priority. Manual Load restoration will be deferred during periods of tie restoration. The UDC should be equipped and prepared to drop Load manually when necessary to allow frequency recovery sufficient to re-establish CAISO intra-area ties and Interties between the CAISO Balancing Authority Area and outside systems. Where manual Load Shedding is required, the CAISO shall make reasonable efforts to allocate the Load Shedding requirement equitably among the UDCs where Load Shedding will be beneficial.
6. The UDC will use its existing plans and priorities to restore Load within the parameters given by the CAISO, giving the appropriate priority to essential services such as military, public safety agencies, water treatment plants, sewage treatment plants, etc.

**SCHEDULE 11**

**RECORDS, INFORMATION, REPORTS**

The CAISO and UDC will jointly develop any necessary forms and procedures for collection, study and transmittal of system data, information, reports, and forecasts.

**SCHEDULE 12**

**INTERCONNECTION OPERATION STANDARDS**

The CAISO and UDC shall jointly maintain stable operating parameters and control power and reactive flow in accordance with the CAISO Tariff and the following Interconnection Operation Standards.

**UDC Responsibilities**

1.0 The UDC shall operate its facilities at each point of interconnection with the CAISO Controlled Grid in such manner as to avoid any material or adverse impact on the CAISO Controlled Grid. In accordance with this performance goal, the UDC shall:

1.1 Operate its facilities at each point of interconnection with the CAISO Controlled Grid within established operating parameters including normal ratings, emergency ratings, voltage limits, and balance of load between electrical phases.

1.2 Maintain primary and backup protective systems such that faults on UDC facilities will be cleared with minimal impact on the CAISO Controlled Grid.

1.3 Maintain Load power factor at each point of interconnection with the CAISO Controlled Grid as close as possible to unity power factor and pursuant to Section 8.2.3.3 of the CAISO Tariff.

**CAISO Responsibilities**

2.0 The CAISO shall operate the CAISO Controlled Grid at each point of interconnection with the UDC in such manner as to avoid any material or adverse impact on the UDC facilities. In accordance with this performance goal, the CAISO shall:

2.1 Participate with the UDC and TO in the development of joint power quality performance standards and jointly maintain compliance with such standards.

2.2 Observe UDC grid voltage limits specified in Attachment 1 including requirements for reduced voltage on CAISO Controlled Grid facilities which apply during heavy fog (or other unusual operating conditions) as needed to minimize the risk of insulator flashover.

2.3 Approve transmission owner maintenance requests in a timely manner, and shall not unreasonably withhold approval of TO requests for authorization to perform energized insulator washing work or to take planned Outages needed to replace or insul-grease insulators.

2.4 Support UDC investigation of power quality incidents, and provide related data to the UDC in a timely manner.



2.5 Support installation of apparatus on the CAISO Controlled Grid to improve power quality, and take all reasonable measures to investigate and mitigate power quality concerns caused by actions or events in neighboring systems or Balancing Authority Areas.

2.6 Maintain Load power factor at each UDC Interconnection as close as possible to unity power factor and pursuant to Section 8.2.3.3 of the CAISO Tariff.

**SCHEDULE 13**

**CRITICAL PROTECTION SYSTEMS**

Distribution protective relay schemes affecting the CAISO Controlled Grid are those associated with transformers that would trip transmission breakers and/or busses at UDC Interconnection point when activated. These would include any of the following:

1. High Side Overcurrent Relays
2. Differential Overcurrent Relays
3. Sudden Pressure Relays
4. Low Oil Relays
5. Neutral Ground Overcurrent Relays
6. On fuse protected transformers, it would be the high-side fuses.

**SCHEDULE 14**

**RIGHTS OF ACCESS TO FACILITIES**

14.1           Equipment Installation. In order to give effect to this Operating Agreement, a Party that requires to use particular equipment (the equipment owner) may require installation of such equipment on property owned by the other Party (the property owner), provided that the equipment is necessary to meet the equipment owner's service obligations and that the equipment shall not have a negative impact on the reliability of the service provided, nor prevent the property owner from performing its own obligations or exercising its rights under this Operating Agreement.

14.1.1       Free Access. The property owner shall grant to the equipment owner free of charge reasonable installation rights and rights of access to accommodate equipment inspection, maintenance, repair, upgrading, or removal for the purposes of this Operating Agreement, subject to the property owner's reasonable safety, operational, and future expansion needs.

14.1.2       Notice. The equipment owner shall provide reasonable notice to the property owner when requesting access for site assessment, equipment installation, or other relevant purposes. Such access shall not be provided unless the parties mutually agree to the date, time, and purpose of each access. Agreement on the terms of the access shall not be unreasonably withheld or delayed.

14.1.3       Removal of Installed Equipment. Following reasonable notice, the equipment owner shall be required, at its own expense, to remove or relocate equipment, at the request of the property owner, provided that the equipment owner shall not be required to do so if it would have a negative impact on the reliability of the service provided, or be prevented from performing its own obligations or exercising its rights under this Operating Agreement.

14.1.4       Costs. The equipment owner shall repair at its own expense any property damage it causes in exercising its rights and shall reimburse the property owner for any other reasonable costs that it may be required to incur to accommodate the equipment owner's exercise of its rights under this Section 14.1.

14.2           Rights to Assets. The Parties shall not interfere with each other's assets, without prior written agreement.

14.3           Inspection of Facilities. In order to meet their respective obligations under this Operating Agreement, each Party may view or inspect facilities owned by the other Party. Provided that reasonable notice is given, a Party shall not unreasonably deny access to relevant facilities for viewing or inspection by the requesting Party.

14.4           Access During Emergencies. Either Party shall have rights of access, without prior notice, to the other Party's equipment as necessary during times of a System Emergency.

**SCHEDULE 15**

**PENALTIES AND SANCTIONS**

Intentionally left blank, initially, in accordance with Section 11.8

**CAISO TARIFF APPENDIX B.9**  
**Dynamic Scheduling Host Balancing Authority Operating Agreement**

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR**

AND

**[BALANCING AUTHORITY]**

**DYNAMIC SCHEDULING HOST BALANCING AUTHORITY OPERATING AGREEMENT**

**DYNAMIC SCHEDULING HOST BALANCING AUTHORITY  
OPERATING AGREEMENT**

**THIS DYNAMIC SCHEDULING HOST BALANCING AUTHORITY OPERATING AGREEMENT (“AGREEMENT”)** is established this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_ and is accepted by and between:

**[Full legal name]** (“Host Balancing Authority”), having its registered and principal executive office at [address],

and

**California Independent System Operator Corporation** (“CAISO”), a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate, initially 151 Blue Ravine Road, Folsom, California 95630.

The Host Balancing Authority and the CAISO are hereinafter referred to as the “Parties”.

**Whereas:**

- A.** The Parties named above operate Balancing Authority Areas.
- B.** The Parties wish to coordinate operation of dynamic scheduling functionality to satisfy North American Electric Reliability Corporation (“NERC”) policies, Western Electricity Coordinating Council (“WECC”) Minimum Operating Reliability Criteria (“MORC”), and Good Utility Practice.
- C.** The Host Balancing Authority does not have an Interconnected Balancing Authority Area Operating Agreement (“IBAAOA”) with the CAISO and desires to implement an agreement to facilitate dynamic scheduling from System Resources in its Balancing Authority Area to the CAISO Balancing Authority Area without an IBAAOA.
- D.** The Parties wish to enter into this Agreement to establish the terms and conditions for the operation of the dynamic scheduling functionality from Host Balancing Authority’s Balancing Authority Area to the CAISO Balancing Authority Area.
- E.** The CAISO has certain statutory obligations under California law to maintain power system reliability.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, **THE PARTIES AGREE** as follows:

## **1. Term and Termination**

### **1.1 Effective Date**

This Agreement shall be effective as of the date set forth above, unless this Agreement is accepted for filing and made effective by the Federal Energy Regulatory Commission ("FERC") on some other date, if FERC filing is required, and shall continue in effect until terminated.

### **1.2 Termination**

This Agreement may be terminated by either Party upon thirty (30) days written notice to the other Party or upon mutual consent of both Parties. For entities subject to FERC jurisdiction, termination will be effective upon acceptance by FERC of notice of termination, if this Agreement has been filed with FERC, or thirty (30) days after the date of the notice of termination by a Party, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders. The CAISO shall timely file any required notice of termination with FERC. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the filing of the notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination with FERC within sixty (60) days after issuance of the notice of termination by a Party; or (2) the CAISO files the notice of termination with FERC in accordance with the requirements of FERC Order No. 2001.

## **2. Definitions**

### **2.1 WECC Definitions**

Except as defined below, terms and expressions used in this Agreement shall have the same meanings as those contained in the WECC Glossary of WECC Terms and Acronyms.

### **2.2 Specific Definitions**

**2.2.1 CAISO Dynamic Scheduling Protocol:** The CAISO's Dynamic Scheduling Protocol, which is set forth in Appendix X of the CAISO Tariff.

**2.2.2 CAISO Tariff:** CAISO Operating Agreement, Protocols, and Tariff as amended from time to time, together with any appendices or attachments thereto.

**2.2.3 Good Utility Practice:** Any of the practices, methods, and acts engaged in or approved by a significant portion of the electric utility industry in the WECC region during the relevant time period, or any of the practices, methods, and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety, and expedition. Good Utility Practice is not intended to be any one of a number of the optimum practices, methods, or acts to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region.



**2.2.4 Point of Contact:** A person or entity having the authority to receive and act upon scheduling or dispatch communications from the other Balancing Authority and available through a communications device mutually agreed upon on a 24-hour, 7-day basis.

**2.2.5 Scheduling Coordinator:** An entity certified by the CAISO for the purposes of undertaking the functions of: submitting bids or schedules for energy, generation, transmission losses, and ancillary services; coordinating generation; tracking, billing, and settling trades with other Scheduling Coordinators; submitting forecast information; paying the CAISO's charges; and ensuring compliance with CAISO protocols.

**2.2.6 System Resource:** "System Resource" is defined in the CAISO Tariff and, in the context of this Agreement, may include combinations of resources as described in the CAISO Dynamic Scheduling Protocol.

### **3 General**

#### **3.1 Purpose**

This Agreement sets forth the requirements that must be satisfied by the Host Balancing Authority should it elect to support Scheduling Coordinators' requests for implementation of a dynamic scheduling functionality and delivery of energy and energy associated with ancillary services (except regulation service) into the CAISO Balancing Authority Area. The requirements encompass technical (energy management system ("EMS")/ automatic generation control ("AGC") and communications), interchange scheduling, telemetry, and aspects of Balancing Authority Area operations.

#### **3.2 NERC/WECC Operating Standards Observed**

Nothing in this Agreement is intended to change, supersede, or alter either Party's obligations to abide by NERC standards and policies and WECC criteria.

#### **3.3 Applicable Standards**

This Agreement incorporates, by reference, the CAISO Dynamic Scheduling Protocol.

#### **3.4 Communication**

The CAISO and the Host Balancing Authority shall each operate and maintain a 24-hour, 7-day control center with real-time scheduling and control functions. Appropriate control center staff will be provided by each Party who shall be responsible for operational communications and who shall have sufficient authority to commit and bind that Party. The CAISO and the Host Balancing Authority shall jointly develop communication procedures necessary to support scheduling and dispatch functions. The Points of Contact and the procedures for insuring reliable communication are identified in Schedule 1.

**4. Telecommunications Requirements**

The CAISO and Host Balancing Authority shall establish and maintain real-time, redundant, diversely routed, communications links between the CAISO EMS and the Host Balancing Authority EMS, with the primary link utilizing the standard inter-control center communications protocol ("ICCP") in accordance with the CAISO Dynamic Scheduling Protocol for the dynamically scheduled System Resources listed in Schedule 2.

**5. Telemetry**

For each operating hour for which a System Resource is scheduled to deliver energy, and/or energy associated with any of the non-regulating ancillary services to the CAISO Balancing Authority Area, the Host Balancing Authority shall provide, via the ICCP communication links to the CAISO EMS, the data for each System Resource, as set forth in the CAISO Dynamic Scheduling Protocol.

**6. Interchange Scheduling Requirements**

**6.1 Dynamic Scheduling**

The Host Balancing Authority shall support Scheduling Coordinators' requests to arrange dynamic interchange schedules for the delivery of energy to the CAISO Balancing Authority Area, reflecting the System Resource's instantaneous energy production or allocation level and taking into account available transmission capacity.

**6.2 Treatment of Area Control Error ("ACE")**

The Host Balancing Authority shall instantaneously compensate its AGC for the System Resource's energy output that is generated or allocated for establishing the dynamic schedule to the CAISO such that the System Resource energy production or allocation changes have an equal in magnitude and opposite in sign effect on the Host Balancing Authority's ACE.

**6.3 Integration of Dynamic Scheduling**

For each operating hour during which energy was dynamically scheduled for delivery to the CAISO Balancing Authority Area, the Host Balancing Authority shall compute an integrated amount of interchange based on the System Resource's integrated energy production, by integrating the instantaneous System Resource production levels. Such integrated MWH value shall be agreed to hourly by the real-time schedulers.

**6.4 Delivery of Megawatts ("MW")**

The Host Balancing Authority shall not be obligated to make up any difference between the dynamic energy schedule and the MW being generated or allocated by the System Resource.

**6.5 Access to Information**

The Parties agree to exchange information related to telemetry sent and received with respect to the delivery of energy (i) at the request of the other Party for purposes of after-the-fact interchange accounting or (ii) on demand for any other purpose.

**7. Other Host Balancing Authority Responsibilities**

**7.1 Operational Jurisdiction**

The Host Balancing Authority will have, at a minimum, the level of operational jurisdiction over the System Resource and the associated dynamic schedule that NERC and WECC vest in Host Balancing Authorities.

**7.2 E-Tagging**

The Host Balancing Authority must support associated e-tagging as described in the CAISO Dynamic Scheduling Protocol and deemed to be consistent with NERC and/or WECC requirements.

**7.3 Real-Time Adjustments**

The Host Balancing Authority must have a means to manually override and/or otherwise adjust the dynamic signal in real-time, if needed.

**7.4 Coordination with Other Balancing Authorities**

The Host Balancing Authority must provide in real-time the instantaneous value of each dynamic schedule to every intermediary Balancing Authority Area through whose systems such dynamic schedule may be implemented to the CAISO.

**8. Other**

**8.1 Losses**

The CAISO shall not be responsible for transmission losses caused by transmitting energy dynamically within or across the Host Balancing Authority's Balancing Authority Area for delivery to the CAISO.

**8.2 Certification**

Only CAISO-certified System Resource/Host Balancing Authority arrangements will be allowed to bid or self provide ancillary services in the CAISO's ancillary services market through a CAISO-certified Scheduling Coordinator.

**8.3 No Guarantee of Award**

Certification of a System Resource/Host Balancing Authority arrangement allows for bidding of energy and/or certain ancillary services into the CAISO market; it does not, however, guarantee selection of such bid.

**8.4 Performance Assessment**

The CAISO will monitor and measure dynamically imported ancillary services, whether bid or self-provided, against the performance benchmarks described in the CAISO Dynamic Scheduling Protocol.

**8.5 Description of System Resources**

Each dynamically scheduled System Resource permitted pursuant to this Agreement is described in Schedule 2.

**9. Notifications**

The CAISO and the Host Balancing Authority shall jointly develop methods for coordinating the notification of all affected scheduling entities within their respective Balancing Authority Areas regarding schedule changes in emergency or curtailment conditions.

**10 Liability**

**10.1 Uncontrollable Forces**

An Uncontrollable Force means any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm, flood, earthquake, explosion, any curtailment, order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities, or any other cause beyond the reasonable control of a Balancing Authority which could not be avoided through the exercise of Good Utility Practice.

Neither the CAISO nor the Host Balancing Authority will be considered in default of any obligation under this Agreement or liable to the other for direct, indirect, and consequential damages if prevented from fulfilling that obligation due to the occurrence of an Uncontrollable Force. Neither the CAISO nor the Host Balancing Authority will be considered in default of any obligation under this Agreement to the extent caused by any act, or failure to act, of any intermediary Balancing Authority.

In the event of the occurrence of an Uncontrollable Force, which prevents either the CAISO or the Host Balancing Authority from performing any obligations under this Agreement, the affected entity shall not be entitled to suspend performance of its obligations in any greater scope or for any longer duration than is required by the Uncontrollable Force. The CAISO and the Host Balancing Authority shall each use its best efforts to mitigate the effects of such Uncontrollable Force, remedy its inability to perform, and resume full performance of its obligations hereunder.

## **10.2 Liability To Third Parties**

Except as otherwise expressly provided herein, nothing in this Agreement shall be construed or deemed to confer any right or benefit on, or to create any duty to, or standard of care with reference to any third party, or any liability or obligation, contractual or otherwise, on the part of CAISO or the Host Balancing Authority.

## **10.3 Liability Between the Parties**

The Parties' duties and standard of care with respect to each other, and the benefits and rights conferred on each other, shall be no greater than as explicitly stated herein. Neither Party, its directors, officers, employees, or agents, shall be liable to the other Party for any loss, damage, claim, cost, charge, or expense, whether direct, indirect, or consequential, arising from the Party's performance or nonperformance under this Agreement, except for a Party's gross negligence, or willful misconduct.

## **11 Miscellaneous**

### **11.1 Assignments**

Either Party to this Agreement may assign its obligations under this Agreement, with the other Party's prior written consent. Such consent shall not be unreasonably withheld.

Obligations and liabilities under this Agreement shall be binding on the successors and assigns of the Parties. No assignment of this Agreement shall relieve the assigning Party from any obligation or liability under this Agreement arising or accruing prior to the date of assignment.

### **11.2 Notices**

Any notice, demand, or request which may be given to or made upon either Party regarding this Agreement shall be made in writing and unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 3 and shall be deemed properly served, given, or made: (a) upon delivery if delivered in person, (b) five (5) days after deposit in the mail if sent by first class United States mail, postage prepaid, (c) upon receipt of confirmation by return facsimile if sent by facsimile, or (d) upon delivery if delivered by prepaid commercial courier service. A Party must update the information in Schedule 3 relating to its address as that information changes. Such changes shall not constitute an amendment to this Agreement.

### **11.3 Waivers**

Any waiver at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or matter arising in connection with this Agreement. Any delay short of the statutory period of limitations, in asserting or enforcing any right under this Agreement, shall not constitute or be deemed a waiver of such right.

#### **11.4 Governing Law and Forum**

Subject to ICAA 11.5, this Agreement shall be deemed to be a contract made under and for all purposes shall be governed by and construed in accordance with the laws of the State of California. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement shall be brought in any of the following forums, as appropriate: a court of the State of California or any federal court of the United States of America located in the State of California or, where subject to its jurisdiction, before the Federal Energy Regulatory Commission. No provision of this Agreement shall be deemed to waive the right of any Party to protest, or challenge in any manner, whether this Agreement, or any action or proceeding arising under or relating to this Agreement, is subject to the jurisdiction of the Federal Energy Regulatory Commission.

#### **11.5 Consistency with Federal Laws and Regulations**

(a) Nothing in this Agreement shall compel any person or federal entity to: (1) violate federal statutes or regulations; or (2) in the case of a federal agency, to exceed its statutory authority, as defined by any applicable federal statutes, regulations, or orders lawfully promulgated thereunder. If any provision of this Agreement is inconsistent with any obligation imposed on any person or federal entity by federal law or regulation to that extent, it shall be inapplicable to that person or federal entity. No person or federal entity shall incur any liability by failing to comply with any provision of this Agreement that is inapplicable to it by reason of being inconsistent with any federal statutes, regulations, or orders lawfully promulgated thereunder; provided, however, that such person or federal entity shall use its best efforts to comply with the CAISO Tariff to the extent that applicable federal laws, regulations, and orders lawfully promulgated thereunder permit it to do so.

(b) If any provision of this Agreement requiring any person or federal entity to give an indemnity or impose a sanction on any person is unenforceable against a federal entity, the CAISO shall submit to the Secretary of Energy or other appropriate Departmental Secretary a report of any circumstances that would, but for this provision, have rendered a federal entity liable to indemnify any person or incur a sanction and may request the Secretary of Energy or other appropriate Departmental Secretary to take such steps as are necessary to give effect to any provisions of this Agreement that are not enforceable against the federal entity.

#### **11.6 Severability**

If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.

### **11.7 Section Headings**

Section headings provided in this Agreement are for ease of reading and are not meant to interpret the text in each Section.

### **11.8 Amendments**

This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that are subject to FERC approval shall not take effect until FERC has accepted such amendments for filing and has made them effective. Nothing contained herein shall be construed as affecting in any way the right of the CAISO or the Host Balancing Authority to unilaterally make application to FERC for a change in the rates, terms and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.

### **11.9 Counterparts**

This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.

**IN WITNESS WHEREOF**, the Parties hereto have caused this Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date first written above.

**California Independent System Operator Corporation**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**[Full legal name of Host Balancing Authority]**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



**SCHEDULE 1**

**POINTS OF CONTACT**  
**[Section 3.4]**

**OPERATIONAL CONTACT**

**CAISO:**

Transmission Dispatcher  
(Folsom-Primary):

\_\_\_\_\_

Transmission Dispatcher  
(Alhambra-Backup):

\_\_\_\_\_

Generation Dispatcher  
(Folsom-Primary):

\_\_\_\_\_

Generation Dispatcher  
(Alhambra-Backup):

\_\_\_\_\_

Real-Time Scheduler  
(Folsom):

\_\_\_\_\_

Real-Time Scheduler  
(Alhambra):

\_\_\_\_\_

Pre Scheduler:

\_\_\_\_\_

Shift Supervisor:

\_\_\_\_\_

Control Room Fax:

\_\_\_\_\_

Outage Coordination:  
Fax:

\_\_\_\_\_

\_\_\_\_\_

Director of Grid Operations:

\_\_\_\_\_

WECC Reliability Coordinator:

\_\_\_\_\_

Address:

California ISO

151 Blue Ravine Road

P.O. Box 639014

Folsom, CA 95763-9014

**OPERATIONAL CONTACT**

**Host Balancing Authority:**

Transmission Dispatcher  
(Primary):

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Transmission Dispatcher  
(Backup):

---

Generation Dispatcher  
(Primary):

---

Generation Dispatcher  
(Backup):

---

Real-Time Scheduler:

---

Dispatch Supervisor:

---

Outage Coordination:

---

Fax:

---

Chief Dispatcher:

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Address:

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**SCHEDULE 2**

**DESCRIPTION OF DYNAMICALLY SCHEDULED SYSTEM RESOURCES**  
**[Section 4]**

**SCHEDULE 3**

**NOTICES**  
**[Section 11.2]**

**Host Balancing Authority**

Name of Primary

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax No: \_\_\_\_\_

Name of Alternative

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax No: \_\_\_\_\_

**CAISO**

Name of Primary  
Representative:

\_\_\_\_\_

Title:

\_\_\_\_\_

Address:

\_\_\_\_\_

City/State/Zip Code

\_\_\_\_\_

Email Address:

\_\_\_\_\_

Phone:

\_\_\_\_\_

Fax No:

\_\_\_\_\_

Name of Alternative  
Representative:

\_\_\_\_\_

Title:

\_\_\_\_\_

Address:

\_\_\_\_\_

City/State/Zip Code

\_\_\_\_\_

Email Address:

\_\_\_\_\_

Phone:

\_\_\_\_\_

Fax No:

\_\_\_\_\_

**CAISO TARIFF APPENDIX B.10**  
**Small Utility Distribution Company Operating Agreement**

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR**

**AND**

**[SMALL UTILITY DISTRIBUTION COMPANY]**

**SMALL UTILITY DISTRIBUTION COMPANY OPERATING AGREEMENT**

**SMALL UTILITY DISTRIBUTION COMPANY  
OPERATING AGREEMENT**

**THIS OPERATING AGREEMENT** is dated this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_ and is entered into, by and between:

- (1) **[Full legal name of SUDC]**, having its registered and principal place of business located at **[Address]** (the "SUDC");  
and
- (2) **California Independent System Operator Corporation**, a California non-profit public benefit corporation having its principal place of business located in such place in the State of California as the CAISO Governing Board may from time to time designate, initially 151 Blue Ravine Road, Folsom, California 95630 (the "CAISO").

The SUDC and the CAISO are hereinafter referred to individually as "Party" and collectively as "Parties".

**Whereas:**

- A. The purpose of this Operating Agreement is to establish the rights and obligations of the SUDC and the CAISO with respect to the SUDC's Facilities interconnected with the CAISO Controlled Grid and the SUDC's cooperation and coordination with the CAISO regarding reliability and the operational control of the CAISO Controlled Grid and the SUDC's Distribution System.
- B. The SUDC owns and operates a small Distribution System within the CAISO Balancing Authority Area subject to the authority of a Local Regulatory Authority.
- C. The SUDC wishes to receive and transmit Energy and/or Ancillary Services to and/or from the CAISO Controlled Grid under the terms and conditions set forth in the CAISO Tariff.
- D. The CAISO has certain statutory obligations under California law to maintain the reliability of the CAISO Controlled Grid.
- E. The Parties recognize that while a single SUDC has little or no ability to materially, adversely affect reliability of the CAISO Controlled Grid or the CAISO Balancing Authority Area, the SUDC agrees to support and be part of the coordinated response to System Emergencies and to reliability concerns relating to the CAISO Balancing Authority Area as set forth in this Operating Agreement.
- F. This Operating Agreement obligates the SUDC to comply with the sections of the CAISO Tariff, the CAISO Operating Procedures and the CAISO Specifications specified in this Operating Agreement.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, **THE PARTIES AGREE** as follows:

**ARTICLE I  
DEFINITIONS AND INTERPRETATION**

- 1.1 Master Definitions Supplement.** Unless defined in Section 1.2 of this Operating Agreement, all defined terms and expressions used in this Operating Agreement shall have the same meaning as those contained in the Master Definitions Supplement to the CAISO Tariff.



**1.2 Special Definitions for this Operating Agreement.** In this Operating Agreement, the following words and expressions shall have the meanings set opposite them:

**“CAISO Specifications”** means those standards pertaining to the areas of operation listed in Article IV of this Operating Agreement and listed in Schedule 6, approved by the CAISO to establish detailed technical performance and reliability parameters at the CAISO Controlled Grid and SUDC Interconnection, associated with the CAISO Tariff, as those standards may be amended from time to time.

**“CAISO Operating Procedures”** means those procedures pertaining to the areas of operation listed in Article IV of this Operating Agreement and listed in Schedule 9, created by the CAISO to establish detailed operating procedures at the CAISO Controlled Grid and SUDC Interconnection, associated with general provisions required in the CAISO Tariff, as those standards may be amended from time to time.

**“SUDC Facilities”** shall have the meaning accorded to such term as provided in Section 3.2 of this Operating Agreement.

**1.3 Rules of Interpretation.** The following rules of interpretation and conventions shall apply to this Operating Agreement:

- (a) if there is any inconsistency between this Operating Agreement and the CAISO Tariff, the CAISO Tariff will prevail to the extent of the inconsistency;
- (b) the singular shall include the plural and vice versa;
- (c) the masculine shall include the feminine and neutral and vice versa;
- (d) “includes” or “including” shall mean “including without limitation”;
- (e) references to a Section, Article or Schedule shall mean a Section, Article or a Schedule of this Operating Agreement, as the case may be, unless the context otherwise requires;
- (f) a reference in this Operating Agreement to a given agreement, instrument or the CAISO Tariff shall be a reference to that agreement, instrument or the CAISO Tariff as modified, amended, supplemented or restated through the date as of which such reference is made;
- (g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced or restated from time to time;
- (h) unless the context otherwise requires, any reference to a “person” includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization or other entity, in each case whether or not having separate legal personality;
- (i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;
- (j) any reference to a day, week, month or year is to a calendar day, week, month or year; and
- (k) the captions and headings in this Operating Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Operating Agreement.

## ARTICLE II TERM AND TERMINATION

- 2.1 Effective Date.** This Operating Agreement shall be effective as of the date it is accepted for filing and made effective by the FERC, if such FERC filing is required, and shall remain in full force and effect until the earlier of the termination date, the termination of the Transmission Control Agreement or such other date as the Parties shall mutually agree. With respect to any such termination, the CAISO must file a timely notice of termination with FERC, if such FERC filing is required, and this Operating Agreement shall terminate on the date FERC permits such a notice of termination to be effective, if such FERC filing is required.
- 2.2 Termination Date.**
- 2.2.1 Termination by Default.** Either Party (the terminating Party) may terminate this Operating Agreement by giving written notice in the event that the other Party (the defaulting Party) commits any default under this Operating Agreement and/or the CAISO Tariff which, if capable of being remedied, is not remedied within 30 days after the terminating Party has given the defaulting Party written notice of the default, unless excused by reason of Uncontrollable Forces under Article X of this Operating Agreement.
- 2.2.2 Failure To Meet SUDC Definition.** Failure of a SUDC to satisfy the CAISO Tariff definition of a SUDC shall be grounds for the CAISO to terminate this Operating Agreement. In the event the CAISO believes the SUDC no longer satisfies the CAISO Tariff definition of a SUDC, the CAISO shall provide written notification of the same to the SUDC and the SUDC shall have 60 days to respond. Following the 60-day response period and regardless of the position of the SUDC, if the CAISO believes the SUDC no longer satisfies the CAISO Tariff definition of a SUDC regardless of the response, the CAISO may file a notice of termination with FERC in accordance with Section 2.2.3.
- 2.2.3 Filing.** With respect to any notice of termination given pursuant to this Section 2.2, the CAISO must file a timely notice of termination with FERC, if this Operating Agreement was filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the request by either Party to file a notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within 30 days of receipt of such request; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Operating Agreement shall terminate on the date FERC permits such a notice of termination to be effective, if filed with FERC, or thirty (30) days after the date of the notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

## ARTICLE III GENERAL TERMS AND CONDITIONS

- 3.1 SUDC Responsibilities.** The SUDC will be responsible to operate and maintain its SUDC Facilities in accordance with applicable reliability standards, statutes, and regulations and Good Utility Practice so as to avoid any material adverse impact on the reliability of the CAISO Balancing Authority Area and the CAISO Controlled Grid.

- 3.2 Interconnection and SUDC Facilities.** Schedule 1 sets forth the SUDC's Generating Units, if any, and those facilities that comprise the interconnection of the SUDC Distribution System and the CAISO Controlled Grid. These facilities will be considered the "SUDC Facilities" and, except as otherwise expressly provided, the provisions of this Operating Agreement shall apply only to such SUDC Facilities.
- 3.3 Non-SUDC Facilities.** To assist the CAISO in cataloging non-SUDC facilities located in the CAISO Balancing Authority Area and for information purposes only, Schedule 2 sets forth any non-SUDC Generating Units or other facilities that are interconnected to the SUDC Distribution System. Such non-SUDC facilities are not owned or operated by the SUDC.
- 3.4 Agreement Subject to CAISO Tariff.** Notwithstanding anything to the contrary herein, the Parties agree that they will comply with Section 4.11 of the CAISO Tariff, and any other applicable provisions of the CAISO Tariff specifically referenced in this Operating Agreement. This Operating Agreement shall be subject to such provisions of the CAISO Tariff, which shall be deemed to be incorporated to the extent referenced herein, as the same may be changed or superseded from time to time pursuant to Sections 22.10 and 22.4.3 of the CAISO Tariff. Nothing in this Operating Agreement shall affect in any way the authority of the CAISO to unilaterally make application to FERC for a change in the CAISO Tariff under Section 205 of the Federal Power Act, nor shall anything in this Operating Agreement affect the right of either Party to file a complaint under Section 206 of the Federal Power Act regarding the CAISO Tariff.
- 3.5 Operation of CAISO Controlled Grid.** The CAISO shall operate the CAISO Balancing Authority Area and the CAISO Controlled Grid in accordance with the CAISO Tariff and the Transmission Control Agreement to which it is a party.
- 3.6 CAISO Specifications and CAISO Operating Procedures.**
- 3.6.1 Compliance with CAISO Specifications and CAISO Operating Procedures.** The SUDC will abide by and will perform all of the obligations under the CAISO Specifications identified in Schedule 6 and CAISO Operating Procedures identified in Schedule 9 in respect of all matters set forth therein as the same may be changed or superseded from time to time pursuant to the procedures set forth in Sections 22.10 and 22.4.3 of the CAISO Tariff. In the event of any conflict or dispute over interpretation, those sections of the CAISO Tariff identified herein shall, at all times, take precedence over such CAISO Specifications and CAISO Operating Procedures. The CAISO shall not implement any reliability requirements, operating requirements or performance standards that would impose increased costs on the SUDC without giving due consideration to whether the benefits of such requirements or standards are sufficient to justify such increased costs. In any proceeding concerning the cost recovery by the SUDC of capital and operation and maintenance costs incurred to comply with CAISO Specifications and CAISO Operating Procedures, the CAISO shall to the extent practicable, at the request of the SUDC, provide specific information in a form that may be readily understood by the general public regarding the nature of, and need for, the CAISO-imposed requirements or standards to enable the SUDC to use this information in public hearings in support of cost recovery through rates and tariffs.

- 3.6.2 Review of CAISO Specifications and CAISO Operating Procedures.** The CAISO shall periodically review with the SUDC the CAISO Specifications identified in Schedule 6 and CAISO Operating Procedures identified in Schedule 9 and shall modify such CAISO Specifications and/or CAISO Operating Procedures as provided in Section 3.6.1. If a new CAISO Specification or CAISO Operating Procedure applicable to the SUDC is adopted pursuant to Section 3.6.1, the CAISO shall provide a revised version of Schedule 6 or Schedule 9 to the SUDC. Any changes to Schedule 6 or Schedule 9 will not constitute an amendment to this Operating Agreement.
- 3.6.3 Periods When Compliance is Required.** While awaiting dispute resolution or regulatory review, the SUDC shall not be required to comply with changes to the CAISO Specifications and CAISO Operating Procedures, except where compliance is necessary in order to prevent or remedy an imminent System Emergency.
- 3.7 Utilization of Certified Scheduling Coordinator.** The SUDC shall utilize a CAISO-certified Scheduling Coordinator to submit Bids for Energy and Ancillary Services to or from the CAISO Controlled Grid. At the time when the SUDC retains such Scheduling Coordinator, the SUDC shall confirm that the Scheduling Coordinator has entered into a Scheduling Coordinator Agreement with the CAISO that is currently in effect.
- 3.8 Single Point of Contact.** The CAISO and the SUDC shall each provide a single point of contact for the exchange of operational procedures and information. Details of requirements relating to and the identity of the initial points of contact are set forth in Schedule 3.
- 3.9 SUDC Compliance.** In the event the CAISO believes that the SUDC has failed to comply with any provision of the CAISO Tariff created after the effective date applicable to the SUDC in accordance with this Operating Agreement, the CAISO shall notify the SUDC of such alleged failure and, if requested, shall meet with the SUDC regarding such alleged failure to comply. If the Parties cannot reach agreement on the alleged failure to comply, then the CAISO may, if applicable, invoke Section 2.2.1 of this Operating Agreement.

#### **ARTICLE IV OPERATIONAL COORDINATION**

- 4.1 Maintenance Coordination.** The SUDC shall coordinate its SUDC Facilities Outage requirements with the Participating TO with which it is interconnected. The SUDC will provide the CAISO with copy of any written information regarding Outages of the SUDC Facilities that could cause a material adverse impact on the reliability of the CAISO Controlled Grid. To the extent the SUDC schedules maintenance of SUDC Facilities that has a reasonable potential to cause a material adverse impact to reliability of the CAISO Controlled Grid, the SUDC shall notify the CAISO of such maintenance when it becomes known, and that information will be updated quarterly or as changes occur to the proposed schedule. Consistent with the SUDC's normal record generation and retention practices, the SUDC will record the details for all such work and shall provide available records when it is known, quarterly, or upon written request by the CAISO.

- 4.2 System Emergencies.** The responsibilities of the Parties in relation to System Emergencies are stated in Sections 4.11.4, 4.11.5, as well as Section 34 and Section 7 of the CAISO Tariff, the CAISO Operating Procedures identified in Schedule 9, and in Schedule 4.
- 4.3 System Emergency Response.** The SUDC will participate in Load Shedding by reducing Load on a voluntary basis when the CAISO declares a Stage 1 System Emergency. The SUDC will use any available local communication infrastructure to request that its customers curtail their electricity usage. The SUDC will not be called separately in Stage 3 System Emergencies to manually shed Load. Load restoration of any voluntary Load reduction may not commence until such time as the CAISO declares that a System Emergency no longer exists. The responsibilities of the Parties to direct and to accept direction for Load reduction or other emergency plans are stated in Sections 4.11.4 and 4.11.5 of the CAISO Tariff, and the CAISO Operating Procedures identified in Schedule 9 and CAISO Specifications identified in Schedule 6.
- 4.4 System Disturbance Load Restoration.** The responsibilities of the Parties for restoring Load following a system disturbance are stated in Section 4.11.5.2 of the CAISO Tariff, the CAISO Operating Procedures identified in Schedule 9 and CAISO Specifications identified in Schedule 6, and in Schedule 5.
- 4.5 Interconnection Operation Standards.** The CAISO and SUDC shall maintain stable established operating parameters and control power and reactive flow within standards stated in Schedule 6.
- 4.6 Records, Information and Reports.** The Parties are required to maintain such records, to share information, and to make such reports as are stated in Sections 4.11.1.2, 4.11.6 and 4.11.8 of the CAISO Tariff, and the CAISO Operating Procedures identified in Schedule 9 and the CAISO Specifications identified in Schedule 6. In accordance with Schedule 7, the SUDC will cooperate with the CAISO regarding its collection, study and transmittal of system data, information, reports, and forecasts, provided that the SUDC need only provide available information to the CAISO. Upon the request of the CAISO, the SUDC will cooperate with the CAISO regarding any CAISO review following a major Outage and provide any requested information that is available.
- 4.7 Critical Protective Systems.** The SUDC shall (in accordance with Section 11.2 of this Operating Agreement) notify the CAISO as soon as it is reasonably practicable of any condition that it becomes aware of that may compromise the CAISO Controlled Grid Critical Protective Systems.
- 4.8 SUDC Distribution System.** The CAISO shall (in accordance with Section 11.2 of this Operating Agreement) notify the SUDC as soon as is reasonably practicable of any condition which the CAISO becomes aware that may compromise the operation and reliability of the SUDC Distribution System.

## **ARTICLE V ACCESS TO FACILITIES**

- 5.1 Access Rights.** Pursuant to Section 4.11.9.1 of the CAISO Tariff and Schedule 8 of this Operating Agreement, the CAISO and the SUDC shall each have the right to install or to have installed equipment or other facilities, including metering equipment, on the electric utility property of the other necessary for the implementation of this Operating Agreement. The CAISO's installation of

equipment on the property of the SUDC shall comply with Local Regulatory Authority regulations, except where compliance with Local Regulatory Authority regulations would cause the CAISO to violate the CAISO Tariff, and with all relevant safety standards. In such case, the SUDC and CAISO will work together to resolve the conflict between the Local Regulatory Authority regulations and the CAISO Tariff.

- 5.2 Meter Testing.** The SUDC shall, at the request of the CAISO and upon reasonable notice, provide access to its facilities necessary to permit the CAISO or a CAISO-approved meter inspector to perform such testing as necessary in accordance with Section 4.11.9.2 or 4.11.9.4 of the CAISO Tariff and the procedures set forth in Schedule 8. For meters that are not owned by the SUDC, the CAISO will obtain approval from the meter owner in advance of accessing SUDC's Facilities. Such approval shall be provided to the SUDC upon request.
- 5.3 Emergency Access Rights.** The CAISO shall have a right to access the SUDC's equipment or other facilities during a System Emergency in accordance with Section 4.11.9.3 of the CAISO Tariff. In a System Emergency, the SUDC shall have a right of access to CAISO equipment on SUDC property and SUDC equipment on CAISO property without notice.

## **ARTICLE VI COSTS**

- 6.1 SUDC Operating and Maintenance Costs.** The SUDC shall be responsible for all costs incurred in connection with procuring, installing, operating and maintaining its facilities identified in Schedule 1 for the purpose of meeting its obligations under this Operating Agreement.
- 6.2 CAISO Operating and Maintenance Costs.** The CAISO shall be responsible for the procurement, installation, operation and maintenance costs of CAISO equipment set out in Article V of this Operating Agreement installed on SUDC property.

## **ARTICLE VII DISPUTE RESOLUTION**

- 7.1 Alternative Dispute Resolution.** The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Operating Agreement. In the event any dispute is not settled, the Parties shall adhere to the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that all reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to the SUDC and references to the CAISO Tariff shall be read as references to this Operating Agreement.

## **ARTICLE VIII REPRESENTATIONS AND WARRANTIES**

- 8.1 Representations and Warranties.** Each Party represents and warrants that its execution, delivery and performance of this Operating Agreement has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.

- 8.2 Necessary Approvals.** Each Party represents that all necessary approvals, permits, licenses, easements, right of way or access to install, own and operate its facilities subject to this Operating Agreement have been obtained prior to the effective date of this Operating Agreement.

## **ARTICLE IX LIABILITY**

- 9.1 Extent of Liability.** The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Operating Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to the SUDC and references to the CAISO Tariff shall be read as references to this Operating Agreement.

## **ARTICLE X UNCONTROLLABLE FORCES**

- 10.1 Uncontrollable Forces Tariff Provisions.** Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Operating Agreement, except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as a reference to the SUDC and references to the CAISO Tariff shall be read as references to this Operating Agreement.

## **ARTICLE XI MISCELLANEOUS**

- 11.1 Assignments.** Either Party may assign its obligations under this Operating Agreement, with the other Party's prior written consent, in accordance with Section 22.2 of the CAISO Tariff, which is incorporated by reference into this Operating Agreement. Such consent shall not be unreasonably withheld.
- 11.2 Notices.** Any notice, demand or request which may be given to or made upon either Party regarding this Operating Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff, which is incorporated by reference, except that all reference in Section 22.4 of the CAISO Tariff to Market Participants shall be read as a reference to the SUDC and references to the CAISO Tariff shall be read as references to this Operating Agreement, and unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 3. A Party must update the information in Schedule 3 of this Operating Agreement as that information changes in accordance with Section 22.4 of the CAISO Tariff. Such changes will not constitute an amendment to this Operating Agreement.
- 11.3 Waivers.** Any waiver at any time by either Party of its rights with respect to any default under this Operating Agreement, or with respect to any other matter arising in connection with this Operating Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or matter arising in connection with this Operating Agreement. Any delay short of the statutory period of limitations, in asserting or enforcing any right under this Operating Agreement, shall not constitute or be deemed a waiver of such right.

**11.4 Governing Law and Forum.** This Operating Agreement shall be deemed to be a contract made under and for all purposes shall be governed by and construed in accordance with the laws of the State of California except in its conflict of laws provisions. The Parties irrevocably consent that any legal action or proceeding arising under or in relation to this Operating Agreement to which the CAISO ADR Procedures do not apply, shall be brought in any of the following forums, as appropriate: any court of the State of California, any federal court of the United States of America located in the State of California or, where subject to its jurisdiction, before the Federal Energy Regulatory Commission.

**11.5 Consistency with Federal Laws and Regulations.**

- (a) Nothing in this Operating Agreement shall compel any person or federal entity to: (1) violate federal statutes or regulations; or (2) in the case of a federal agency, to exceed its statutory authority, as defined by any applicable federal statutes, regulations, or orders lawfully promulgated thereunder. If any provision of this Operating Agreement is inconsistent with any obligation imposed on any person or federal entity by federal law or regulation to that extent, it shall be inapplicable to that person or federal entity. No person or federal entity shall incur any liability by failing to comply with this Operating Agreement that is inapplicable to it by reason of being inconsistent with any federal statutes, regulations, or orders lawfully promulgated thereunder; provided, however, that such person or federal entity shall use its best efforts to comply with the CAISO Tariff to the extent that applicable federal laws, regulations, and orders lawfully promulgated thereunder permit it to do so.
- (b) If any provision of this Operating Agreement requiring any person or federal entity to give an indemnity or impose a sanction on any person is unenforceable against a federal entity, the CAISO shall submit to the Secretary of Energy or other appropriate Departmental Secretary a report of any circumstances that would, but for this provision, have rendered a federal entity liable to indemnify any person or incur a sanction and may request the Secretary of Energy or other appropriate Departmental Secretary to take such steps as are necessary to give effect to any provisions of this Operating Agreement that are not enforceable against the federal entity.

**11.6 Integration.** This Operating Agreement constitutes the full agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.

**11.7 Severability.** If any term, covenant, or condition of this Operating Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Operating Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Operating Agreement.



**11.8 Penalties.** Any penalties to be levied under this Operating Agreement shall be established in accordance with the CAISO Tariff and approved by the FERC. Nothing in this Operating Agreement, with the exception of the provisions relating to the CAISO ADR Procedures, shall be construed as waiving the rights of the SUDC to oppose or protest any penalty proposed by the CAISO to the FERC or the specific imposition by the CAISO of any FERC-approved penalty on the SUDC.

**11.9 [NOT USED]**

**11.10 Amendments.** This Operating Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. Nothing contained herein shall be construed as affecting in any way the right of the CAISO to unilaterally make application to FERC for a change in the rates, terms and conditions of this Operating Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder, and the SUDC shall have the right to make a unilateral filing with FERC to modify this Operating Agreement pursuant to Section 206 or any other applicable provision of the FPA and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Operating Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.

**11.11 Counterparts.** This Operating Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Operating Agreement.

**IN WITNESS WHEREOF**, the Parties hereto have caused this Operating Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date hereinabove written.

**California Independent System Operator Corporation**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

**[Full name of SUDC]**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

**SCHEDULE 1**

**SYSTEM INTERCONNECTION FACILITIES**

[List to be provided in accordance with the SUDC Operating Agreement.]

**SCHEDULE 2**

**Non-SUDC FACILITIES**

[List to be provided in accordance with the SUDC Operating Agreement.]

**SCHEDULE 3**

**OPERATIONAL CONTACTS**

**CAISO:**

Transmission Dispatcher  
(Folsom): \_\_\_\_\_  
Transmission Dispatcher  
(Alhambra): \_\_\_\_\_  
Generator Dispatcher:  
(Folsom-Primary) \_\_\_\_\_  
Generator Dispatcher:  
(Alhambra-Backup) \_\_\_\_\_  
Real Time Scheduler:  
(Folsom) \_\_\_\_\_  
Real Time Scheduler:  
(Alhambra) \_\_\_\_\_  
  
Pre Scheduler: \_\_\_\_\_  
  
Shift Supervisor: \_\_\_\_\_  
Control Room fax: \_\_\_\_\_  
  
Outage Coordination: \_\_\_\_\_  
Fax: \_\_\_\_\_  
  
Director of Grid Operations: \_\_\_\_\_  
  
WECC Reliability Coordinator: \_\_\_\_\_

**SUDC:**

Name of Operations  
Representative: \_\_\_\_\_  
  
Title: \_\_\_\_\_  
  
Address: \_\_\_\_\_  
  
City/State/Zip Code: \_\_\_\_\_  
  
Email address: \_\_\_\_\_  
  
Phone: \_\_\_\_\_  
  
Fax: \_\_\_\_\_  
  
Name of Alternative  
Representative: \_\_\_\_\_  
  
Title: \_\_\_\_\_  
  
Email address: \_\_\_\_\_  
  
Phone: \_\_\_\_\_  
  
Fax: \_\_\_\_\_

**CONTACTS FOR NOTICES**

**SUDC**

Name of Primary  
Representative: \_\_\_\_\_  
Title: \_\_\_\_\_  
Address: \_\_\_\_\_  
City/State/Zip Code: \_\_\_\_\_  
Email Address: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax No: \_\_\_\_\_

Name of Alternative  
Representative: \_\_\_\_\_  
Title: \_\_\_\_\_  
Address: \_\_\_\_\_  
City/State/Zip Code: \_\_\_\_\_  
Email Address: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax No: \_\_\_\_\_

**CAISO**

Name of Primary

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax No: \_\_\_\_\_

Name of Alternative

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax No: \_\_\_\_\_

**SCHEDULE 4**  
**SYSTEM EMERGENCIES**

The CAISO will notify the SUDC's operational contact, as identified in Schedule 2, of the emergency, including information regarding the cause, nature, extent, and potential duration of the emergency. The SUDC contact will then take such actions as are appropriate for the emergency.

The SUDC will make requests for information from the CAISO regarding emergencies through the CAISO Operations Shift Supervisor, by the SUDC's operational contact, or the SUDC may coordinate public information with the CAISO Communication Coordinator.

For transmission system caused outages the CAISO Operations Shift Supervisor will notify the SUDC contact of any information related to the outage such as cause, nature, extent, potential duration and customers affected.

Available SUDC information and CAISO Grid Control Center logs, CAISO Electric Switching Orders and CAISO Energy Management System temporal database will be used in the CAISO's preparation of outage reviews. These documents are defined as the chronological record of the operation of the activities which occur with the portion of the electrical system assigned to that control center. The log shall contain all pertinent information, including orders received and transmitted, relay operations, messages, clearances, accidents, trouble reports, daily switching program, etc.

The SUDC will retain records in accordance with its record retention policy or practice, provided the record associated with this Operating Agreement are retained for a minimum of six years.



**SCHEDULE 5**

**SYSTEM DISTURBANCE LOAD RESTORATION**

If the SUDC is required to shed load, the SUDC will follow the procedures set forth below in this Schedule 5 in promoting orderly, coordinated restoration of electric systems after a major system disturbance has occurred which resulted in Load Shedding by frequency relays in California.

1. Immediately after Load Shedding has occurred in the SUDC, the SUDC will remain in contact with its respective Participating Transmission Owner (PTO) Area Control Center (ACC) until normal frequency has been restored throughout the CAISO Balancing Authority Area or the CAISO Shift Supervisor has concluded that such full-time communications can be terminated. Emergency communications over the California ACC Hot-line will be under the direction of the CAISO Shift Supervisor and the senior dispatcher present at the affected PTO ACC(s).
2. Manual Load restoration will not normally be initiated until the California ACC Hot Line is attended. No Load is to be manually restored unless directed by the CAISO, either directly or through its assignee, provided that the procedure for the CAISO's designation of any assignee is agreed to by the SUDC, after the frequency has recovered and there is indication that the frequency can be maintained. The SUDC will await direction from the CAISO or its assignee, who will be in contact with the CAISO Shift Supervisor. The CAISO Shift Supervisor will determine whether adequate generation resources are available on line to support the Load to be restored.
3. If the CAISO cannot meet the WECC and NERC Balancing Authority Area Disturbance Control Standard or the Control Performance Standard post disturbance, no manual Load restoration will be permitted. If the frequency is such that automatic Load restoration occurs under these conditions, if the SUDC has restored Load automatically, it will manually shed an equivalent amount of Load to offset the Load which was automatically restored.

**SCHEDULE 6**

**INTERCONNECTION OPERATION STANDARDS**

The CAISO and SUDC shall jointly maintain stable operating parameters and control power and reactive flow in accordance with the capabilities of the SUDC, the CAISO Tariff and the following interconnection operation standards.

**SUDC Responsibilities**

1. The SUDC shall operate its SUDC Facilities at each point of interconnection with the CAISO Controlled Grid in such manner as to avoid any material adverse impact on the reliability of the CAISO Controlled Grid. In accordance with this performance goal, the SUDC shall: i) operate its SUDC Facilities at each point of interconnection with the CAISO Controlled Grid in accordance with Good Utility Practice with respect to normal ratings, emergency ratings, voltage limits, and balance of load between electrical phases; and ii) maintain Load power factor at each point of interconnection with the CAISO Controlled Grid as close as reasonably possible to unity power factor and consistent with Good Utility Practice.

**CAISO Responsibilities**

1. The CAISO shall operate the CAISO Controlled Grid at each point of interconnection with the SUDC in accordance with the CAISO Tariff and in such manner as to avoid any material adverse impact on the SUDC Facilities. In accordance with this performance goal, the CAISO shall:
2. At the request of the SUDC, participate with the SUDC and Participating TO in the development of joint power quality performance standards and jointly maintain compliance with such standards.
3. Observe SUDC grid voltage limits specified in Attachment 1 including requirements for reduced voltage on CAISO Controlled Grid facilities which apply during heavy fog (or other unusual operating conditions) as needed to minimize the risk of insulator flashover.
4. At the request of the SUDC, support SUDC investigation of power quality incidents, and provide related data to the SUDC in a timely manner.
5. Support installation of apparatus on the CAISO Controlled Grid to improve power quality, and take all reasonable measures to investigate and mitigate power quality concerns caused by actions or events in neighboring systems or Balancing Authority Areas.
6. Maintain, or cause to be maintained, Load power factor at each SUDC Interconnection as close as reasonably possible to unity power factor and consistent with Good Utility Practice, pursuant to Section 8.2.3.3 of the CAISO Tariff.

The Parties may adopt additional operations standards for the interconnection provided such standards are in writing and are mutually agreed to.

**SCHEDULE 6**  
**ATTACHMENT 1**

**SUDC GRID VOLTAGE LIMITS**

[To be determined]

**SCHEDULE 7**

**RECORDS, INFORMATION, REPORTS**

The SUDC shall provide available information to the CAISO relating to SUDC system operations reasonably related to system reliability of the CAISO Controlled Grid. The Parties shall jointly develop any necessary forms and procedures for collection, study and transmittal of system data, information, reports and forecasts.

**SCHEDULE 8**

**RIGHTS OF ACCESS TO FACILITIES**

- 1. Equipment Installation.** In order to give effect to this Operating Agreement, a Party that requires the use of particular equipment (the equipment owner) may require installation of such equipment on property owned by the other Party (the property owner), provided that the equipment is necessary to meet the equipment owner's service obligations and that the equipment shall not have a negative impact on the reliability of the service provided, nor prevent the property owner from performing its own obligations or exercising its rights under this Operating Agreement.
- 2. Free Access.** The property owner shall grant to the equipment owner free of charge reasonable installation rights and rights of access to accommodate equipment inspection, maintenance, repair, upgrading, or removal for the purposes of this Operating Agreement, subject to the property owner's reasonable safety, operational, and future expansion needs.
- 3. Notice.** The equipment owner shall provide reasonable notice to the property owner when requesting access for site assessment, equipment installation, or other relevant purposes. Such access shall not be provided unless the parties mutually agree to the date, time, and purpose of each access. Agreement on the terms of the access shall not be unreasonably withheld or delayed.
- 4. Removal of Installed Equipment.** Following reasonable notice, the equipment owner shall be required, at its own expense, to remove or relocate equipment, at the request of the property owner, provided that the equipment owner shall not be required to do so if it would have a negative impact on the reliability of the service provided, or be prevented from performing its own obligations or exercising its rights under this Operating Agreement.
- 5. Costs.** The equipment owner shall repair at its own expense any property damage it causes in exercising its rights and shall reimburse the property owner for any other reasonable costs that it may be required to incur to accommodate the equipment owner's exercise of its rights under Section 1 or Section 4.
- 6. Rights to Assets.** The Parties shall not interfere with each other's assets, without prior written agreement.
- 7. Inspection of Facilities.** In order to meet their respective obligations under this Operating Agreement, the CAISO may view or inspect SUDC Facilities and the SUDC may view or inspect CAISO Controlled Grid facilities. Provided that reasonable notice is given, a Party shall not unreasonably deny access to such facilities for viewing or inspection by the requesting Party.
- 8. Access During Emergencies.** Either Party shall have rights of access, without prior notice, to the other Party's equipment as necessary during times of a System Emergency.

**SCHEDULE 9**

**SUDC OPERATING PROCEDURES**

[To be determined.]

**CAISO TARIFF APPENDIX B.11**  
**Pro Forma CRR Entity Agreement**

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**

**AND**

**[CONGESTION REVENUE RIGHTS ENTITY]**

**CRR ENTITY AGREEMENT**

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**CRR ENTITY AGREEMENT**

**THIS AGREEMENT** is dated this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, and is entered into, by and between:

(1) **[Full Legal Name]** having its registered and principal place of business located at **[Address]** (the "CRR Entity");

and

(2) **California Independent System Operator Corporation**, a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate, initially 151 Blue Ravine Road, Folsom, California 95630 (the "CAISO").

The CRR Entity and the CAISO are hereinafter referred to individually as a "Party" and collectively as the "Parties."

**Whereas:**

- A.** The CAISO Tariff provides that any entity that holds or intends to hold CRRs must register and qualify with the CAISO and comply with the terms of the CAISO Tariff, regardless of whether they are to acquire CRRs through the CRR Allocation or CRR Auction, or through the Secondary Registration System.
- B.** The CRR Entity has completed the Candidate CRR Holder application process and is eligible to participate in the CRR Allocation or CRR Auction or register as a CRR Holder through the Secondary Registration System.
- C.** The CAISO Tariff further provides that any entity who wishes to participate in the CRR Allocation or CRR Auction or register as a CRR Holder through the Secondary Registration System must meet all of the Candidate CRR Holder requirements and creditworthiness provisions in the CAISO Tariff and the relevant Business Practice Manual, including demonstration of its ability to accommodate the financial responsibility associated with holding CRRs.
- D.** The CRR Entity intends to obtain CRRs either through the CRR Allocation or CRR Auction or to register as a CRR Holder through the Secondary Registration System and, therefore, wishes to undertake to the CAISO that it will comply with the applicable provisions of the CAISO Tariff.
- E.** The Parties are entering into this Agreement in order to establish the terms and conditions pursuant to which the CAISO and the CRR Entity will discharge their respective duties and responsibilities under the CAISO Tariff.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, **THE PARTIES AGREE** as follows:

**ARTICLE I  
DEFINITIONS AND INTERPRETATION**

- 1.1 Master Definitions Supplement.** All terms and expressions used in this Agreement shall have the same meaning as those contained in the Master Definitions Supplement in Appendix A of the CAISO Tariff.
- 1.2 Rules of Interpretation.** The following rules of interpretation and conventions shall apply to this Agreement:
- (a) if there is any inconsistency between this Agreement and the CAISO Tariff, the CAISO Tariff will prevail to the extent of the inconsistency;
  - (b) the singular shall include the plural and vice versa;
  - (c) the masculine shall include the feminine and neutral and vice versa;
  - (d) "includes" or "including" shall mean "including without limitation";
  - (e) references to a Section, Article, or Schedule shall mean a Section, Article, or a Schedule of this Agreement, as the case may be, unless the context otherwise requires;
  - (f) a reference to a given agreement or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented, or restated through the date as of which such reference is made;
  - (g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced, or restated from time to time;
  - (h) unless the context otherwise requires, any reference to a "person" includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization, or other entity, in each case whether or not having separate legal personality;
  - (i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;
  - (j) any reference to a day, week, month, or year is to a calendar day, week, month, or year; and
  - (k) the captions and headings in this Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Agreement.

**ARTICLE II  
ACKNOWLEDGEMENTS OF CRR ENTITY AND CAISO**

- 2.1 Scope of Application to Parties.** The CRR Entity and CAISO acknowledge that all Candidate CRR Holders or CRR Holders must sign this Agreement in accordance with section 4.10.1.9.1 of the CAISO Tariff.

**ARTICLE III  
TERM AND TERMINATION**

**3.1 Effective Date.** This Agreement shall be effective as of the later of the date it is executed by both Parties or the date accepted for filing and made effective by FERC, if such FERC filing is required, and shall remain in full force and effect until terminated pursuant to Section 3.2 of this Agreement.

**3.2 Termination**

**3.2.1 Termination by CAISO.** Subject to Article V, the CAISO may terminate this Agreement by giving written notice to the CRR Entity of termination in the event that the CRR Entity commits any material default under this Agreement and/or the CAISO Tariff as it pertains to this Agreement which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given, to the CRR Entity, written notice of the default, unless excused by reason of Uncontrollable Forces in accordance with Article X of this Agreement or unless the CAISO agrees, in writing, to an extension of the time to remedy such material default. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement was filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the filing of the notice of termination is made after the preconditions for termination have been met and the CAISO files the notice of termination within sixty (60) days after issuance of the notice of default; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if filed with FERC, or thirty (30) days after the date of the CAISO's notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

**3.2.2 Termination by CRR Entity.** In the event that the CRR Entity is no longer a CRR Holder, it may terminate this Agreement, on giving the CAISO not less than ninety (90) days' written notice; provided, however any outstanding financial right or obligation or any other obligation under the CAISO Tariff of the Candidate CRR Holder or CRR Holder that have arisen while the CRR Entity was a Candidate CRR Holder or a CRR Holder, and any provision of this Agreement necessary to give effect to such right or obligation shall survive until satisfied. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the request to file a notice of termination is made after the preconditions for termination have been met and the CAISO files the notice of termination within sixty (60) days after receipt of such request; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if such notice is required to be filed with FERC, or upon ninety (90) days after the CAISO's receipt of the CRR Entity's notice of termination, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

**ARTICLE IV  
GENERAL TERMS AND CONDITIONS**

- 4.1 CRR Holder Requirements.** The CRR Entity must register and qualify with the CAISO and comply with all terms of the CAISO Tariff applicable to Candidate CRR Holders or CRR Holders, regardless of the manner in which they acquire CRRs whether by CRR Allocation, CRR Auction, or through the Secondary Registration System.
- 4.2 CRR Holder Creditworthiness Requirements.** The CRR Entity must comply with the requirements for creditworthiness applicable to Candidate CRR Holders or CRR Holders, including the creditworthiness provisions of the CAISO Tariff and the relevant Business Practice Manual.
- 4.3 Settlement Account.** The CRR Entity shall maintain at all times an account with a bank capable of Fed-Wire transfer to which credits or debits shall be made in accordance with the billing and Settlement provisions of Section 11 of the CAISO Tariff. Such account shall be the account referred to in Schedule 2 hereof or as notified by the CRR Entity to the CAISO from time to time by giving at least seven (7) days written notice before the new account becomes operational. Such changes to Schedule 2 shall not constitute an amendment to this Agreement.
- 4.4 Electronic Contracting.** All submitted applications, bids, confirmations, changes to information on file with the CAISO and other communications conducted via electronic transfer (e.g., direct computer link, FTP file transfer, bulletin board, e-mail, facsimile or any other means established by the CAISO) shall have the same legal rights, responsibilities, obligations and other implications as set forth in the terms and conditions of the CAISO Tariff as if executed in written format.
- 4.5 Agreement Subject to CAISO Tariff.** The Parties will comply with all provisions of the CAISO Tariff applicable to Candidate CRR Holders or CRR Holders. This Agreement shall be subject to the CAISO Tariff, which shall be deemed to be incorporated herein.

**ARTICLE V  
PERFORMANCE**

- 5.1 Penalties.** The CRR Entity shall be subject to all penalties made applicable to Candidate CRR Holders and CRR Holders set forth in the CAISO Tariff. Nothing in this Agreement, with the exception of the provisions relating to the CAISO ADR Procedures, shall be construed as waiving the rights of the CRR Entity to oppose or protest the specific imposition by the CAISO of any FERC-approved penalty on the CRR Entity.
- 5.2 Corrective Measures.** If the CRR Entity or the CAISO fails to meet or maintain the requirements set forth in this Agreement and/or the CAISO Tariff as it pertains to this Agreement, the CAISO or the CRR Entity shall be permitted to take any of the measures, contained or referenced in the CAISO Tariff, which the Party seeking enforcement deems to be necessary to correct the situation.

**ARTICLE VI  
COSTS**

- 6.1 Operating and Maintenance Costs.** The CRR Entity shall be responsible for all its costs incurred in connection with all its CRR related activities.

**ARTICLE VII  
DISPUTE RESOLUTION**

- 7.1 Dispute Resolution.** The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that any reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to the CRR Entity and references to the CAISO Tariff shall be read as references to this Agreement.

**ARTICLE VIII  
REPRESENTATIONS AND WARRANTIES**

- 8.1 Representation and Warranties.** Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.

**ARTICLE IX  
LIABILITY**

- 9.1 Liability.** The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to the CRR Entity and references to the CAISO Tariff shall be read as references to this Agreement.

**ARTICLE X  
UNCONTROLLABLE FORCES**

- 10.1 Uncontrollable Forces Tariff Provisions.** Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Agreement except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as a reference to the CRR Entity and references to the CAISO Tariff shall be read as references to this Agreement.

**ARTICLE XI  
MISCELLANEOUS**

- 11.1 Assignments.** Either Party may assign or transfer any or all of its rights and/or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff and other CAISO Tariff requirements as applied to Candidate CRR Holders or CRR Holders. Such consent shall not be unreasonably withheld. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest was an original Party to this Agreement.
- 11.2 Notices.** Any notice, demand, or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff, provided that all references in Section 22.4 of the CAISO Tariff to Market Participants shall be read as a reference to the CRR Entity and references to the CAISO Tariff shall be read as references to this Agreement, and unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 1. A Party must update the information in Schedule 1 of this Agreement as information changes. Such changes to Schedule 1 shall not constitute an amendment to this Agreement.
- 11.3 Waivers.** Any waiver at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.
- 11.4 Governing Law and Forum.** This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in accordance with, the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement to which the CAISO ADR Procedures do not apply, shall be brought in any of the following forums, as appropriate: (i) any court of the State of California, (ii) any federal court of the United States of America located in the State of California, except to the extent subject to the protections of the Eleventh Amendment of the United States Constitution or, (iii) where subject to its jurisdiction, before the Federal Energy Regulatory Commission.
- 11.5 Consistency with Federal Laws and Regulations.** This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.
- 11.6 Merger.** This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.

- 11.7 Severability.** If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.
- 11.8 [NOT USED]**
- 11.9 Amendments.** This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. Nothing herein shall be construed as affecting in any way the right of the CAISO to make unilateral application to FERC for a change in the rates, terms, and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder, and the CRR Entity shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to Section 206 or any other applicable provision of the FPA and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein. The standard of review the Commission shall apply when acting upon proposed modifications to this Agreement by the CAISO shall be the "just and reasonable" standard of review rather than the "public interest" standard of review. The standard of review the Commission shall apply when acting upon proposed modifications to this Agreement by the Commission's own motion or by a signatory other than the CAISO or non-signatory entity shall also be the "just and reasonable" standard of review. Schedules 1 and 2 are provided for informational purposes and revisions to those schedules do not constitute a material change in the Agreement warranting Commission review.
- 11.10 Counterparts.** This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.

**IN WITNESS WHEREOF**, the Parties hereto have caused this Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date hereinabove written.

**California Independent System Operator Corporation**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**[Name of CRR Entity]**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



**SCHEDULE 1**

**NOTICES**

**[Section 11.2]**

**CRR Entity**

Name of Primary

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax No: \_\_\_\_\_

Name of Alternative

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax No: \_\_\_\_\_

**CAISO**

Name of Primary

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

Name of Alternative

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

**SCHEDULE 2**  
**SETTLEMENT ACCOUNT**  
**[SECTION 4.3]**

**CRR Entity Account Information**

Settlement Account No:

---

Title:

---

Sort Code:

---

Bank:

---

**CAISO TARIFF APPENDIX B.12**  
**Pro Forma MSS Aggregator CRR Entity Agent Agreement**

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**

**AND**

**[METERED SUBSYSTEM AGGREGATOR]**

**MSS AGGREGATOR CRR ENTITY AGENT AGREEMENT**

**MSS AGGREGATOR CRR ENTITY AGENT AGREEMENT**

**THIS AGREEMENT** is dated this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, and is entered into, by and between:

- (1) **[INSERT NAME OF MSS AGGREGATOR]**, a **[INSERT TYPE OF ENTITY]**, having its registered and principal place of business located at **[INSERT ADDRESS]**, acting as the agent on behalf of the following principals: **[INSERT NAMES OF MSS OPERATOR LSEs]**, all of which are MSS Operators and Load Serving Entities, ("MSS Operators") pursuant to the terms of that certain **[INSERT TITLE OF MSS AGGREGATOR AGREEMENT]** ("MSSAA") dated \_\_\_\_\_ (the "CRR Entity Agent");

and

- (2) **California Independent System Operator Corporation**, a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate, initially 151 Blue Ravine Road, Folsom, California 95630 (the "CAISO").

The CRR Entity Agent and the CAISO are hereinafter referred to individually as a "Party" and collectively as the "Parties."

**Whereas:**

- A.** The CAISO Tariff provides that any entity that holds or intends to hold CRRs must register and qualify with the CAISO and comply with the terms of the CAISO Tariff (either directly or through its agent), regardless of whether they are to acquire CRRs through the CRR Allocation or CRR Auction, or through the Secondary Registration System.
- B.** The CRR Entity Agent pursuant to the terms of the MSSAA is authorized by the aggregated MSS Operators to act on the behalf of the MSS Operators with regard to matters relating to CRRs, including, but not limited to, allowing the CRR Entity Agent to participate in the CRR nomination process on behalf of the MSS Operators, to accept financial responsibility under this Agreement, to perform settlement functions, and to comply with CAISO Tariff requirements.
- C.** The CRR Entity Agent has completed the Candidate CRR Holder application process on behalf of its aggregated MSS Operators and pursuant to the terms of the MSSAA is eligible to participate on behalf of the MSS Operators in the CRR Allocation or CRR Auction or register through the Secondary Registration System on behalf of the MSS Operators. However, the CRR Entity Agent will not hold title to or ownership of any CRRs issued to any of its aggregated MSS Operators through the CRR Allocation, CRR Auction, or Secondary Registration System processes. Rather, the CRR Entity Agent will hold title for the CRRs allocated to the individual MSS Operator's Load in trust on behalf of the MSS Operator.
- D.** The CAISO Tariff further provides that any entity that wishes to participate in the CRR Allocation or CRR Auction or register as a CRR Holder through the Secondary Registration System must meet all of the Candidate CRR Holder requirements and creditworthiness provisions in the CAISO Tariff and the relevant Business Practice Manual, including demonstration of its ability to accommodate the financial responsibility associated with holding CRRs.

- E.** The aggregated MSS Operators desire to act through the CRR Entity Agent to comply with all requirements referenced in part D, above, in order to obtain CRRs through the CRR Allocation, CRR Auction, or Secondary Registration System.
- F.** The CRR Entity Agent, on behalf of its aggregated MSS Operators, wishes to undertake such necessary tasks and requirements set forth herein to comply with the applicable provisions of the CAISO Tariff in order to allow the MSS Operators to participate in the CRR Allocation, CRR Auction, and Secondary Registration System processes.
- G.** The Parties are entering into this Agreement in order to establish the terms and conditions pursuant to which the CAISO and the CRR Entity Agent will discharge their respective duties and responsibilities under the CAISO Tariff.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, **THE PARTIES AGREE** as follows:

## **ARTICLE I DEFINITIONS AND INTERPRETATION**

- 1.1 Master Definitions Supplement.** All terms and expressions used in this Agreement shall have the same meaning as those contained in the Master Definitions Supplement in Appendix A of the CAISO Tariff, unless otherwise defined herein.
- 1.2 Rules of Interpretation.** The following rules of interpretation and conventions shall apply to this Agreement:
  - (a) if there is any inconsistency between this Agreement and the CAISO Tariff, the CAISO Tariff will prevail to the extent of the inconsistency;
  - (b) the singular shall include the plural and vice versa;
  - (c) the masculine shall include the feminine and neutral and vice versa;
  - (d) "includes" or "including" shall mean "including without limitation";
  - (e) references to a Section, Article, or Schedule shall mean a Section, Article, or a Schedule of this Agreement, as the case may be, unless the context otherwise requires;
  - (f) a reference to a given agreement or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented, or restated through the date as of which such reference is made;
  - (g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced, or restated from time to time;
  - (h) unless the context otherwise requires, any reference to a "person" includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization, or other entity, in each case whether or not having separate legal personality;
  - (i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;

- (j) any reference to a day, week, month, or year is to a calendar day, week, month, or year; and
- (k) the captions and headings in this Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Agreement.

## **ARTICLE II ACKNOWLEDGEMENTS OF CRR ENTITY AGENT AND CAISO**

- 2.1 Scope of Application to Parties.** The CRR Entity Agent and CAISO acknowledge that all MSS Aggregators that are authorized by their aggregated MSS Operators to act as the agent of those MSS Operators in undertaking all obligations and responsibilities of Candidate CRR Holders or CRR Holders must sign this Agreement in accordance with section 4.10.1.9.1 of the CAISO Tariff.

## **ARTICLE III TERM AND TERMINATION**

- 3.1 Effective Date.** This Agreement shall be effective as of the later of the date it is executed by both Parties or the date accepted for filing and made effective by FERC, if such FERC filing is required, and shall remain in full force and effect until terminated pursuant to Section 3.2 of this Agreement.

### **3.2 Termination**

- 3.2.1 Termination by CAISO.** Upon notice that the agency relationship between all of the aggregated MSS Operators and the CRR Entity Agent has terminated, including any notice that the MSSAA has terminated, the CAISO may terminate this Agreement by giving written notice to the CRR Entity Agent of termination. Further, subject to Article V, the CAISO may terminate this Agreement by giving written notice to the CRR Entity Agent of termination in the event that the CRR Entity Agent commits any material default under this Agreement and/or the CAISO Tariff as it pertains to this Agreement which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given, to the CRR Entity Agent, written notice of the default, unless excused by reason of Uncontrollable Forces in accordance with Article X of this Agreement or unless the CAISO agrees, in writing, to an extension of the time to remedy such material default. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement was filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the filing of the notice of termination is made after the preconditions for termination have been met and the CAISO files the notice of termination within sixty (60) days after issuance of the notice of default; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if filed with FERC, or thirty (30) days after the date of the CAISO's notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.



**3.2.2 Termination by CRR Entity Agent.** In the event that the CRR Entity Agent is no longer a CRR Holder as trustee for any or all of its aggregated MSS Operators, the CRR Entity Agent may terminate this Agreement, on giving the CAISO not less than ninety (90) days' written notice; provided, however, any outstanding financial right or obligation or any other obligation under the CAISO Tariff of the Candidate CRR Holder or CRR Holder (regardless of whether such obligation shall be borne by an aggregated MSS Operator or the CRR Entity Agent) that has arisen while the CRR Entity Agent was a Candidate CRR Holder or a CRR Holder as trustee for any or all of its MSS Operators, and any provision of this Agreement necessary to give effect to such right or obligation, shall survive until satisfied. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the request to file a notice of termination is made after the preconditions for termination have been met and the CAISO files the notice of termination within sixty (60) days after receipt of such request; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if such notice is required to be filed with FERC, or upon ninety (90) days after the CAISO's receipt of the CRR Entity Agent's notice of termination, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

#### **ARTICLE IV GENERAL TERMS AND CONDITIONS**

- 4.1 CRR Holder Requirements.** The CRR Entity Agent acting on behalf of its aggregated MSS Operators must register and qualify on behalf of the MSS Operators with the CAISO and comply with all terms of the CAISO Tariff applicable to Candidate CRR Holders or CRR Holders, regardless of the manner in which it acquires the CRRs on behalf of its aggregated MSS Operators, whether by CRR Allocation or CRR Auction, or through the Secondary Registration System. The CRR Entity Agent shall participate in the CRR nomination process on an aggregated basis on behalf of each of its aggregated MSS Operators on the basis of that individual MSS Operator's Load ratio share set forth in Schedule 3. The CAISO shall allocate CRRs to each individual MSS Operator based on its Load ratio share set forth in Schedule 3, which CRRs will be held in the aggregate by the CRR Entity Agent on behalf of its aggregated MSS Operators. The CRR Entity Agent acknowledges and agrees that it shall not hold title to or ownership of any of the CRRs of its aggregated MSS Operators. Ownership and title of any obtained CRRs shall be held in trust by the CRR Entity Agent on behalf of the applicable MSS Operator in accordance with each MSS Operator's Load share ratio as set forth in Schedule 3.
- 4.2 CRR Holder Creditworthiness Requirements.** The CRR Entity Agent acting on behalf of its aggregated MSS Operators must comply with the requirements for creditworthiness applicable to Candidate CRR Holders or CRR Holders, including the creditworthiness provisions of the CAISO Tariff and the relevant Business Practice Manual.
- 4.3 Settlement Account.** The CRR Entity Agent on behalf of its aggregated MSS Operators shall maintain at all times an account with a bank capable of Fed-Wire transfer to which credits or debits shall be made in accordance with the billing and Settlement provisions of Section 11 of the CAISO Tariff. Such account shall be the account referred to in Schedule 2 hereof or as notified by the CRR Entity Agent to the CAISO from time to time by giving at least seven (7) days written notice before the new account becomes operational. Such changes to Schedule 2 shall not constitute an amendment to this Agreement.

- 4.4 CRR Entity Agent Responsibility for MSS Operator Load Share Ratio.** The CRR Entity Agent shall track each aggregated MSS Operator's Load share ratio of CRRs separately as set forth in Schedule 3 and shall be solely responsible for tracking such allocations. The CRR Entity Agent acknowledges and agrees that CAISO shall have no responsibility with regard to such pro rata allocations of CRRs as set forth in Schedule 3. The CAISO shall issue CRRs allocated to the aggregated MSS Operators in aggregate to the CRR Entity Agent, and the CRR Entity Agent shall be solely responsible for ensuring the proper allocation of such CRRs to each aggregated MSS Operator. In the event the MSS Operator and CRR Entity Agent aggregation or agency relationship terminates, the CRR Entity Agent shall be solely responsible for ensuring that the appropriate pro rata share of every CRR Source is properly assigned to the applicable MSS Operator.
- 4.5 Provision of Evidence of CRR Entity Agent Authority.** The CRR Entity Agent shall provide the CAISO with a copy of the MSSAA or other sufficient evidence to assure the CAISO of its authority to act as agent on behalf of its aggregated MSS Operators with regard to the matters addressed in this Agreement. The CRR Entity Agent shall provide the CAISO with the contact name, address, e-mail address, and phone number of an individual representative of each of its aggregated MSS Operators whom the CAISO may contact regarding matters addressed in this Agreement. The CRR Entity Agent shall immediately notify the CAISO in writing of any revision to the terms of the MSSAA that affects its authority to act as agent on behalf of its aggregated MSS Operators or any other change in its relationship with any of its aggregated MSS Operators.
- 4.6 Electronic Contracting.** All submitted applications, bids, confirmations, changes to information on file with the CAISO and other communications conducted via electronic transfer (e.g., direct computer link, FTP file transfer, bulletin board, e-mail, facsimile or any other means established by the CAISO) shall have the same legal rights, responsibilities, obligations and other implications as set forth in the terms and conditions of the CAISO Tariff as if executed in written format.
- 4.7 Agreement Subject to CAISO Tariff.** The Parties will comply with all provisions of the CAISO Tariff applicable to Candidate CRR Holders or CRR Holders. This Agreement shall be subject to the CAISO Tariff, which shall be deemed to be incorporated herein.

## **ARTICLE V PERFORMANCE**

- 5.1 Penalties.** The CRR Entity Agent on behalf of its aggregated MSS Operators shall be subject to all penalties made applicable to Candidate CRR Holders and CRR Holders set forth in the CAISO Tariff. Nothing in this Agreement, with the exception of the provisions relating to the CAISO ADR Procedures, shall be construed as waiving the rights of the CRR Entity Agent on behalf of its aggregated MSS Operators to oppose or protest the specific imposition by the CAISO of any FERC-approved penalty on the CRR Entity Agent or any MSS Operator.
- 5.2 Corrective Measures.** If the CRR Entity Agent or the CAISO fails to meet or maintain the requirements set forth in this Agreement and/or the CAISO Tariff, the CAISO or the CRR Entity Agent shall be permitted to take any of the measures, contained or referenced in the CAISO Tariff as it pertains to this Agreement, which the Party seeking enforcement deems to be necessary to correct the situation.

**ARTICLE VI  
COSTS**

- 6.1 Operating and Maintenance Costs.** The CRR Entity Agent shall be responsible for all its costs and any costs of its aggregated MSS Operators incurred in connection with all its CRR related activities.

**ARTICLE VII  
DISPUTE RESOLUTION**

- 7.1 Dispute Resolution.** The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that any reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to one or more aggregated MSS Operators and/or the CRR Entity Agent (as applicable) and references to the CAISO Tariff shall be read as references to this Agreement.

**ARTICLE VIII  
REPRESENTATIONS AND WARRANTIES**

- 8.1 Representation and Warranties.** Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law, and that the proper agreements providing for the CRR Entity Agent relationship with each aggregated MSS Operator, including, but not limited to, the MSSAA, are in full force and effect.

**ARTICLE IX  
LIABILITY**

- 9.1 Liability.** The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to one or more aggregated MSS Operators and/or the CRR Entity Agent (as applicable), and references to the CAISO Tariff shall be read as references to this Agreement. Further, in reliance on the agency relationship between the CRR Entity Agent and each aggregated MSS Operator, CAISO shall treat the CRR Entity Agent as the MSS Operators and shall not be liable to any aggregated MSS Operator for any claims, liabilities, or errors arising from this agency relationship, including, but not limited to, CRR ownership or Settlement Accounts, unless the CAISO causes such claim(s), liability(ies) or error(s) due to its gross negligence or willful conduct.

**ARTICLE X  
UNCONTROLLABLE FORCES**

- 10.1 Uncontrollable Forces Tariff Provisions.** Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Agreement except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as a reference to one or more aggregated MSS Operators and/or the CRR Entity Agent (as applicable) and references to the CAISO Tariff shall be read as references to this Agreement.

**ARTICLE XI  
MISCELLANEOUS**

- 11.1 Assignments.** Either Party may assign or transfer any or all of its rights and/or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff and other CAISO Tariff requirements as applied to Candidate CRR Holders or CRR Holders. Such consent shall not be unreasonably withheld. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest was an original Party to this Agreement.
- 11.2 Notices.** Any notice, demand, or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff, provided that all references in Section 22.4 of the CAISO Tariff to Market Participants shall be read as a reference to the CRR Entity Agent and references to the CAISO Tariff shall be read as references to this Agreement, and unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 1. A Party must update the information in Schedule 1 of this Agreement as information changes. Such changes to Schedule 1 shall not constitute an amendment to this Agreement.
- 11.3 Waivers.** Any waiver at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.
- 11.4 Governing Law and Forum.** This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in accordance with, the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement to which the CAISO ADR Procedures do not apply, shall be brought in any of the following forums, as appropriate: (i) any court of the State of California, (ii) any federal court of the United States of America located in the State of California, except to the extent subject to the protections of the Eleventh Amendment of the United States Constitution, or (iii) where subject to its jurisdiction, before the Federal Energy Regulatory Commission.
- 11.5 Consistency with Federal Laws and Regulations.** This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.
- 11.6 Merger.** This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.
- 11.7 Severability.** If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.

**11.8 [NOT USED]**

**11.9 Amendments.** This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. Nothing herein shall be construed as affecting in any way the right of the CAISO to make unilateral application to FERC for a change in the rates, terms, and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder, and the CRR Entity Agent shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to Section 206 or any other applicable provision of the FPA and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein. The standard of review the Commission shall apply when acting upon proposed modifications to this Agreement by the CAISO shall be the "just and reasonable" standard of review rather than the "public interest" standard of review. The standard of review the Commission shall apply when acting upon proposed modifications to this Agreement by the Commission's own motion or by a signatory other than the CAISO or non-signatory entity shall also be the "just and reasonable" standard of review. Schedules 1 and 2 are provided for informational purposes and revisions to those schedules do not constitute a material change in the Agreement warranting Commission review.

**11.10 Counterparts.** This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.

**IN WITNESS WHEREOF**, the Parties hereto have caused this Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date hereinabove written.

**California Independent System Operator Corporation**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**[INSERT NAME OF CRR ENTITY AGENT]**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**SCHEDULE 1**

**NOTICES**

**[Section 11.2]**

**CRR Entity Agent**

Name of Primary

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax No: \_\_\_\_\_

Name of Alternative

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax No: \_\_\_\_\_

**CAISO**

Name of Primary

Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

Name of Alternative  
Representative: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Email address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_



**SCHEDULE 2**  
**SETTLEMENT ACCOUNT**

**[Section 4.3]**

**CRR Entity Agent Account Information**

Settlement Account No:

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Title:

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Sort Code:

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Bank:

---

**SCHEDULE 3**

**[Pro Rata Load Share per MSS Operator Represented by CRR Entity Agent]**

**[Section 4.4]**

**CAISO TARIFF APPENDIX C**  
**Locational Marginal Price**

**CAISO TARIFF APPENDIX C**  
**Location Marginal Price**

The CAISO shall calculate the price of Energy at Generation PNodes, Scheduling Points, and Aggregated Pricing Nodes, as provided in the CAISO Tariff. LMPs can be set by Bids to sell or purchase Energy. The CAISO establishes Trading Hub prices and LAPs as provided in the CAISO Tariff. The LMPs at PNodes, including Scheduling Points, and Aggregated Pricing Nodes include separate components for the marginal cost of Energy, Marginal Cost of Congestion, and Marginal Cost of Losses. As provided in Sections 6.5.3.2.2 and 6.5.5.2.4, Day-Ahead Market LMPs are calculated and posted on a Day-Ahead basis for each hour of the Day-Ahead Market for Energy and for each Dispatch Interval for the Real-Time LMPs.

**A. LMP Composition**

In each hour of the Day-Ahead Market for Energy, the CAISO calculates the LMP for each PNode, which is equal to the marginal cost of Energy available at the PNode in the hour, based on the Bids of sellers and buyers selected in the Day-Ahead Market for Energy and specified in the Day-Ahead Schedule. The CAISO designates a Reference Bus,  $r$ , for calculation of the System Marginal Energy Cost ( $SMEC_r$ ). The CAISO uses a distributed Reference Bus to define an aggregate value of Energy for the CAISO Control Area. For each bus other than the Reference Bus, the Transmission Provider determines separate components of the LMP for the marginal cost of Energy, Marginal Cost of Congestion, and Marginal Cost of Losses relative to the Reference Bus, consistent with the following equation:

$$LMP_i = SMEC_r + MCC_i + MCL_i$$

$$LMP_r = SMEC_r$$

where:

- $SMEC_r$  is the LMP component representing the marginal cost of Energy (also referred to as  $\lambda$ ) at the Reference Bus,  $r$  (System Marginal Energy Cost).

- $MCC_i$  is the LMP component representing the Marginal Cost of Congestion (also referred to as  $\rho$ ) at bus  $i$  relative to the Reference Bus.
- $MCL_i$  is the LMP component representing the Marginal Cost of Losses (also referred to as  $\gamma$ ) at bus  $i$  relative to the Reference Bus.

#### **B. The System Marginal Energy Cost Component of LMP**

The SMEC shall be the same for each location throughout the system. SMEC is the sensitivity of the power balance constraint at the optimal solution. The power balance constraint ensures that the physical law of conservation of Energy (the sum of Generation and imports equals the sum of Demand, including exports and Transmission Losses) is accounted for in the network solution. For the designated reference location the CAISO will utilize a distributed Reference Bus for which constituent PNodes are weighted in pre-specified proportions, referred to as Reference Bus distribution factors. The distribution factors are based on actual Demand at each PNode that represents Load. Once the Reference Bus is selected, and Demand has dictated the distribution factors, the cost of economically providing the next increment of Energy, based on submitted Bids, at that Reference Bus becomes the System Marginal Energy Cost.

#### **C. Marginal Congestion Component Calculation**

The CAISO calculates the Marginal Costs of Congestion at each bus as a component of the bus-level LMP. The Marginal Cost of Congestion ( $MCC_i$ ) component of the LMP at bus  $i$  is calculated using the equation:

$$MCC_i = -(\sum_{k=1}^K PTDF_{ik} * FSP_k)$$

where:

- $K$  is the number of thermal or interface transmission constraints.
- $PTDF_{ik}$  is the Power Transfer Distribution Factor for the generator at bus  $i$  on interface  $k$  which limits flows across that constraint when an increment of power is injected at bus  $i$  and an equivalent amount of power is withdrawn at the Reference Bus. The industry convention is to ignore the effect of losses in the determination of PTDFs.

- $FSP_k$  is the constraint Shadow Price on interface  $k$  and is equivalent to the reduction in system cost expressed in \$/MWh that results from an increase of 1MW of the capacity on interface  $k$ .

The Shadow Price at a given binding constraint is the value per MW of the next increment of generation that would flow across the constrained path by relaxing the binding constraint. The PTDF of a PNode with respect to a transmission path (and direction on the path) measures the change in the power flow through the path (positive or negative, with respect to the designated direction on the path) as a result of an incremental injection at the Node, balanced by incremental change of Load at the Reference Bus.

#### **D. Marginal Losses Component Calculation**

The CAISO calculates the Marginal Cost of Losses (MCL $_i$ ) at each bus  $i$  as described in Section 27.1.1.2.

The MCL component of the LMP at any bus  $i$  within the CAISO's Control Area is calculated using the equation:

$$MCL_i = MLF_i * SMEC_r$$

Where:

- $MLF_i$  is the marginal loss factor for PNode  $i$  to the system Reference Bus, based on an AC power flow solution. The marginal loss factor at a PNode is the incremental change in the quantity (MW) of transmission losses in the network resulting when serving an increment of Load at the PNode from the Reference Bus.
  - $MLF_i$  is equal to  $1 - \partial L / \partial G_i$ , where:  $L$  is system losses,  $G_i$  is "generation injection" at PNode  $i$ ,  $\partial L / \partial G_i$  is the partial derivative of system losses with respect to generation injection at bus  $i$ , that is, the incremental change in system losses associated with an incremental change in the generation injections at bus  $i$  holding constant other injection and withdrawals at all buses other than the Reference Bus and bus  $i$ .
- $SMEC_r$  is the SMEC at the Reference Bus,  $r$ .

### **E. Trading Hub Price Calculation**

The CAISO calculates Existing Zone Generation Trading Hub prices, as provided in Section 27.3, based on the LMP calculations described in this Attachment and in Section 27.2.

$$\text{EZ Gen Trading Hub Price}_j = \sum_{i=1}^{NG} WG_{ist} * LMP_i$$

where:

- NG is the number of Generation buses defined in the Existing Zone Generation Trading Hub  $j$ .
- $WG_{ist}$  is the generation-weighting factor for bus  $i$  for season  $s$  for time period  $t$  representing peak or off-peak period in Existing Zone Generation Trading Hub  $j$ . The sum of the weighting factors must add up to 1. These weights are based on the previous years actual generation output as described in Section 27.3.

### **F. Load Zone Price Calculation**

The CAISO calculates LAP prices based on the LMPs for a set of buses that comprise the LAP. These LAP prices represent the weighted average of the LMPs at the set of buses that comprise the LAP. The LAP bus weight is equal to the fractional share of each Load bus in the total Load in the LAP during the hour.

The price for LAP  $j$  is:

$$\text{LAP Price}_j = \sum_{i=1}^{NZ} WZ_i * LMP_i$$

where:

- NZ is the number of Load buses in LAP  $j$ .
- $WZ_i$  is the load-weighting factor for bus  $i$  in LAP  $j$ . The sum of the weighting factors must equal 1 (i.e., 100 percent). These weights are based on State Estimator results for similar day.

Each LAP one includes only the buses of Market Participants who are in the LAP and who have Load that is represented by that LAP's definition. Market Participants that have metered Load must either be settled at a Default LAP or a Custom LAP created for each Load point of the Market Participant (nodal Settlement).

#### **G. Intertie Scheduling Point Price Calculation**

The CAISO calculates LMPs for Scheduling Points, which are *represented in the FNM as* PNodes or aggregations of PNodes external to the CAISO Balancing Authority Area through the same process that is used to calculate LMPs within the CAISO Balancing Authority Area. *In some cases, facilities that are part of the* CAISO Controlled Grid *but are* external to the CAISO Balancing Authority Area connect some Intertie Scheduling Points to the CAISO Balancing Authority Area, and in these cases the Scheduling Points are within external *Balancing Authority* Areas. In both of these cases, *the Scheduling Points are represented in the FNM.* The CAISO places injections and withdrawals at the Scheduling Point PNodes to represent Bids and Schedules whose supporting physical *injection and withdrawal* locations are unknown, and the LMPs for Settlement of *accepted Bids* are established at the Scheduling Point PNodes.

##### **G.1 Intertie Scheduling Point Price Calculation for IBAA's**

*As described in Section 27.5.3, the CAISO's FNM includes a full model of the network topology of each IBAA. Consistent with the provisions of Section 27.5.3.4, the CAISO Tariff will specify Resource IDs that associate Intertie Scheduling Point Bids and Schedules with supporting injection and withdrawal locations on the FNM. As provided in Section 27.5.3.4, such Resource IDs may be specified by the CAISO based on the information available to it, or developed pursuant to a Market Efficiency Enhancement Agreement. Once these Resource IDs are established, the CAISO will determine Intertie Scheduling Point LMPs based on the injection and withdrawal locations associated with each Intertie Scheduling Point Bid and Schedule by the appropriate Resource ID. In calculating these LMPs the CAISO follows the provisions specified in Section 27.5.3 regarding the treatment of transmission Constraints and losses on the IBAA network facilities.*



**CAISO TARIFF APPENDIX D**  
**Black Start Generating Units**

**Appendix D - Black Start Generating Units**

The following requirements must be met by Generating Units providing Black Start:

- (a) Black Start Generating Units must be capable of starting and paralleling with the CAISO Controlled Grid without aid from the CAISO Controlled Grid;
- (b) Black Start Generating Units must be capable of making a minimum number of starts per event (to be without aid from the CAISO Controlled Grid as determined by the CAISO);
- (c) Black Start Generating Units must be equipped with governors capable of operating in the stand alone (asynchronous) and parallel (synchronous) modes.
- (d) Black Start Generating Units must have Start-Up load pickup capabilities at a level to be determined by the CAISO, including total Start-Up load (MW) and largest Start-Up load (MW) for such power output levels as the CAISO may specify.
- (e) All Black Start Generating Units must be capable of producing reactive Power (boost) and absorbing reactive Power (buck) as required by the CAISO to control system voltages. This requirement may be met by the operation of more than one Black Start Generating Unit in parallel providing that:
  - (i) the Black Start Generation supplier demonstrates that the proposed Generation resource shares reactive burden equitably;
  - (ii) all Participating Generators associated with the proposed Black Start source are located in the same general area.

Buck/boost capability requirement shall be dependent on the location of the proposed resource in relation to Black Start load.

- (f) All Black Start Generating Units must have the following communication/control requirements:
  - (i) dial-up telephone;
  - (ii) backup radio;
  - (iii) manning levels which accord with Good Utility Practice.

**CAISO TARIFF APPENDIX E**  
**Verification of Submitted Data for Ancillary Services**

## **Appendix E**

### **Verification of Submitted Data for Ancillary Services**

The CAISO shall use the following procedures for verifying the Bid information submitted by Scheduling Coordinators for Ancillary Services.

**1. Bid File and Schedule Format.** The CAISO shall verify that the Bids conform to the format specified for the type of Ancillary Service Bid submitted. If the Bid file does not conform to specifications, it shall be annotated by the CAISO to indicate the location of the errors, and returned to the Scheduling Coordinator for corrections. Any changes made by a Scheduling Coordinator shall require a new submittal of Bid information, and all validity checks shall be performed on the re-submitted Bid .

#### **2. Generation Bids.**

**2.1. Quantity Data.** The CAISO shall verify that no Scheduling Coordinator is submitting a Bid quantity for Regulation, Spinning Reserve, or Non-Spinning Reserve which exceeds available capacity for Regulation and Operating Reserves on the Generating Units, Loads and resources scheduled for that Settlement Period.

**2.2 Location Data.** The CAISO shall verify that the Location data corresponds to the CAISO Controlled Grid Interconnection data.

**2.3. Operating Capability.** The CAISO shall verify that the operating capability data corresponds to the CAISO Controlled Grid Interconnection data for each Generating Unit, Load or other resource for which a Scheduling Coordinator is submitting an Ancillary Service Bid.

#### **3. [Not Used]**

**4. Notification of Validity or Invalidity of Ancillary Services Bids.** The CAISO shall, as soon as reasonably practical following the receipt of competitive Bids or Self-Provided Ancillary Service Self-Schedules, send to the Scheduling Coordinator who submitted the Bid the following information:

- (a) acknowledgment of receipt of the competitive Bid or Self-Provided Ancillary Service Self-Schedule;
- (b) notification that the Bid has been accepted or rejected for non-compliance with the rules specified in this Appendix. If a Bid is rejected, such notification shall contain an explanation of why the Bid was not accepted;
- (c) a copy of the Bid or Self-Schedule as processed by the CAISO.

In response to an invalid Bid, the Scheduling Coordinator shall be given a period of time to respond to the notification. The Scheduling Coordinator shall respond by resubmitting a corrected Bid. If the Scheduling Coordinator does not respond to the notification within the required time frame, the CAISO shall proceed without that Scheduling Coordinator's Bid.

**5. Treatment of Missing Values.**

**5.1 Missing Location Values.** Any Bid submitted without a Location Code shall be deemed to have a zero Bid quantity for that Settlement Period.

**5.2 Missing Quantity Values.** Any Bid submitted without a quantity value shall be deemed to have a zero Bid quantity for Ancillary Service capacity for that Settlement Period.

**5.3 Missing Price Values.** Any Bid submitted with non-zero quantity value, but with a missing price value, shall be rejected.

**6. Treatment of Equal Price Bids.** The CAISO shall allow these Scheduling Coordinators to resubmit, at their own discretion, their Bid no later than two (2) hours the same day the original Bid was submitted. In the event identical prices still exist following resubmission of Bids, the CAISO shall determine the merit order for each Ancillary Service by considering applicable Constraint information for each Generating Unit, Load or other resource, and optimize overall costs for the Trading Day. If equal Bids still remain, the CAISO shall proportion participation in the Day-Ahead Schedule or HASP Schedule (as the case may be) amongst the bidding Generating Units, Loads and resources with identical Bids to the extent permitted by operating Constraints and in a manner deemed appropriate by the CAISO.

**7. Receipt of Bids.** The CAISO shall maintain an audit trail relating to the receipt of Bids and the processing of those Bids.

**CAISO TARIFF APPENDIX F**  
**Rate Schedules**

**CAISO TARIFF APPENDIX F**  
**Schedule 1**

**Grid Management Charge**

**Part A – Monthly Calculation of Grid Management Charge (GMC)**

The Grid Management Charge consists of *the following* separate service charges: (1) the Core Reliability Services – Demand Charge, (2) the Core Reliability Services – Energy Exports Charge; (3) Energy Transmission Services – Net Energy Charge, (4) the Energy Transmission Services – Uninstructed Deviations Charge, (5) the *Core Reliability Services/Energy Transmission Services – Transmission Ownership Rights Charge*, (6) *the* Forward Scheduling Charge, (7) the Market Usage Charge, and (8) the Settlements, Metering, and Client Relations Charge.

1. The rate in \$/MW for the Core Reliability Services – Demand Charge will be calculated by dividing the GMC costs, as determined in accordance with Part C of this Schedule 1, allocated to this service category in accordance with Part E of this Schedule 1, by the total of the forecasted Scheduling Coordinators' metered non-coincident peak hourly demand in MW for all months during the year (excluding the portion of such Demand associated with Energy Exports, if any, as may be modified in accordance with Part F of this Schedule 1), reduced by thirty-four percent *(34%)* of the sum of all Scheduling Coordinators' metered non-coincident peak *Demands* occurring during the hours ending 0100 through 0600, or during the hours ending 2300 through 2400, every day, including Sundays and holidays; provided that if a Scheduling Coordinator's metered non-coincident peak *Demand* hour during the month occurs during the hours ending 0100 through 0600, or during the hours ending 2300 through 2400, every day, the rate shall be sixty-six percent *(66%)* of the standard Core Reliability Services – Demand *Charge* rate.
2. The rate in \$/MWh for the Core Reliability Services – Energy Exports *Charge* will be calculated by dividing the GMC costs, as determined in accordance with Part C of this Schedule 1, allocated to this service category in accordance with Part E of this Schedule 1, by the total of the forecasted Scheduling Coordinators' metered volume of Energy Exports in MWh, *excluding each Scheduling Coordinator's Energy Exports associated with Transmission Ownership Rights*.
3. The rate in \$/MWh for the Energy Transmission Services – Net Energy Charge will be calculated by dividing the GMC costs, as determined in accordance with Part C of this Schedule 1, allocated to this service category in accordance with Part E of this Schedule 1, by the total annual forecasted Metered *Balancing Authority Area Load*, *excluding each Scheduling Coordinator's Metered Balancing Authority Area Load associated with Transmission Ownership Rights*.
4. The rate in \$/MWh for the Energy Transmission Services – Uninstructed Deviations Charge will be calculated by dividing the GMC costs, as determined in accordance with Part C of this Schedule 1, allocated to this service category in accordance with Part E of this Schedule 1, by the absolute value of total annual forecasted net *Uninstructed Imbalance Energy* (netted within a Settlement Interval summed over the calendar month) in MWh, *provided that the rate for each Scheduling Coordinator's Participating Intermittent Resources will be assessed against the Uninstructed Imbalance Energy of such Participating Intermittent Resources netted over the Trading Month*.

5. The rate in \$/MWh for the Core Reliability Services/Energy Transmission Services – Transmission Ownership Rights Charge will be calculated by dividing the GMC costs, as determined in accordance with Part C of this Schedule 1, allocated to this service category in accordance with Part E of this Schedule 1, by the total annual forecasted Metered Balancing Authority Area Load associated with Transmission Ownership Rights.
6. The rate in \$ per Schedule or \$ per Inter-SC Trade for the Forward Scheduling Charge will be calculated by dividing the GMC costs, as determined in accordance with Part C of this Schedule 1, allocated to this service category in accordance with Part E of this Schedule 1, by the annual forecasted number of non-zero MW Day-Ahead and HASP Schedules, as may be modified in accordance with Part F of this Schedule 1, including all awarded Ancillary Service and Residual Unit Commitment Bids and all Inter-SC Trades, including Inter-SC Trades of IFM Load Uplift Obligations. This charge will be assessed separately with respect to Schedules and Inter-SC Trades.
7. The rate in \$/MWh for the Market Usage Charge will be calculated by dividing the GMC costs, as determined in accordance with Part C of this Schedule 1, allocated to this service category in accordance with Part E of this Schedule 1, by the annual forecasted total purchases and sales (including out-of-market transactions) of Ancillary Services, Energy, Instructed Imbalance Energy, and net Uninstructed Imbalance Energy (with Uninstructed Imbalance Energy for Participating Intermittent Resources netted over the Trading Month and all other Uninstructed Imbalance Energy being netted within a Settlement Interval) in MWh. A Market Usage Charge rate will be calculated separately for two sets of CAISO Markets: (i) the Ancillary Services and RTM rate will be based on MWh of purchases and sales of Ancillary Services in the DAM, the HASP, and the RTM, MWh of Instructed Imbalance Energy, and MWh of Uninstructed Imbalance Energy netted over the Settlement Interval; and (ii) the rate for the Day-Ahead Market for Energy will be based on MWh of net Energy purchases or sales in the DAM.
8. The rate for the Settlements, Metering, and Client Relations Charge will be fixed at \$100.00 per month, per Scheduling Coordinator ID Code (SCID) with an invoice value other than \$0.00 in the current Trading Month.

For a Scheduling Coordinator for a Load following MSS, the GMC service charges set forth in above shall be applied as set forth in Section 11.22.3 of the CAISO Tariff.

The rates for the foregoing charges shall be adjusted automatically each year, effective January 1 for the following twelve months, in the manner set forth in Part D of this Schedule.

#### **Part B – Quarterly Adjustment, If Required**

Each component rate of the Grid Management Charge will be adjusted automatically on a quarterly basis, up or down, so that rates reflect the annual revenue requirement as stated in the CAISO's filing or posting on the CAISO Website, as applicable, if the estimated revenue collections for that component, on an annual basis, change by more than five percent (5%) or \$1 million, whichever is greater, during the year. Such adjustment may be implemented not more than once per calendar quarter, and will be effective the first day of the next calendar month.

The rates will be adjusted according to the formulae listed in Appendix F, Schedule 1, Part A with the billing determinant(s) readjusted on a going-forward basis to reflect the change of more than five percent (5%) or \$1 million, whichever is greater, from the estimated revenue collections provided in the annual informational filing.



**Part C – Costs Recovered through the GMC**

As provided in Section 11.22.2 of the CAISO Tariff, the Grid Management Charge includes the following costs, as projected in the CAISO's budget for the year to which the Grid Management Charge applies:

- CAISO Operating Costs;
- CAISO Other Costs and Revenues, including penalties, interest earnings and other revenues;
- CAISO Financing Costs, including debt service on CAISO Start Up and Development Costs and subsequent capital expenditures; and
- CAISO Operating and Capital Reserves Costs.

Such costs, for the CAISO as a whole, are allocated to the service charges that comprise the Grid Management Charge: (1) Core Reliability Services - Demand Charge, (2) Core Reliability Services – Energy Exports Charge, (3) Energy Transmission Services – Net Energy Charge, (4) Energy Transmission Services – Uninstructed Deviations Charge, (5) **Core Reliability Services/ Energy Transmission Services – Transmission Ownership Rights Charge**, (6) Forward Scheduling Charge, (7) Market Usage Charge, and (8) Settlements, Metering, and Client Relations Charge, according to the factors listed in Part E of this Schedule 1, and

**adjusted annually for:**

- any surplus revenues from the previous year as deposited in the **CAISO** Operating and Capital Reserves Account, or deficiency of revenues, as recorded in a memorandum account;

**divided by:**

- forecasted annual billing determinant volumes;

**adjusted quarterly for:**

- a change in the volume estimate used to calculate the individual Grid Management Charge components, if, on an annual basis, the change is **five percent (5%) or \$1 million, whichever is greater, from the estimated revenue collections provided in the annual informational filing.**

The Grid Management Charge revenue requirement formula is as follows:

Grid Management Charge revenue requirement =

**CAISO Operating Costs + CAISO Financing Costs + CAISO Other Costs and Revenues + CAISO Operating and Capital Reserves Costs,**

**[The "USoA" reference below is the FERC Uniform System of Accounts, and is intended to include subsequent re-numbering or re-designation of the same accounts or subaccounts.]**

Where,

**(1) CAISO Operating Costs include:**

- (a) Transmission expenses (USoA 560-574);**
- (b) Regional market expenses (USoA 575 subaccounts);**
- (c) Customer accounting expenses (USoA 901-905);**
- (d) Customer service and informational expenses (USoA 906-910);**
- (e) Sales expenses (USoA 911-917);**
- (f) Administrative & general expenses (USoA 920-935);**
- (g) Taxes other than income taxes that relate to CAISO operating income (USoA 408.1); and**
- (h) Miscellaneous, non-operating expenses, penalties and other deductions (USoA 426 subaccounts).**

(2) CAISO Financing Costs include:

- (a) For any fiscal year, scheduled principal and interest payments, sinking fund payments related to balloon maturities, repayment of commercial paper notes, net payments required pursuant to a payment obligation, or payments due on any CAISO notes. This amount includes the current year accrued principal and interest payments due in the first one hundred twenty (120) days of the following year.
- (b) The debt service coverage requirement, which is a percentage of the senior lien debt service, i.e., all debt service that has a first lien on CAISO net operating revenues. The coverage requirement is twenty-five percent (25%), unless otherwise specified by the rate covenants of the official statements for each CAISO bond offering.

(3) CAISO Other Costs and Revenues include:

- (a) Interest earnings (USoA 419) on CAISO Operating and Capital Reserves Account balances, excluding interest on bond or note proceeds specifically designated for capital projects or capitalized interest.
- (b) Miscellaneous revenues (USoA 421 and 456 subaccounts), including but not limited to Scheduling Coordinator application and training fees, WECC Reliability Coordinator reimbursements, and fines assessed and collected by the CAISO.
- (c) Other interest expenses (USoA 431) not provided for elsewhere.

(4) CAISO Operating and Capital Reserves Costs include:

- (a) The projected CAISO Operating and Capital Reserves Account balance for December 31 of the prior year less the reserve requirement. If such amount is negative, the amount may be divided by two, so that the reserve is replenished within a two-year period. The reserve requirement is fifteen percent (15%) of annual CAISO Operating Costs, unless otherwise specified by (1) the rate covenants of the official statements for each CAISO bond offering, (2) the CAISO Governing Board or (3) the FERC.
- (b) Funding from current year revenues for approved capital and projects initiated in the fiscal year.

A separate revenue requirement shall be established for each component of the Grid Management Charge by developing the revenue requirement for the CAISO as a whole and then assigning such costs to the service categories using the allocation factors provided in Appendix F, Schedule 1, Part E.

**Part D – Information Requirements**

**Budget Schedule**

The CAISO will convene, prior to the commencement of the annual budget process, an initial meeting with stakeholders to: (a) receive ideas to control CAISO costs; (b) receive ideas for projects to be considered in the capital budget development process; and, (c) receive suggestions for reordering CAISO priorities in the coming year.

Within two (2) weeks of the initial meeting, the ideas presented by the stakeholders shall be communicated in writing to the CAISO's officers, directors and managers as part of the budget development process, and a copy of this communication shall be made available to stakeholders.

Subsequent to the initial submission of the draft budget to the finance committee of the CAISO Governing Board, the CAISO will provide stakeholders with the following information: (a) proposed capital budget with indicative projects for the next subsequent calendar year, a budget-to-actual review for capital expenditures for the previous calendar year, and a budget-to-actual review of current year capital costs; and, (b) expenditures and activities in detail for the next subsequent calendar year (in the form of a draft of the budget book for the CAISO Governing Board), budget-to-actual review of expenditures and activities for the previous calendar year, and a budget-to-actual review of expenditures for the current year. Certain of this detailed information which is deemed commercially sensitive will only be made available to parties that pay the CAISO's GMC (or regulators) who execute a confidentiality agreement.

The CAISO shall provide such materials on a timely basis to provide stakeholders at least one full committee meeting cycle to review and prepare comments on the draft annual budget to the finance committee of the CAISO Governing Board.

At least one month prior to the CAISO Governing Board meeting scheduled to consider approval of the proposed budget, the CAISO will hold a meeting open to all stakeholders to discuss the details of the CAISO's budget and revenue requirement for the forthcoming year. To the extent that such a meeting will deal with complex matters of budgetary and policy import, the CAISO will endeavor to host a workshop on the CAISO's budget preparation process in advance of the meeting to better prepare stakeholders.

Prior to a final recommendation by the finance committee of the CAISO Governing Board on the CAISO's draft annual budget, the CAISO shall respond in writing to all written comments on the draft annual budget submitted by stakeholders and/or the CAISO shall issue a revised draft budget indicating in detail the manner in which the stakeholders' comments have been taken into consideration.

The CAISO will provide no fewer than **forty-five (45)** days for stakeholder review of its annual budget between initial budget posting and final approval of the budget by the CAISO Governing Board.

### **Budget Posting**

After the approval of the annual budget by the CAISO Governing Board, the CAISO will post on the CAISO Website the CAISO operating and capital budget to be effective during the subsequent fiscal year, and the billing determinant volumes used to develop the rate for each component of the Grid Management Charge, together with workpapers showing the calculation of such rates.

### **Annual Filing**

If the Grid Management Charge revenue requirement for **any** Budget Year does not exceed \$19**7** million, the CAISO shall not be required to make a Section 205 filing to adjust the GMC charges calculated in accordance with this Schedule 1 to collect such **revenue** requirement. In order for the CAISO to adjust the GMC charges to collect a Grid Management Charge revenue requirement for a Budget Year that exceeds \$19**7** million, the CAISO must submit an application to the FERC under **FPA** Section 205. In any event, the CAISO shall submit a filing under **FPA** Section 205 for approval of the **Grid Management Charge** to be effective **no later than** January 1, 20**10**. In such filing, the CAISO may revise the **Grid Management Charge** rates set forth in this Schedule 1, but shall not be required to do so.

### **Periodic Financial Reports**

The CAISO will create periodic financial reports consisting of an income statement, balance sheet, statement of operating reserves, and such other reports as are required by the CAISO Governing Board. The periodic financial reports will be posted on the CAISO Website not less than quarterly.

## **Part E – Cost Allocation**

1. The Grid Management Charge revenue requirement, determined in accordance with Part C of this Schedule 1, shall be allocated to the service charges specified in Part A of this Schedule 1 as follows, subject to Section 2 of this Part E **and to Part F of this Schedule 1**. Expenses projected to be recorded in each cost center shall be allocated among the charges in accordance with the allocation factors listed in Table 1 to this Schedule 1, subject to Section 2 of this Part E **and to Part F of this Schedule 1**. In the event the CAISO budgets for projected expenditures for cost centers are not specified in Table 1 to Schedule 1, such expenditures shall be allocated based on the allocation factors for the respective CAISO division hosting that newly-created cost center. Such divisional allocation factors are specified in Table 1 to this Schedule 1.

Debt service expenditures for the CAISO's **existing** bond offerings shall be allocated among the charges in accordance with the allocation factors listed in Table 1 to this Schedule 1, subject to Section 2 of this Part E **and to Part F of this Schedule 1**. Capital expenditures shall be allocated among the charges in accordance with the allocation factors listed in Table 2 to this Schedule 1, subject to Section 2 of this Part E **and to Part F of this Schedule 1**, for the system for which the capital expenditure is projected to be made.

Any costs allocated by the factors listed in Table 1 and Table 2 to the Settlements, Metering, and Client Relations **Charge** category that would remain un-recovered after the assessment of the charge for that service specified in Section 8 of Part A of this Schedule 1 on forecasted billing determinant volumes shall be reallocated to the remaining GMC service categories in the ratios set forth in Table 3 to this Schedule 1.

**The cost allocation factors in Tables 1, 2, and 3 to this Schedule 1 include the following association of factors to the components of the Grid Management Charge, subject to Part F of this Schedule 1:**

**CRS: This factor is the allocation of costs to the Core Reliability Services – Demand Charge and Core Reliability Services - Energy Exports Charge.**

**ETS: This factor is the allocation of costs to the Energy Transmission Services – Net Energy Charge and Energy Transmission Services – Uninstructed Deviations Charge, subject to Section 2 of this Part E.**

**CRS/ETS TOR: This factor is the allocation of costs to Core Reliability Services/Energy Transmission Services – Transmission Ownership Rights Charge for the assessment of the Core Reliability Services – Demand Charge, Core Reliability Services – Energy Exports Charge, and the Energy Transmission Services – Net Energy Charge to Metered Balancing Authority Area Load served over Transmission Ownership Rights.**

**FS: This factor is the allocation of costs to the Forward Scheduling Charge.**

**MU: This factor is the allocation of costs to the Market Usage Charge, except for the application of the Market Usage Charge to purchases or sales of Energy in the Day-Ahead Market.**

**MU-FE: This factor is the allocation of costs to the Market Usage Charge as applied to net purchases or sales of Energy in the Day-Ahead Market.**

**SMCR: This factor is the allocation of costs to the Settlements, Metering, and Client Relations Charge.**

2. The allocation of costs in accordance with Section 1 and Tables 1 and 2 of this Part E shall be adjusted as follows:

Costs allocated to the Energy Transmission Services (ETS) category in the following tables are further apportioned to the Energy Transmission Services – Net Energy Charge and Energy Transmission Services – Uninstructed Deviations Charge subcategories in eighty percent (80%) and twenty percent (20%) ratios, respectively.

**Table 1**  
**O&M, Debt Service, and Other Expense Recoveries Cost Allocation Factors**

CC#	Cost Center Name	CRS	ETS	CRS/ETS TOR	FS	MU	MU-FE	SMCR	Total
2111	CEO-General	38.89%	15.11%	0.44%	4.29%	13.32%	3.54%	24.42%	100.00%
2121	Market Monitoring	22.40%	0.00%	0.00%	6.20%	46.69%	17.11%	7.60%	100.00%
2122	Market Surveillance Committee (Non-labor costs only)	25.00%	0.00%	0.00%	0.00%	75.00%	0.00%	0.00%	100.00%
2211	Planning and Infrastructure Development	53.25%	46.75%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
2221	Regional Transmission-North	57.67%	42.33%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
2231	Regional Transmission-South	54.60%	45.40%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
2241	Grid Assets	68.34%	31.66%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
2242	Generator Interconnections	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
2251	Network Applications	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
2311	CFO General	37.33%	14.40%	0.42%	3.96%	10.70%	5.12%	28.05%	100.00%
2321	Accounting	38.89%	15.11%	0.44%	4.29%	13.32%	3.54%	24.42%	100.00%
2331	Financial Planning and Treasury	31.41%	12.20%	0.36%	3.46%	10.76%	2.86%	38.95%	100.00%
2341	Human Resources	40.85%	16.67%	0.47%	3.01%	10.06%	6.00%	22.94%	100.00%
2351	Facilities	40.85%	16.67%	0.47%	3.01%	10.06%	6.00%	22.94%	100.00%
2361	Procurement and Vendor Management	38.89%	15.11%	0.44%	4.29%	13.32%	3.54%	24.42%	100.00%
2371	Enterprise Risk Management	34.73%	11.83%	0.38%	5.53%	9.35%	6.78%	31.40%	100.00%
2372	Internal Audit	38.89%	15.11%	0.44%	4.29%	13.32%	3.54%	24.42%	100.00%
2373	Information Security	23.53%	3.01%	0.22%	9.91%	6.42%	9.47%	47.44%	100.00%
2374	Physical Security	40.85%	16.67%	0.47%	3.01%	10.06%	6.00%	22.94%	100.00%



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First Revised Sheet No. 1196  
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CC#	Cost Center Name	CRS	ETS	CRS/ETS TOR	FS	MU	MU-FE	SMCR	Total
2411	Information Technology-General	35.13%	8.03%	0.35%	8.08%	11.07%	4.65%	32.69%	100.00%
2412	Asset Management (Non-Labor costs only)	32.40%	9.79%	0.33%	7.51%	12.78%	5.37%	31.83%	100.00%
2421	IT Projects	23.53%	3.01%	0.22%	9.91%	6.42%	9.47%	47.44%	100.00%
2431	IT Project Management	23.53%	3.01%	0.22%	9.91%	6.42%	9.47%	47.44%	100.00%
2441	Software Quality Assurance	23.53%	3.01%	0.22%	9.91%	6.42%	9.47%	47.44%	100.00%
2451	IT Support & Operations	37.26%	10.02%	0.39%	9.71%	12.49%	2.34%	27.78%	100.00%
2452	System & Database Administration	23.53%	3.01%	0.22%	9.91%	6.42%	9.47%	47.44%	100.00%
2453	Data Center & Operations	40.24%	18.35%	0.49%	2.44%	14.15%	1.64%	22.70%	100.00%
2454	Architecture & Systems Engineering	23.53%	3.01%	0.22%	9.91%	6.42%	9.47%	47.44%	100.00%
2462	EMS Information Technology	94.09%	2.45%	0.80%	0.00%	1.33%	0.00%	1.33%	100.00%
2463	Operations Information Technology	31.43%	9.40%	0.33%	13.67%	26.52%	0.00%	18.65%	100.00%
2464	Corporate Systems	32.52%	10.30%	0.32%	1.22%	10.23%	1.92%	43.49%	100.00%

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First Revised Sheet No. 1197  
 Superseding Original Sheet No. 1197

CC#	Cost Center Name	CRS	ETS	CRS/ETS TOR	FS	MU	MU-FE	SMCR	Total
2511	Operations-General	46.52%	16.54%	0.75%	1.33%	15.19%	2.09%	17.58%	100.00%
2521	Grid Operations	68.53%	24.09%	1.42%	0.00%	5.96%	0.00%	0.00%	100.00%
2522	Real-Time Operations	60.99%	29.70%	1.20%	0.00%	8.11%	0.00%	0.00%	100.00%
2523	Scheduling	65.75%	32.87%	1.38%	0.00%	0.00%	0.00%	0.00%	100.00%
2524	Outage Management	94.00%	0.37%	4.17%	0.00%	1.47%	0.00%	0.00%	100.00%
2531	Alhambra Grid Operations	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
2541	Market Services	5.38%	0.00%	0.00%	5.02%	44.24%	7.90%	37.46%	100.00%
2542	Market Operations	5.14%	0.00%	0.00%	13.08%	56.08%	20.56%	5.14%	100.00%
2543	Billing and Settlements	12.56%	0.00%	0.00%	0.00%	0.00%	0.00%	87.44%	100.00%
2544	Settlement Projects	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
2545	Market Information	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%
2551	Operations Support	38.68%	19.64%	0.00%	0.00%	1.76%	0.00%	39.92%	100.00%
2552	Operations Data and Compliance	41.75%	0.00%	0.00%	0.00%	0.00%	0.00%	58.25%	100.00%
2553	Operations Procedures and Training	63.23%	36.77%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
2554	Model & Contract Implementation	35.54%	0.00%	0.00%	0.00%	8.77%	0.00%	55.69%	100.00%
2555	Information Engineering & Analysis	8.80%	46.39%	0.00%	0.00%	0.00%	0.00%	44.82%	100.00%
2561	Reliability Coordination	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%

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First Revised Sheet No. 1198  
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CC#	Cost Center Name	CRS	ETS	CRS/ETS TOR	FS	MU	MU-FE	SMCR	Total
2611	General Counsel-General	38.89%	15.11%	0.44%	4.29%	13.32%	3.54%	24.42%	100.00%
2621	Asst General Counsel-Corporate	38.89%	15.11%	0.44%	4.29%	13.32%	3.54%	24.42%	100.00%
2631	Asst General Counsel-Regulatory	38.89%	15.11%	0.44%	4.29%	13.32%	3.54%	24.42%	100.00%
2641	Asst General Counsel Tariff & Compliance	38.89%	15.11%	0.44%	4.29%	13.32%	3.54%	24.42%	100.00%
2651	Asst Corporate Secretary	38.89%	15.11%	0.44%	4.29%	13.32%	3.54%	24.42%	100.00%
2711	Market Development Program Mgmt-General	18.92%	21.45%	0.04%	8.86%	42.78%	0.43%	7.51%	100.00%
2721	Market and Product Development	7.43%	14.86%	0.00%	7.43%	62.86%	0.00%	7.43%	100.00%
2722	Tariff and Regulatory Policy Development	0.00%	9.34%	0.00%	18.69%	71.97%	0.00%	0.00%	100.00%
2723	Infrastructure Policy & Contracts	45.42%	44.49%	0.00%	0.00%	0.00%	0.00%	10.09%	100.00%
2731	Program Office	38.89%	15.11%	0.44%	4.29%	13.32%	3.54%	24.42%	100.00%
2741	MRTU Program	10.30%	4.25%	0.12%	19.93%	10.75%	16.19%	38.46%	100.00%

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CC#	Cost Center Name	CRS	ETS	CRS/ETS TOR	FS	MU	MU-FE	SMCR	Total
2811	External Affairs-General	12.89%	5.00%	0.15%	1.42%	4.41%	1.17%	74.96%	100.00%
2821	Communications & Public Relations	38.89%	15.11%	0.44%	4.29%	13.32%	3.54%	24.42%	100.00%
2822	Information Products & Services	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
2831	State/Federal Affairs	38.89%	15.11%	0.44%	4.29%	13.32%	3.54%	24.42%	100.00%
2841	Customer Services and Industry Affairs	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%

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 Superseding Original Sheet No. 1200

Financing and Capital Project Budgets									
		CRS	ETS	CRS/ETS TOR	FS	MU	MU-FE	SMCR	Total
	1998/2000 Bond Financed Capital	29.96%	8.36%	0.31%	11.78%	16.47%	1.07%	32.05%	100.00%
	2004 Bond Financed Capital	16.20%	5.07%	0.17%	17.67%	10.90%	14.09%	35.90%	100.00%
	2007 Bond Financed Capital	13.44%	5.08%	0.15%	19.05%	10.48%	15.71%	36.09%	100.00%
Other Revenues and Expense Credits									
	SC Application and Training Fees	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
	WECC Reimbursement/NERC Reimbursement	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
	COI Path Operator Fee	71.81%	28.19%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
	Large Generator Interconnection Project	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
	Interest Earnings	34.78%	12.18%	0.38%	7.33%	12.98%	5.30%	27.06%	100.00%

**Table 2**

**Capital Cost Allocation Factors**

System	CRS	ETS	CRS/ETS TOR	FS	MU	MU-FE	SMCR	Total
ACC Upgrades (Communication between ISO & IOUs)	99.18%	0.00%	0.82%	0.00%	0.00%	0.00%	0.00%	100.00%
Ancillary Services Management (ASM) Component of SA	14.88%	0.00%	0.12%	40.00%	45.00%	0.00%	0.00%	100.00%
Application Development Tools	23.53%	3.01%	0.22%	9.91%	6.42%	9.47%	47.44%	100.00%
Automated Dispatch System (ADS)	49.59%	0.00%	0.41%	25.00%	20.00%	0.00%	5.00%	100.00%
Automated Load Forecast System (ALFS)	69.42%	0.00%	0.58%	10.00%	20.00%	0.00%	0.00%	100.00%
Automatic Mitigation Procedure (AMP)	0.00%	84.30%	0.70%	0.00%	15.00%	0.00%	0.00%	100.00%
Backup systems (Legato/Quantum)	23.53%	3.01%	0.22%	9.91%	6.42%	9.47%	47.44%	100.00%
Balance of Business Systems (BBS)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
Balancing Energy Ex Post Price (BEEP) Component of SA	49.59%	2.83%	0.43%	20.00%	27.14%	0.00%	0.00%	100.00%
Bill's Interchange Schedule (BITS)	84.30%	0.00%	0.70%	0.00%	15.00%	0.00%	0.00%	100.00%
CAISO Outage Modeling Tool (COMT)	64.47%	1.42%	0.55%	15.00%	18.57%	0.00%	0.00%	100.00%
CaseWise (process modeling tool)	40.34%	19.26%	0.49%	1.52%	14.24%	1.70%	22.45%	100.00%
CHASE	40.34%	19.26%	0.49%	1.52%	14.24%	1.70%	22.45%	100.00%
Client Relations Tools	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
Common Information Model (CIM)	99.18%	0.00%	0.82%	0.00%	0.00%	0.00%	0.00%	100.00%
Compliance	41.75%	0.00%	0.00%	0.00%	0.00%	0.00%	58.25%	100.00%
Congestion Management (CONG) Component of SA	0.00%	28.34%	0.23%	0.00%	71.43%	0.00%	0.00%	100.00%

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System	CRS	ETS	CRS/ETS TOR	FS	MU	MU-FE	SMCR	Total
Congestion Reform-DSOW	0.00%	63.76%	0.53%	0.00%	35.71%	0.00%	0.00%	100.00%
Congestion Revenue Rights (CRR)	0.00%	22.67%	0.19%	0.00%	77.14%	0.00%	0.00%	100.00%
DataWarehouse	31.59%	2.86%	0.00%	3.07%	18.90%	6.93%	36.65%	100.00%
Dept. of Market Analysis Tools (SAS/MARS)	22.40%	0.00%	0.00%	6.20%	46.69%	17.11%	7.60%	100.00%
Dispute Tracking System (Remedy)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
Documentum	40.34%	19.26%	0.49%	1.52%	14.24%	1.70%	22.45%	100.00%
Electronic Tagging (Etag)	99.18%	0.00%	0.82%	0.00%	0.00%	0.00%	0.00%	100.00%
Energy Management System (EMS)	99.18%	0.00%	0.82%	0.00%	0.00%	0.00%	0.00%	100.00%
Engineering Analysis Tools	59.51%	39.67%	0.82%	0.00%	0.00%	0.00%	0.00%	100.00%
Evaluation of Market Separation	0.00%	14.17%	0.12%	0.00%	85.71%	0.00%	0.00%	100.00%
Existing Transmission Contracts Calculator (ETCC)	24.79%	4.25%	0.24%	20.00%	30.71%	0.00%	20.00%	100.00%
FERC Study Software	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%
Firm Transmission Right (FTR) and Secondary Registration System (SRS)	0.00%	17.00%	0.14%	15.00%	57.86%	0.00%	10.00%	100.00%
Global Resource Reliability Management Application (GRRMA)	74.38%	14.88%	0.74%	0.00%	10.00%	0.00%	0.00%	100.00%
Grid Operations Training Simulator (GOTS)	62.48%	36.70%	0.82%	0.00%	0.00%	0.00%	0.00%	100.00%
Hour-Ahead Data AnalysisTool, Day-Ahead Data AnalysisTool,	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%
Human Resources	40.34%	19.26%	0.49%	1.52%	14.24%	1.70%	22.45%	100.00%

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First Revised Sheet No. 1203  
 Superseding Original Sheet No. 1203

System	CRS	ETS	CRS/ETS TOR	FS	MU	MU-FE	SMCR	Total
IBM Contract (also known as Outsourced Contracts)	34.79%	13.90%	0.40%	4.29%	11.66%	4.26%	30.69%	100.00%
Integrated Forward Market (IFM)	9.92%	0.00%	0.08%	35.00%	0.00%	55.00%	0.00%	100.00%
Internal Development	23.53%	3.01%	0.22%	9.91%	6.42%	9.47%	47.44%	100.00%
Interzonal Congestion Management reform - Real Time	0.00%	63.76%	0.53%	0.00%	35.71%	0.00%	0.00%	100.00%
Land and Building Costs	40.34%	19.26%	0.49%	1.52%	14.24%	1.70%	22.45%	100.00%
Local Area Network (LAN)	40.34%	19.26%	0.49%	1.52%	14.24%	1.70%	22.45%	100.00%
Locational Marginal Pricing (LMPM)	9.92%	0.00%	0.08%	35.00%	55.00%	0.00%	0.00%	100.00%
Market Quality System (MQS)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
Masterfile	19.84%	0.00%	0.16%	20.00%	55.00%	0.00%	5.00%	100.00%
Meter Data Acquisition System (MDAS)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
Miscellaneous (2004 related capital)	23.53%	3.01%	0.22%	9.91%	6.42%	9.47%	47.44%	100.00%
Monitoring (Tivoli)	23.53%	3.01%	0.22%	9.91%	6.42%	9.47%	47.44%	100.00%
MRTU Capital	12.68%	4.68%	0.14%	19.01%	10.75%	15.41%	37.33%	100.00%
Network Applications	0.00%	99.18%	0.82%	0.00%	0.00%	0.00%	0.00%	100.00%
New Resource Interconnection (NRI)	99.18%	0.00%	0.82%	0.00%	0.00%	0.00%	0.00%	100.00%
New System Equipment (replacement of owned equipment)	23.53%	3.01%	0.22%	9.91%	6.42%	9.47%	47.44%	100.00%
NT/web servers	40.34%	19.26%	0.49%	1.52%	14.24%	1.70%	22.45%	100.00%
NT-servers	40.34%	19.26%	0.49%	1.52%	14.24%	1.70%	22.45%	100.00%



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System	CRS	ETS	CRS/ETS TOR	FS	MU	MU-FE	SMCR	Total
Office Automation - desktop/laptop (OA)	40.34%	19.26%	0.49%	1.52%	14.24%	1.70%	22.45%	100.00%
Office equipment (scanner, printer, copier, fax, Communication Equip.)	40.34%	19.26%	0.49%	1.52%	14.24%	1.70%	22.45%	100.00%
Open Access Same-Time Information System (OASIS)	9.92%	2.83%	0.11%	25.00%	42.14%	0.00%	20.00%	100.00%
Operational Meter Analysis and Reporting (OMAR)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
Oracle Corporate Financials	40.34%	19.26%	0.49%	1.52%	14.24%	1.70%	22.45%	100.00%
Oracle Enterprise Manager (OEM)	6.46%	0.68%	0.06%	43.90%	26.52%	0.00%	22.38%	100.00%
Oracle Licenses	6.46%	0.68%	0.06%	43.90%	26.52%	0.00%	22.38%	100.00%
Oracle Market Financials BBS	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
Out of Sequence Market Operation Settlements Information System (OOS)	4.96%	4.96%	0.08%	0.00%	90.00%	0.00%	0.00%	100.00%
Outage Scheduler (OS)	49.59%	5.67%	0.46%	10.00%	34.29%	0.00%	0.00%	100.00%
Participating Intermittent Resource Project (PIRP)	0.00%	0.00%	0.00%	64.75%	35.25%	0.00%	0.00%	100.00%
Physical Facilities Software Application/Furniture/Leasehold Improvements	40.34%	19.26%	0.49%	1.52%	14.24%	1.70%	22.45%	100.00%
Portal	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
Post Transaction Repository (PTR)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
Process Information System (PI)	79.34%	0.00%	0.66%	0.00%	10.00%	0.00%	10.00%	100.00%
Rational Buyer	99.18%	0.00%	0.82%	0.00%	0.00%	0.00%	0.00%	100.00%
Real Time Energy Dispatch System (REDS)	99.18%	0.00%	0.82%	0.00%	0.00%	0.00%	0.00%	100.00%
Real Time Nodal Market	34.71%	0.00%	0.29%	10.00%	55.00%	0.00%	0.00%	100.00%
Reliability Management System (RMS)	99.18%	0.00%	0.82%	0.00%	0.00%	0.00%	0.00%	100.00%

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System	CRS	ETS	CRS/ETS TOR	FS	MU	MU-FE	SMCR	Total
Remedy (related to Transmission Registry, New Resource Interconnection and Resource Registry)	99.18%	0.00%	0.82%	0.00%	0.00%	0.00%	0.00%	100.00%
Remote Intelligent Gateway (RIG) & Data Processing Gateway (DPG)	99.18%	0.00%	0.82%	0.00%	0.00%	0.00%	0.00%	100.00%
Resource Adequacy	99.18%	0.00%	0.82%	0.00%	0.00%	0.00%	0.00%	100.00%
Resource Register (RR)	99.18%	0.00%	0.82%	0.00%	0.00%	0.00%	0.00%	100.00%
RMR Application Validation Engine ( RAVE)	99.18%	0.00%	0.82%	0.00%	0.00%	0.00%	0.00%	100.00%
Scheduling & Logging for ISO California (SLIC)	64.47%	1.42%	0.55%	15.00%	18.57%	0.00%	0.00%	100.00%
Scheduling & Tagging Next Generation (STING)	84.30%	0.00%	0.70%	0.00%	15.00%	0.00%	0.00%	100.00%
Scheduling Architecture (SA)	15.51%	12.00%	0.23%	19.99%	52.27%	0.00%	0.00%	100.00%
Scheduling Infrastructure (SI)	0.00%	0.00%	0.00%	64.75%	35.25%	0.00%	0.00%	100.00%
Scheduling Infrastructure Business Rules (SIBR)	0.00%	0.00%	0.00%	64.75%	35.25%	0.00%	0.00%	100.00%
Security Constrained Economic Dispatch (SCED)	0.00%	39.67%	0.33%	0.00%	60.00%	0.00%	0.00%	100.00%
Security- External/Physical	40.34%	19.26%	0.49%	1.52%	14.24%	1.70%	22.45%	100.00%
Security-ISS (CUDA)	23.53%	3.01%	0.22%	9.91%	6.42%	9.47%	47.44%	100.00%
Settlements and Market Clearing	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
Sign Board (Symon Board maint.)	40.34%	19.26%	0.49%	1.52%	14.24%	1.70%	22.45%	100.00%
Startup Costs through 3/31/98 Working Capital-3 months	40.34%	19.26%	0.49%	1.52%	14.24%	1.70%	22.45%	100.00%
Storage (EMC symmetrix)	24.87%	6.18%	0.21%	13.62%	17.62%	4.11%	33.40%	100.00%
System Equipment Buyouts (lease buyouts)	44.00%	1.00%	0.00%	7.00%	11.00%	0.00%	37.00%	100.00%
Tactical Emergency Management System (TEMS)	99.18%	0.00%	0.82%	0.00%	0.00%	0.00%	0.00%	100.00%

CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION  
 FERC ELECTRIC TARIFF  
 FOURTH REPLACEMENT VOLUME NO. II

First Revised Sheet No. 1206  
 Superseding Original Sheet No. 1206

System	CRS	ETS	CRS/ETS TOR	FS	MU	MU-FE	SMCR	Total
Telephone/PBX	40.34%	19.26%	0.49%	1.52%	14.24%	1.70%	22.45%	100.00%
Training Systems	23.53%	3.01%	0.22%	9.91%	6.42%	9.47%	47.44%	100.00%
Transmission Constrained Unit Commitment (TCUC) Must Offer Obligation	0.00%	99.18%	0.82%	0.00%	0.00%	0.00%	0.00%	100.00%
Transmission Map Plotting & Display	49.59%	49.59%	0.82%	0.00%	0.00%	0.00%	0.00%	100.00%
Treasury Workstation/Investment Program	40.21%	19.26%	0.49%	1.81%	15.60%	2.00%	20.62%	100.00%
Trustee Costs, Interest- Capitalized, User Groups	17.40%	2.96%	0.17%	17.81%	19.94%	0.03%	41.69%	100.00%
Utilities - System i.e. Print drivers	23.53%	3.01%	0.22%	9.91%	6.42%	9.47%	47.44%	100.00%
Vitria (Middleware)	23.53%	3.01%	0.22%	9.91%	6.42%	9.47%	47.44%	100.00%
Wide Area Network (WAN)	38.26%	0.93%	0.32%	19.89%	12.46%	0.63%	27.51%	100.00%

**Table 3**

**Reallocation Factors for Projected Unrecovered Portion of Settlements, Metering, and Client Relations Revenue Requirement**

	CRS	ETS	CRS/ETS TOR	FS	MU	MU-FE	SMCR	Total
Functional Association of Settlements, Metering, and Client Relations	0.00%	65.68%	0.25%	0.70%	23.73%	9.64%	0.00	100.00

**Part F – Other Modifications to the Rates**

Consistent with a Settlement Agreement accepted by the FERC in Docket Nos. ER04-115-000, et al., GMC rates and charges shall be calculated consistent with the following additional requirements:

1. The Forward Scheduling Charge assessed against **Inter-SC Trades** submitted by **Pacific Gas and Electric Company** solely in its role as Path 15 facilitator will be reduced by excluding **sixty-five percent (65%)** of the number of such **Inter-SC Trades** from the Forward Scheduling Charge. Such excluded **Inter-SC Trades** shall not be included in the denominator upon which the Forward Scheduling Charge is calculated.

**CAISO TARIFF APPENDIX F**  
**Schedule 2**  
**[Not Used]**

**CAISO TARIFF APPENDIX F**  
**Schedule 3**  
**High Voltage Access Charge and Wheeling Access Charge**

**1. Objectives and Definitions.**

**1.1 Objectives.**

- (a) The Access Charge will remain utility-specific until a New Participating TO executes the Transmission Control Agreement, at which time the Access Charge will change as discussed below.
- (b) The Access Charge is the charge assessed for using the CAISO Controlled Grid. It consists of three components, the High Voltage Access Charge (HVAC), the Transition Charge and the Low Voltage Access Charge (LVAC).
- (c) The HVAC ultimately will be based on one CAISO Grid-wide rate. Initially, the HVAC will be based on TAC Areas, which will transition 10% per year to the CAISO Grid-wide rate. In the first year after the TAC Transition Date described in Section 4.2 of this Schedule 3, the HVAC will be a blend based on 10% CAISO Grid-wide and 90% TAC Area.
- (d) New High Voltage Facility additions and capital additions to Existing High Voltage Facilities will be immediately included in the CAISO Grid-wide component of the HVAC. The Transmission Revenue Requirement for New High Voltage Facilities will not be included in the calculation of the Transition Charge.
- (e) The LVAC will remain utility-specific and will be determined by each Participating TO. The LVAC of Non-Load-Serving Participating TOs may also be project specific. Each Participating TO will charge for and collect the LVAC, subject to Section 26.1 of the CAISO Tariff and Section 13 of this Schedule 3.
- (f) The cost-shift associated with transitioning from utility-specific rates to one CAISO Grid-wide rate will be mitigated in accordance with the CAISO Tariff, including this schedule.
- (g) The Wheeling Access Charge is paid by Scheduling Coordinators for Wheeling as set forth in Section 26.1.4 of the CAISO Tariff. The CAISO will collect the Wheeling revenues from Scheduling Coordinators on a Trading Interval basis and repay these to the Participating TOs based on the ratio of each Participating TO's Transmission Revenue Requirement to the sum of all Participating TOs' Transmission Revenue Requirements.

**1.2 Definitions**

Unless the context otherwise requires, any word or expression defined in the Master Definition Supplement shall have the same meaning where used in this Schedule 3.

**2. Assessment of High Voltage Access Charge and Transition Charge.**

All UDCs and MSS Operators in a PTO Service Territory serving Gross Loads directly connected to the transmission facilities or Distribution System of a UDC or MSS Operator in a PTO Service Territory shall pay to the CAISO a charge for transmission service on the High Voltage Transmission Facilities included in the CAISO Controlled Grid. The charge will be based on the High Voltage Access Charge applicable to the TAC Area in which the point of delivery is located and the applicable Transition Charge. A UDC or MSS Operator that is also a Participating TO shall pay, or receive payment of, if applicable, the difference between (i) the High Voltage Access Charge and Transition Charge applicable to its transactions as a UDC or MSS Operator; and (ii) the disbursement of High Voltage Access Charge revenues to which it is entitled pursuant to Section 26.1.3 of the CAISO Tariff.

**3. TAC Areas.**

- 3.1** TAC Areas are based on the Control Areas in California prior to the CAISO Operations Date. Three TAC Areas will be established based on the Original Participating TOs: (1) a Northern Area consisting of the PTO Service Territory of Pacific Gas and Electric Company and the PTO Service Territory of any entity listed in Section 3.3 or 3.5 of this Schedule; (2) an East Central Area consisting of the PTO Service Territory of Southern California Edison Company and the PTO Service Territory of any entity listed in Section 3.4, 3.5 or 3.6 (as indicated therein) of this Schedule 3; and (3) a Southern Area consisting of the PTO Service Territory of San Diego Gas & Electric Company. Participating TOs that are not in one of the above cited PTO Service Territories are addressed below.
- 3.2** If the Los Angeles Department of Water and Power joins the CAISO and becomes a Participating TO, its PTO Service Territory will form a fourth TAC Area, the West Central Area.
- 3.3** If any of the following entities becomes a Participating TO, its PTO Service Territory will become part of the Northern Area: Sacramento Municipal Utility District, Western Area Power Administration - Sierra Nevada Region, the Department of Energy California Labs, Northern California Power Agency, City of Redding, Silicon Valley Power, City of Palo Alto, City and County of San Francisco, Alameda Bureau of Electricity, City of Biggs, City of Gridley, City of Healdsburg, City of Lodi, City of Lompoc Utility Department, Modesto Irrigation District, Turlock Irrigation District, Plumas County Water Agency, City of Roseville Electric Department, City of Shasta Lake, and City of Ukiah or any other entity owning or having contractual rights to High Voltage or Low Voltage Transmission Facilities in Pacific Gas and Electric Company's Control Area prior to the CAISO Operations Date.
- 3.4** If any of the following entities becomes a Participating TO, its PTO Service Territory will become part of the East Central Area: City of Anaheim Public Utility Department, City of Riverside Public Utility Department, City of Azusa Light and Water, City of Banning Electric, City of Colton, City of Pasadena Water and Power Department, The Metropolitan Water District of Southern California and City of Vernon or any other entity owning or having contractual rights to High Voltage or Low Voltage Transmission Facilities in Southern California Edison Company's Control Area prior to the CAISO Operations Date.
- 3.5** If the California Department of Water Resources becomes a Participating TO, its High Voltage Transmission Revenue Requirements associated with High Voltage Transmission Facilities in the Northern Area would become part of the High Voltage Transmission Revenue Requirement for the Northern Area while the remainder would be included in the East Central Area.

- 3.6** If the City of Burbank Public Service Department (Burbank) and/or the City of Glendale Public Service Department (Glendale) become Participating TOs after or at the same time as the Los Angeles Department of Water and Power becomes a Participating TO, then the PTO Service Territory of Burbank and/or Glendale would become part of the West Central Area. Otherwise, if Burbank or Glendale becomes a Participating TO, prior to Los Angeles, its PTO Service Territory will become part of the East Central Area. Once either Burbank or Glendale are part of the East Central Area, they will not move to the West Central Area if such area is established.
- 3.7** If the Imperial Irrigation District or an entity outside the State of California should apply to become a Participating TO, the CAISO Governing Board will review the reasonableness of integrating the entity into one of the existing TAC Areas. If the entity cannot be integrated without the potential for significant cost shifts, the CAISO Governing Board may establish a separate TAC Area.
- 4. TAC Transition Date.**
- 4.1** New Participating TOs shall provide the CAISO with a notice of intent to join and execute the Transmission Control Agreement by either January 1 or July 1 of any year and provide the CAISO with an application within 15 days of such notice of intent.
- 4.2** The TAC Transition Period shall begin on either January 1 or July 1 after the date the first New Participating TO's execution of the Transmission Control Agreement takes effect (TAC Transition Date). The TAC Transition Date shall be the same for the Northern Area, East Central Area and the Southern Area. The TAC Transition Date shall also be the same for the West Central Area, should it come into existence in accordance with Section 3.2 of this Schedule 3, unless the CAISO provides additional information demonstrating the need for a deferral. The 10-year TAC Transition Period described in Section 5.8 of Schedule 3 shall start from that date. If the West Central TAC Area is created after the TAC Transition Date, the applicable High Voltage Access Charge shall transition to a CAISO Grid-wide High Voltage Access Charge over the TAC Transition Period remaining from the TAC Transition Date, on the same schedule as the other TAC Areas.
- 4.3** Application to Additional TAC Areas. For any TAC Areas other than those specified in Section 4.2 of this Schedule 3, created after the TAC Transition Date, including any TAC Area created as a result of the application of Section 3.7 of this Schedule 3, whether and over what period the applicable High Voltage Access Charge shall transition to a CAISO Grid-wide charge shall be determined by the CAISO Governing Board.
- 4.4** Application to Wheeling Access Charges. The transition described in this Section 4 shall also apply, on the same schedule, to High Voltage Wheeling Access Charges.
- 4.5** Conversion of Existing Rights. During the process by which a New Participating TO executes the Transmission Control Agreement, the CAISO and potential New Participating TO that has an obligation to serve Load shall determine the IFM Congestion Credit to be allocated to the New Participating TO in accordance with Section 4.3.1.2 of the CAISO Tariff for each Existing Right that the New Participating TO converts to Converted Rights. In making that determination, the CAISO will consider the amount of contracted transmission capacity, the firmness of the contracted transmission capacity, and other characteristics of the contracted transmission capacity.



**5. Determination of the Access Charge.**

- 5.1** The Access Charge consists of a High Voltage Access Charge (HVAC) that is based on a TAC Area component and a CAISO Grid-wide component, a Transition Charge, and a Low Voltage Access Charge (LVAC) that is based on a utility-specific rate established by each Participating TO in accordance with its TO Tariff.
- 5.2** Each Participating TO will develop, in accordance with Section 6 of this Schedule 3, a High Voltage Transmission Revenue Requirement (HVTRR<sub>PTO</sub>) consisting of a Transmission Revenue Requirement for Existing High Voltage Facility (EHVTRR<sub>PTO</sub>) and a Transmission Revenue Requirement for New High Voltage Facility (NHVTRR<sub>PTO</sub>). The HVTRR<sub>PTO</sub> includes the TRBA adjustment described in Section 6.1 of this Schedule 3.
- 5.3** The Gross Load amount in MWh shall be established by each Participating TO and filed at FERC with each Participating TO's Transmission Revenue Requirement (GL<sub>PTO</sub>).
- 5.4** The HVAC applicable to each UDC or MSS Operator serving Gross Load in the PTO Service Territory, shall be based on a TAC Area component (HVAC<sub>A</sub>) and a CAISO Grid-wide component (HVAC<sub>I</sub>).

$$HVAC = HVAC_A + HVAC_I$$

- 5.5** The Existing Transmission Revenue Requirement for the TAC Area component (ETRR<sub>A</sub>) is the summation of each Participating TO's EHVTRR<sub>PTO</sub> in that TAC Area. The Gross Load in the TAC Area (GL<sub>A</sub>) is the summation of each Participating TO's Gross Load in that TAC Area (GL<sub>PTO</sub>). The TAC Area component will be based on the product of Existing Transmission Revenue Requirement for the TAC Area (ETRR<sub>A</sub>) and the applicable annual transition percentage (%TA) in Section 5.8 of this Schedule 3, divided by the Gross Load in the TAC Area (GL<sub>A</sub>).

$$ETRR_A = \sum EHVTRR_{PTO}$$

$$GL_A = \sum GL_{PTO}$$

$$HVAC_A = (ETRR_A * \%TA) / GL_A$$

- 5.6** The Existing Transmission Revenue Requirement for the CAISO Grid-wide component (ETRR<sub>I</sub>) will be the summation of all TAC Areas' ETRR<sub>A</sub> multiplied by the applicable annual transition percentage (%IGW) in Section 5.8 of this Schedule 3. The New Transmission Revenue Requirement (NTRR) is the summation of each Participating TO's NHVTRR<sub>PTO</sub>. The CAISO Grid-wide component will be based on the ETRR<sub>I</sub> plus the NTRR, divided by the summation of all Gross Loads in the TAC Areas (GL<sub>A</sub>).

$$ETRR_I = \sum ETRR_A * \%IGW$$

$$HVAC_I = (ETRR_I + NTRR) / \sum GL_A$$

The foregoing formulas will be adjusted, as necessary to take account of new TAC Areas.

**5.7** The Transition Charge shall be calculated separately for each Participating TO by dividing (i) the net difference between (1) the Participating TO's payment responsibility, if any, under Section 26.5 of the CAISO Tariff and Section 7 of this Schedule 3; and (2) the amount, if any, payable to the Participating TO in accordance with Section 26.5 of the CAISO Tariff and Section 7 of this Schedule 3; by (ii) the total of all forecasted Gross Load in the PTO Service Territory of the Participating TO, including the UDC and/or MSS Operator. If greater than zero, the Transition Charge shall be collected with the High Voltage Access Charge. If less than zero, the Transition Charge shall be credited with the High Voltage Access Charge. The amount of each Participating TO's NHVTRR shall not be included in the Transition Charge calculation.

**5.8** The High Voltage Access Charge shall transition over a 10-year TAC Transition Period from TAC Area to CAISO Grid-wide. The transition percentage to be used for each year will be based on the following:

<b>Year</b>	<b>TAC Area High Voltage (%TA)</b>	<b>CAISO Grid-Wide High Voltage (%IGW)</b>
1	90%	10%
2	80%	20%
3	70%	30%
4	60%	40%
5	50%	50%
6	40%	60%
7	30%	70%
8	20%	80%
9	10%	90%
10	0%	100%

**5.9** After the completion of the TAC Transition Period described in Section 4 of this Schedule 3, the High Voltage Access Charge shall be equal to the sum of the High Voltage Transmission Revenue Requirements of all Participating TOs, divided by the sum of the Gross Loads of all Participating TOs.

**6. High Voltage Transmission Revenue Requirement.**

**6.1** The High Voltage Transmission Revenue Requirement of a Participating TO will be determined consistent with CAISO procedures posted on the CAISO Website and shall be the sum of:

- (a) the Participating TO's High Voltage Transmission Revenue Requirement (including costs related to Existing Contracts associated with transmission by others and deducting transmission revenues actually expected to be received by the Participating TO related to transmission for others in accordance with Existing Contracts, less the sum of the Standby Transmission Revenues); and
- (b) the annual high voltage TRBA adjustment, which shall be based on the principal balance in the high voltage TRBA as of September 30 and shall be calculated as a dollar amount based on the projected Transmission Revenue Credits as adjusted for the true up of the prior year's difference between projected and actual credits. A Non-Load-Serving Participating TO shall include any over- or under-recovery of its annual High Voltage Transmission Revenue Requirement in its high voltage TRBA. If the annual high voltage TRBA adjustment involves only a partial year of operations, the Non-Load-Serving Participating TO's over- or under-recovery shall be based on a partial year revenue requirement, calculated by multiplying the Non-Load-Serving Participating TO's High Voltage Transmission Revenue Requirement by the number of days the High Voltage Transmission Facilities were under the CAISO's Operational Control divided by the number of days in the year.

**7. Limitation.**

- (a) During each year of the TAC Transition Period described in this Schedule 3, the increase in the total payment responsibility applicable to Gross Loads in the PTO Service Territory of an Original Participating TO attributable to the total for the year of (i) the amount applicable for the Original Participating TO under Section 26.5 of the CAISO Tariff; plus (ii) the amount applicable to the implementation of the High Voltage Access Charge shall not exceed the amount specified in paragraph (b) of this section. This limitation shall be calculated individually for each Original Participating TO, provided that, if the net effect of clauses (i) and (ii) of this paragraph is positive for one or more Original Participating TOs for any year, the combined net effect shall be allocated among all Original Participating TOs in proportion to the amounts specified in paragraph (b) of this section. This limitation shall be applied by the CAISO's calculation annually of amounts payable by New Participating TOs to Original Participating TOs such that the combined effect of clauses (i) and (ii) of this paragraph, and the payments received by each Original Participating TO shall not exceed the amounts specified in paragraph (b) of this section. The amount receivable by the Original Participating TO from the New Participating TOs to implement the limitation in paragraph (b) of this section, shall be credited through the Transition Charge established pursuant to Section 5.7 of this Schedule 3. Payment responsibility under this section, if any, shall be allocated among New Participating TOs in proportion to their TAC Benefits.

- (b) The maximum annual amounts for Original Participating TO shall be as follows:
- (i) For Pacific Gas and Electric Company and Southern California Edison Company, the maximum annual amount shall be thirty-two million dollars (\$32,000,000.00) each; and
  - (ii) For San Diego Gas & Electric Company, the maximum annual amount shall be eight million dollars (\$8,000,000.00).

**8. Updates to High Voltage Access Charges.**

- 8.1** High Voltage Access Charges and High Voltage Wheeling Access Charges shall be adjusted: (1) on January 1 and July 1 of each year when necessary to reflect the addition of any New Participating TO and (2) on the date FERC makes effective a change to the High Voltage Transmission Revenue Requirements of any Participating TO. Using the High Voltage Transmission Revenue Requirement accepted or authorized by FERC, consistent with Section 9 of this Schedule 3, for each Participating TO, the CAISO will recalculate on a monthly basis the High Voltage Access Charge and Transition Charge applicable during such period. Revisions to the Transmission Revenue Balancing Account adjustment shall be made effective annually on January 1 based on the principal balance in the TRBA as of September 30 of the prior year and a forecast of Transmission Revenue Credits for the next year.
- 8.2** For service provided by a Participating TO prior to the TAC Transition Date, no refund ordered by FERC or amount accrued to that Participating TO's Transmission Revenue Balancing Account related to such service shall be reflected in the High Voltage Access Charge, Low Voltage Access Charge, the High Voltage Transmission Revenue Requirement, or the Low Voltage Transmission Revenue Requirement of a Participating TO. For service provided by a Participating TO following the TAC Transition Date, any refund associated with a Participating TO's Transmission Revenue Requirement that has been accepted by FERC, subject to refund, shall be provided as ordered by FERC. Such refund shall be invoiced separately from the CAISO Market Invoice.
- 8.3** If the Participating TO withdraws one or more of its transmission facilities from the CAISO Operational Control in accordance with Section 3.4 of the Transmission Control Agreement, then the CAISO will no longer collect the TRR for that transmission facility through the CAISO's Access Charge effective upon the date the transmission facility is no longer under the Operational Control of the CAISO. The withdrawing Participating TO shall be obligated to provide the CAISO with all necessary information to implement the withdrawal of the Participating TO's transmission facilities and to make any necessary filings at FERC to revise its TRR. The CAISO shall revise its transmission Access Charge to reflect the withdrawal of one or more transmission facilities from CAISO Operational Control.

**9. Approval of Updated High Voltage Revenue Requirements.**

- 9.1** Participating TOs will make the appropriate filings at FERC to establish their Transmission Revenue Requirements for their Low Voltage Access Charges and the applicable High Voltage Access Charges, and to obtain approval of any changes thereto. All such filings with the FERC will include a separate appendix that states the HVTRR, LVTRR (if applicable) and the appropriate Gross Load data and other information required by the FERC to support the Access Charges. The Participating TO will provide a copy of its filing to the CAISO and the other Participating TOs in accordance with the notice provisions in the Transmission Control Agreement.

**9.2** Federal power marketing agencies whose transmission facilities are under CAISO Operational Control shall develop their High Voltage Transmission Revenue Requirements pursuant to applicable federal laws and regulations, including filing with FERC. All such filings with FERC will include a separate appendix that states the HVTRR, LVTRR (if applicable) and the appropriate Gross Load data and other information required by the FERC to support the Access Charges. The procedures for public participation in a federal power marketing agency's ratemaking process shall be posted on the federal power marketing agency's website. The federal power marketing agency shall also post on the website the Federal Register Notices and FERC orders for rate making processes that impact the federal power marketing agency's High Voltage Transmission Revenue Requirement. The Participating TO will provide a copy of its filing to the CAISO and the other Participating TOs in accordance with the notice provisions in the Transmission Control Agreement.

**10. Disbursement of High Voltage Access Charge and Transition Charge Revenues.**

**10.1** High Voltage Access Charge and Transition Charge revenues shall be calculated for disbursement to each Participating TO on a monthly basis as follows:

- (a) the amount determined in accordance with Section 26.1.2 of the CAISO Tariff ("Billed HVAC/TC");
- (b)
  - (i) for a Participating TO that is a UDC or MSS Operator and has Gross Load in its TO Tariff in accordance with Appendix F, Schedule 3, Section 9, then calculate the amount each UDC or MSS Operator would have paid and the Participating TO would have received by multiplying the High Voltage Utility-Specific Rates for the Participating TO whose High Voltage Facilities served such UDC and MSS Operator times the actual Gross Load of such UDCs and MSS Operators ("Utility-specific HVAC"); or
  - (ii) for a Non-Load-Serving Participating TO, then calculate the Non-Load-Serving Participating TO's portion of the total Billed HVAC/TC in subsection (a) based on the ratio of the Non-Load-Serving Participating TO's High Voltage Transmission Revenue Requirement to the sum of all Participating TOs' High Voltage Revenue Requirements.
- (c) if the total Billed HVAC/TC in subsection (a) received by the CAISO less the total dollar amounts calculated in Utility-specific HVAC in subsection (b)(i) and subsection (b)(ii) is different from zero, the CAISO shall allocate the positive or negative difference among those Participating TOs that are subject to the calculations in subsection (b)(i) based on the ratio of each Participating TO's High Voltage Transmission Revenue Requirement to the sum of all of those Participating TOs' High Voltage Transmission Revenue Requirements that are subject to the calculations in subsection (b)(i). This monthly distribution amount is the "HVAC Revenue Adjustment";
- (d) the sum of the HVAC revenue share determined in subsection (b) and the HVAC Revenue Adjustment in subsection (c) will be the monthly disbursement to the Participating TO.

**10.2** If the same entity is both a Participating TO and a UDC or MSS Operator, then the monthly High Voltage Access Charge and Transition Charge amount billed by the CAISO will be the charges payable by the UDC or MSS Operator in accordance with Section 26.1.2 of the CAISO Tariff less the disbursement determined in accordance with Section 10.1(d) of this Schedule 3. If this difference is negative, that amount will be paid by the CAISO to the Participating TO.

**11. Determination of Transmission Revenue Requirement Allocation Between High Voltage and Low Voltage Transmission Facilities.**

**11.1** Each Participating TO shall allocate its Transmission Revenue Requirement between the High Voltage Transmission Revenue Requirement and Low Voltage Transmission Revenue Requirement based on the Procedure for Division of Certain Costs Between the High and Low Voltage Transmission Access Charges contained in Section 12 of this Schedule.

**12. Procedure for Division of Certain Costs Between the High and Low Voltage Transmission Access Charges.**

**12.1** Division of Costs:

(a) Substations

Costs for substations and substation equipment, including transformers:

- (i) If the Participating TO has substation TRR information by facility and voltage, then the TRR for facilities and equipment at or above 200 kV should be allocated to the HVTRR and the TRR for facilities and equipment below 200 kV should be allocated to the LVTRR;
- (ii) If the Participating TO has substation TRR information by facility but not by voltage, then the TRR for facilities and equipment should be allocated to the HVTRR and to the LVTRR based on the ratio of gross substation investment allocated to HVTRR to gross substation investment allocated to LVTRR pursuant to Section 12.1(a)(i); or
- (iii) If the Participating TO does not have substation TRR information by facility or voltage, then the TRR for facilities and equipment should be allocated to the HVTRR and to the LVTRR based on the Participating TO's transmission system-wide gross plant ratio. The system-wide gross plant ratio is determined once the costs that can be split between High Voltage Transmission Facilities and Low Voltage Transmission Facilities for all facilities has been developed in accordance with Sections 12.1(a) through (c), then the resulting cost ratio between High Voltage Transmission Facilities and Low Voltage Transmission Facilities shall be used as the system-wide gross plant ratio.
- (iv) Costs of transformers that step down from high voltage (200 kV or above) to low voltage, to the extent the Participating TO does not have the revenue requirement information available on a voltage basis, should be allocated consistent with the procedures for substations addressed above.

- (b) Transmission Towers and Land with Circuits on Multiple Voltages  
For transmission towers that have both High Voltage Transmission Facilities and Low Voltage Transmission Facilities on the same tower, the cost of these assets should be allocated two-thirds to the HVTRR and one-third to the LVTRR. If the transmission tower has only High Voltage Transmission Facilities, then the costs of these assets should be allocated entirely to the HVTRR. If the transmission tower has only Low Voltage Transmission Facilities, then the TRR of these assets should be allocated entirely to the LVTRR. Provided that the Participating TO does not have land cost information available on a voltage basis, in which case the costs should be allocated based on the bright-line of the voltage levels, the costs for land used for transmission rights-of-way for towers that have both high voltage and low voltage wires should be allocated two-thirds to the HVTRR component and one-third to the LVTRR.
- (c) Operation and Maintenance, Transmission Wages & Salaries, Taxes, Depreciation and Amortization, and Capital Costs  
If the Participating TO can delineate costs for transmission operations and maintenance (O&M), transmission wages and salaries, taxes, depreciation and amortization, or capital costs on a voltage basis, the costs shall be applied on a bright-line voltage basis. If the costs for O&M, transmission wages and salaries, taxes, depreciation and amortization, or capital costs, are not available on voltage levels, the allocation to the HVTRR and the LVTRR should be based on the Participating TO's system-wide gross plant ratio defined in Section 12.1(a).
- (d) Existing Transmission Contracts  
If the Take-Out Point for the Existing Contract is a High Voltage Transmission Facility, the Existing Contract revenue will be credited to the HVTRR of the Participating TO receiving such revenue. Similarly, the Participating TO that is paying charges under such an Existing Contract may include the costs in its HVTRR. If the Take-Out Point for the Existing Contract is a Low Voltage Transmission Facility, the Existing Contract revenue will be credited to the HVTRR and the LVTRR of the receiving Participating TO based on the ratio of the Participating TO's HVTRR to its LVTRR, prior to any adjustments for such revenues. The Participating TO that is paying the charges under the Existing Contract will include the costs in its HVTRR and LVTRR in the same ratio as the revenues are recognized by the Participating TO receiving the payments.
- (e) Division of the TRBA Adjustment between HVTRR and LVTRR
  - (i) Wheeling revenues associated with transactions exiting the CAISO Controlled Grid at Scheduling Points or Take-Out Points that are at High Voltage Transmission Facilities shall be reflected as high voltage TRBA adjustment components;
  - (ii) Wheeling revenues associated with transactions exiting the CAISO Controlled Grid at Scheduling Points or Take-Out Points that are at Low Voltage Transmission Facilities shall be attributed between high voltage and low voltage TRBA adjustment components based on the High Voltage and Low Voltage Wheeling Access Charge rates assessed to such transactions by the CAISO and/or the Participating TO;

- (iii) Any Low Voltage Access Charge amounts paid pursuant to Section 26.1 of the CAISO Tariff for the Low Voltage Transmission Facilities of a Non-Load-Serving Participating TO shall be reflected as a component of the low voltage TRBA adjustment associated with the Low Voltage Access Charge;
- (iv) CRR revenues from CRRs allocated to Participating TOs shall be assigned to high voltage or low voltage TRBA adjustment components based on the voltage of the path related to the CRR; and,
- (v) Other Transmission Revenue Credits shall be allocated between high voltage and low voltage TRBA adjustment components on a gross plant basis.

**13. Low Voltage Access Charge for a Non-Load-Serving Participating TO.** Pursuant to Section 26.1 of the CAISO Tariff, the provisions of this Section 13 of this Schedule 3 shall apply to a Non-Load-Serving Participating TO that has Low Voltage Transmission Facilities.

**13.1** Low Voltage Transmission Revenue Requirement. The Low Voltage Transmission Revenue Requirement of a Non-Load-Serving Participating TO shall be calculated separately for each individual project that includes one or more Low Voltage Transmission Facilities or shall be calculated for a group of Low Voltage Transmission Facilities if all are part of projects directly connected to the facilities of the same Participating TO(s). The Low Voltage Transmission Revenue Requirement will be determined consistent with CAISO procedures posted on the CAISO Website and shall be the sum of:

- (a) the Non-Load-Serving Participating TO's Low Voltage Transmission Revenue Requirement for the relevant Low Voltage Transmission Facility or group of facilities; and
- (b) the annual low voltage TRBA adjustment for the relevant Low Voltage Transmission Facility or group of facilities, which shall be based on the principal balance in the low voltage TRBA as of September 30 and shall be calculated as a dollar amount based on the projected Transmission Revenue Credits as adjusted for the true up of the prior year's difference between projected and actual credits. In accordance with Section 26.1 of the CAISO Tariff, the Non-Load-Serving Participating TO shall include any over- or under-recovery of its annual Low Voltage Transmission Revenue Requirement in its low voltage TRBA. If the annual low voltage TRBA adjustment involves only a partial year of operations, the Non-Load-Serving Participating TO's over- or under-recovery shall be based on a partial year revenue requirement, calculated by multiplying the Non-Load-Serving Participating TO's Low Voltage Transmission Revenue Requirement by the number of days the Low Voltage Transmission Facilities were under the CAISO's Operational Control divided by the number of days in the year.

**13.2** Updates to Low Voltage Access Charges. Unless otherwise agreed by the affected Participating TOs, a Non-Load-Serving Participating TO shall adjust its Low Voltage Access Charges and Low Voltage Wheeling Access Charges (1) when necessary to reflect any new transmission addition directly connecting a Participating TO to the Low Voltage Transmission Facilities of the Non-Load-Serving Participating TO; (2) on the date FERC makes effective a change to the Low Voltage Transmission Revenue Requirement of the Non-Load-Serving Participating TO; and (3) on the date FERC makes effective a change to Gross Load of a



Participating TO directly connected to the Non-Load-Serving Participating TO. Using the Low Voltage Transmission Revenue Requirement accepted or authorized by FERC, consistent with Section 9 of this Schedule 3, for the Non-Load-Serving Participating TO, the ISO will recalculate on a monthly basis the Low Voltage Access Charge applicable during such period. Revisions to the low voltage TRBA adjustment shall be made effective annually on January 1 based on the principal balance in the low voltage TRBA as of September 30 of the prior year and a forecast of Transmission Revenue Credits for the next year.

For service provided by a Non-Load-Serving Participating TO following the TAC Transition Date, any refund associated with a Non-Load-Serving Participating TO's Transmission Revenue Requirement that has been accepted by FERC, subject to refund, shall be provided as ordered by FERC. Such refund shall be invoiced separately from the CAISO Market Invoice.

If the Non-Load-Serving Participating TO withdraws one or more of its transmission facilities from the CAISO Operational Control in accordance with Section 3.4 of the Transmission Control Agreement, then the CAISO will no longer collect the TRR for that transmission facility through the CAISO's Access Charge effective upon the date the transmission facility is no longer under the Operational Control of the CAISO. The withdrawing Non-Load-Serving Participating TO shall be obligated to provide the CAISO with all necessary information to implement the withdrawal of the Participating TO's transmission facilities and to make any necessary filings at FERC to revise its TRR. The CAISO shall revise its transmission Access Charge to reflect the withdrawal of one or more transmission facilities from CAISO Operational Control.

- 13.3** Approval of Updated Low Voltage Transmission Revenue Requirement. A Non-Load-Serving Participating TO will make the appropriate filings at FERC to establish its Transmission Revenue Requirement for its Low Voltage Access Charge, and to obtain approval of any changes thereto. All such filings with the FERC will include a separate appendix that states the LVTRR and other information required by the FERC to support the Low Voltage Access Charge. The Non-Load-Serving Participating TO will provide a copy of its filing to the CAISO and the other Participating TOs in accordance with the notice provisions in the Transmission Control Agreement.

Federal power marketing agencies whose transmission facilities are under CAISO Operational Control shall develop their Low Voltage Transmission Revenue Requirements pursuant to applicable federal laws and regulations, including filing with FERC. All such filings with FERC will include a separate appendix that states the LVTRR and other information required by the FERC to support the Access Charges. The procedures for public participation in a federal power marketing agency's ratemaking process shall be posted on the federal power marketing agency's website. The federal power marketing agency shall also post on the website the Federal Register Notices and FERC orders for rate making processes that impact the federal power marketing agency's Low Voltage Transmission Revenue Requirement. The Non-Load-Serving Participating TO will provide a copy of its filing to the CAISO and the other Participating TOs in accordance with the notice provisions in the Transmission Control Agreement.

- 13.4** Disbursement of Low Voltage Access Charge Revenues. Unless otherwise agreed by the affected Participating TOs, Low Voltage Access Charge revenues of a Non-Load-Serving Participating TO shall be calculated for disbursement to that Non-Load-Serving Participating TO on a monthly basis as the sum of Low Voltage Access Charges billed by the CAISO to the UDCs or MSS Operators of Participating TOs pursuant to Section 26.1 of the CAISO Tariff.

**13.5** Payment of Low Voltage Access Charge. Notwithstanding the separate accounting for the Low Voltage Access Charge specified in Section 26.1 of the CAISO Tariff and this Section 13 of this Schedule 3, if the same entity is both a Participating TO and a UDC or MSS Operator, then the monthly High Voltage Access Charge and Transition Charge amount, and any Low Voltage Access Charge amount pursuant to this Section 13 of this Schedule 3, billed by the CAISO will be the charges payable by the UDC or MSS Operator in accordance with Sections 26.1.2 and 26.1 of the CAISO Tariff less the disbursement determined in accordance with Section 10.1(d) of this Schedule 3. If this difference is negative, that amount will be paid by the CAISO to the Participating TO.

**14. Wheeling Access Charges.**

**14.1** CAISO Charges on Scheduling Coordinators for Wheeling. The CAISO will charge Scheduling Coordinators for a Wheeling Out or a Wheeling Through transaction the product of the Wheeling Access Charge and the total of the hourly Schedules or awards of Wheeling in MWh for each Trading Interval at each Scheduling Point associated with that transaction pursuant to Section 26.1.4 of the CAISO Tariff.

**14.2** Wheeling Access Charge. The Wheeling Access Charge for each Participating TO shall be as specified in Section 26.1.4 of the CAISO Tariff.

**14.3** CAISO Payments to Transmission Owners for Wheeling. The CAISO will pay all Wheeling revenues to Participating TOs on the basis of the ratio of each Participating TO's Transmission Revenue Requirement (less the TRR associated with Existing Rights) to the sum of all Participating TOs' TRRs (less the TRRs associated with Existing Rights) as specified in Section 26.1.4.3 of the CAISO Tariff and in the applicable Business Practice Manual. The Low Voltage Wheeling Access Charge shall be disbursed to the appropriate Participating TO in accordance with the applicable Business Practice Manual.

**14.4** Weighted Average Rate for Wheeling Service. The weighted average rate payable for Wheeling over joint facilities at each Scheduling Point shall be calculated as set forth in the applicable Business Practice Manual.

**CAISO TARIFF APPENDIX F**  
**Schedule 4**  
**Participating Intermittent Resources Forecast Fee**

A charge up to \$.10 per MWh shall be assessed on the metered Energy from Participating Intermittent Resources as a Forecast Fee. The amount of the charge shall be specified in the CAISO Tariff.

**Participating Intermittent Resources Process Fee**

A process fee charge shall be assessed, for each calendar quarter, to each Exporting Participating Intermittent Resource that exported Energy in the quarter. On an annualized basis, the aggregate quarterly charges shall total to \$10,000. The charge is not volumetric, and shall be calculated as follows:

$$(\$10,000/4)/N = \$\text{quarterly charge}$$

N = number of Participating Intermittent Resources exporting Energy in the quarter

**Participating Intermittent Resources Export Fee**

A Participating Intermittent Resources Export Fee shall be assessed to Exporting Participating Intermittent Resources each calendar quarter. The Participating Intermittent Resources Export Fee shall be calculated as the product of (1) the sum of all Settlement costs avoided by Participating Intermittent Resources for the preceding calendar quarter, or portion thereof, consisting of Charge Types 1597 [FERC Must-offer Obligation Capacity Payment System Allocation], 1697 [Tier 1 MLCC Allocation for System Needs], 1797 [Tier 1 MLCC Allocation of Resource Adequacy for System Needs], 1897 [Tier 1 MLCC Allocation of RCST for System Needs], and 4487 [Allocation of Excess Cost for Instructed Energy], but excluding charges for Uninstructed Energy associated with Charge Type 4407 and Transmission Loss Obligation associated with Charge Type 4450, (2) by the ratio of the total MW/h generated by an Exporting Participating Intermittent Resource during the calendar quarter, or portion thereof (based on metered output), by the total MW/h generated by all Participating Intermittent Resources during the calendar quarter, or portion thereof (based on metered output), and (3) by the percentage of the Exporting Participating Intermittent Resource's capacity deemed exporting under Section 5.3 of the EIRP or PIR Export Percentage.

Participating Intermittent Resources Export Fee per Participating Intermittent Resource =

Program Costs x (MW/h individual Participating Intermittent Resource/MW/h all Participating Intermittent Resources) x PIR Export Percentage

**CAISO TARIFF APPENDIX F**  
**SCHEDULE 5**  
**STATION POWER CHARGES**

The CAISO shall assess a charge of \$500 to the Scheduling Coordinator representing the owner of one or more Generating Units that submits an application to establish a Station Power Portfolio or to change the configuration of Station Power meters or the generating facilities included in a Station Power Portfolio. If the generating facilities in a single Station Power Portfolio are scheduled by more than one Scheduling Coordinator, then the Scheduling Coordinator representing the most installed capacity shall be assessed the application charge.

A charge of \$200 will be assessed to the Scheduling Coordinator of Generating Units that have Station Power meters each time the CAISO is required to shift Meter Data to a unique Load identifier pursuant to the Station Power Protocol. For example, if a Scheduling Coordinator has two Station Power meters, and both Remote Self Supply and Third Party Supply is attributed to each Station Power meter in a single Netting Period, then the CAISO must shift Meter Data to a total of four unique Load identifiers and the charge would be \$800 in that month (2 meters x 2 Load IDs x \$200).

All revenue collected by the CAISO pursuant to this Schedule 5 shall be considered "Other Revenues" and applied as a credit to the Grid Management Charge revenue requirement in accordance with Schedule 1 of Appendix F.

**CAISO TARIFF APPENDIX F**

**SCHEDULE 6**

**ICPM SCHEDULES**

**Monthly ICPM Capacity Payment**

The monthly ICPM Capacity Payment shall be calculated by multiplying the monthly shaping factor of 1/12 by the annual ICPM Capacity price of \$41/kW-year in accordance with Section 43.6.1, unless the Scheduling Coordinator for the ICPM Capacity resource has agreed to another price that has been determined in accordance with Section 43.6.2.

**Availability**

The target availability for a resource designated under ICPM is 95%. Incentives and penalties for availability above and below the target are as set forth in the table below, entitled "Availability Factor Table." The CAISO shall calculate availability on a monthly basis using actual availability data. The ICPM Availability Factor for each month shall be calculated using the following curve:

**AVAILABILITY FACTOR TABLE**

<b>Availability (excluding only Scheduled Maintenance)</b>	<b>Capacity Payment Factor</b>	<b>ICPM Availability Factor</b>
100%	3.3%	1.139
99%	3.3%	1.106
98%	3.3%	1.073
97%	2.5%	1.040
96%	1.5%	1.015
95%	-	1.000
94%	-1.5%	.985
93%	-1.5%	.970
92%	-1.5%	.955
91%	-1.5%	.940
90%	-1.5%	.925
89-80%	-1.7%*	.908-.755
79-41%	-1.9%*	.736-.014
-40%	-	0.0

\*The "Capacity Payment Factor" decreases by 1.7% and 1.9% respectively for every 1% decrease in availability.

*The ICPM Capacity Payment shall be adjusted upward from the 95% availability starting point by the positive percentages listed as the "Capacity Payment Factor" above, by multiplication by the amounts listed for each ICPM Availability Factor above 95%, so that, for example, if a 97% availability is achieved for the month, then the ICPM Capacity Payment for that month would be the monthly value for 95% plus an additional 4% (1.5% for the first percent availability above 95%, and 2.5% for the second percent availability above 95%), i.e., multiplication of the otherwise applicable ICPM Capacity Payment by the ICPM Availability Factor of 1.040. Reductions in the ICPM Capacity Payment shall be made correspondingly according to the "Capacity Payment Factor" above for monthly availability levels falling short of the 95% availability starting point, by multiplication by the amounts listed for each ICPM Availability Factor below 95%.*

**CAISO TARIFF APPENDIX G**

**Pro Forma Reliability Must-Run Contract**

**PRO FORMA**  
**MUST-RUN SERVICE AGREEMENT**

**dated \_\_\_\_\_, 20\_\_**

**between**

**[OWNER NAME]**

**and**

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**



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### **MUST-RUN SERVICE AGREEMENT**

THIS MUST-RUN SERVICE AGREEMENT is made as of the \_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, between \_\_\_\_\_, a [corporation/limited liability company/municipal corporation] organized under the laws of the State of \_\_\_\_\_ (the "Owner"), and the CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION, a nonprofit public benefit corporation incorporated under the laws of the State of California (the "CAISO").

#### **RECITALS**

- A. Owner is the owner or lessee of, or is otherwise entitled to dispatch and market the Energy and Ancillary Services produced from and provided by, the electrical generating Units located at the Facility described in Schedule A to this Agreement;
  - B. Under Section 345 of the California Public Utilities Code, CAISO is responsible for the efficient use and reliable operation of the CAISO Controlled Grid;
  - C. CAISO has determined that it needs the ability to dispatch Units under the terms and conditions of this Agreement to have Owner deliver Energy into or provide Ancillary Services to the CAISO Controlled Grid when required by CAISO to ensure the reliability of the CAISO Controlled Grid; and
  - D. Each Unit covered by this Agreement has been designated as a Reliability Must-Run Unit.
- In consideration of the covenants and agreements contained in this Agreement, the Parties agree as follows:

#### **ARTICLE 1 DEFINITIONS**

Terms, when used with initial capitalization in this Agreement and the attached schedules shall have the meanings set out below. The singular shall include the plural and vice versa. "Includes" or "including" shall mean "including without limitation." References to a section, article or schedule shall mean a section, article or schedule of this Agreement, unless another agreement or instrument is specified. Unless the context otherwise requires, references to any law shall be deemed references to such law as amended, replaced or restated from time to time. Unless the context otherwise requires, any reference to a "person" includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization or other entity, in each case whether or not having separate legal identity. References to "Owner" or "CAISO" shall, unless the context otherwise requires, mean Owner and CAISO respectively and their permitted assigns and successors. References to sections or provisions of the CAISO Tariff include any succeeding sections or provisions of the CAISO Tariff.

**“Adjusted RMR Invoice”** is defined in Section 9.1(b).

**“ADR”** means alternative dispute resolution pursuant to Section 11.1 and Schedule K.

**“Agreement”** means this Must-Run Service Agreement, including schedules, as amended from time to time.

**“Ancillary Services”** means those ancillary services identified in Schedule E.

**“Applicable UDC Tariff”** means the applicable retail tariff(s), of the utility distribution company in whose service territory the Unit is located, under which the Unit is eligible to purchase power to meet its auxiliary power requirements, whether or not the Unit actually purchases auxiliary power under the tariff(s). The Applicable UDC Tariff for the Facility is set out on Schedule A.

**“Availability”** means, in relation to a Unit, the maximum quantity of Energy or Ancillary Services, measured at the Delivery Point, the Unit is capable of producing at any given time assuming adequate time to ramp the Unit to that maximum quantity. For hydroelectric Units, Availability measures the extent to which the Unit is capable of producing Energy or providing Ancillary Services, given sufficient usable water to produce Energy or provide Ancillary Services. The Availability of a Unit is measured in MW.

**“Availability Deficiency Factor”** is calculated as set forth in Section 8.5.

**“Availability Payment”** means the payment to Owner described in Section 8.1 for Condition 1 and 8.2 for Condition 2.

**“Availability Test”** means a test of a Unit's Availability requested by CAISO or Owner pursuant to Section 4.9(a).

**“Bid Sufficiency Test”** means the test described in Section 4.1(c).

**“Billable MWh”** is defined in Section 8.3(a).

**“Billing Month”** is defined in Section 9.1(b).

**“Black Start”** means the ability of a Unit to start without an external source of electricity or the process of doing so.

**“Business Day”** means any of Monday through Friday, excluding any day which is a Federal bank holiday.

**“CAISO Availability Notice”** means a notice given by CAISO to Owner modifying the Availability of the Unit under Section 4.9 (a)(vi) or Section 5.4 (b).

**“CAISO Controlled Grid”** means the system of transmission lines and associated facilities that from time to time are under CAISO’s operational control.

**“CAISO Invoice”** is defined in Section 9.1(b).

**“CAISO’s Repair Share”** is defined in Section 7.5 (g).

**“CAISO Settlements Calendar”** is defined in Section 9.1(b).

**“CAISO Tariff”** means the California Independent System Operator Tariff on file with FERC and in effect from time to time.

**“Calculation Hour”** is defined in Section 8.3(c)(i)(A).

**“California Agency”** means the agency or agencies responsible for representing the State of California in FERC proceedings involving the rates, terms and conditions of service under this Agreement.

**“Capital Item”** means an addition or modification to, change in or repair, replacement or renewal of plant, equipment or facilities used by Owner to fulfill Owner’s obligations under this Agreement. A Capital Item does not include Repairs to such plant, equipment or facilities. A Capital Item does not include an Upgrade, unless recovery of costs of the Upgrade has been approved by CAISO. For purposes of this Agreement, Capital Items are “retirement units” or other items the costs of which are properly capitalized in accordance with the FERC Uniform System of Accounts, 18 C.F.R. Part 101.

**“Closed”** is defined in Section 2.5.

**“Collateral”** is defined in Section 9.7.

**“Comparable RMR Unit”** is defined in Section 4.7 (f).

**“Competitive Constraint Run”** is defined in Appendix A to the CAISO Tariff.

**“Condition 1”** means the terms of this Agreement applicable to a Unit providing service under Condition 1 as described in Section 3.1.

**“Condition 2”** means the terms of this Agreement applicable to a Unit providing service under Condition 2 as described in Section 3.1.

**“Confidential Information”** is defined in Section 12.5.

**“Contract Service Limits”** for a given Unit means the Maximum Annual MWh, Maximum Annual Service Hours, Maximum Annual Start-ups, and, if applicable, the Maximum Monthly MWh as stated in Section 13 of Schedule A.

**“Contract Year”** means a calendar year; provided, however, that the initial Contract Year shall commence on the Effective Date and expire at the end of the calendar year in which the Effective Date occurred. If the Agreement terminates during a calendar year, the last Contract Year shall end on the termination date.

**“Counted MWh”** is defined in Section 5.3.

**“Counted Service Hours”** is defined in Section 5.3.

**“Counted Start-ups”** is defined in Section 5.3.

**“Credit Carryforward”** is defined in Section 9.1(e) and Section 9.1(f).

**“Day Ahead Schedule”** is defined in Appendix A to the CAISO Tariff.

**“Deliver”** means to deliver Energy into the CAISO Controlled Grid or Distribution Grid (at the Delivery Point or such other point as the Parties may otherwise agree) or to provide Ancillary Services (whether or not any Energy is Delivered as part of the Ancillary Service) pursuant to a Dispatch Notice (including deliveries for which a Dispatch Notice has been issued under Section 4.5 and deliveries in substitute Market Transactions under Section 5.2) and the terms “Delivered” and “Delivering” shall be construed accordingly.

**“Delivered Ancillary Services”** means the type and, if applicable, the MW of Ancillary Services Delivered by Owner.

**“Delivered MWh”** means the MWh of Energy Delivered by Owner and shall be equal to the sum of Billable MWh, Hybrid MWh, MWh deemed Delivered under Section 5.1 (f); and MWh Delivered from Substitute Units under Section 5.1 (c) or Section 5.1 (d).

**“Delivery Point”** means the point identified in Section 4 of Schedule A where Energy and Ancillary Services are to be Delivered.

**“Direct Contract”** means a contract between Owner and one or more identified persons for the sale of Energy or Ancillary Services other than under this Agreement, and shall in no event include a transaction in a market run by CAISO.

**“Dispatch Notice”** means a notice delivered by CAISO to Owner’s Scheduling Coordinator on a daily, hourly or real-time basis requesting dispatch of one or more Unit(s) to provide Energy or Ancillary Services under this Agreement. Dispatch Notices include: (a) Day-Ahead Schedules and Real-Time Dispatches where the RMR Unit or Units are flagged as RMR Dispatches as a result of the Market-Power Mitigation and Reliability Requirements Determination processes pursuant to the CAISO Tariff, (b) Manual RMR Dispatch Notices, (c) notices deemed to have been given by CAISO for the Energy actually Delivered by a Unit that starts or increases Energy output as a result of a “system emergency” as defined in the CAISO Tariff whether the start or increase occurs automatically (for Units specified in Section 2 of Schedule A as having the ability to Start-up or ramp automatically) or pursuant to a standing written order of the CAISO, and (d) Test Dispatch Notices given by CAISO under Section 4.9 other than Test Dispatch Notices issued at Owner’s request to test Availability or heat input of the Unit.

**“Distribution Grid”** means the radial lines, distribution lines and other facilities used to transmit or distribute Energy from the Facility other than the CAISO Controlled Grid.

**“Due Date”** means the date which is the 30th day after the date on which a Party submits an invoice to the other Party. Notwithstanding the above, the Due Dates for the Revised Estimated RMR Invoice, the Revised Adjusted RMR Invoice, and the CAISO Invoice shall be as specified in Section 9.1(b). If the 30th day, or other Due Date as specified in Section 9.1(b), is not a Business Day, the Due Date shall be the next Business Day.

**“Effective Date”** means the date this Agreement becomes effective pursuant to Section 2.1 thereof.

**“Energy”** means electrical energy.

**“Estimated RMR Invoice”** is defined in Section 9.1(b).

**“Existing Contractual Limitation”** means a contractual limitation on the Start-up or operation of a Unit existing prior to the date the Unit was designated as a Reliability Must-Run Unit. All Existing Contractual Limitations are described in Section 14 of Schedule A.

**“Facility”** means the electrical generating facility described in Schedule A. A hydroelectric facility may include one or more electric generating facilities which are hydraulically linked by a common water system.

**“Facility Trust Account”** is defined in Section 9.2.

**“FERC”** means the Federal Energy Regulatory Commission, any successor agency, or any other agency to whom authority under the Federal Power Act affecting this Agreement has been delegated.

**“Final Invoice”** is defined in Section 9.10(a).

**“Financing Agreement”** means agreements for financing the Facility or any portion of the Facility.



**“Fixed Option Payment Factor”** is set forth in Section 2 of Schedule B.

**“Force Majeure Event”** means any occurrence beyond the reasonable control of a Party which causes the Party to be unable to perform an obligation under this Agreement in whole or in part and which could not have been avoided by the exercise of Good Industry Practice. Force Majeure Event includes an act of God, war, civil disturbance, riot, strike or other labor dispute, acts or failures to act of Governmental Authority, fire, explosion, flood, earthquake, storm, drought, lightning and other natural catastrophes. A Force Majeure Event shall not include lack of finances or the price of fossil fuel.

**“Forced Outage”** means a reduction in Availability of a Unit for which sufficient notice is not given to allow the outage to be factored into CAISO’s day-ahead or hour-head scheduling process.

**“Good Industry Practice”** means any of the practices, methods, and acts engaged in or approved by a significant portion of the electric power industry during the relevant time period, or any of the practices, methods, and acts which, in the exercise of reasonable judgment in the light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety, and expedition. Good Industry Practice does not require use of the optimum practice, method, or act, but only requires use of practices, methods, or acts generally accepted in the region covered by the Western Systems Coordinating Council.

**“Governmental Authority”** means the government of any nation, any state or other political subdivision thereof, including any entity exercising executive, legislative, judicial, regulatory or administrative functions of or pertaining to a government.

**“Hourly Metered Total Net Generation”** means the electric generation in MWh for the Unit in any Settlement Period as measured by the Unit’s electrical meter described in Schedule A, Section 5, “Metering and Related Arrangements”, minus any auxiliary loads metered on the load side of such electrical meter for that Settlement Period in accordance with the CAISO Tariff.

**“Hybrid MWh”** is defined in Section 8.3(b).

**“Hydroelectric Dependable Capacity”** is the amount of MWh forecast to be produced by a hydroelectric Facility in an adverse hydrologic year.

**“Interest Rate”** means the lesser of the rate of interest per annum calculated in accordance with 18 C.F.R. 35.19a of the FERC’s Regulations or the maximum rate permitted by law.

**“Local Capacity Area”** is defined in Appendix A to the CAISO Tariff.

**“Long-term Planned Outage”** means a planned interruption, in whole or in part, in the electrical output of a Unit to permit Owner to perform a major equipment overhaul and inspection or for new construction work but only if the outage is scheduled to last 21 consecutive days or more (which may span more than one Contract Year) and either (a) is scheduled in accordance with the CAISO’s outage coordination protocol prior to the beginning of the Contract Year or (b) was scheduled as a Long-term Planned Outage for the last quarter of the expiring Contract Year but, with approval of the CAISO Outage Coordination Office, was postponed and rescheduled into the new Contract Year.

**“Manual RMR Dispatch Notice”** is a Dispatch Notice issued other than as a result of the Market Power Mitigation and Reliability Requirements Determination process as described in the CAISO Tariff.

**“Market Power Mitigation and Reliability Requirements Determination” or “MPM-RRD”** is as defined in the CAISO Tariff.

**“Market Schedule”** is defined in Section 8.3(c)(i)(C).

**“Market Transaction”** means a delivery of Energy or provision of Ancillary Services from a Unit pursuant to a Direct Contract or bids into markets run by the, CAISO or any similar entity.

**“Maximum Annual MWh”** means, for each Unit, the maximum MWh of Energy that Owner may be obligated to Deliver from the Unit in each Contract Year without becoming entitled to charges for excess service under Schedule G. The Maximum Annual MWh for each Unit is set out in Section 12 of Schedule A. The rules for counting MWh are set out in Section 5.3.

**“Maximum Annual Service Hours”** means, for each Unit, the maximum Service Hours that Owner may be obligated to provide service from the Unit in each Contract Year without becoming entitled to charges for excess service under Schedule G. The Maximum Annual Service Hours for each Unit is set out in Section 12 of Schedule A. The rules for counting Service Hours are set out in Section 5.3.

**“Maximum Annual Start-ups”** means, for each Unit, the maximum number of times Owner may be obligated to Start-up the Unit in each Contract Year without becoming entitled to charges for Start-ups under Schedule G. The Maximum Annual Start-ups for each Unit is set out in Section 12 of Schedule A. The rules for counting Start-ups are set out in Section 5.3.

**“Maximum Monthly MWh”** means, for each hydroelectric Unit, the maximum MWh of Energy that Owner may be obligated to Deliver from the Unit without becoming entitled to charges for excess service under Schedule G. The Maximum Monthly MWh for each hydroelectric Unit is set out in Section 12 of Schedule A. The rules for counting MWh are set out in Section 5.3.

**“Maximum Net Dependable Capacity”** means the amount shown in Section 1 of Schedule A as the Maximum Net Dependable Capacity of a Unit.

**“Minimum Load”** means, for each Unit, the higher of (1) the lowest level in MW at which the Unit can maintain stable continuous operations, or (2) the Minimum Load for the Unit as shown in Section 9 of Schedule A.

**“Minimum Off Time”** means, for each Unit, the minimum time following Shutdown that the Unit must remain off line before initiation of the next Start-up. The Minimum Off Time for each Unit is shown in Section 11 of Schedule A.

**“Minimum Run Time”** means, for each Unit, the minimum time the Unit must remain Synchronized following Start-up. The Minimum Run Time for each Unit is shown in Section 10 of Schedule A.

**“Month”** means a calendar month.

**“Monthly Option Payment”** is defined in Section 8.1(a) for Condition 1 and Section 8.2(a) for Condition 2.

**“Motoring Charge”** means the payment in accordance with Schedule E for the Energy required to spin a generator or condenser that is electrically connected to the CAISO Controlled Grid or Distribution Grid to provide Ancillary Services in circumstances where the generator is not producing Energy.

**“MW”** means one megawatt.

**“MWh”** means one megawatt hour.

**“Net Repair Costs”** is defined in Section 7.5(a).

**“New Responsible Utility”** is defined in Section 9.4 (f).

**“Nonmarket Transaction”** means a Delivery of Energy or Ancillary Services other than Hybrid MWh from a Unit pursuant to a Dispatch Notice.

**“Non-Performance Penalty”** means a penalty computed pursuant to Section 8.5.

**“Other Outage”** means any reduction in the Availability of a Unit as reflected in an CAISO Availability Notice or Owner’s Availability Notice (whether characterized by the North American Electric Reliability Council (“NERC”) as a “forced outage”, “planned outage” or “maintenance outage”) other than a Long-term Planned Outage.

**“Owner’s Availability Notice”** means a notice given under Section 4.9(a)(vii) or Section 7.3(b) by Owner to CAISO notifying CAISO of the Availability of a Unit.

**“Owner’s Repair Cost Obligation”** is an allowance for Repairs to be made during the Contract Year calculated pursuant to Section 7.5 (k). Owner’s Repair Cost Obligation is set out in Section 13 of Schedule A.

**“Party”** means either CAISO or Owner, and “Parties” means CAISO and Owner.

**“Penalty Period”** is defined in Section 8.5 (a).

**“Pre-empted Dispatch Payment”** is defined in Schedule E.

**“Prepaid Start-ups”** is defined in Section 8.4.

**“Prepaid Start-up Charge”** means the payment to Owner for Prepaid Start-ups described in Section 8.1.

**“Prepaid Start-up Cost”** is defined in Schedule D.

**“Prior Period Change(s)”** is defined in Section 9.1(g).

**“Prior Period Change Examples”** is defined in Section 9.1(l).

**“Prior Period Change Guidelines”** is defined in Section 9.1(l).

**“Prior Period Change Worksheet”** is defined in Section 9.1(g).

**“Ramp Rate”** is the applicable Ramp Rate as stated in Section 8 of Schedule A.

**“Ramping Constraint”** means the limits on ramping a Unit to higher or lower output as set out in Section 7 of Schedule A.

**“Real-Time Dispatch”** is defined in Appendix A of the CAISO Tariff.

**“Recalculation Settlement Statement”** is defined in Appendix A of the CAISO Tariff.

**“Reliability Must-Run Unit”** means a “reliability must-run unit” as defined in Appendix A of the CAISO Tariff.

**“Repair”** means repairs or replacement required to remedy or prevent any loss or damage that impairs the capability of the Unit to Deliver Energy or Ancillary Services, the cost of which is properly treated as an expense in accordance with the FERC Uniform System of Accounts, 18 C.F.R. Part 101.

**“Repair Payment Factor”** is determined pursuant to Section 7.5(g).

**“Requested Ancillary Services”** means the type and, if applicable, the MW of Ancillary Services CAISO requests Owner to Deliver from a Unit pursuant to a Dispatch Notice.

**“Requested MW”** means the MW of Energy CAISO requests Owner to Deliver pursuant to a Dispatch Notice.

**“Requested MWh”** means the product of the Requested MW of Energy and the time in hours (or fraction thereof) during which the Dispatch Notice requested Delivery of the Requested MW. This includes ramping energy calculated pursuant to the CAISO Tariff.

**“Requested Operation Period”** means the time during which CAISO requests that a Unit Deliver Energy or Ancillary Services pursuant to a Dispatch Notice.

**“Response Notice”** is defined in Section 14.3(b)(ii).

**“Responsible Utility”** is an entity which, under the CAISO Tariff, is responsible for paying all or part of the costs incurred by CAISO under this Agreement.

**“Responsible Utility Facility Trust Account”** is defined in Section 9.2.

**“Revised Adjusted RMR Invoice”** is defined in Section 9.1(b).

**“Revised Estimated RMR Invoice”** is defined in Section 9.1(b).

**“RMR Dispatch”** is as defined in Appendix A of the CAISO Tariff.

**"RMR Invoices"** means the four invoices issued each Billing Month by Owner to CAISO pursuant to Section 9.1 for payment of charges under this Agreement. The four invoices are the Estimated RMR Invoice, Revised Estimated RMR Invoice, Adjusted RMR Invoice, and Revised Adjusted RMR Invoice.

**"RMR Invoice Template"** is defined in Section 9.1(d).

**"RMR Owner Facility Trust Account"** is defined in Section 9.2.

**"RMR Payments Calendar"** means the calendar issued by CAISO pursuant to Section 11.13 of the CAISO Tariff.

**"Scheduling Coordinator"** means an entity certified by CAISO for the purposes of undertaking the functions specified in Section 4.5 of the CAISO Tariff with respect to a unit.

**"Scheduling Coordinator Revenues"** is defined in Section 9.1(f).

**"Service Hours"** means the amount of time (measured in hours or fractions thereof) a Unit is Delivering Energy or Ancillary Services pursuant to a Dispatch Notice.

**"Settlement Period"** means the period beginning at the start of the hour and ending at the end of the hour.

**"Shutdown"** means the condition of a Unit when it is not Synchronized and not in Start-up.

**"Small Project Estimate"** is defined in Section 7.4 (b).

**"Start-up"** means the action of bringing a Unit from Shutdown to Minimum Load and the terms "Starts-up", "Started-up" and "Starting-up" shall be construed accordingly.

**"Start-up Lead Time"** means, for each Unit, the amount of time required to Start-up the Unit, as shown in Section 6 of Schedule A.

**"Start-up Payment"** is defined in Schedule D.

**"Substitute Unit"** means a generating unit or combination of units, other than the Unit identified in the Dispatch Notice (whether or not located at the Facility, whether or not designated as a Reliability Must-Run Unit and whether or not owned by Owner), which, under the circumstances existing at the time, is capable of providing system reliability benefits equivalent to the system reliability benefits provided by the Unit identified in the Dispatch Notice. In the case of Units providing Ancillary Services, a Substitute Unit must (i) be certified to provide the requested type of Ancillary Service, (ii) provide the same or higher ramp rate and MW of capacity and, (iii) is located in the same Local Capacity Area as the Unit identified in the Dispatch Notice.

**"Surcharge Payment"** means the payment to Owner for Capital Items described in Section 8.1 for Condition 1 and Section 8.2 for Condition 2.

**"Surcharge Payment Factor"** means the percentage of the cost of a Capital Item that CAISO is obligated to pay.

**"Synchronized"** means the condition where a Unit is electrically connected to and capable of delivering Energy to the CAISO Controlled Grid or Distribution Grid.

**“Termination Fee”** means amounts determined pursuant to the termination fee formula contained in Section 2.5(b).

**“Termination Fee Invoice”** is defined in Section 9.9(a).

**“Test Dispatch Notice”** means a notice issued to test a Unit pursuant to Section 4.9.

**“Trading Day”** means the day on which Energy or Ancillary Services are to be Delivered.

**“Unit”** means an individual electricity generating unit which has been designated a Reliability Must-Run Unit and is part of the Facility identified in Schedule A.

**“Unit Availability Limit”** means for any hour the maximum MW which Owner is obligated to make available to CAISO from a Unit. The Unit Availability Limit shall be the lower of (a) the Maximum Net Dependable Capacity of the Unit or (b) the Availability of the Unit as stated in the currently effective Owner’s Availability Notice or CAISO Availability Notice.

**“Unplanned Capital Item Notice”** is defined in Section 7.6(b).

**“Unplanned Repair Notice”** is defined in Section 7.5(b).

**“Upgrade”** means any change or modification to the Facility that increases the nameplate capacity rating of an existing Unit or adds a new unit.

**“Variable Cost Payment”** means the payment to Owner for Billable MWh described in Schedule C.

**ARTICLE 2**  
**TERM**

**2.1 Term**

- (a) This Agreement shall become effective on the later of March 31, 2008, or the date it is permitted to become effective by FERC, and shall continue in effect for one Contract Year.
- (b) CAISO may extend the term of this Agreement for an additional calendar year as to one or more Unit by notice given not later than October 1 of the expiring Contract Year. CAISO may extend the term for less than a full calendar year as to one or more Unit but only if CAISO gives notice not less than 12 months prior to the date to which it proposes to extend the term.

**2.2 Termination**

- (a) Subject to any necessary authorization from FERC, this Agreement may be terminated as to one or more Unit in accordance with this Section 2.2; provided, however, that if this Agreement applies to a Facility having hydroelectric Unit, this Agreement may be terminated only as to all hydroelectric Units at the Facility. If this Agreement terminates as to fewer than all Units, the Agreement shall remain in effect as to the remaining Units. If this Agreement terminates as to all Units, the Agreement shall terminate.
- (b) This Agreement may be terminated as to one or more Units:
  - (i) by CAISO pursuant to Section 11.4 in the event of default by Owner;
  - (ii) by Owner pursuant to Section 11.4 in the event of default by CAISO;
  - (iii) by Owner pursuant to Section 7.4 (f), 7.5 (i) or 7.6 (h);
  - (iv) by Owner or CAISO, if the Unit is condemned by a Governmental Authority; or
  - (v) by Owner or CAISO, if Owner's authorization from a Governmental Authority (including, where applicable, licenses under Part I of the Federal Power Act) that is necessary to site, operate or obtain access to such Unit is terminated or expires or is reissued or modified so that it becomes illegal, uneconomical or otherwise impractical for the Owner to continue operating the Facility. Owner shall be obligated to use its best efforts to renew and keep effective its licenses and authorizations and to oppose conditions or modifications which would make continued operation illegal, uneconomical or otherwise impractical.
- (c) To the extent that Owner transfers the right to control the dispatch of the Facility or Unit which right is necessary to satisfy its obligations under this Agreement, Owner shall assign this Agreement to the transferee in accordance with Section 13.1.
- (d) If CAISO terminates the Agreement or does not extend the term of the Agreement as to a Unit, CAISO shall not redesignate the same Unit, or designate another non-reliability must-run unit at the same Facility, as a Reliability Must-Run Unit during the one year period following termination or expiration of the Agreement as to that Unit unless (i) CAISO demonstrates that the unit is required to maintain the reliability of the CAISO Controlled Grid or any portion thereof and the need to designate the unit as a Reliability Must-Run Unit is caused by an extended outage of a generation or transmission facility not known to CAISO at the time of the termination or expiration or (ii) the unit is selected through an CAISO competitive process in which Owner participated. For purposes of the foregoing, CAISO's need for spinning reserves, nonspinning reserves, replacement reserves or regulation as defined in the CAISO Tariff shall not be grounds for redesignating the Unit or designating another unit at the Facility as a Reliability Must-Run Unit.

- (e) Subject to any necessary authorization from FERC, this Agreement shall terminate as to any Unit leased by Owner in the event that, for any reason, the lease expires or is terminated unless Owner acquires ownership of such Unit upon such expiration or termination. Any termination under this Section 2.2 (e) shall not affect any right CAISO may have thereafter to designate such Unit as a Reliability Must-Run Unit and the conditions in Section 2.2 (d) shall not apply to such redesignation.

### **2.3 Effective Date of Expiration or Termination**

If FERC authorization is required to give effect to expiration or termination of this Agreement as to one or more Units, the effective date of the expiration or termination shall be the date FERC permits the expiration or termination to become effective. Owner shall promptly file for the requisite FERC authorizations to terminate service under this Agreement as of the proposed effective date of expiration or termination; provided, that nothing in this Agreement shall prejudice the right of either Party to contest the other Party's claim that a termination or expiration has occurred. If FERC authorization is not required to terminate service under this Agreement, the effective date of expiration or termination shall be the later of (i) the date specified in CAISO or Owner's notice of termination or (ii) the date that all conditions to the termination or expiration have been satisfied.

### **2.4 Effect of Expiration or Termination**

Expiration or termination of this Agreement shall not affect the accrued rights and obligations of either Party, including either Party's obligations to make all payments to the other Party pursuant to this Agreement or post-termination audit rights under Section 12.2.

### **2.5 Termination Fee**

- (a) CAISO shall pay Owner a Termination Fee calculated pursuant to Section 2.5 (b) if the Unit is Closed within six months after the Unit ceases to be subject to this Agreement as a result of termination pursuant to Sections 2.2 (b) (ii), (iii), (iv) or (v) or because CAISO does not extend the term under Section 2.1 (b). Within 60 days after the Unit is Closed, Owner will send CAISO a notice stating (i) the date the Unit Closed and (ii) the amount of the Termination Fee due Owner pursuant to this Section 2.5 including detailed calculations of each component of the formula in Section 2.5(b) identifying the source of each input used. For purposes of this Section, "Closed" shall mean that the Unit is not producing Energy or providing capacity and there are no Direct Contracts obligating any entity to deliver Energy or provide capacity from the Unit during the 36 month period beginning at the date the Unit Closed. A Unit shall cease to be Closed if, during the 36 month period beginning at the date the Unit Closed, any entity: (i) sells Energy or capacity; (ii) executes a Direct Contract for service or (iii) obtains a new permit from any Governmental Authority for operations, in each case that would involve use of the Capital Item for which a Termination Fee is being paid.

- (b) The Termination Fee shall be determined using the following formula:

$$T = \text{NCI} + \text{CWIP} - S$$

Where:

T	=	Termination Fee (\$)
NCI	=	Undepreciated portion of the cost of Capital Items which constitute part of the Closed Unit which were approved in accordance with Section 7.4 or 7.6 and were in service at the date the Unit Closed with the cost and depreciation rates determined under Section 7.4 or 7.6, as applicable. In calculating NCI, the undepreciated cost of each Capital Item shall be multiplied by the Surcharge Payment Factor applicable to that Capital Item.



- CWIP = The actual cost, at the date the Unit Closed, of Capital Items for the Closed Unit which were approved in accordance with Section 7.4 or 7.6, as applicable, but were not in service at the date the Unit Closed, plus the cost to pay or terminate any remaining obligations incurred in connection with installation of the Capital Items. In calculating CWIP, the cost of each Capital Item shall be multiplied by the Surcharge Payment Factor applicable to that Capital Item.
- S = The salvage value, if any, of the Capital Items included in the calculation of either NCI or CWIP.

The cost for each Capital Item shall be determined by agreement or ADR pursuant to Section 7.4 or 7.6. Except for those items for which a ten-year depreciation life is specified in Section 7.4 of this Agreement, the depreciation rate for each Capital Item shall be determined by agreement or ADR in connection with the applicable Capital Item approval process under Section 7.4 or 7.6.

- (c) The Termination Fee shall be payable in 36 equal monthly installments calculated using the following formula:

$$M = T \left[ \frac{r}{1 - (1 + r)^{-36}} \right]$$

Where

- M = the monthly payment,  
T = Termination Fee under Section 2.5(b), and  
r = an annual discount rate equal to the interest rate used by FERC for the calculation of refunds (as set forth in 18 C.F.R. § 35.19a) in effect on the date that Owner provides notice to the CAISO pursuant to Section 2.5(a) of this Agreement, divided by 12.
- (d) If the Unit ceases to be Closed at any time within 36 months following the date the Unit Closed, CAISO shall cease payment of Termination Fee installments as of the Month in which the Unit ceased to be Closed, but Owner shall not be obligated to refund installments for any Month in which the Unit was Closed. Once a Unit has ceased to be Closed, CAISO shall not be required to pay any remaining Termination Fee installments even if the Unit again Closes.
- (e) Any dispute regarding an element of the Termination Fee (e.g. salvage value) not resolved at the time the Capital Item was approved shall be subject to ADR. If the amount of the Termination Fees associated with a single termination or expiration is \$5 million or more as billed by Owner, the Responsible Utility shall have the same rights as CAISO to receive notice that the Unit(s) Closed and to initiate or participate in ADR.

**ARTICLE 3**  
**CONDITIONS OF MUST-RUN AGREEMENT**

**3.1 Conditions Under Which Units Will Operate**

This Agreement includes two conditions of service under which Owner may provide service from its Unit(s). By way of general description and subject to the specific provisions set forth in this Agreement:

- (i) A Unit under Condition 1 may participate in Market Transactions and Owner will retain all revenues from participation in Market Transactions;
- (ii) A Unit under Condition 2 shall bid in accordance with Section 6.1 (b) to participate in Market Transactions when CAISO has issued a Dispatch Notice for the Unit and Owner will not retain revenues from participation in Market Transactions. A Unit under Condition 2 shall not participate in a Market Transaction when CAISO has not issued a Dispatch Notice for the Unit.

Owner shall begin operating each Unit under the Condition designated by Owner prior to the Effective Date and thereafter may transfer the Unit to a different Condition pursuant to Section 3.2.

**3.2 Transfer Between Conditions**

- (a) Except for a hydroelectric Unit, Owner may, from time to time, transfer a Unit from one Condition to the other Condition, provided that it may not do so without CAISO's consent unless, as of the transfer date, the Unit will have been subject to its existing Condition for at least twelve months. If a transfer is to become effective at the beginning of a Contract Year, Owner shall provide CAISO at least 30 days prior notice of the transfer. For a transfer to become effective at any other time, Owner shall give CAISO notice at least 90 days prior to the transfer. If a Unit is transferred from Condition 1 to Condition 2 during a Contract Year, Owner shall credit to CAISO on the first invoice after the transfer is effective an amount computed by multiplying (i) the positive difference, if any, of the Prepaid Start-ups minus the Counted Start-ups by (ii) the Prepaid Start-up Cost. If a Unit is transferred from Condition 2 to Condition 1, CAISO shall not be required to pay a Condition 1 Prepaid Start-up Charge for the remainder of the Contract Year in which the transfer occurred, but shall pay, for each Start-up, the Condition 1 Start-up Payment calculated pursuant to Equation D-1 in Schedule D.
- (b) A hydroelectric Unit may only operate under Condition 1.
- (c) CAISO may not transfer a Unit from one Condition to the other Condition.
- (d) Any transfer of a Unit from one Condition to the other Condition shall be effective on the first day of the Month following expiration of the applicable notice.
- (e) If a Unit is transferred from Condition 1 to Condition 2, Surcharge Payments for Capital Items shall be changed prospectively from the effective date of the transfer to reflect a Surcharge Payment Factor of 1.0. If a Unit is transferred from Condition 2 to Condition 1, Surcharge Payments for Capital Items shall be changed prospectively from the effective date of the transfer to reflect the Condition 1 Surcharge Payment Factor previously determined for the Capital Item, or if the factor was not previously determined, the Surcharge Payment Factor agreed to by CAISO and Owner. If Owner and CAISO do not agree on the Surcharge Payment Factor, the Surcharge Payment Factor shall be determined through ADR in accordance with Schedule B.

**ARTICLE 4  
DISPATCH OF UNITS**

**4.1 CAISO's Right to Dispatch**

- (a) Subject to the limitations set forth in this Agreement, CAISO shall direct dispatch of a Unit by delivering a Dispatch Notice to Owner's Scheduling Coordinator in accordance with the CAISO Tariff.
- (b) Dispatch Notices for Energy, other than Energy associated with Ancillary Services, shall be issued solely for purposes of meeting local reliability needs or managing congestion on non-competitive paths. For purposes of dispatching Energy, local reliability needs do not include Energy required to manage congestion on competitive paths. CAISO shall issue Dispatch Notices to meet local reliability needs or manage congestion on non-competitive paths, whenever market bids cannot be used to meet those needs or manage such congestion or such market bids cannot be used to meet those needs or manage such congestion without taking a bid out of merit order or requiring CAISO to decrement another supplier's schedule to accommodate the unit which provided the bid. CAISO may not issue a Dispatch Notice to fill a need for imbalance energy.
- (c) Except as needed for black start or voltage support required to meet local reliability needs, to meet operating criteria associated with the Potrero power plant, or as outlined below, CAISO may issue Dispatch Notices for Ancillary Services only if the available bids in Ancillary Service capacity markets do not provide sufficient capacity to meet CAISO's requirements.
  - (i) If the CAISO determines on a Trading Day that it needs additional Ancillary Service on that Trading Day, CAISO shall use the following procedures:
    - (A) CAISO shall communicate such needs to all Scheduling Coordinators as quickly as possible after such needs are identified.
    - (B) After completing (A), CAISO shall attempt to procure those additional Ancillary Services from the CAISO's Real-Time market (in the appropriate region if CAISO is procuring Ancillary Services on a regional basis) that have not closed, subject to the Bid Sufficiency Test described below.
    - (C) CAISO shall not issue a Dispatch Notice for Ancillary Services for any hour of the Trading Day before the earlier of (a) the time at which the real-time market for that hour closes or (b) if a Start-up would be required to provide the Ancillary Service, such earlier time as is necessary to comply with the applicable Start-up Lead Time and Ramping Constraints on Schedule A.
  - (ii) CAISO shall not be required to accept any bid for an Ancillary Service above applicable bid caps then in effect under the CAISO Tariff before issuing a Dispatch Notice for Ancillary Services.
  - (iii) Bid Sufficiency Test
    - (A) The Bid Sufficiency Test may only be applied:
      - (1) To purchases from the real-time market;
      - (2) If CAISO has fully complied with its obligation to promptly notify Scheduling Coordinators of its need to acquire additional ancillary services from the real-time market; and
      - (3) To the extent that the approved CAISO Tariff does not preclude such a test.

- (B) The Bid Sufficiency Test shall be applied on an individual hourly basis and for an individual Ancillary Service type. The test result shall be considered "insufficient" in real-time market if, and only if - (1) bids in the real-time market for the particular Ancillary Service (including any bids that can be used to satisfy that particular Ancillary Services requirement under Section 8.2.3.5 of the CAISO Tariff) represent less than two times such remaining Ancillary Service requirement; or (2) there are fewer than two unaffiliated bidders to provide such remaining Ancillary Service requirement. If the application of the Bid Sufficiency Test results in a determination of "insufficiency", the CAISO may issue a Dispatch Notice to satisfy its needs for that hour and that individual Ancillary Service.
- (C) If the result of the Bid Sufficiency Test is a finding that available bids are "insufficient", CAISO may nonetheless accept available market bids if it determines in its sole discretion that the prices bid and the supply curve created by the bids indicate that the bidders were not attempting to exercise market power.

#### **4.2 Timing of Dispatch Notices**

Subject to the terms and conditions of this Agreement, CAISO shall issue Manual RMR Dispatch Notices promptly after it makes a determination that it will require Energy or Ancillary Services under this Agreement.

#### **4.3 Form and Content of Dispatch Notices**

- (a) All Dispatch Notices shall be in writing if circumstances permit. If circumstances require that a Dispatch Notice be given or changed orally, the Dispatch Notice shall be confirmed in writing within 24 hours after the oral notice or change was given.
- (b) Each Dispatch Notice shall specify the Unit from which CAISO requests Owner to Deliver Energy or Ancillary Services, the time of commencement and termination of the Requested Operation Period and, for each hour of the Requested Operation Period, the Requested MW or the Requested Ancillary Services. A Dispatch Notice for a hydroelectric Facility must request that Owner Deliver Energy from the entire Facility rather than from a specific Unit. However, CAISO may request that Owner Deliver Ancillary Services from specific Units in a hydroelectric Facility; provided that Energy associated with such Ancillary Services shall be Delivered from the Facility and not the specified Units. CAISO may issue Dispatch Notices in real time without specifying the time the Requested Operation Period is to terminate and may adjust the Requested MW or Requested Ancillary Services in real time if CAISO provides all such information in writing as provided in Section 4.3(a).

#### **4.4. Non-complying Dispatch Notices**

Owner shall not be obligated to comply with a Dispatch Notice that does not comply with Section 4.3 or 4.6 and Owner shall not be liable, suffer any penalties or suffer any reduction in payments for failure to comply with a Dispatch Notice which is not in compliance with those Sections, provided that Owner promptly notifies CAISO that the notice does not comply with Section 4.3 or 4.6 and provides the reasons the Dispatch Notice does not comply. Owner may provide such notice after the Requested Operation Period if the notice concerns a Dispatch Notice given during, or less than one-half hour prior to, the Requested Operation Period. Compliance with a Dispatch Notice shall not be deemed a waiver of objections to the Dispatch Notice.

**4.5 Intentionally left blank.**

**4.6 Limitations on CAISO's Right to Dispatch**

CAISO's Dispatch Notice may not request Owner to, and Owner shall not be obligated to:

- (i) Provide service from a Unit at less than the Minimum Load for the Unit;
- (ii) Provide service from a Unit for less than the Minimum Run Time;
- (iii) Start-up a Unit after less than the Minimum Off Time;
- (iv) Start-up a Unit unless the time between the delivery of the Dispatch Notice requesting such Start-up and the commencement of the applicable Requested Operation Period equals at least the Start-up Lead Time for the Unit and the Dispatch Notice provides sufficient time to satisfy the Ramping Constraint of the Unit;
- (v) Provide service from a Unit in excess of its Unit Availability Limit;
- (vi) Provide service from a Unit when to do so would violate environmental limitations applicable to the Unit as set forth in Section 3 of Schedule A;
- (vii) Start-up or provide service from a Unit in violation of any applicable law, regulation, license or permit; or
- (viii) Start-up or provide service from a Unit to the extent that doing so would cause a breach of an Existing Contractual Limitation; or
- (ix) Deliver Energy or Ancillary Services to the extent such Delivery would cause a breach of a contract for capacity made available through an Upgrade or a Capital Item or Repair for which CAISO is not obligated to make a Surcharge Payment or pay CAISO's Repair Share.

**4.7 Dispatch in Excess of Contract Service Limits**

- (a) CAISO shall use its best efforts in accordance with Good Industry Practice not to issue a Dispatch Notice that would cause a Unit's Counted Start-ups, Counted MWh, or Counted Service Hours to exceed any of the Unit's Contract Service Limits.
- (b) CAISO may issue a Dispatch Notice requiring a Unit to Deliver Energy or Ancillary Services after the Unit has exceeded a Contract Service Limit only if the Requested MWh or Requested Ancillary Services cannot be obtained by CAISO either (i) by accepting market bids in accordance with Section 4.1 or (ii) from Comparable RMR Unit(s) without exceeding the contract service limits or violating other operational limitations under CAISO's agreement with the Comparable RMR Unit(s). Owner shall use its best efforts, in accordance with Good Industry Practice, to comply with such Dispatch Notice.
- (c) If Owner of a hydroelectric Facility complies with a request to exceed the Maximum Monthly MWh, Owner may reduce the Maximum Monthly MWh for remaining Months of the Contract Year to reflect the accelerated use of available water. Not later than 15 days after any delivery in excess of Maximum Monthly MWh, Owner shall provide CAISO a notice showing revised Maximum Monthly MWh for remaining Months of the Contract Year.
- (d) If the Owner does not comply with a Dispatch Notice under Section 4.7(b), Owner at CAISO's request shall provide a written explanation.
- (e) If Owner, in compliance with a Dispatch Notice, Starts-up a Unit and the Counted Start-ups for the Contract Year exceed the Maximum Annual Start-ups for the Unit, CAISO shall pay for each such excess Start-up at the rate set out in Schedule G. If Owner, in compliance with a Dispatch Notice, Delivers Energy and the Counted MWh for the Unit for the Contract Year exceeds the Maximum Annual MWh, the Counted Service Hours from the Unit for the Contract Year exceed the Maximum Annual Service Hours, or if applicable, the Counted MWh for the Month exceed the Maximum Monthly MWh, CAISO shall pay for the Billable MWh Delivered in response to such Dispatch Notice and exceeding the Contract Service Limit at the rates set forth in Schedule G.

- (f) For purposes of this Section 4.7:
  - (i) "Best efforts" does not require Owner to provide service inconsistent with the limitations set forth in Section 4.6 or if Owner reasonably believes providing the service might cause significant physical harm to the Unit.
  - (ii) The term "Good Industry Practice" shall not be applied to permit CAISO to consider the relative costs of Comparable RMR Units when determining whether to request dispatch of a Unit in excess of the Contract Service Limits.
  - (iii) "Comparable RMR Unit" means a unit which has been designated a Reliability Must-Run Unit and which, in CAISO's reasonable judgment, is capable of providing system reliability benefits to CAISO equivalent to the system reliability benefits provided by the Unit which otherwise would be subject to the Dispatch Notice. In the case of Units providing Ancillary Services, a Comparable RMR Unit must: (A) be certified to provide the Requested type of Ancillary Service, (B) provide the same or higher ramp rate and MW capacity and (C) is located in the same Local Capacity Area as the Unit which otherwise would be subject to the Dispatch Notice.
- (g) CAISO and Owner shall have the right to dispute the other Party's actions or inactions under this Section 4.7 and any dispute shall be subject to resolution through ADR.

#### **4.8 Air Emissions**

If CAISO determines that it is necessary to reserve MWh to satisfy potential dispatches under this Agreement without violating present or future limitations on the discharge of air pollutants or contaminants into the atmosphere specified by any federal, state, regional or local law by any regulation, air quality implementation plan, or permit condition promulgated or imposed by any Governmental Authority, the terms and conditions of such reservation shall be set out on Schedule P.

#### **4.9 Test Dispatch Notices**

- (a) Availability Tests
  - (i) CAISO may from time to time test the Availability of a Unit by requiring the Unit to Deliver Energy pursuant to a Test Dispatch Notice provided to Owner's Scheduling Coordinator using the procedures described in Section 4.2 and 4.3. CAISO, without cause, may request one Availability Test each Contract Year. CAISO may request additional Availability Tests if the Unit fails to comply fully with a Dispatch Notice. CAISO shall not request an Availability Test for a hydroelectric Unit during periods of constrained water availability. Lack of available water shall not be deemed to result in a failed test and reduction of the Unit Availability Limit for a hydroelectric Unit.
  - (ii) Owner may request an Availability Test at any time. CAISO shall issue a Test Dispatch Notice within three days after receipt of Owner's request, but for good cause, CAISO may reschedule the test to a date acceptable to Owner. Owner's request shall state the amount of Energy to be produced. The effect of operations pursuant to such a request is set out in Section 5.3.
  - (iii) The Test Dispatch Notice shall be marked "Availability Test Dispatch Notice." The Test Dispatch Notice shall specify a Requested Operation Period of four hours of continuous operations at the requested output plus any applicable Start-up Lead Time, time to satisfy Ramping Constraints and time for Shutdown (or for hydroelectric Units the time sufficient water is available, if that is less).

- (iv) Subject to the other conditions or restrictions expressed in this Agreement, Owner shall provide service from the Unit and Deliver the Requested MWh in accordance with the Availability Test Dispatch Notice; provided, however, that Owner, in response to such Test Dispatch Notice, may deliver all or part of the Requested MWh in a Market Transaction by complying with the procedures set forth in Section 5.2.
- (v) An Availability Test shall be treated as having been successfully completed if the average MW Delivered at the Delivery Point during the Availability Test was not less than 99% of the Requested MW for the Requested Operation Period. The average MW Delivered during the Availability Test shall be computed by dividing (i) the total MWh produced during the four-hour period immediately following completion of the ramp up, multiplied by the appropriate ambient temperature correction factors for the Unit as set out in Section 3 of Schedule A, by (ii) four hours.
- (vi) If a Unit fails an Availability Test, CAISO may issue a CAISO Availability Notice restating the Availability of the Unit to a level not less than the average MW Delivered during the Availability Test. Following the notice, Owner shall not issue an Owner's Availability Notice increasing the Availability of the Unit above the level determined through such failed Availability Test until (A) the Unit has successfully completed a subsequent Availability Test, (B) the Unit has delivered in Market Transactions, pursuant to a Dispatch Notice or in a combination of the two, during a continuous four hour operating period, average MW in excess of those determined in the Availability Test or (C) Owner has otherwise demonstrated to CAISO's reasonable satisfaction that the Availability of the Unit has been restored.
- (vii) If the average MW Delivered during the Availability Test exceed 101% of the Unit Availability Limit in effect prior to the Availability Test, Owner may issue an Owner's Availability Notice setting Availability retroactive to the time the request was received by CAISO to the lesser of (A) the average MW Delivered during the Availability Test or (B) the Maximum Net Dependable Capacity.
- (b) Emissions Test  
If it is necessary for Owner to operate a Unit to fulfill regulatory requirements for emissions testing, Owner may request CAISO to issue a Dispatch Notice for such operation. Owner shall provide a request specifying the test date at least seven days in advance of the emissions test. CAISO shall issue a Dispatch Notice to schedule the requested operation on the date specified in Owner's request, or for good cause, CAISO may cause the test to be rescheduled to a date acceptable to Owner, provided that CAISO shall not delay the test by more than seven days without Owner's consent. The Test Dispatch Notice shall be marked "Emissions Test Dispatch Notice".
- (c) Black Start Test  
CAISO may from time to time test Unit(s) designated to provide Black Start service by requiring the Unit to deliver Black Start service pursuant to a Test Dispatch Notice provided to Owner's Scheduling Coordinator using the procedures described in Sections 4.2 and 4.3. Such Test Dispatch Notice shall be marked "Black Start Test Notice." The Black Start Test shall be performed in accordance with the Ancillary Services Requirements Protocol in the CAISO Tariff. CAISO shall not request a Black Start Test for a hydroelectric Unit during periods of constrained water availability.

- (d) **Heat Input Test**  
Not more frequently than once each Contract Year, Owner may, by giving at least seven days' prior notice to CAISO, request CAISO to issue a Test Dispatch Notice in order for Owner to determine the heat input of a Unit. CAISO shall not unreasonably refuse to issue a Test Dispatch Notice for a heat input test. The Test Dispatch Notice shall be marked "Heat Input Test Notice." The heat input test shall be conducted in accordance with testing standards and procedures agreed to by CAISO and Owner. In the absence of such agreement, the standards and procedures shall be determined through ADR before such test may be conducted. The arbitrator shall specify procedures for testing which are consistent with Good Industry Practice. Following such a heat input test, Owner shall be permitted to make a filing under Section 205 of the Federal Power Act limited to modifying the heat inputs used in the Variable Cost Payment, Start-up Payment, Preempted Dispatch Payment and Mandatory Energy Bid in Schedules C, D, E and M, respectively, to reflect the results of such test.

**4.10 Forecasts Of CAISO's Requirements**

Not later than November 15 of each year, CAISO shall provide Owner and the Responsible Utility with a non-binding forecast representing CAISO's then current best estimate of the monthly MWh, monthly peak day MW, and monthly Service Hours that CAISO will require each Unit to provide each month during the ensuing Contract Year ("Annual Forecast"). In addition, not later than June 15 of each year, CAISO shall provide Owner and with a non-binding forecast ("Update") representing CAISO's then current best estimate of the monthly MWh, monthly peak day MW, and monthly Service Hours that CAISO will require each Unit to provide each month from June through the end of the Contract Year. Each Annual Forecast and Update will take into account the Long-term Planned Outages. The Annual Forecasts and Updates shall be treated as confidential pursuant to Section 12.5 and shall not be binding.

**4.11 Determination of Contract Service Limits**

- (a) If CAISO has extended the term of this Agreement pursuant to Section 2.1 (b), then not later than October 31 of the expiring Contract Year Owner shall make a filing under Section 205 of the Federal Power Act limited to revising Schedule A to reflect the Contract Service Limits for all Units other than hydroelectric Units for the ensuing Contract Year. The Contract Service Limits for each year after the initial Contract Year shall be determined through application of the following rules:
- (i) Maximum Annual MWh for each Unit shall be the average annual MWh produced in Market and Nonmarket Transactions by the Unit during the 60 month period ending June 30 of the expiring Contract Year;
  - (ii) Maximum Annual Service Hours for each Unit shall be the average annual Service Hours the Unit operated in Market and Nonmarket Transactions during the 60 month period ending June 30 of the expiring Contract Year; and
  - (iii) Maximum Annual Start-Ups shall be the number of Start-ups of the Unit for Market and Nonmarket Transactions during the year selected by CAISO. CAISO may select any of the five preceding years to determine Maximum Annual Start-Ups but shall select the same year for all Units at the Facility. For purposes of the foregoing sentence only, a year shall mean a 12-month period ending June 30. Thus, by way of example, CAISO may determine Maximum Annual Start-ups for calendar year 2002 based on the Maximum Annual Start-ups during any of the following five periods: (A) 12 months ended June 30, 2001; (B) 12 months ended June 30, 2000; (C) 12 months ended June 30, 1999; (D) 12 months ended June 30, 1998; or (E) 12 months ended June 30, 1997.



Owner shall provide the information necessary to determine the Contract Service Limits to CAISO and the Responsible Utility not less than 15 days prior to the filing. CAISO shall give notice to Owner and Responsible Utility identifying the year to be used to determine Maximum Annual Start-ups not later than five Business Days after it receives the information from Owner.

- (b) If CAISO has extended the term of this Agreement pursuant to Section 2.1 (b), then not later than 15 days prior to the beginning of the ensuing Contract Year, Owner of a hydroelectric Facility shall make a filing under Section 205 of the Federal Power Act to reflect the revised Contract Service Limits to be in effect during the ensuing Contract Year for the hydroelectric Facility. Such filing shall be based on Owner's current water management forecast and shall reflect the water expected to be available for electric generation above the Hydroelectric Dependable Capacity. Such filing, if accepted or approved, shall set the Maximum Monthly MWh in Schedule A for the ensuing Contract Year, subject to adjustment in accordance with the notice described below giving revised Monthly Maximum MWh. The Maximum Monthly MWh in Schedule A of this Agreement on the Effective Date reflects the Hydroelectric Dependable Capacity. Not later than April 15 of each Contract Year, Owner shall provide notice to CAISO giving revised Maximum Monthly MWh for each remaining Month of the Contract Year based on its then current water management forecast. If, during any Contract Year, Owner determines that drought conditions jeopardize its ability to supply Hydroelectric Dependable Capacity, Owner shall promptly give notice to the CAISO of this determination, including revised Maximum Monthly MWh for each remaining Month of the Contract Year. Following such a determination, Owner shall provide CAISO with weekly updated water management forecasts until the earlier of the end of the Contract Year or Owner's determination that its ability to supply the Hydroelectric Dependable Capacity is no longer jeopardized by such conditions. CAISO acknowledges that the accuracy of a water management forecast may be substantially affected by a Force Majeure Event at any time after the Owner provides the forecast and consequently Owner shall not be liable for the accuracy of the water management forecast or any reliance on it other than a Monthly Maximum MWh amount.

**ARTICLE 5**  
**DELIVERY OF ENERGY AND ANCILLARY SERVICES BY OWNER**

**5.1 Owner's Delivery of Energy and Ancillary Services**

- (a) Subject to the limits in this Agreement, and subject to the CAISO's Real-Time Dispatch instructions whether flagged as an RMR Dispatch or not, Owner shall provide service from the Units and Deliver the Requested MWh or Requested Ancillary Services in accordance with each Dispatch Notice. To the maximum extent practical, and except for regulation, Owner shall Deliver at each moment of each hour during the Requested Operation Period not less than the Requested MW or Requested Ancillary Services. If Owner has disputed a Dispatch Notice under Section 4.6 (i) (Minimum Load) (ii) (Minimum Run Time) (iii) (Minimum Off Time) (iv) (Start-up Lead Time and Ramping Constraint), or (v) (Unit Availability Limit) and such dispute is not resolved prior to the time for delivery, Owner will use reasonable efforts to comply with the Dispatch Notice, but shall not be liable to CAISO if it is unable to do so and Owner prevails in the dispute.
- (b) If Owner has disputed a Dispatch Notice under Section 4.6 (vi) (environmental), (vii) (violation of law), (viii) (Existing Contractual Limitations) or (ix) (Upgrade Contract), Owner shall not be required to Deliver Energy or Ancillary Services pending resolution of the dispute as to whether the Dispatch Notice violated such Section; provided, however, that Owner shall not be relieved from any liability that it would otherwise have for failure to comply with the disputed Dispatch Notice if it subsequently is determined that the Dispatch Notice did not violate Section 4.6 (vi), (vii), (viii) or (ix).
- (c) Subject to CAISO approval, if Owner cannot Deliver the Requested MWh or Requested Ancillary Services by providing service from the Unit identified in a Dispatch Notice, Owner may Deliver the requested services by providing service from a Substitute Unit. Owner shall provide oral or written notice to CAISO as soon as possible in advance of the first Real-Time Dispatch of the Requested Operation Period stating why it cannot provide the requested service from the Unit identified in the Dispatch Notice, identifying the Substitute Unit, describing the services it will provide from the Substitute Unit and specifying the charges applicable to service from the Substitute Unit. CAISO may deny approval only if the proposed unit does not qualify as a Substitute Unit or if there is insufficient time to accommodate the request prior to the running of the MPM-RRD process and the operator determines that the substitution would affect the MPM-RRD results, in which case the substitution request will be accommodated for any remaining portion of the Requested Operation Period, if the unit is otherwise acceptable. The total cost to CAISO for service from the Substitute Unit shall be at the rate specified by the Owner, provided that the total cost will not exceed the total costs for the same amount of service from the Unit specified in the Dispatch Notice.
- (d) If Owner can Deliver the Requested MWh or Requested Ancillary Services by providing service from the Unit identified in the Dispatch Notice, Owner may Deliver the requested services by providing service from (i) the Unit identified in CAISO's Dispatch Notice or (ii) with CAISO's consent, a Substitute Unit. Owner of a hydroelectric Unit will Deliver the Requested MWh from the Facility and will Deliver the Voltage Support and Black Start requested in a Dispatch Notice from the specified Unit or a Substitute Unit. If Owner proposes to satisfy its delivery obligations by providing service from a Substitute Unit, Owner shall provide oral or written notice to CAISO prior to the Requested Operation Period identifying the Substitute Unit, describing the services it will provide from Substitute Unit and specifying the charges applicable to service from the Substitute Unit. Owner may Deliver the agreed services from the Substitute Unit and will be paid at the agreed rates if CAISO accepts Owner's proposal, or CAISO and Owner otherwise agree on the services and applicable rates for service from a Substitute Unit. CAISO's decision shall not be subject to ADR.

- (e) Owner shall Deliver the Requested MWh or Requested Ancillary Services at the Delivery Point or such other point(s) reasonably acceptable to CAISO and shall comply with the metering and related arrangements set forth in Section 5 of Schedule A to this Agreement or as otherwise specified in Owner's applicable Meter Service Agreement.
- (f) If Owner would have been able to Deliver the Requested MWh or Requested Ancillary Services but for an outage in the CAISO Controlled Grid or Distribution Grid beyond Owner's reasonable control, Owner shall be deemed to have complied with the Dispatch Notice for purposes of Sections 5.4 and 8.5.

**5.2 Substitution of Market Transactions for Dispatch Notices**

- (a) Owner may satisfy, in whole or in part, its obligation to Deliver Energy, but not Ancillary Services, during a Requested Operation Period by delivering Energy under a Market Transaction from the Unit identified in a Dispatch Notice if Owner complies with the requirements and procedures of this Section 5.2.
- (b) Owner shall give notice of its intent to substitute a Market Transaction through the submission of bids in the CAISO's Markets. Any dispatch level that clears the Competitive Constraint Run of the MPM-RRD process through the submission of Economic Bids or Self-Schedules, and is reflected in the Day-Ahead Schedule or Real-Time Dispatch, shall be deemed a Market Transaction.
- (c) Owner may substitute a Market Transaction only if the deadline for bids into the market selected by Owner has not passed.
- (d) Intentionally left blank.

**5.3 Rules for Calculating Counted Start-ups, Counted MWh and Counted Service Hours**

- (a) The following rules shall govern calculation of Counted Start-ups:
  - (i) Except as limited below, all Start-ups successfully completed in compliance with a Dispatch Notice shall be included in Counted Start-ups for the Unit for which the Dispatch Notice was issued.
  - (ii) If a Start-up required by a Dispatch Notice is canceled by CAISO after the Start-up is initiated, Counted Start-ups shall include a fractional Start-up computed by dividing (i) the lesser of (a) the time elapsed between initiation of the Start-up and cancellation or (b) the Start-up Lead Time by (ii) the applicable Start-up Lead Time for the Unit.
  - (iii) For Units under Condition 1, if a Dispatch Notice is issued pursuant to Section 4.5 for a period in which the Unit is scheduled to operate or is operating in a Market Transaction for which a Start-up was required, or Owner substitutes a Market Transaction under Section 5.2 for a Requested Operation Period for which a Start-up was required, Counted Start-ups shall include one-half of the Start-up for the Unit for which the Dispatch Notice was issued. No Start-up shall be counted more than once.
  - (iv) For Units under Condition 2, Counted Start-ups shall include each Start-up whether the Energy is Delivered to the CAISO in a Nonmarket Transaction or is delivered in a Market Transaction pursuant to bids made under Section 6.1 (b).
  - (v) If Owner complies with a Dispatch Notice by Delivering the Requested MWh or Ancillary Services from a Substitute Unit, any Start-ups of the Substitute Unit will not be included in Counted Start-ups for the Unit specified in the Dispatch Notice or the Substitute Unit.
  - (vi) Except as provided in Section 5.3(a)(iii), any Start-up not required to comply with a Dispatch Notice will not be included in Counted Start-ups.

- (b) The following rules shall govern calculation of Counted MWh:
  - (i) Except as limited below, all MWh Delivered in compliance with a Dispatch Notice shall be included in Counted MWh for the Unit for which the Dispatch Notice was issued.
  - (ii) For Units under Condition 1, if a Dispatch Notice is issued pursuant to Section 4.5 for a period in which a Unit is scheduled to operate or is operating in a Market Transaction or if Owner, in response to a Dispatch Notice, substitutes a Market Transaction under Section 5.2 for all or part of the Requested MWh, MWh equal to the sum of (A) Billable MWh plus (B) 50% of the Hybrid MWh, will be included in Counted MWh for the Unit for which the Dispatch Notice was issued.
  - (iii) If a Unit operating under Condition 2 sells Energy pursuant to bids made under Section 6.1 (b), the Billable MWh shall be included in Counted MWh for the Unit.
  - (iv) Intentionally left blank.
  - (v) If Owner Delivers Requested MWh or Energy associated with Ancillary Services from a Substitute Unit, the MWh Delivered from the Substitute Unit will not be included in Counted MWh for the Unit specified in the Dispatch Notice or the Substitute Unit.
- (c) The following rules shall govern calculation of Counted Service Hours:
  - (i) Except as limited below, all Service Hours expended in compliance with a Dispatch Notice other than Service Hours expended for Ancillary Services during which the Unit is not Synchronized shall be included in Counted Service Hours for the Unit for which the Dispatch Notice was issued.
  - (ii) For Units under Condition 1, if a Dispatch Notice is issued pursuant to Section 4.5 for a period in which a Unit is scheduled to operate or is operating in a Market Transaction or if Owner, in response to a Dispatch Notice, substitutes a Market Transaction under Section 5.2 for all or part of the Requested MWh, one-half of the Requested Operation Period will be included in Counted Service Hours for the Unit for which the Dispatch Notice was issued.
  - (iii) If a Unit operating under Condition 2 sells Energy pursuant to bids made under Section 6.1 (b), each Service Hour expended by the Unit to produce the Energy shall be included in Counted Service Hours.
  - (iv) If Owner Delivers Requested MWh or Ancillary Services from a Substitute Unit, the Service Hours expended by the Substitute Unit will not be included in Counted Service Hours for the Unit specified in the Dispatch Notice or the Substitute Unit.
- (d) Counted MWh, Counted Service Hours and Counted Start-ups for the Contract Year ending December 31, 1999 shall include MWh, Service Hours and Start-ups for the period January 1, 1999 through the Effective Date under the reliability must-run rate schedule which is superseded by this Agreement using the rules set out in this Section 5.3 as if this Agreement had been in effect during that period. Owner's initial report under Section 5.5 shall show the MWh, Service Hours and Start-ups for the period January 1, 1999 through the Effective Date calculated using the rules set out in this Section 5.3.

**5.4 Owner's Failure To Deliver Requested MWh or Requested Ancillary Services**

- (a) Owner shall promptly notify CAISO if Owner will not be able to Deliver all or part of the Requested MWh or Requested Ancillary Services from the Unit identified in the Dispatch Notice or from the Substitute Unit previously accepted by CAISO.
- (b) If a Unit fails to Deliver the full amount of Requested MWh or Requested Ancillary Services, CAISO may issue an CAISO Availability Notice restating the Availability to a level not less than the Availability indicated by the actual deliveries. If CAISO has issued an CAISO Availability Notice under this Section 5.4(b), Owner shall not issue an Owner's Availability Notice increasing the Availability of the Unit until (i) the Unit has successfully completed an Availability Test, (ii) the Unit has delivered in Market Transactions or in a combination of Market Transactions and Nonmarket Transactions pursuant to a Dispatch Notice during a continuous four hour operating period, average MW in excess of those shown in the CAISO Availability Notice, or (iii) Owner has otherwise demonstrated to the CAISO's reasonable satisfaction that the Availability of the Unit has been restored. CAISO's only other remedies for Owner's failure to Deliver Requested Ancillary Services or Requested MWh are as set out in Sections 8.5, 11.3 and 12.6.

**5.5 Reports**

Not less than two days prior to the beginning of every Month during the Contract Year, Owner or Owner's Scheduling Coordinator shall provide CAISO and the Responsible Utility a report for each Unit setting forth as of the day before the date of the report the Counted MWh, Counted Service Hours and Counted Start-ups for the current Contract Year. All reports shall be treated as confidential pursuant to Section 12.5.

**ARTICLE 6**  
**MARKET TRANSACTIONS**

**6.1 Right To Engage In Market Transactions**

- (a) In addition to the right to substitute a Market Transaction pursuant to Section 5.2, if a Unit is operating under Condition 1, Owner may enter into Market Transactions for Energy or Ancillary Services at any level outside of a Requested Operation Period. If CAISO has issued a Dispatch Notice for Energy to a Unit under Condition 1, Owner may enter into Market Transactions for Energy at any level during the Requested Operation Period, and may enter into a Market Transaction for Ancillary Services at any level that does not preclude compliance with the Dispatch Notice. If CAISO has issued a Dispatch Notice for Ancillary Services to a Unit under Condition 1, Owner may enter into Market Transactions for Energy or Ancillary Services at any level that does not preclude compliance with the Dispatch Notice.
- (b) If CAISO issues a Dispatch Notice for a Unit operating under Condition 2, Owner shall submit bids in succeeding available Energy and Ancillary Services markets for the Requested Operation Period in accordance with the following requirements:
  - (i) If the next available market is an Energy market, Owner shall bid all Energy the Unit can produce, up to the Unit Availability Limit, in excess of the higher of (A) Energy or Ancillary Services capacity cleared in a prior market; or (B) capacity required to Deliver Requested Ancillary Services. Owner shall bid all Energy at the bid price calculated using the formula in Part I of Schedule M.
  - (ii) If the next available market is an Ancillary Services market, Owner shall bid all available capacity, up to the Unit Availability Limit, in excess of the higher of the capacity needed to (A) deliver Energy and Ancillary Services cleared in a prior market or (B) Deliver the Requested MWh or Ancillary Services different from the Requested Ancillary Service.
  - (iii) If the markets are concurrent, Owner shall bid in the Ancillary Services market all available capacity, up to the Unit Availability Limit, in excess of the higher of the capacity needed to (A) deliver Energy and Ancillary Services cleared in a prior market or (B) Deliver the Requested MWh or Ancillary Services different from the Requested Ancillary Service.
  - (iv) Owner shall bid all Ancillary Service capacity at the bid price calculated using the formula in Part II of Schedule M.
  - (v) Owner shall not bid Energy or Ancillary Services in excess of the quantities the Unit can provide during the Requested Operation Period given the Unit's ramp rates, Ramping Constraints and any other applicable operating limitations, with due allowance for a Unit's ability to change output during the Requested Operation Period.
  - (vi) Neither Owner nor Owner's Scheduling Coordinator shall bid Energy or Ancillary Services to the extent that participating in a Market Transaction would conflict with a contract entered into prior to the Effective Date. Owner shall include in Section 14 of Schedule A a description of all contract restrictions affecting Owner's ability to participate in Market Transactions.

CAISO may order Owner not to bid to participate in a Market Transaction if CAISO determines that participation in Market Transactions would cause a Unit to exceed Contract Service Limits or impair CAISO's ability to dispatch the Unit to meet reliability needs at other times during the Contract Year. A Unit operating under Condition 2 shall not otherwise engage in Market Transactions.

**ARTICLE 7  
OPERATION AND MAINTENANCE**

**7.1 Owner's Obligation**

Owner shall fuel, operate and maintain each Unit, or cause the Unit to be fueled, operated and maintained, in accordance with applicable law and Good Industry Practice and with due regard for the reliability purpose of this Agreement. Owner is not required to have or maintain fuel oil burning capability, fuel oil inventories, or permits to burn fuel oil and shall not be required to burn fuel oil to respond to a Dispatch Notice unless, and then only to the extent that, the Unit's primary fuel is distillate fuel oil or Schedule H requires Owner to maintain fuel oil capability.

**7.2 Outages and Overhauls**

- (a) Owner shall be entitled to take a Unit out of operation or reduce the Availability of the Unit to repair and maintain the Unit in accordance with Good Industry Practice and the requirements of the CAISO Tariff. The dates and times of the outages and any changes to those dates and times shall be determined in accordance with the CAISO Tariff. For purposes of complying with the requirements of the CAISO Tariff, Other Outage shall be separated between "maintenance outage" and "forced outage," as defined in the CAISO Tariff.
- (b) Owner shall have the right to curtail or discontinue, in whole or in part, Deliveries of Energy or Ancillary Services from a Unit for so long as, and to the extent that, a Forced Outage affecting the Unit continues or when, in Owner's judgment in accordance with Good Industry Practice, operating conditions at the Unit so require. Curtailment or discontinuance under this Section shall give rise to applicable remedies under Article 8.

**7.3 Reports and Notices**

- (a) As soon as practical after commencement of a Forced Outage, Owner shall give CAISO notice of the Forced Outage, the expected duration of the outage, and the expected time when the Unit will be available to generate electricity and the expected Availability during and following the Forced Outage. Owner shall keep CAISO informed of any developments that will affect either the duration of the Forced Outage or the Availability of the Unit during or after the end of the Forced Outage.
- (b) Owner shall keep CAISO advised of the Availability of each Unit by promptly issuing Owner's Availability Notices any time Owner becomes aware that the Unit's Availability changed in accordance with Section 9 of the CAISO Tariff. Owner may not reduce a Unit's Availability due to the cost of fuel. An Owner's Availability Notice shall become effective when issued, provided, however, that if Owner becomes subject to a Non-Performance Penalty under Section 8.5, any Owner's Availability Notice given during the Penalty Period shall not become effective until 72 hours after the Owner's Availability Notice is given. An Owner's Availability Notice or CAISO's Availability Notice shall continue in effect until it is superseded by a subsequent Owner's Availability Notice or CAISO's Availability Notice.

**7.4 Planned Capital Items**

- (a) On or before March 1 of each year, Owner shall provide CAISO a preliminary report in the form required by this Section 7.4 showing Owner's proposed Capital Items for the next Contract Year and a five-year forecast of anticipated Capital Items in the Form attached as Schedule L-1, assuming the Agreement will be extended. Owner shall submit a final report in the form required by this Section 7.4 reflecting updated information by August 1 of each year. Owner may, but shall not be obligated to, include an Upgrade as a proposed Capital Item in either the preliminary or final report.

- (b) The preliminary and final reports for proposed Capital Items for the next Contract Year shall be submitted on the form attached as Schedule L-1. Owner shall provide additional information requested by the CAISO necessary to evaluate the proposal. Each preliminary and final report shall separately list individual projects expected to cost more than \$500,000 and shall include two "Small Project Estimates." One Small Project Estimate shall identify Capital Items (projected to cost less than \$500,000 each) required to maintain or enhance reliability. The second Small Project Estimate shall identify all other Capital Items projected to cost less than \$500,000 each. Individual Capital Items projected to cost more than \$50,000 shall be identified separately in one of the two Small Project Estimates. All Capital Items covered by the Small Project Estimate will be depreciated over 10 years.
- (c) Within 60 days after submission of the final report, CAISO will notify Owner of the proposed Capital Items CAISO has approved and the Capital Items it has not approved. If CAISO fails to provide notice within such 60 day period, all Capital Items included in the final report shall be deemed approved as proposed by Owner. Approval constitutes CAISO agreement that the CAISO's share of the estimated cost of the Capital Item will be recovered through Surcharge Payment under Article 8 and will be eligible for recovery through a Termination Fee pursuant to Section 2.5. If the actual cost of the Capital Item exceeds the estimated cost, CAISO may initiate ADR to determine whether the additional costs were reasonable and shall not be obligated to pay through Surcharge Payments or as a Termination Fee any portion of the overrun found to be unreasonable in such ADR proceeding. If CAISO contests the additional costs, Owner shall have the burden of proving that the additional costs were reasonable. If CAISO does not initiate ADR or makes a separate agreement with Owner, the additional costs shall be deemed reasonable and CAISO shall be obligated to pay CAISO's share of the actual costs through Surcharge Payments or as a Termination Fee.
- (d) If a proposed Capital Item is not approved, CAISO shall provide Owner a detailed statement of the reasons for the disapproval and, if the proposal would be acceptable with modifications, a detailed list of the proposed modifications. Owner may accept the modifications proposed by CAISO, or CAISO or Owner may initiate an ADR proceeding to review CAISO's rejection or proposed modification if the Capital Item is necessary for Owner to meet its obligations under this Agreement. In such proceeding, CAISO may not support its disapproval on any basis not shown in its detailed statement of the reasons for disapproval. Any Capital Items approved through such ADR proceeding shall be recovered by Owner through Surcharge Payments under Article 8 and will be eligible for recovery through a Termination Fee pursuant to Section 2.5. Owner shall not be obligated to install any Capital Item unless CAISO is obligated to pay a Surcharge Payment for the Capital Item.
- (e) The preliminary and final reports and all additional information about proposed Capital Items provided to CAISO shall be treated as Confidential Information in accordance with Section 12.5.
- (f) If CAISO rejects a proposed Capital Item, such rejection is not reversed by ADR and it would be uneconomical, impractical or illegal to continue operation without the Capital Item, then Owner, subject to obtaining authorization from FERC (if required by law to do so), may terminate this Agreement with respect to the affected Unit without cost or liability therefor, except as provided in Section 2.4.



## **7.5 Unplanned Repairs**

- (a) In the event of any loss or damage to the Facility that impairs the capability of one or more Units to Deliver Energy or Ancillary Services, Owner shall, without additional charge, make necessary Repairs, to the extent that:
  - (i) the total cost (net of proceeds received by Owner from Insurers and other third parties pursuant to applicable insurance, warranties and other contracts in connection with all Repairs and excluding costs covered by clause (ii)) of all Repairs for all Units ("Net Repair Costs") during the Contract Year does not exceed Owner's Repair Cost Obligation for the Facility; or
  - (ii) the loss or damage impairing the Unit's capability to produce Energy or Ancillary Services was caused by Owner's failure to comply with Good Industry Practice or by any wrongful act or omission by Owner. The reference to "Units" in clause (i) includes all Reliability Must-Run Units located at the Facility, but no other Reliability Must-Run Units. Except as provided above, Owner shall not be obligated to make any Repairs unless CAISO is obligated to pay CAISO's Repair Share for the Repairs.
- (b) If the Net Repair Costs incurred by Owner for all Repairs since the beginning of the Contract Year exceed Owner's Repair Cost Obligation, then Owner shall provide a notice thereof ("Unplanned Repair Notice") in the form attached as Schedule L-1 to CAISO. Owner shall provide such additional information as CAISO may reasonably require to evaluate such proposed Repairs.
- (c) CAISO shall submit a written acceptance or objection to Owner's proposal within 21 days of receipt of an Unplanned Repair Notice. CAISO shall be deemed to have accepted Owner's proposal in the Unplanned Repair Notice if CAISO does not submit a written objection within 21 days after receipt of the Unplanned Repair Notice, as provided above. Any objection shall be based on one or more of the following grounds:
  - (i) the loss or damage was caused by Owner's failure to comply with Good Industry Practice;
  - (ii) the loss or damage was caused by a wrongful act or omission by Owner;
  - (iii) the Repairs are not required or are more extensive than required in order to make good the loss or damage concerned or to comply with applicable law;
  - (iv) the Net Repair Costs for the Contract Year will not exceed or has not exceeded the Owner's Repair Cost Obligation;
  - (v) the estimated cost of Repairs exceeds that which is reasonably necessary to effect such Repairs;
  - (vi) the Repair will not result in benefits to CAISO as compared to alternatives available to CAISO;
  - (vii) Owner's proposals for carrying out the Repairs or the proposed CAISO's Repair Share are unreasonable;
  - (viii) Owner's proposal includes estimated costs which are not properly treated as an expense under FERC's Uniform System of Accounts; or
  - (ix) Owner has not provided sufficient information to evaluate Owner's proposal. In addition to providing the basis of the objection, any objection of CAISO shall include a list of all changes CAISO contends should be made to Owner's proposal and justification of all such changes.

- (d) If CAISO submits an objection to an Unplanned Repair Notice, the Parties shall attempt to reach agreement on changes to Owner's proposal. If the Parties have not reached agreement within 30 days after CAISO's receipt of the Unplanned Repair Notice, Owner or CAISO may refer the matter to ADR under a schedule (specified by the arbitrator if the participants cannot agree) requiring a decision within 30 days following appointment of the arbitrator. The ADR decision will be effective without delay.
- (e) Owner shall proceed with the Repairs if it is agreed or determined pursuant to ADR that CAISO will pay CAISO's Repair Share or that Owner is otherwise obligated to make the Repairs. Owner shall keep full and detailed records of the cost of the Repairs and shall make them available to CAISO for inspection upon reasonable request.
- (f) If the actual cost of the Repairs exceeds the estimated cost, CAISO may initiate ADR to determine whether the additional costs were reasonable and shall not be obligated to pay any portion of the additional cost found to be unreasonable in such ADR proceeding. Owner shall have the burden of proving that the additional costs were reasonable.
- (g) If it is agreed or determined pursuant to ADR that CAISO will pay for a Repair, CAISO shall pay CAISO's Repair Share of the actual cost as a lump sum within 60 days after the later of (i) the completion of the Repair and (ii) the effective date of authorization by FERC, if any is necessary, for Owner to charge such cost to CAISO. "CAISO's Repair Share" means the Repair Payment Factor for the Repair at issue multiplied by the amount by which (i) the agreed or determined cost of Repairs at issue plus the Net Repair Costs of all prior Repairs for the Contract Year minus the cost of all prior Repairs for which CAISO is obligated to pay CAISO's Repair Share during the Contract Year exceeds (ii) Owner's Repair Cost Obligation. The Repair Payment Factor shall be as agreed to by Owner and CAISO. If Owner and CAISO do not agree on the Repair Payment Factor, the Repair Payment Factor shall equal the Fixed Option Payment Factor, unless the Owner demonstrates in ADR that it would not have made the proposed Repair in accordance with Good Industry Practice but for its obligations under this Agreement, in which case the Repair Payment Factor shall be as determined in ADR.
- (h) Owner shall use commercially reasonable efforts to recover its full entitlements under applicable insurance policies, warranties and other contracts even after CAISO has paid CAISO's Repair Share. Owner shall keep CAISO informed of the status of such recovery efforts and will refund to CAISO any portions of CAISO's Repair Share payment that is later recovered from any other party as a credit to CAISO on the next invoice with interest at the Interest Rate from the date such proceeds are received by Owner to the Due Date of such next invoice, or if this Agreement is terminated, as a payment upon submission of the Final Invoice.
- (i) If Owner is not obligated to make a Repair and does not do so, and if it would be uneconomical, impractical or illegal to continue operation without the Repair, then Owner, subject to obtaining authorization from FERC (if required by law to do so), may terminate this Agreement with respect to the affected Unit without cost or liability therefor, except as provided in Section 2.4.
- (j) If Owner makes a Repair notwithstanding that CAISO is not obligated to pay for the Repair, Owner shall not be entitled to recover the costs of the Repair from CAISO unless FERC approves recovery of the costs.
- (k) Owner's Repair Cost Obligation shall be an amount computed as follows:
  - (i) Intentionally left blank
  - (ii) The Owner's Repair Cost Obligation shall be equal to 3% of the fixed operation and maintenance costs for all Units at the Facility, underlying the rates in effect at the beginning of the Contract Year.

**7.6 Unplanned Capital Items**

- (a) To the extent a Capital Item is required to remedy or prevent impairment of the Unit's capability to Deliver Energy or Ancillary Services and the impairment was caused by Owner's failure to comply with Good Industry Practice or by any wrongful act or omission by Owner, Owner shall install such Capital Item at Owner's expense. Otherwise, Owner shall not be obligated to install any Capital Item unless CAISO is obligated to pay a Surcharge Payment for the Capital Item. The issue of whether Owner is obligated to install a Capital Item is subject to ADR.
- (b) If, during the Contract Year, Owner determines it is necessary to install Capital Items not approved under Section 7.4 and Owner has expended all amounts covered by the approved Small Project Estimates under Section 7.4, Owner shall provide a notice thereof ("Unplanned Capital Item Notice") on the form attached as Schedule L-1 to CAISO. Owner shall provide such information as CAISO may reasonably require in order to evaluate the proposed Capital Items.
- (c) CAISO shall submit a written acceptance or objection to Owner's proposal within 21 days after receipt of a complete Unplanned Capital Item Notice provided that if the proposal does not involve either loss or damage to the Facility or a Capital Item required by law or regulation, CAISO shall respond within 60 days. If CAISO fails to provide notice within such period, Owner's proposal in the Unplanned Capital Item Notice shall be deemed approved. Any objection shall be based on one or more of the following grounds:
  - (i) the impairment being remedied or prevented was caused by Owner's failure to comply with Good Industry Practice;
  - (ii) the impairment being remedied or prevented was caused by a wrongful act or omission by Owner;
  - (iii) the Capital Item is not required or is more extensive than required in order to remedy or prevent impairment to the Facility or to comply with applicable law;
  - (iv) the estimated cost of the Capital Item exceeds that which is reasonably necessary;
  - (v) installation of the Capital Item will not result in benefits to CAISO as compared to alternatives available to CAISO;
  - (vi) Owner's proposals for installing or testing the Capital Item are unreasonable;
  - (vii) Owner's proposals for depreciation of the cost of the Capital Item or calculation of the Annual Capital Item Cost and Surcharge Payment Factor are unreasonable; or
  - (viii) Owner has not provided sufficient information to evaluate Owner's proposal. In addition to providing the basis of the objection, any objection of CAISO shall include a list of all changes CAISO contends should be made to Owner's proposal and justification of all such changes.
- (d) If CAISO submits an objection to an Unplanned Capital Item Notice, the Parties shall attempt to reach agreement on changes to Owner's proposal. If Owner's proposal involves either loss or damage to the Facility or the Capital Item is required by law and the Parties have not reached agreement 30 days after CAISO's receipt of the Unplanned Capital Item Notice, either Owner or CAISO may refer the matter to ADR under a schedule (specified by the arbitrator if the participants cannot agree) requiring a decision within 30 days following appointment of the arbitrator. The ADR decision will be effective without delay. Failure to agree on other proposed Capital Items may also be referred to ADR but without an expedited schedule.

- (e) Owner shall proceed to install the Capital Item if it is agreed or determined pursuant to ADR that CAISO will pay a Surcharge Payment for the Capital Item or that Owner is otherwise required to install the Capital Item. Owner shall keep full and detailed records of the cost of the Capital Item and shall make them available to CAISO for inspection upon reasonable request.
- (f) If the actual cost of the Capital Item exceeds the estimated cost, CAISO may initiate ADR to determine whether the additional costs were reasonable and shall not be obligated to pay any portion of the additional cost found to be unreasonable in such ADR proceeding. Owner shall have the burden of proving that the additional costs were reasonable.
- (g) If it is agreed or determined pursuant to ADR that CAISO will pay for the Capital Item, CAISO shall be deemed to have agreed that the cost of the Capital Item will be recovered through a Surcharge Payment under Article 8 and will be eligible for recovery through a Termination Fee pursuant to Section 2.5. The costs included in Surcharge Payments and Termination Fees to be paid by CAISO shall be net of all proceeds received by Owner from insurers and other third parties pursuant to applicable insurance, warranties and other contracts after deducting all costs Owner incurred to collect the proceeds. Owner shall use commercially reasonable efforts to recover its full entitlements under applicable insurance policies, warranties and other contracts. Owner shall keep CAISO informed of the status of such recovery efforts and will adjust future Surcharge Payments to reflect proceeds later recovered from any other party.
- (h) If the capability or performance of a Unit is impaired, if Owner is not obligated to install a Capital Item to remedy such impairment under Section 7.6(a) and does not do so, and if it would be uneconomical, impractical or illegal to continue operation without the Capital Item, then Owner, subject to obtaining authorization from FERC (if required by law to do so), may terminate this Agreement with respect to the affected Unit without cost or liability therefor except as provided in Section 2.4.
- (i) If Owner installs a Capital Item notwithstanding that CAISO is not obligated to pay for the Capital Item, Owner shall not be entitled to recover the costs of the Capital Item from CAISO unless FERC approves recovery of the costs.
- (j) Notwithstanding any other provision of this Agreement, if a Capital Item is required to remedy impairment of the Facility, the Unit's Monthly Option Payment shall not be decreased for any of the period of time during which Owner is waiting for CAISO's response to an Unplanned Capital Item Notice or during which ADR concerning an Unplanned Capital Item Notice is pending unless it is determined that Owner is required to install the Capital Item pursuant to Section 7.6 (a).

**7.7 Adjustments to Performance Characteristics**

- (a) If Owner installs any Capital Item or makes any Repairs the costs of which are paid by CAISO under this Agreement, Owner shall modify the Maximum Net Dependable Capacity, Unit Availability Limit, and performance characteristics of the affected Unit to reflect the resulting changes in operating costs effective as of the date CAISO's payment of CAISO's Repair Share of the Repairs is made, or in the case of a Capital Item, the date the cost of the Capital Item is included in a Surcharge Payment or the rates paid by CAISO.
- (b) If FERC authorization is required to permit Owner to recover the CAISO's Repair Share from CAISO or to include the costs of a Capital Item in a Surcharge Payment or the rates paid by CAISO hereunder, Owner shall make a Section 205 filing limited to recovery of the costs and implementation of related changes to performance characteristics, shall request that the filing become effective as of the date the Capital Item or Repair was placed in service and request expedited consideration of the filing. If CAISO has approved the Capital Item or Repair, CAISO shall intervene in support of such filing including support of requests to place the change in effect without suspension or hearing.
- (c) If Owner makes Repairs or installs a Capital Item when not required to do so and CAISO has not agreed or is not required by ADR to pay for such Repair or Capital Item, Owner may either:
  - (i) make an appropriate adjustment to the Maximum Net Dependable Capacity, Unit Availability Limit and performance characteristics of the affected Unit to reflect the capability the Unit would have had if the Capital Item had not been installed or the Repairs had not been made; or
  - (ii) make appropriate adjustment to the Maximum Net Dependable Capacity, Unit Availability Limit and performance characteristics of the affected Unit to reflect the Repairs or installation of the Capital Item.
- (d) Any adjustment to the Heat Input characteristics of the Unit shall be made in accordance with Section 4.9(d).

**7.8 Upgrades of Generating Units**

Owner may Upgrade any Unit at the Facility, provided that no Upgrade shall release Owner from Owner's performance obligations under this Agreement. CAISO shall secure no rights under this Agreement to any capacity or services increased or enhanced by any Upgrade unless the Parties agree as to the terms of CAISO's rights and the amount of CAISO's payment for such Upgrade. If the Parties so agree, the Maximum Net Dependable Capacity, Unit Availability Limit and performance characteristics of the affected Unit shall be adjusted to reflect CAISO's agreed upon rights to the Upgrade provided that any adjustment in heat input shall be made in accordance with Section 4.9(d). If FERC authorization is required to permit Owner to recover the portion of the Upgrade cost CAISO has agreed to pay for the agreed revisions to the Unit characteristics, Owner shall make a Section 205 filing limited to recovery of the costs and implementation of related changes to the Maximum Net Dependable Capacity, Unit Availability Limit and performance characteristics, shall request that the filing become effective as of the date CAISO begins paying its agreed portion of the cost of the Upgrade and request expedited consideration of the filing. CAISO shall intervene in support of such filing including support of requests to place the change in effect without suspension or hearing.

**7.9 Third-Party Participation in CAISO Review Process**

- (a) Subject to fulfillment of the requirements of Section 7.9 (b), CAISO shall consult with the Responsible Utility and the California Agencies prior to approving Capital Items or Repairs. CAISO may approve Capital Items or Repairs aggregating less than \$5,000,000 for the Facility in a Contract Year without approval of the Responsible Utility or the California Agencies. After Capital Items and Repairs aggregating \$5,000,000 for the Facility in a Contract Year have been approved by CAISO, CAISO's approval of all other Capital Items and Repairs for that Contract Year shall not be effective unless the Responsible Utility has consented to such Capital Item or Repair.
- (b) The requirements of Section 7.9 (a) relating to Responsible Utilities shall apply only if and to the extent that the Responsible Utility agrees to waive its right to challenge before the FERC Owner's recovery of approved costs of Repairs or Capital Items. The requirement of Section 7.9 (a) relating to the California Agency shall apply only if and to the extent that each California Agency agrees to waive its right to challenge Owner's recovery of costs associated with the proposed Repairs or Capital Item on any grounds not set out in written objections provided by the California Agencies to CAISO and Owner within 30 days of the California Agencies' receipt of the preliminary and final reports under Section 7.5 or Section 7.6.
- (c) Provided that the California Agencies and Responsible Utility are bound by the provisions of the Confidentiality and Non-disclosure Agreement attached as Schedule N and make the waivers required in Section 7.9 (b), Owner will provide copies of the required reports and notices under Section 7.4, Section 7.5 or Section 7.6, and any additional information provided to the CAISO pursuant to Sections 7.4, 7.5 and 7.6, as the case may be, to the California Agencies and Responsible Utility at the same time as the reports, notices and information are provided to CAISO, and CAISO will provide copies of all information provided to Owner pursuant to such Sections to the California Agencies and Responsible Utility.

**ARTICLE 8**  
**RATES AND CHARGES**

**8.1 Condition 1**

When a Unit is under Condition 1, CAISO shall pay Owner each Month for each Unit the sum of:

- (a) the Monthly Option Payment which shall be equal to the Monthly Availability Payment plus the Monthly Surcharge Payment, minus the sum of all Non-Performance Penalties for the Month. In no event shall (i) the Monthly Option Payment for any month be less than zero, (ii) the sum of the Monthly Availability Payments for a Contract Year exceed the Annual Fixed Revenue Requirement for the Contract Year, or (iii) the sum of the Monthly Surcharge Payments for the Contract Year exceed the Annual Capital Item Cost (as defined in Schedule B) for the Contract Year. The Monthly Availability Payment and the Monthly Surcharge Payment shall each be computed in accordance with Schedule B. The Non-Performance Penalties for the Month shall be calculated in accordance with Section 8.5;
- (b) the Variable Cost Payment computed in accordance with Schedule C;
- (c) one-twelfth of the Prepaid Start-up Charge as set out on Schedule D;
- (d) the sum of the Start-up Adjustments calculated in accordance with Schedule D for each Start-up during the Month which was a Prepaid Start-up;
- (e) the sum for all Settlement Periods in the Month of the Pre-empted Dispatch Payments and Motoring Charges calculated in accordance with Schedule E;
- (f) once the Counted MWh for the Contract Year equals the Maximum Annual MWh, the Counted Service Hours for the Contract Year equals the Maximum Annual Service Hours, or the Counted MWh for hydroelectric units for the Month equals the Maximum Monthly MWh, a payment for each subsequent Billable MWh at the rate set out on Schedule G;
- (g) once the Counted Start-ups for the Contract Year equals the Maximum Annual Start-ups, a payment for each additional Start-up calculated in accordance with Schedule G; and
- (h) charges for services Delivered from Substitute Units pursuant to Sections 5.1(c) and (d).

**8.2 Condition 2**

When a Unit is operating under Condition 2, CAISO shall pay Owner the sum of:

- (a) the Monthly Option Payment, which shall be equal to the Monthly Availability Payment plus the Monthly Surcharge Payment, minus the sum of all Non-Performance Penalties for the Month. In no event shall (i) the Monthly Option Payment for any month be less than zero, (ii) the sum of the Monthly Availability Payments for a Contract Year exceed the Annual Fixed Revenue Requirement for the Contract Year or (iii) the sum of the Monthly Surcharge Payments for the Contract Year exceed the Annual Capital Item Cost (as defined in Schedule B) for the Contract Year. The Monthly Availability Payment and the Monthly Surcharge Payment shall each be computed in accordance with Schedule B. The Non-Performance Penalties for the Month shall be calculated in accordance with Section 8.5.
- (b) the Variable Cost Payment computed in accordance with Schedule C;
- (c) the sum of all Start-up Payments for the Month until Counted Start-ups equal Maximum Annual Start-ups computed in accordance with Schedule D;
- (d) the sum for all Settlement Periods in the Month of Motoring Charges calculated in accordance with Schedule E;

- (e) once the Counted MWh for the Contract Year equals the Maximum Annual MWh or the Counted Service Hours for the Contract Year equals the Maximum Annual Service Hours, a payment for each subsequent Billable MWh at the rate set out on Schedule G;
- (f) once the Counted Start-ups for the Contract Year equals the Maximum Annual Start-ups, a payment for each additional Start-up calculated in accordance with Schedule G; and
- (g) charges for services Delivered from Substitute Units pursuant to Section 5.1(c) and (d).

### **8.3 Determination of Billable MWh and Hybrid MWh**

- (a) "Billable MWh" shall be determined by application of the following rules:
  - (i) If a Unit under Condition 1 or Condition 2 Delivers MWh only in Nonmarket Transactions during a Settlement Period, the Billable MWh shall be the lesser of (A) the Hourly Metered Total Net Generation or (B) the Requested MWh.
  - (ii) If a Unit under Condition 1 delivers MWh in both Market and Nonmarket Transactions during a Settlement Period:
    - (A) If the Hourly Metered Total Net Generation during the Settlement Period is equal to or greater than the Requested MWh applicable to the Settlement Period, the Billable MWh shall be (1) the Requested MWh minus (2) the Hybrid MWh, but shall never be less than zero.
    - (B) If the Hourly Metered Total Net Generation during the Settlement Period is less than the Requested MWh applicable to the Settlement Period, the Billable MWh shall be (1) Hourly Metered Total Net Generation minus (2) the Hybrid MWh, but shall never be less than zero.
  - (iii) If a Unit is under Condition 2, the Billable MWh shall be the lesser of (A) the Hourly Metered Total Net Generation or (B) the sum of (1) Requested MWh and (2) the amount, if any, by which the total MWh for which Owner's bids pursuant to Section 6.1 (b) cleared the market exceeds the Requested MWh.
- (b) "Hybrid MWh" shall be the sum of the MWh scheduled in Market Transactions which were substituted for Requested MWh under Section 5.2 and the MWh scheduled in Market Transactions for which CAISO issued a Dispatch Notice pursuant to Section 4.5 provided that Hybrid MWh shall never exceed the Hourly Metered Total Net Generation.

### **8.4 Determination of Prepaid Start-ups**

Prepaid Start-ups for Condition 1 shall be the Maximum Annual Start-ups. There shall be no Prepaid Start-ups for Condition 2.

### **8.5 Non-Performance Penalty**

- (a) If a Unit fails to comply fully with a Dispatch Notice and such failure is not due to a Force Majeure Event under this Agreement, the Unit shall be subject to a Non-Performance Penalty computed in accordance with this Section 8.5.
- (b) The Non-Performance Penalty shall be calculated for each hour of the Penalty Period in which Owner is not deemed to be in full compliance with a Dispatch Notice and is not excused from performance. The Non-Performance Penalty shall be the sum of the amounts calculated for each Settlement Period in the Month by multiplying (i) the Availability Deficiency Factor for the Settlement Period by (ii) the sum of the Hourly Penalty Rate and the Hourly Surcharge Penalty Rate for the Unit as set forth on Schedule B; provided that the Non-Performance Penalty for any Month shall not exceed the sum of the Condition 1 Availability Payment and Condition 1 Surcharge Payment (for Units on Condition 1), or the sum of the Condition 2 Availability Payment and Condition 2 Surcharge Payment (for Units on Condition 2) for the Month. For purposes of this calculation:



- (i) an Availability Deficiency Factor shall be calculated for each hour of the Penalty Period as one minus the number determined by dividing (a) the Delivered MWh for the hour in question by (b) the product of the Unit Availability Limit and the percentage of the hour (up to 100%) that the Unit was subject to a Dispatch Notice;
  - (ii) the Penalty Period shall be the 72 hour period beginning at the time Owner fails to comply fully with a Dispatch Notice, provided that if Owner in accordance with Section 7.2(a) had scheduled an outage to begin during the 72 hour period, the Penalty Period will terminate at the time the outage was scheduled to begin.
  - (iii) the Unit Availability Limit shall be the Unit Availability Limit as it existed at the time CAISO issued the Dispatch Notice with which Owner failed to comply but reduced to eliminate the effect of any Force Majeure Event affecting deliveries during the Penalty Period.
- (c) For purposes of this Section 8.5 and Section 4.9(a)(i), a Unit shall be deemed to be in full compliance with a Dispatch Notice if the Unit Delivers (i) at least 97 percent of the Requested MW or (ii) not more than 2 MW less than the Requested MW.

#### **8.6 Long-term Planned Outage Adjustment**

Not later than 60 days after the end of each Contract Year, Owner shall submit to CAISO a statement showing the Long-term Planned Outage Adjustment for the Contract Year. The Long-term Planned Outage Adjustment shall equal (a) the Hourly Availability Charge plus each Hourly Capital Item Charge, as shown in Schedule B, multiplied by (b) the difference, if positive, of (i) the hours scheduled for performance of Long-term Planned Outages minus (ii) the actual hours spent performing Long-term Planned Outages during the Contract Year. Owner shall credit any Long-term Planned Outage Adjustment on the next invoice or, if this Agreement has terminated, shall pay any Long-term Planned Outage Adjustment to the CAISO upon submission of the Final Invoice.

**ARTICLE 9**  
**STATEMENTS AND PAYMENTS**

**9.1 Invoicing**

- (a) The billing, invoicing and payment of charges under this Agreement shall be as specified in this Article 9, Schedule O to this Agreement and Section 11.13 of the CAISO Tariff. CAISO shall not modify any provision of Section 41 of the CAISO Tariff or Section 11.13 as they apply to this Agreement without Owner's consent, provided that Owner's consent shall not be required for a change of allocations of RMR costs among market participants under the CAISO Tariff. Notwithstanding anything in this Agreement to the contrary, invoices either due or from the RMR Owner or Responsible Utility for an amount less than \$10.00 will be adjusted to \$0.00 and no amounts will be due to or from that RMR Owner or Responsible Utility for that invoice.
- (b) Owner will submit to CAISO RMR Invoices for each Month during the term of this Agreement, which are defined in this Section 9.1(b) as follows: (i) Estimated RMR Invoice; (ii) Revised Estimated RMR Invoice; (iii) Adjusted RMR Invoice; and (iv) Revised Adjusted RMR Invoice. In the event there are no revisions to the Estimated RMR Invoice or the Adjusted RMR Invoice, Owner shall submit an e-mail to CAISO with a copy to the Responsible Utility indicating that the Estimated RMR Invoice or the Adjusted RMR Invoice shall be deemed to be the Revised Estimated RMR Invoice or the Revised Adjusted RMR Invoice.
  - (i) Within 14 days after the end of each Month during the term of this Agreement (and, if this Agreement does not expire or terminate at the end of a Month, within 14 days after the end of the Month in which the Agreement expires or terminates), Owner shall submit an estimated invoice ("Estimated RMR Invoice") to CAISO for all charges and credits due under this Agreement for the Month ("Billing Month"). Each Estimated RMR Invoice shall reflect actual data for the Billing Month to the extent actual data is available and shall otherwise reflect estimated data.
  - (ii) By the date specified on the RMR Payments Calendar, Owner shall submit a revised estimated invoice ("Revised Estimated RMR Invoice") to CAISO, which will include appropriate revisions based on the CAISO's validation of the Estimated RMR Invoice. The Due Date of the Revised Estimated RMR Invoice shall be the 30th day after the date on which Owner submitted the Estimated RMR Invoice to CAISO, or if such date is not a Business Day, the Due Date shall be the next Business Day.
  - (iii) By the date specified on the RMR Payments Calendar, CAISO shall submit an invoice ("CAISO Invoice") to the Responsible Utility, with an e-mail notification to Owner and the Responsible Utility, which specifies the payment due from the Responsible Utility to CAISO and from CAISO to Owner on the basis of the Revised Estimated RMR Invoice. However, in the event the payment is due from Owner to CAISO and from CAISO to the Responsible Utility, then CAISO shall submit the CAISO Invoice to Owner with an e-mail notification to Owner and the Responsible Utility.
  - (iv) Within 7 days of receipt by Owner of the Recalculation Settlement Statement for the last day of the Billing Month, Owner shall submit an adjusted invoice ("Adjusted RMR Invoice") to CAISO, reflecting actual data for the Billing Month.
  - (v) By the date specified on the RMR Payments Calendar, Owner shall submit to CAISO an invoice reflecting actual data for the Billing Month and including appropriate revisions based on the CAISO's validation of the Adjusted RMR Invoice ("Revised Adjusted RMR Invoice"). The Due Date of the Revised Adjusted RMR Invoice shall be the 30th day after the date on which Owner submitted the Adjusted RMR Invoice to CAISO, or if such date is not a Business Day, the Due Date shall be the next Business Day.

- (vi) By the date specified on the RMR Payments Calendar, CAISO shall submit an CAISO Invoice to the Responsible Utility, with an e-mail notification to Owner and the Responsible Utility, which specifies the payment due from the Responsible Utility to CAISO and from CAISO to Owner on the basis of the Revised Adjusted RMR Invoice. However, in the event the payment is due from Owner to CAISO and from CAISO to the Responsible Utility, then CAISO shall submit the CAISO Invoice to Owner with an e-mail notification to Owner and the Responsible Utility.
- (c) If the day on which any RMR Invoice is due to be issued is not a Business Day, such RMR Invoice shall be issued on the next succeeding Business Day.
- (d) Each RMR Invoice shall use the template posted on the CAISO Website in accordance with Schedule O ("RMR Invoice Template"). Each RMR Invoice shall set out detailed calculations and breakdowns of the amounts due, shall identify the source of each input used in the calculations, and shall identify all relationships among data in different invoice levels.
- (e) This section 9.1(e) applies to all Condition 1 Units. Any amounts received by or due to Owner's Scheduling Coordinator for Billable MWh and Ancillary Services Delivered in Nonmarket Transactions during the Billing Month shall be subtracted from the amount otherwise due under each RMR Invoice. If subtraction of the Energy and any Ancillary Service amounts for a Unit under Condition 1 results in a credit to CAISO on an RMR Invoice, the credit shall be carried forward ("Credit Carryforward") to the RMR Invoices for each succeeding Billing Month in that Contract Year until extinguished; provided that Owner shall not be required to carry any such credit into a later Contract Year or to pay any part of such credit to CAISO.
- (f) This section 9.1(f) applies to all Condition 2 Units. All amounts received by or due to Owner's Scheduling Coordinator in connection with Market Transactions and Nonmarket Transactions during the Billing Month ("Scheduling Coordinator Revenues") shall be subtracted from the amount otherwise due under each RMR Invoice. If subtracting the Scheduling Coordinator Revenues results in a credit to CAISO on an RMR Invoice, the credit shall be carried forward ("Credit Carryforward") to the appropriate RMR Invoices for each succeeding Billing Month in that Contract Year until extinguished. If there is an unextinguished credit balance remaining at the end of the Contract Year, Owner shall refund to CAISO an amount equal to the lesser of (i) the remaining balance of Scheduling Coordinator Revenues or (ii) the total amounts due Owner pursuant to Section 8.2 for the Contract Year minus all Scheduling Coordinator Revenues previously credited to Owner during such Contract Year. Such refund amount will be included on December's Adjusted RMR Invoice, or the Final Invoice if the Agreement is terminated.
- (g) In the event any corrections, surcharges, credits, refunds or other adjustments pertaining to a Billing Month are discovered after the Revised Adjusted RMR Invoice for such Billing Month has been issued ("Prior Period Changes"), then such Prior Period Changes shall be included in a worksheet for the prior period ("Prior Period Change Worksheet") and submitted for payment in the next allowed Billing Month for Prior Period Changes. The allowed Billing Months for Prior Period Changes are as follows. Any Prior Period Changes pertaining to the months of January through June of a Contract Year which are discovered prior to the submission of the December Estimated RMR Invoice for such Contract Year shall be included in a Prior Period Change Worksheet submitted with the December Estimated RMR Invoice. Any Prior Period Changes pertaining to the months of July through December of a Contract year which are discovered prior to the

submission of the May Estimated RMR Invoice for the subsequent Contract year shall be included, subject to Section 9.8, in a Prior Period Change Worksheet submitted with the May Estimated RMR Invoice for the subsequent Contract Year. Any Prior Period Changes pertaining to a Billing Month for a prior Contract Year which are discovered after the first opportunity to submit a Prior Period Change Worksheet has passed, shall be included in a Prior Period Change Worksheet submitted with the Estimated RMR Invoice for the next December or May Billing Month, whichever comes first. Any Prior Period Changes pertaining to the time when the Facilities were under a superseded rate schedule using Conditions of Must Run Agreement A, B, and C, shall be calculated through a separate process and not included on RMR Invoices issued under this Agreement unless the Prior Period Changes result from the Revenue Requirements Settlements outlined in the Stipulation and Agreement approved on May 28, 1999, in FERC Docket No. ER98-441-000, et al.

- (h) Owner shall send a copy of each RMR Invoice and any Prior Period Change Worksheet(s) to the Responsible Utility at the time it sends such invoices to CAISO.
- (i) Owner shall provide supporting detail with the Prior Period Change Worksheets to identify the relevant Contract Year and provide clear calculations by Facility, by Billing Month, and such other detail as necessary to support the Prior Period Change(s). This level of detail shall be consistent with the level of detail originally required to perform the computation(s) that are being corrected in the Prior Period Change Worksheet. Prior Period Change Worksheets, when required, shall include all identified Prior Period Changes for each applicable prior Contract Year, and shall be computed as specified in section 9.1(j).
- (j) A Prior Period Change Worksheet shall contain the following information and calculations for each Billing Month in the relevant Contract Year(s), commencing with the Billing Month pertaining to the Prior Period Change(s):
  - (i) The Revised Adjusted RMR Invoice for the Billing Month or, if such Billing Month has previously been submitted on a Prior Period Change Worksheet, the most recent revision of such RMR Invoice.
  - (ii) A revision of the RMR Invoice specified in paragraph (1) above which shows the RMR Invoice revised to incorporate the Prior Period Change(s) as if such Prior Period Change(s) had been invoiced in the Billing Month which gave rise to the Prior Period Change(s). Such revision shall incorporate the impact of the Prior Period Change(s) on RMR payments, including any impact resulting from the Credit Carryforward calculation for the current or previous Billing Months in the Contract Year. For Condition 2 Units, such calculation shall include a recalculation of the refund described in Section 9.1(f).
  - (iii) The difference between the amounts calculated under paragraph (2) above and paragraph (1) above. The amount due to or from Owner as a result of this calculation shall be clearly specified, with interest shown separately from any other amount due. Interest shall be calculated at the Interest Rate from the Due Date of the Revised Estimated RMR Invoice for the Billing Month to the date payment of the amount due is made.

Owner shall total for all Billing Months which are included on the Prior Period Change Worksheet, the amount due as a result of the calculation in paragraph (3) above for each Billing Month. Owner shall also total for all Billing Months which are included on the Prior Period Change Worksheet, the interest due as a result of the calculation in paragraph (3) above for each Billing Month. The total amount due and interest due shall be transferred from the Prior Period Change Worksheet to the appropriate Estimated RMR Invoice, and such amounts shall be due as specified on the Estimated RMR Invoice.

- (k) Any time a Unit switches from Condition 1 to Condition 2 or Condition 2 to Condition 1 during a Contract Year, the provisions of Section 9.1(e) shall apply to the months when the unit was on Condition 1 and the provisions of Section 9.1(g) shall apply to the months when the unit was on Condition 2.
- (l) CAISO shall separately post on the CAISO Website examples ("Prior Period Change Examples") developed and agreed to by the RMR Invoice Task Force created under Schedule O of the calculations described in Sections 9.1(e), 9.1(f), 9.1(g) and 9.1(j) to provide guidance on the correct treatment of Prior Period Changes and to show the correct preparation of the Prior Period Change Worksheet and transfer of amount due to the appropriate Estimated RMR Invoice. Additionally, the RMR Invoice Task Force shall develop and agree to, and CAISO shall post on the CAISO Website, guidelines ("Prior Period Change Guidelines") underlying the calculations described in Sections 9.1(e), 9.1(f), 9.1(g) and 9.1(j). The Prior Period Change Worksheet shall be prepared, and the amount due shall be calculated and transferred to the Estimated RMR Invoice, in accordance with the RMR Invoice Template, the Prior Period Change Examples, and the Prior Period Change Guidelines posted on the CAISO Website. In the event of a dispute regarding the treatment of Prior Period Changes, all Parties to such dispute shall refer to the Prior Period Change Examples and Prior Period Change Guidelines posted on the CAISO Website for guidance.

## **9.2 Facility Trust Accounts**

CAISO shall establish two segregated commercial bank accounts under the "Facility Trust Account" referred to in Sections 11.13 and 41 of the CAISO Tariff for each Responsible Utility. One commercial bank account, the "RMR Owner Facility Trust Account", shall be held in trust by CAISO for Owner. The other commercial bank account, the "Responsible Utility Facility Trust Account", shall be held in trust by CAISO for the Responsible Utility. Payments received by CAISO from a Responsible Utility in connection with this Agreement, including payments following termination of this Agreement, will be deposited into the RMR Owner Facility Trust Account and payments from CAISO to Owner will be withdrawn from such Account, all in accordance with Sections 11.13 and 41 of the CAISO Tariff and this Article 9. Any payments received by CAISO from Owner in connection with this Agreement, including payments following termination of this Agreement, will be deposited into the Responsible Utility Facility Trust Account. Any payments to a Responsible Utility of funds received from Owner under this Agreement will be withdrawn from the Responsible Utility Facility Trust Account, all in accordance with Section 11.13 and 41 of the CAISO Tariff, and this Agreement. Neither the RMR Owner Facility Trust Account nor the Responsible Utility Facility Trust Account shall have other funds commingled in it at any time.

### 9.3 Payment

- (a) CAISO shall pay Owner all invoiced amounts due on Revised Estimated RMR Invoices, Revised Adjusted RMR Invoices, and Final Invoices whether or not disputed by CAISO or the Responsible Utility except to the extent that CAISO (i) is entitled to a refund on a Revised Estimated or Revised Adjusted RMR Invoice or Final Invoice against such payment under this Agreement or (ii) is entitled to deduct an amount under Section 9.6. All payments shall be made from the RMR Owner Facility Trust Account on or before the Due Date by wire transfer in accordance with instructions from Owner. If Owner is also the Responsible Utility, at the discretion of Owner payments to it may be made by memorandum account instead of wire transfer. Owner shall establish and maintain a settlement account at a commercial bank located in the United States and reasonably acceptable to CAISO which can effect money transfers via Fed-Wire where payments to and from the Facility Trust Accounts shall be made in accordance with Section 9.2 and Section 11.13 of the CAISO Tariff. Owner shall notify CAISO of its settlement account details prior to the Effective Date. Owner may from time to time change its settlement account details, provided that, Owner shall give CAISO 15 days notice before making changes. In the event there is a refund amount due to CAISO, Owner shall refund the amount due CAISO in accordance with Section 9.2 and Section 11.13 of the CAISO Tariff.
- (b) If a Revised Adjusted RMR Invoice is less than the amount paid by CAISO on the Revised Estimated RMR Invoice, the difference shall be paid by Owner to CAISO with interest at the Interest Rate from the Due Date of the Revised Estimated RMR Invoice to the Due Date of the Revised Adjusted RMR Invoice, or, if the Agreement is terminated, shall be paid to CAISO on submission of the Final Invoice. If a Revised Adjusted RMR Invoice is greater than the amount paid by CAISO under the Revised Estimated RMR Invoice, CAISO shall pay Owner the difference with interest at the Interest Rate from the Due Date of the Revised Estimated RMR Invoice to the Due Date of the Revised Adjusted RMR Invoice by CAISO.

### 9.4 Payment Default

- (a) Except as provided in Section 9.4 (b), Owner, in addition to any other remedy it may have, may pursue all claims against CAISO and the Collateral, as defined in Section 9.7 below, if CAISO fails to pay any invoice in full by the Due Date as required under Section 9.3. CAISO, in addition to any other remedy it may have, may pursue all claims against Owner if Owner fails to pay any invoice in full by the Due Date as required under Section 9.3. The parties' remedies shall be subject to the limitations set forth in Article 11.
- (b) If the amounts CAISO has not paid have been invoiced by CAISO to the Responsible Utility and the Responsible Utility has not paid such amounts to CAISO, Owner shall cause execution to issue against, and shall collect solely from the Collateral or the Responsible Utility, and not CAISO, if all of the following conditions have been satisfied:
  - (i) The Responsible Utility is **[INSERT SCE, PGE or SDGE, as applicable]**
  - (ii) CAISO has invoiced via the CAISO Invoice **[INSERT SCE, PGE or SDGE, as applicable]** for costs (net of any applicable credits, all as shown on the Revised Estimated or Revised Adjusted RMR Invoice) after deducting only amounts permitted to be deducted under Section 9.6.

- (iii) The CAISO Tariff expressly requires **[INSERT SCE, PGE or SDGE, as applicable]** to pay all amounts shown on the CAISO Invoices without offset, recoupment or deduction (except to the extent that Section 41 of the CAISO Tariff permits deduction of amounts that are due the Responsible Utility after resolution of a dispute) and, to the extent that **[INSERT SCE, PGE or SDGE, as applicable]** disputes any amounts due under the CAISO Invoices, to pay the disputed amounts under protest and subject to refund with interest; and
  - (iv) **[INSERT SCE, PGE or SDGE, as applicable]** fails to pay all or a portion of the amounts due under the CAISO Invoices and did not have the right to have such amount deducted under Section 41 of the CAISO Tariff.
- (c) Notwithstanding the provisions of Section 9.4 (b), Owner may cause execution to issue against, and collect from, CAISO, the Responsible Utility, the Collateral or insurance maintained by CAISO pursuant to Section 12.1(a), if notwithstanding the requirement to pay CAISO Invoices without offset, recoupment or deduction (except to the extent that Section 41 of the CAISO Tariff permits deduction of amounts that are due the Responsible Utility after resolution of a dispute), a Responsible Utility nonetheless offsets amounts unrelated to this Agreement or withholds amounts based on a breach or default by CAISO of any of its obligations to the Responsible Utility.
- (d) The CAISO Invoices shall separately show the amounts due for services from each Facility. If the Responsible Utility withholds any portion of the amount due under the CAISO Invoices, CAISO shall inform Owner of the specific Facility and time periods for which the Responsible Utility withheld payments.
- (e) As a condition for Owner's agreement not to seek to recover amounts from CAISO under Section 9.4(b), CAISO agrees to include and retain in the CAISO Tariff provisions expressly recognizing that Owner is a third party beneficiary of, and has all rights that CAISO has under the CAISO Tariff, at law, in equity or otherwise, to enforce the Responsible Utility's obligation to pay all sums invoiced to it in the CAISO Invoices but not paid by the Responsible Utility, to the extent that, as a result of the Responsible Utility's failure to pay, CAISO does not pay Owner on a timely basis amounts due under this Agreement. Owner recognizes that its rights as a third party beneficiary are (i) no greater than CAISO's rights against the Responsible Utility, and (ii) subject to Section 13 of the CAISO Tariff regarding dispute resolution. Either CAISO or Owner (but not both) will be entitled to enforce any claim arising from unpaid CAISO Invoices, and only one party will be a "disputing party" under Section 13 of the CAISO Tariff with respect to such claim so that the Responsible Utility will not be subject to duplicate claims or recoveries. Owner shall have the right to control the disposition of claims against the Responsible Utility for non-payments which result in payment defaults by CAISO under this Agreement. To that end, CAISO agrees that in the event of nonpayment by the Responsible Utility of amounts due under the CAISO Invoices, CAISO will not take any action to enforce its rights against the Responsible Utility unless CAISO is requested to do so by Owner. CAISO shall cooperate with Owner in a timely manner as necessary or appropriate to most fully effectuate Owner's rights related to such enforcement, including using its best efforts to enforce the Responsible Utility's payment obligations if, as, to the extent, and within the time frame, requested by Owner. CAISO shall intervene and participate where procedurally necessary to the assertion of a claim by Owner.

- (f) If a Responsibility Utility was not the Responsible Utility on April 1, 1998 (a "New Responsible Utility") and if:
  - (i) The senior unsecured debt of the New Responsible Utility is rated or becomes rated at less than A- from Standard & Poors ("S&P") or A3 from Moody's Investment Services ("Moody's), and
  - (ii) Such ratings do not improve to A- or better from S&P or A3 or better from Moody's within 60 days,CAISO shall then require the New Responsible Utility to issue and confirm to CAISO an irrevocable and unconditional letter of credit in an amount equal to three times the highest monthly payment invoiced by CAISO to the New Responsible Utility (or the prior Responsible Utility) in connection with services provided under this Agreement during the last 3 months for which invoices have been issued. The letter of credit must be issued by a bank or other financial institution whose senior unsecured debt rating is not less than A from S&P and A2 from Moody's. The letter of credit shall authorize CAISO or Owner to draw on the letter of credit for deposit solely into the RMR Owner Facility Trust Account in an amount equal to any amount due and not paid by the Responsible Utility under the CAISO Invoices.

**9.5 Interest**

If CAISO or Owner fails to make any payment by the Due Date, the amount due but not paid shall accrue interest at the Interest Rate from the Due Date until the amount is paid.

**9.6 Disputed Amounts**

- (a) If CAISO or the Responsible Utility disputes a Revised Estimated or Revised Adjusted RMR Invoice or Final Invoice or part thereof submitted by Owner under this Agreement, or if the Responsible Utility disputes an CAISO Invoice or part thereof that relates to an RMR Invoice or Final Invoice submitted by Owner to CAISO under this Agreement, and if such dispute is based in whole or part on an alleged error or breach or default of Owner's obligations to CAISO under this Agreement, then CAISO promptly shall give written notice to Owner of the reasons for the dispute and the amount in dispute. CAISO shall pay Owner the disputed amount without offset, recoupment or reduction of any kind or nature. Such payment may, however, be made by CAISO under protest with reservation of the right to seek a refund with interest at the Interest Rate from the date of the disputed payment to the date of repayment. If CAISO notifies Owner that CAISO or the Responsible Utility disputes any amount of Owner's RMR Invoice or Final Invoice, Owner shall at its own cost provide CAISO with all information and assistance CAISO reasonably requires to resolve the dispute and shall join with CAISO in any discussions and negotiations with the Responsible Utility to resolve the dispute. The dispute shall be subject to ADR provided that in such ADR proceeding only one entity (CAISO or Responsible Utility) will be the disputing party with respect to such claim. Owner shall be obligated to refund to CAISO as a result of resolution of such dispute only if, and to the extent, the resolution determines the amount invoiced by Owner exceeded the amounts due Owner under this Agreement for the period covered by the RMR Invoices(s) and/or Final Invoice. Any amount agreed or determined to be owed by Owner to CAISO under this Section 9.6 (a) shall be refunded by Owner to CAISO with interest, by Owner's inclusion of such refund (including interest) in a Prior Period Change Worksheet included



- with the next appropriate May or December Estimated RMR Invoice as specified in Sections 9.1(g) through 9.1(l) of this Agreement. If Owner does not include such refund (including interest) in the appropriate RMR Invoice, then such refund shall be made by CAISO's deduction of such amount from the next Revised Estimated and Revised Adjusted RMR Invoice(s) and Final Invoice submitted by Owner to CAISO under this Agreement until such amount is extinguished, or, if this Agreement has terminated, by paying such amount to CAISO. Interest shall be at the Interest Rate unless it is determined through ADR that the amount invoiced by Owner was submitted without a good faith basis in fact or law, in which case interest shall be at twice the Interest Rate.
- (b) It is expressly understood that the Responsible Utility shall, to the extent set forth herein, be a third party beneficiary of, and shall have all rights that CAISO has under this Agreement, at law, in equity and otherwise, to dispute an RMR Invoice or Final Invoice submitted to CAISO by Owner under this Agreement and to enforce Owner's obligation to make any required payment to CAISO under this Agreement to the extent CAISO does not make a related deposit into the Responsible Utility Facility Trust Account as a result of Owner's failure to make the required payment. The rights of the Responsible Utility as third party beneficiary shall be no greater than CAISO's rights against Owner and shall be subject to the ADR provisions of this Agreement. Either CAISO or the Responsible Utility, but not both, will be entitled to enforce any claim arising from a related set of facts, and only one such entity will be a disputing party under Article 11 of this Agreement with respect to any such claim so that Owner shall not be subject to duplicate claims or recoveries. If the Responsible Utility is not the Owner, the Responsible Utility shall control the disposition of all claims against Owner for non-payment described in this Section 9.6, including the choice of disputing party. The CAISO shall have the right to intervene for the purpose of participating in the proceeding even if it is not the disputing party. CAISO shall cooperate with the Responsible Utility in a timely manner as necessary or appropriate to most fully effectuate the Responsible Utility rights related to such enforcement, including using its best efforts to enforce Owner's payment obligations if, as, to the extent, and within the time frame, requested by Responsible Utility. Subject to the foregoing, CAISO shall intervene and participate where procedurally necessary to the assertion of a claim by the Responsible Utility.

#### **9.7 Payment Security**

To secure all of CAISO's payment obligations to Owner under this Agreement, CAISO agrees to grant Owner a security interest and lien in the following collateral (collectively, the "Collateral"): (a) all past, present and future accounts and other amounts Responsible Utility owes CAISO at any time pursuant to Section 41 of the CAISO Tariff attributable to invoices submitted by Owner under this Agreement (collectively, the "Accounts"), (b) the RMR Owner Facility Trust Account, all funds in the RMR Owner Facility Trust Account at any time, and all funds paid on account of any Accounts, (c) all proceeds of the Collateral, if any, and (d) all of CAISO's right, title and interest in the Collateral. CAISO represents and warrants to Owner that (a) CAISO has the authority to grant such security interest, (b) CAISO will have good, marketable and exclusive title to all of the Collateral, (c) such security interest and lien will at all times be a valid, enforceable and first-priority lien on the Collateral, and (d) such security interest will be duly perfected by the filing of a financing statement under the California Uniform Commercial Code describing the Collateral in the office of the Secretary of State of California and the delivery of a written notice of Owner's security interest to the bank with which the RMR Owner Facility Trust Account is maintained. If CAISO defaults on its obligation to pay under this Agreement, Owner shall be entitled to enforce such security

interest, to exercise its rights in the Collateral, to collect the Accounts from Responsible Utility, to collect all funds in the RMR Owner Facility Trust Account, and to exercise all other rights and remedies under the California Uniform Commercial Code. CAISO agrees to promptly execute and deliver all financing statements and other documents Owner reasonably requests, including but not limited to a written notice of Owner's security interest in the Collateral to the bank with which the RMR Owner Facility Trust Account is maintained, in order to maintain, perfect and enforce such security interest.

**9.8 Errors**

If a Party discovers an error in the amount of an invoice or payment under this Agreement and notifies the other Party within 60 days after discovering the error, the error shall be corrected as specified in Sections 9.1(g) through 9.1(l) of this Agreement; provided that a Party shall not be entitled to have an error corrected unless the Party notifies the other Party within 12 months after the date of the applicable Revised Adjusted RMR Invoice or Final Invoice, or within 60 days after issuance of the final report with respect to an audit pursuant to Section 12.2(g), whichever is later.

**9.9 Payment of Termination Fee**

- (a) Within 14 days after the end of each Month during the period in which any Termination Fee is payable under Section 2.5, Owner shall submit an invoice ("Termination Fee Invoice") to CAISO and a copy to the Responsible Utility for all Termination Fee amounts due for the Month. Each Termination Fee Invoice shall: (i) be broken down by Unit and (ii) clearly identify the source of each input used.
- (b) CAISO shall pay Owner amounts invoiced under this Section 9.9 in accordance with Sections 9.3 through 9.8. If CAISO or, if applicable, the Responsible Utility, has disputed the amount of a Termination Fee stated in a Termination Fee Invoice, then neither CAISO nor the Responsible Utility shall be required to give notice of the same disputed amount as to subsequent Termination Fee Invoices.

**9.10 Payment of Final Invoice**

- (a) Within 7 days of receipt by Owner of the Recalculation Settlement Statement for market transactions for the effective date of termination of this Agreement, Owner shall submit an invoice ("Final Invoice") to CAISO and a copy to the Responsible Utility for all charges and other amounts then due under this Agreement. Amounts then due shall include: (i) charges for all Billable MWh and Ancillary Services provided under this Agreement and not previously invoiced; (ii) the Long-term Planned Outage Adjustment under Section 8.6. and (iii) refunds described in section 9.1(f) for Condition 2 Units. Calculation of the Long-term Planned Outage Adjustment shall be made by deeming the effective date of termination to be the end of the Contract Year, and by assuming that all Long-term Planned Outages scheduled to occur after the termination date occur as scheduled. The Final Invoice shall not include remaining Monthly payments of a Termination Fee under Section 2.5, which shall continue to be paid monthly until the obligation is extinguished.
- (b) CAISO shall pay Owner the amount stated in the Final Invoice in accordance with Section 9.3 through 9.8.

**ARTICLE 10**  
**FORCE MAJEURE EVENTS**

**10.1 Notice of Force Majeure Events**

If either Party is unable to perform its obligations under this Agreement due to a Force Majeure Event, the Party unable to perform shall notify the other Party of the Force Majeure Event promptly after the occurrence thereof. The Party's notice may be given orally but shall promptly be confirmed in writing or electronically.

**10.2 Effect of Force Majeure Event**

- (a) If a Force Majeure Event prevents a Party from performing, in whole or in part, its obligations under this Agreement, such Party's obligations, other than obligations to pay money (unless the means of transferring funds is affected), shall be suspended and such Party shall have no liability with respect to such obligations; provided, that the suspension of the Party's obligations is of no greater scope and of no longer duration than is required by the Force Majeure Event.
- (b) If a Force Majeure Event (other than a flood, storm or drought affecting a hydroelectric Unit) reduces the Availability of a Unit, the Availability shall be determined as if the Unit were available up to the Unit Availability Limit in effect prior to the Force Majeure Event through the earlier of the 120th day following the Force Majeure Event or until the Unit's Availability is restored, whichever occurs first. If a flood or storm Force Majeure Event reduces the Availability of a hydroelectric Unit, the Availability shall be determined as if the Unit were available up to its Unit Availability Limit in effect prior to the Force Majeure Event through the earlier of the 120th day following the Force Majeure Event or until the Unit's Availability is restored, and as if the Unit were available up to one-half of such Unit Availability Limit from the 120th day through the earlier of the 240th day or the date on which the Unit's Availability is restored. If a drought Force Majeure Event reduces the Availability of a hydroelectric Unit, the Availability shall be determined as if the Unit were available up to its Unit Availability Limit in effect prior to the Force Majeure Event until the Unit's Availability is restored following the end of the drought Force Majeure Event.

**10.3 Remedial Efforts**

The Party that is unable to perform by reason of a Force Majeure Event shall use commercially reasonable efforts to remedy its inability to perform and to mitigate the consequences of the Force Majeure Event as soon as reasonably practicable; provided, that no Party shall be required to obtain replacement power or to settle any strike or other labor dispute on terms which, in the Party's sole discretion, are contrary to its interest and, except to the extent that the Unit's primary fuel is distillate fuel oil or Schedule H expressly requires Owner to maintain fuel oil capability for the Unit, Owner shall not be required to obtain or use fuel oil to operate a Unit. The Party unable to perform shall advise the other Party of its efforts to remedy its inability to perform and to mitigate the consequences of the Force Majeure Event, and shall advise the other Party of when it believes it will be able to resume performance of its obligations under this Agreement.

## **ARTICLE 11 REMEDIES**

### **11.1 Dispute Resolution**

The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. Unless this Agreement expressly provides that a particular type of dispute is not subject to ADR, the Parties shall use ADR procedures to resolve all disputes which are not otherwise settled. Owner and CAISO will promptly join with all other owners of Reliability Must-Run Units and all Responsible Utilities to jointly develop ADR procedures to be used in connection with such disputes. Following unanimous agreement of Owner, CAISO and Responsible Utilities to the ADR procedures, such procedures shall be posted on CAISO Website. Until there is unanimous agreement on such procedures, the Parties shall use the ADR procedures contained in Schedule K.

### **11.2 Waiver of Damages**

- (a) Except for the obligations set forth in Section 11.4 (Termination for Default) and Section 12.6 (Indemnity), neither Party shall be liable to the other Party for any claim, loss or damage of any nature arising out of or relating to the performance or breach of this Agreement including replacement power costs, loss of revenue, loss of anticipated profits or loss of use of, or damage to, plant or other property, personal injury, or death; provided, however, that this waiver of liability shall not include or cover any claim, damage or loss arising out of the willful misconduct of either Party. Amounts that are specifically payable or reimbursable by the other Party under the terms of this Agreement shall not be considered "claims, losses or damages" for purposes of this Section.
- (b) Neither Party shall be liable to the other for any special, indirect, incidental or consequential damages suffered by the other Party or by third parties arising out of, or relating to, this Agreement or the performance of, or breach of any obligation under, this Agreement, or the negligence of any Party. This limitation shall apply even if the Party is advised of the possibility of these damages.
- (c) Except for the obligations to make or adjust payments or pay penalties expressly provided in Section 2.5 (Termination Fee), Section 7.4 (Planned Capital Items), Section 7.5 (Unplanned Repairs), Section 7.6 (Unplanned Capital Items), Section 7.8 (Upgrades of Generating Units), Article 8 (Rates and Charges) and Article 9 (Statements and Payments), of this Agreement, either Party's maximum aggregate liability for any and all claims arising out of or relating to performance or breach of this Agreement during the Contract Year, whether based upon contract, tort (regardless of degree of fault or negligence), strict liability, warranty, or otherwise, including any liability for Owner's failure to Deliver Requested MWh or Requested Ancillary Services shall not exceed \$20 million.

### **11.3 Injunctive Relief**

In addition to any other remedy to which a Party may be entitled by reason of the other Party's breach of this Agreement, the Party not in default shall be entitled to seek temporary, preliminary and permanent injunctive relief from any court of competent jurisdiction restraining the other Party from committing or continuing any breach of this Agreement.

**11.4 Termination For Default**

- (a) If either Party shall fail to perform any material obligation imposed on it by this Agreement and that obligation has not been suspended pursuant to Section 10, the other Party, at its option, may terminate this Agreement by giving the Party in default notice setting out specifically the circumstances constituting the default and declaring its intention to terminate this Agreement. If the Party receiving the notice disputes the notice, it shall notify the other Party within 14 days after receipt of the notice setting out specifically the grounds of such disputes. Time is of the essence in remedying a default. If the Party receiving the notice does not, within 30 days after receiving the notice, remedy the default or refer the dispute to ADR, the Party not in default shall be entitled by a further notice to terminate this Agreement. The Party not in default shall have a duty to mitigate damages.
- (b) Termination of this Agreement pursuant to this Section 11.4 shall be without prejudice to the right of Owner or CAISO to collect any amounts due to it prior to the time of termination. If CAISO terminates this Agreement as to any Unit(s) due to Owner's default, Owner shall reimburse to CAISO the amount, if any, by which costs incurred by CAISO as a direct result of the termination through the end of the then current Contract Year exceed the costs which CAISO would have incurred absent such termination.

**11.5 Cumulative and Nonexclusive**

Except as provided in Section 5.4(b), each remedy provided for in this Agreement shall be cumulative and not exclusive.

**11.6 Beneficiaries**

Except as is specifically set forth in this Agreement, nothing in this Agreement, whether express or implied, confers any rights or remedies under, or by reason of, this Agreement on any persons other than the Parties and their respective successors and assigns, nor is anything in this Agreement intended to relieve or discharge the obligations or liability of any third party, nor give any third person any rights of subrogation or action against any Party. The owner of title to a Unit that is leased to Owner is an intended beneficiary of Section 2.2(e).

**ARTICLE 12**  
**COVENANTS OF THE PARTIES**

**12.1 Insurance**

- (a) The CAISO shall maintain (i) an errors and omissions insurance policy and (ii) director and officer insurance, with combined aggregate coverage of at least \$150 million under the two policies and an operating reserve of at least \$15 million. The CAISO may reduce the level of insurance coverage, but may not do so unless it provides Owner at least 90 days notice of its intent to reduce the insurance coverage. At Owner's request, CAISO shall provide Owner with evidence of the insurance coverage it has in place. This Section 12.1 shall not be construed to require CAISO to maintain any level of coverage for any period after termination of the Agreement.
- (b) Owner and CAISO will secure and maintain in effect during the term of this Agreement the insurance required by Schedule I. Self-insurance may be utilized by mutual agreement. Owner shall name CAISO as an additional insured on its general commercial liability insurance policies. CAISO shall name Owner as an additional insured on its errors and omissions insurance policies. Owner and CAISO will each certify or cause its respective insurance agent to certify that it is insured under a major risk management program, including self-insured retentions, and except for policies covered by Section 12.1 (a), such insurance will remain in effect in amounts meeting the requirements of Schedule I.

**12.2 Books And Records**

- (a) For a period of 36 months from creation of the records, Owner shall maintain and make available for audit by CAISO complete operations records for each Unit. Such records shall include:
  - (i) information for each Settlement Period on the Availability of the Units, Delivered MWh and Delivered Ancillary Services,
  - (ii) outages,
  - (iii) Facility licenses and permits,
  - (iv) copies of operating and maintenance agreements for the Unit,
  - (v) a list of citations filed against the Unit by any environmental, air quality, health and safety, or other regulatory agency in the last 36 months,
  - (vi) a list of any resolved and unresolved WSCC log items from the last 36 months pertaining to the Unit,
  - (vii) maintenance, overhauls and inspections performed, and
  - (viii) books, accounts and all documents required to support Owner's statements, invoices, charges and computations made pursuant to this Agreement.CAISO may audit Owner's books, accounts and documents relating to invoices, statements, charges and computations no more frequently than once each Contract Year, and only one time following expiration or termination of this Agreement.
- (b) The Responsible Utility shall have the right to participate jointly with CAISO in auditing books, accounts, documents and operating records of the Facilities to the extent required to verify the accuracy and correctness of all Owner's statements, invoices, and computations underlying all Owner charges passed through by CAISO to the Responsible Utility in connection with services rendered by Owner under this Agreement.

- (c) For a period of 36 months from the creation of the records, CAISO shall maintain and make available for audit by Owner all operations records required to permit Owner to verify that CAISO has complied with its obligations to Owner under this Agreement.
- (d) In addition to the audit rights under Section 12.2 (a) and (b), if Owner's rates are determined pursuant to the formula contained in Schedule F, representatives of CAISO and the Responsible Utility shall have the right jointly to audit the records, accounts and supporting documents of Owner to verify (i) the accuracy of any arithmetic calculation and (ii) application of the formula.
- (e) If Owner's rates are determined pursuant to the formula contained in Schedule F, the California Agency shall have the right to audit the records, accounts and supporting documents of Owner or CAISO to verify the accuracy of any arithmetic calculation and application of the formula, including the accuracy of allocation to accounts under the FERC Uniform System of Accounts, 18 C.F.R. Part 101. If there is more than one California Agency, only one audit shall be conducted by the California Agencies and such audit shall be binding on all the California Agencies.
- (f) Any entity exercising its right to audit under this Section 12.2 shall give the audited entity not less than 30 days prior written notice of the audit. Books or records requested in any audit shall be available for inspection by the auditing entity at the offices of the entity being audited between 9:00 A.M. and 5:00 P.M. on Business Days. Any audit under this Section 12.2 shall be completed not more than 36 months after the records were created. Any audit right herein shall be limited to the books and accounts of Owner or CAISO and shall not extend to the books and accounts of the parent or any other affiliate of Owner or CAISO. The expense of any audit shall be borne solely by the auditing Party or entity.
- (g) No adjustments to payments shall be required as a result of an audit unless, and then only to the extent that, CAISO, Owner, or another entity making such an audit under this Section 12.2 takes written exception to the books and accounts and makes a claim upon Owner or CAISO for any discrepancies disclosed by such audit within 60 days following issuance of the final audit report.
- (h) All information provided during the course of an audit shall be treated as Confidential Information in accordance with Section 12.5.
- (i) Nothing in this Agreement shall override any obligation Owner or CAISO may have under applicable law to maintain books and records for periods longer than 36 months nor shall this Agreement override any obligation Owner or CAISO may have to make books and records available for audit by FERC or any other entity. Nothing in this Agreement is intended to limit in any manner (i) the authority of FERC to audit the books and records of Owner or CAISO or the manner in which such audit is noticed or conducted or (ii) CAISO's right to audit market participants (including Owner) under the CAISO Tariff.

### **12.3 Representations And Warranties**

- (a) CAISO represents and warrants to Owner as follows:
  - (i) CAISO is a validly existing corporation with full authority to enter into this Agreement.
  - (ii) CAISO has taken all necessary measures to have the execution and delivery of this Agreement authorized, and upon the execution and delivery of this Agreement shall be a legally binding obligation of CAISO.

- (b) Owner represents and warrants to CAISO as follows:
  - (i) Owner is a validly existing [limited liability company][corporation] [municipal corporation] with full authority to enter into this Agreement.
  - (ii) Owner has taken all necessary measures to have the execution and delivery of this Agreement authorized, and upon the execution and delivery this Agreement shall be a legally binding obligation of Owner.

#### **12.4 Responsibilities**

Each Party shall be responsible for protecting its facilities from possible damage by reason of electrical disturbances or faults caused by the operation, faulty operation, or non-operation of the other Party's facilities. The other Party shall not be liable for any damages so caused.

#### **12.5 Confidentiality**

- (a) Except as may otherwise be required by applicable law, all information and data provided by the Parties to one another pursuant to this Agreement and marked "Confidential" or otherwise identified with specificity in writing as confidential at the time of disclosure ("Confidential Information") shall be treated as confidential and proprietary material of the providing Party and will be kept confidential by the receiving Party and used solely for purposes of this Agreement. Confidential Information will not include information that is or becomes available to the public through no breach of this Agreement, information that was previously known by the receiving Party without any obligation to hold it in confidence, information that the receiving Party receives from a third party who may disclose that information without breach of law or agreement, information that the receiving Party develops independently without using the Confidential Information, and information that the disclosing Party approves for release in writing. The receiving Party shall keep such information confidential and shall limit the disclosure of any such Confidential Information to only those personnel within its organization with responsibility for using such information in connection with this Agreement. The receiving Party shall assure that personnel within its organization read and comply with the provisions of this Section 12.5 and any Confidentiality Agreement implementing this Section 12.5. The Parties shall use all reasonable efforts to maintain the confidentiality of the Confidential Information in any litigation, shall promptly notify the providing Party of any attempt by a third party to obtain the Confidential Information through legal process or otherwise. A Party or third party beneficiary under Article 9 which has received Confidential Information may use that information in litigation or regulatory proceedings related to this Agreement but only after notice to the other Party and affording the other Party an opportunity to obtain a protective order or other relief to prevent or limit disclosure of the Confidential Information.
- (b) The Parties may provide any Confidential Information (i) to the Responsible Utility pursuant to provisions of this Agreement under which information is to be provided to that Responsible Utility and as required for settlement and billing; (ii) to any entity with audit rights under Section 12.2 or review rights specified in other provisions of this Agreement, (iii) on a need-to-know basis, to Owner's Scheduling Coordinator, financial institutions, agents, lessors of the Unit and potential purchasers of interests in a Unit; and, (iv) as required for settlement and billing, to Scheduling Coordinators responsible for paying for services provided under this Agreement. As a condition to receiving any Confidential Information under this Section 12.5, the recipient shall execute a Confidentiality Agreement in the applicable form contained in Schedule N and thereby agree to be subject to the non-disclosure and other obligations contained in this Section 12.5.
- (c) The obligation to provide confidential treatment to Confidential Information shall not be affected by the inadvertent disclosure of Confidential Information by either Party.



**12.6 Indemnity**

Subject to the limitations in Section 11.2 (b), each Party shall indemnify, defend and hold harmless the other Party and its officers, directors, employees, agents, contractors and sub-contractors, from and against all third party claims, judgments, losses, liabilities, costs, expenses (including reasonable attorneys' fees) and damages for personal injury, death or property damage, caused by the negligence or willful misconduct related to this Agreement or breach of this Agreement of the indemnifying Party, its officers, directors, agents, employees, contractors or sub-contractors, provided that this indemnification shall be only to the extent such personal injury, death or property damage is not attributable to the negligence or willful misconduct related to this Agreement or breach of this Agreement of the Party seeking indemnification, its officers, directors, agents, employees, contractors or sub-contractors. This indemnification shall not include or cover any claim covered by any workers' compensation law. This indemnification shall be for an amount not exceeding the deductible of the indemnifying Party's commercial general liability insurance in the case of Owner and errors and omission insurance in the case of CAISO. The indemnified Party shall give the other Party prompt notice of any such claim. The indemnifying Party shall have the right to choose competent counsel, control the conduct of any litigation or other proceeding, and settle any claim. The indemnified Party shall provide all documents and assistance reasonably requested by the indemnifying Party. Section 14 of the CAISO Tariff shall not apply to this Agreement.

**12.7 Owner Financial Requirements**

- (a) Through the term of the Agreement, Owner shall maintain an investment grade rating by Moody's or Standard and Poor's or provide documentation from a financial institution or corporate owner acceptable to the CAISO that there is an equity position described below. The CAISO shall not unreasonably withhold acceptance of the documentation.
  - (i) An equity to debt ratio of at least 30%, or
  - (ii) An equity to total asset ratio of at least 30% or
  - (iii) Demonstrate to the CAISO's reasonable satisfaction that other factors, including, without limitations, commercial financing arrangements, and working capital positions, mitigate the risk of Owner failing to meet the performance requirements under this Agreement.
- (b) If the Owner does not possess and maintain an investment grade rating, an equity position or make other arrangements as described in Section 12.7 (a), then it must provide one of the following:
  - (i) Proof of insurance to cover the financial exposure to the CAISO for one year of Capital Items, Repairs, fuel and any other operating expenses; or
  - (ii) Security to cover the financial exposure to the CAISO for one year of Capital Items, Repairs, fuel and any other operating expenses in one of the following forms:
    - (A) standby letter of credit;
    - (B) corporate guarantee;
    - (C) cash deposit; or
    - (D) security bond.

## **ARTICLE 13 ASSIGNMENT**

### **13.1 Assignment Rights and Procedures**

Neither Party shall assign its rights or delegate its duties under this Agreement without the prior written consent of the other Party, which shall not be unreasonably withheld. CAISO shall be entitled to deny consent to a proposed assignment by Owner only if the assignee does not meet the financial criteria set out in Section 13.2 (a) or the technical criteria set out in Section 13.2 (b). Notwithstanding the foregoing, if FERC approves an assignment, then the non-assigning Party shall be deemed to have consented to the assignment, subject to the non-assigning Party's right to seek judicial review of a FERC decision. Each Party shall give the other Party prompt notice of any proposed assignment or delegation, together with such information as the other Party may reasonably request with respect to the proposed assignment or assignee. Each Party shall be deemed to consent to the assignment or delegation unless it submits a written objection to the assignment or delegation within 14 days of receiving the notice and all financial and technical information as required in Sections 13.2(a) and 13.2(b). In the event of an assignment of this Agreement pursuant to a Financing Agreement, CAISO will execute for the benefit of the bank, financial institution or other entity with an interest in the Financing Agreement, a consent to such assignment reasonably acceptable to CAISO and Owner. An assignment of this Agreement by Owner in connection with the sale of a Unit shall terminate Owner's rights and obligations under this Agreement prospectively from the effective date of the assignment.

### **13.2 Limitation on Right to Withhold Consent**

- (a) CAISO shall not withhold consent to assignment of this Agreement on financial grounds if the assignee meets the financial requirements in Section 12.7(a) or provides financial security pursuant to Section 12.7(b).
- (b) CAISO shall not withhold consent to an assignment on grounds that the assignee is not technically qualified if the assignee was an Owner of a Reliability Must-Run Unit as of May 1, 1999 or the assignee submits appropriate documentation to the CAISO to establish that it has sufficient resources and expertise to be able to:
  - (i) Secure the necessary fuel and transportation for the fuel for the Facility;
  - (ii) Secure all necessary support services, including water supply, communications, waste disposal, etc. for the Facility;
  - (iii) Provide service from the Facility in compliance with the terms of this Agreement;
  - (iv) Provide the engineering and other technical services required to support operation and maintenance of the Facility;
  - (v) Obtain as necessary, and comply with all permits or licenses required to operate or maintain the Facility; and
  - (vi) Provide environmental services required for the operation and maintenance of the Facility.
- (c) The proposed assignee shall provide the last two years' annual audited financial statements and quarterly financial statements (unaudited) prior to the proposed date of purchase. If the proposed assignee is a new company and there are no historical financial statements, then a financial institution or corporate owner must provide pro forma financial statements in a form acceptable to the CAISO.

### **13.3 Transfer of Conditions Following Assignment**

If this Agreement is assigned to a new Owner pursuant to Section 13.1, the new Owner may transfer one or more Units to a different Condition by giving CAISO at least seven days prior notice provided that such notice is given not later than 30 days after the effective date of the assignment. The transfer shall become effective on the first day of month following the later of (i) seven days after the effective date of the assignment or (ii) seven days after the date CAISO receives the new Owner's transfer notice. This section shall not apply to assignment to a new Owner which is an affiliate of Owner as defined in 18 C.F.R. Section 161.2.

**ARTICLE 14**  
**MISCELLANEOUS PROVISIONS**

**14.1 Notices**

Except as otherwise expressly provided in this Agreement or required by law, all notices, consents, requests, demands, approvals, authorizations and other communications provided for in this Agreement shall be in writing and shall be sent by personal delivery, certified mail, return receipt requested, facsimile transmission or by recognized overnight courier service, to the intended Party at such Party's address set forth in Schedule J. Any notices which may be given orally and are given orally shall be confirmed in writing. All such notices shall be deemed to have been duly given and to have become effective: (a) upon receipt if delivered in person or by facsimile; (b) two days after having been delivered to an air courier for overnight delivery; or (c) seven days after having been deposited in the United States mail as certified or registered mail, return receipt requested, all fees pre-paid, addressed to the applicable address(es) set forth in Schedule J.

**14.2 Effect of Invalidity**

Each covenant, condition, restriction and other term of this Agreement is intended to be, and shall be construed as, independent and severable from each other covenant, condition, restriction and other term. If any covenant, condition, restriction or other term of this Agreement is held to be invalid by any court or regulatory body having jurisdiction, the invalidity of such covenant, condition, restriction or other term shall not affect the validity of the remaining covenants, conditions, restrictions or other terms hereof unless the invalidity has a material impact upon the rights and obligations of the Parties. If an invalidity has a material impact on the rights and obligations of the Parties, the Parties shall make a good faith effort to renegotiate and restore the benefits and burdens of this Agreement as they existed prior to the determination of an invalidity.

**14.3 Amendments**

- (a) Any amendments or modifications of this Agreement shall be made only in writing and, except for changes authorized by the FERC under Sections 205 or 206 of the Federal Power Act, shall be duly executed by both Parties. To the extent that any amendments or modifications are subject to FERC approval, such amendments or modifications shall become effective when permitted to be effective by FERC. For purposes of this Agreement, transfer of any Unit from one condition to the other condition or termination of the Agreement as to less than all Units shall not constitute a modification or amendment to this Agreement.
- (b) Where Owner's rates are not subject to FERC jurisdiction, either CAISO or Owner may, not later than 90 days prior to the end of each Contract Year, serve a notice on the other Party and the Responsible Utility stating that it requires a review of the terms of this Agreement, including any rates, prices and charges contained therein ("Review Notice").
  - (i) The Review Notice shall, as a minimum requirement, set forth the following:
    - (A) the precise nature of the proposed revisions (indicating, where possible, the relevant Article, Section and Schedule); and
    - (B) justification for each proposed revision.
  - (ii) The Party in receipt of the Review Notice shall respond to such notice within 30 days of its receipt by issuing a notice in response ("Response Notice"). The Response Notice shall, as a minimum requirement, set forth the following:
    - (A) those revisions set forth in the Review Notice that are accepted as proposed;

- (B) those revisions set out in the Review Notice that are not accepted;
  - (C) alternative proposals (if any) to the proposed revisions set out in the Review Notice;
  - (D) any revisions required by the responding party not covered by (A) through (C) above; and
  - (E) its justification for any of the matters raised under Sections 14.3 (b) (ii) (B) (C) or (D).
- (iii) Any Party failing to respond to a Review Notice shall be deemed to have accepted the revisions set out in the Review Notice.
  - (iv) Following receipt of the Response Notice the duly authorized representatives of the Parties shall meet to negotiate in good faith any revisions to this Agreement.
  - (v) In the event that the Parties are unable to reach agreement on the revisions to be made to this Agreement within 60 days of the date of the Review Notice, either Party may refer the matter for resolution through ADR. The arbitrator shall determine the revisions, if any, to the Agreement on the basis that:
    - (A) the purpose of the Agreement is to maintain the reliability of CAISO Controlled Grid; and
    - (B) costs and charges payable by CAISO should reflect the costs of providing services to the CAISO.
  - (vi) In the event that the Parties agree to the revisions, or such matters are determined through ADR, or a Party fails to respond to a Review Notice, the agreed, determined or deemed accepted revisions shall take effect and the rights and obligations of the Parties shall be amended as from the beginning of the ensuing Contract Year or from such other date and time agreed between the Parties or determined through ADR, and following such time the Parties shall act in accordance with the terms and conditions of this Agreement as amended.

#### **14.4 Filings Under Sections 205 or 206 of the Federal Power Act**

Nothing contained in this Agreement shall be construed as affecting the right of Owner unilaterally to make application to FERC for a change in rates, terms and conditions under Section 205 of the Federal Power Act and pursuant to FERC rules and regulations promulgated thereunder. CAISO may challenge such application or may submit complaints concerning Owner's rates, terms and conditions under Section 206 of the Federal Power Act and pursuant to FERC rules and regulations promulgated thereunder.

#### **14.5 Construction**

The language in all parts of this Agreement shall in all cases be construed as a whole and in accordance with its fair meaning, and shall not be construed strictly for or against either of the Parties.

#### **14.6 Governing Law**

This Agreement shall be interpreted and construed under and pursuant to the laws of the State of California, without regard to conflicts of laws principles.

#### **14.7 Parties' Representatives**

Both Parties shall ensure that throughout the term of this Agreement, a duly appointed Representative is available for communications between the Parties. The Representatives shall have full authority to deal with all day-to-day matters arising under this Agreement. If a Party's Representative becomes unavailable, the Party shall promptly appoint another Representative. Acts and omissions of Representatives shall be deemed to be acts and omissions of the Party. Owner and CAISO shall be entitled to assume that the Representative of the other Party is at all times acting within the limits of the authority given by the Representative's Party. Owner's Representatives and CAISO's Representatives shall be identified on Schedule J.

**14.8 Merger**

This Agreement and the Stipulation and Agreements filed April 2, 1999 and August 14, 2000 in Docket Nos. ER98-441-000 et al. constitute the full agreement of the Parties with respect to the subject matter hereto and supersede all prior agreements, whether written or oral, with respect to such subject matter.

**14.9 Independent Contractors**

Nothing contained in this Agreement shall create any joint venture, partnership or principal/agent relationship between the Parties. Neither Party shall have any right, power or authority to enter into any agreement or commitment, act on behalf of, or otherwise bind the other Party in any way.

**14.10 Conflict with CAISO Tariff**

The CAISO Tariff shall govern matters relating to the subject matter of this Agreement which are not set forth in this Agreement. In all other circumstances, this Agreement shall govern. In the event of a conflict between the terms and conditions of this Agreement and any terms and conditions set forth in the CAISO Tariff the terms and conditions of this Agreement shall prevail.

**14.11 Waiver**

The failure to exercise any remedy or to enforce any right provided in this Agreement shall not constitute a waiver of such remedy or right or of any other remedy or right provided herein. A Party shall be considered to have waived any remedies or rights hereunder only if such waiver is in writing.

**14.12 Assistance**

During the term of this Agreement, each Party shall provide such reasonable assistance and cooperation as the other Party may require in connection with performance of the duties and obligations of each Party under this Agreement, including, but not limited to, assistance in securing any necessary regulatory approvals and in facilitating necessary financing.

**14.13 Headings**

Article and section headings used in this Agreement are inserted for convenience only and are not intended to be a part hereof or in any way to define, limit, describe or to otherwise be used in interpreting the scope and intent of the particular provisions to which they refer.

CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION  
FERC ELECTRIC TARIFF  
FOURTH REPLACEMENT VOLUME NO. II

Original Sheet No. 1287

IN WITNESS WHEREOF, this Agreement has been executed as of the date first above written.  
[OWNER]

By: \_\_\_\_\_

Name:

Title:

The California Independent System Operator Corporation

By: \_\_\_\_\_

Name:

Title:

**FERC**  
**RELIABILITY MUST-RUN SCHEDULES**

Schedule A	Unit Characteristics, Limitations and Owner Commitments
Schedule B	Monthly Option Payment
Schedule C	Variable Cost Payment  Part 1 for Thermal Units Part 2 for Geothermal Units Part 3 for Conventional Hydro Units Part 4 for Pumped Storage Hydro Units Part 5 for Biomass Generation Units
Schedule D	Start-up Payment  Part 1 for Condition 1 Units Part 2 for Condition 2 Units
Schedule E	Ancillary Services Payment  Part 1 for Condition 1 Part 2 for Condition 2 Part 3 for Black Start Services
Schedule F	Determination of Annual Revenue Requirements of Must-Run Generating Units
Schedule G	Charges for Service in Excess of Contract Service Limits
Schedule H	Fuel Oil Service
Schedule I	Insurance Requirements
Schedule J	Notices
Schedule K	Dispute Resolution
Schedule L-1	Request for Approval of Capital Items or Repairs
Schedule L-2	Capital Item and Repair Progress Reports
Schedule M	Mandatory Market Bid for Condition 2 Units When Dispatched by the CAISO
Schedule N-1	Non-Disclosure and Confidentiality Agreement for Responsible Utilities
Schedule N-2	Non-Disclosure and Confidentiality Agreement for Entities Other than Responsible Utilities
Schedule O	Owner's Invoice Process
Schedule P	Reserved Energy for Air Emissions Limitations

## Schedule A

### Unit Characteristics, Limitations and Owner Commitments

#### 1. Description of Facility

Provide the following information for all units at the Facility, regardless of their RMR designation status. Information regarding units not designated as Reliability Must-Run Units is required only if and to the extent that the information is used to allocate Facility costs between Reliability Must-Run Units and other units.

Unit	RMR (Y/N)	Maximum Net Dependable Capacity (includes CAISO-paid Upgrade capacity)*	Fuel Type

For this Facility, the Owner will use \_\_\_\_\_ [insert either MW, MWhs, or service hours] in Schedule B to allocate Annual Fixed Revenue Requirements to and among Units. This election shall be applicable to all Facilities containing Reliability Must Run Units subject to any "RMR contract" as defined in the CAISO Tariff executed by Owner or any of its affiliates as defined in 18 CFR § 161.2.

\* Maximum Net Dependable Capacity shall reflect any transformer or line loss to the Delivery Point.

#### 2. Description of RMR Units

Provide the address(es) of the Units at the Facility and the following tabular information:

	Unit
Type (fossil, combustion turbine, etc.)	
Synchronous Condenser Capability (Y/N)	
Power Factor Range (lead to lag)	
Maximum Reactive Power Leading, MVar	
Maximum Reactive Power Lagging, MVar	
Load at Maximum MVar Lagging, MW	
Load at Maximum MVar Leading, MW	
Black Start Capable (Y/N)	
Automatic Start or Ramp (Y/N)*	
Upgrade Capacity Paid by CAISO, MW	

\* If "Y", describe the conditions under which the Unit will start or ramp automatically.



**3. Operational and Regulatory Limitations of RMR Units:**

Air Emissions Limitations

List applicable NO<sub>x</sub>, CO, SO<sub>2</sub>, particulate, and other appropriate emissions limits; note the name and address of the lead agency; the agency's applicable rule number(s); and note those pollutants for which an emissions cap applies.

**Monthly Reserved MWh for Air Emission Limitations**

Operating Limits related to Ambient Temperatures

Ambient Temperature Correction Factors for Availability Test

Provide a curve or table showing the Ambient Temperature Correction Factors for each Unit (the relationship between Ambient Temperature and Maximum Net Dependable Capability).  
FERC License Conditions (hydroelectric Units)

Other Limits (e.g., cooling water discharge)

**4. Delivery Point**

Unit	Transmission Node (Station Name)	Voltage

**5. Metering and Related Arrangements**

Unit	Meter Location	Meter (Manufacturer & Model No.)

**6. Start-up Lead Times**

Non-hydroelectric Units

Unit	Start-up Segment Number	Generating Unit Down Time (Minutes)	Generating Unit Start-up Time (Minutes)
	1		
	2		
	n		

"X<sub>max</sub>" used in Schedules C and D shall be equal to or less than the hours in the heading of this column. The Start-up Lead Time shall be the Startup time as defined and submitted by the Owner through the process outlined in the CAISO Tariff Schedules and Bids Protocol Section 6.6 or its successor.

Hydroelectric Start-up Lead Times

Unit	Time from notification to Minimum Load - Normal work hours	Time from notification to Minimum Load - Outside Normal Work hours

**7. Ramping Constraint**

Describe any constraints the Unit incurs between Minimum Load and PMax.

**8. Ramp Rate**

Unit	Ramp Rate Segment Number	Output of Point Range (MW)	Minimum Ramp Rate (MW/Minute)	Maximum Ramp Rate (MW/Minute)
	1			
	2			
	n			

Separate Ramp Rates will be shown for each load range and will describe any special restrictions affecting Ramp Rates at various load points, e.g., feed pump operation, heat soaks, etc.

The Ramp Rate shall be the Operational Ramp Rate submitted by the Owner through the process described in the CAISO Tariff. On the Effective Date, the values in the CAISO Master File shall be set equal to the values shown in the table above.

**9. Minimum Load**

Unit	Manual (MW)	AGC (MW)

**10. Minimum Run Time**

Unit	Hours

**11. Minimum Off Time**

Unit	Hours

**12. Contract Service Limits**

Unit	Maximum Annual MWh	Maximum Annual Service Hrs	Maximum Annual Start-ups

Maximum Monthly MWh (Hydroelectric Units only)

MWh

Unit	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

**13. Owner's Repair Cost Obligation**

Owner's Repair Cost Obligation for the current Contract Year is \$ .

**14. Existing Contractual Limitations and Other Contract Restrictions on Market Transactions**

**15. Applicable UDC Tariff(s)**

[List each Tariff and schedule to which it applies]

**Schedule B**  
**Monthly Option Payment**

The formulas and values used to compute the Monthly Option Payment in accordance with Section 8.1 and Section 8.2 for each Unit for each Month are set forth in Equation B-1 below:

**Equation B-1**

$$\text{Monthly Option Payment} = \text{Monthly Availability Payment} + \text{Monthly Surcharge Payment} - \text{Monthly Nonperformance Penalty}$$

The Monthly Option Payment can never be less than zero.

1. The Monthly Availability Payment is calculated in accordance with Equation B-2 below:

**Equation B-2**

$$\text{Monthly Availability Payment (\$)} = \text{lesser of } \left[ \begin{array}{l} \text{Current Monthly Availability Payment (\$)} \\ \text{or} \\ 100\% \text{ of AFRR minus Cumulative Monthly Availability Payments Excluding Current Monthly Availability Payment (\$)} \end{array} \right]$$

2. The Current Monthly Availability Payment is calculated in accordance with Equation B-3 below:

**Equation B-3**

$$\text{Current Monthly Availability Payment (\$)} = \text{Sum for all hours} \left[ \begin{array}{l} \text{Hourly Availability Charge (\$/hr)} * \frac{\text{Unit Availability Limit (MW)}}{\text{Maximum Net Dependable Capacity (MW)}} \end{array} \right]$$

Where:

- A. Hourly Availability Charge is calculated in accordance with Equation B-4 below:

**Equation B-4**

$$\text{Hourly Availability Charge} = \text{Hourly Availability Rate} * \text{Fixed Option Payment Factor}$$

Where:

- Hourly Availability Rate is calculated in accordance with Equation B-5 below.

**Equation B-5**

$$\text{Hourly Availability Rate} = \frac{\text{Annual Fixed Revenue Requirement}}{\text{Target Available Hours}}$$

Annual Fixed Revenue Requirement is set forth in Section 7 below.

Target Available Hours are set forth in Section 6 below.

- For Units under Condition 1, the Fixed Option Payment Factor is set forth in Table B-0 below:

Table B-0	
Unit	Fixed Option Payment Factor

For Units under Condition 2, the Fixed Option Payment Factor is 1.

The Hourly Availability Charges for the Contract Year are set forth in Table B-1 below:

Table B-1		
	Condition 1	Condition 2
Unit 1		

- B. Unit Availability Limit is defined in Article 1 of the Agreement.
  - C. Maximum Net Dependable Capacity is shown in Section 1 of Schedule A.
3. The Monthly Surcharge Payment is calculated in accordance with Equation B-6 below:

**Equation B-6**

$$\text{Monthly Surcharge Payment (\$)} = \text{lesser of} \begin{matrix} \text{Current} \\ \text{Monthly} \\ \text{Surcharge} \\ \text{Payment (\$)} \end{matrix} \text{ or } \begin{matrix} 100\% \text{ of} \\ \text{Sum of all Annual} \\ \text{Capital Item Costs} \\ \text{minus} \\ \text{Cumulative Monthly} \\ \text{Surcharge Payments} \\ \text{Excluding Current} \\ \text{Monthly Surcharge} \\ \text{Payment (\$)} \end{matrix}$$

4. The Current Monthly Surcharge Payment is calculated in accordance with Equation B-7 below:

**Equation B-7**

$$\begin{array}{l} \text{Current Monthly} \\ \text{Surcharge} \\ \text{Payment} \\ \text{(\$)} \end{array} = \begin{array}{l} \text{Sum} \\ \text{for} \\ \text{all} \\ \text{hours} \end{array} \left[ \begin{array}{l} \text{Sum of all} \\ \text{Hourly Capital} \\ \text{Item Charges} \\ \text{(\$/hr)} \end{array} * \begin{array}{l} \text{Unit Availability} \\ \text{Limit (MW)} \\ \hline \text{Maximum} \\ \text{Net Dependable} \\ \text{Capacity (MW)} \end{array} \right]$$

Where:

- A. The Hourly Capital Item Charge for each Capital Item approved pursuant to Sections 7.4 or 7.6 is calculated in accordance with Equation B-8 below:

**Equation B-8**

$$\begin{array}{l} \text{Hourly Capital} \\ \text{Item Charge} \end{array} = \begin{array}{l} \text{Hourly Capital} \\ \text{Item Rate} \end{array} * \begin{array}{l} \text{Surcharge} \\ \text{Payment Factor} \end{array}$$

Where:

- Hourly Capital Item Rate is calculated in accordance with Equation B-9 below:

**Equation B-9**

$$\begin{array}{l} \text{Hourly} \\ \text{Capital Item} \\ \text{Rate} \end{array} = \frac{\text{Annual Capital Item Cost}}{\text{Target Available Hours}}$$

- Annual Capital Item Cost is the amount recoverable by Owner under this Agreement in a Contract Year for each Capital Item approved pursuant to Section 7.4 or Section 7.6.
- Target Available Hours are shown in Section 6 below.
- For Units under Condition 1, the Surcharge Payment Factor for all Capital Items covered by the Small Project Budget shall be the Fixed Option Payment Factor. For all other Capital Items, the Surcharge Payment Factor shall be as agreed to by Owner and CAISO. If the Owner and CAISO do not agree on the Surcharge Payment Factor, the Surcharge Payment Factor shall equal the Fixed Option Payment Factor, unless the Owner demonstrates in ADR that it would not have installed the proposed Capital Item in accordance with Good Industry Practice but for its obligations to the CAISO under this Agreement, in which case the Surcharge Payment Factor shall be as determined in ADR.
- For Units under Condition 2, the Surcharge Payment Factor is 1.

The Hourly Capital Item Charges for the Contract Year are set forth in Table B-2 below:

Table B-2					
Unit	Capital Item Project No.	Annual Capital Item Cost	Condition 1 Surcharge Payment Factor	Condition 1 Hourly Capital Item Charge	Condition 2 Hourly Capital Item Charge

- B. Unit Availability Limit is defined in Article 1 of the Agreement.  
 C. Maximum Net Dependable Capacity is shown in Section 1 of Schedule A.

5. The Monthly Nonperformance Penalty is calculated pursuant to Section 8.5 using the following variables:

A. Hourly Penalty Rate

A Unit's Hourly Penalty Rate for each Contract Year is the lesser of (a) the Unit's Hourly Availability Rate for the Contract Year (calculated pursuant to Item 2.A above), or (b) three times the Unit's Hourly Availability Charge for the Contract Year (as shown in Table B-1 above).

The Hourly Penalty Rates for the Contract Year are set forth in Table B-3 below:

Table B-3		
Unit	Condition 1	Condition 2
Unit 1		

B. Hourly Surcharge Penalty Rate

A Unit's Hourly Surcharge Penalty Rate for each Capital Item for each Contract Year is the lesser of (a) the corresponding Hourly Capital Item Rate for the Contract Year (calculated pursuant to Item 4.A above), or (b) three times the applicable Hourly Capital Item Charge for the Contract Year (as shown in Table B-2 above). The Hourly Surcharge Penalty Rates for the Contract Year are set forth in Table B-4 below:

Table B-4				
Unit	Capital Item Project No.	Hourly Capital Item Rate	Condition 1 Hourly Surcharge Penalty Rate	Condition 2 Hourly Surcharge Penalty Rate

6. Target Available Hours

A Unit's Target Available Hours for each Contract Year are calculated in accordance with the Equation B-10 below:

Equation B-10

$$\text{Target Available Hours (TAH)} = \frac{\text{Hours in the Calendar Year} - (\text{Average Other Outage Hours} + \text{Long-Term Planned Outage Hours})}{\text{}}$$

Average Other Outage Hours means the average annual Other Outage Hours for the Unit during the 60-month period ending June 30 of the previous calendar year.

Long-term Planned Outage Hours means the Long-term Planned Outage Hours for the Contract Year scheduled with CAISO pursuant to Section 7.2(a). For periods prior to December 31, 1998, Other Outage Hours shall exclude a planned interruption, in whole or in part, in the electrical output of a Unit to permit Owner to perform a major equipment overhaul or inspection or for new construction work, but only if the outage lasted 21 or more consecutive days.

Long-term Planned Outage Hours scheduled for a Contract Year shall be subject to the Long-term Scheduled Outage Adjustment pursuant to Section 8.6 of the Agreement.

The Average Other Outage Hours, Long-term Planned Outage Hours and Target Available Hours for each Unit for the Contract Year are shown in Table B-5 below:

<b>Table B-5</b>			
Unit	Average Other Outage Hours	Long-term Planned Outage Hours	TAH

For the purposes of calculating Target Available Hours for the Contract Year ending December 31, 1999, (a) Average Other Outage Hours shall be calculated using the average annual Other Outage Hours for the Unit during the 60-month period ending December 31, 1998, and (b) Long-term Planned Outage Hours shall be calculated using the hours scheduled for performing Long-term Planned Outages as if the Agreement had become effective on January 1, 1999.

7. Annual Fixed Revenue Requirement (AFRR)

The Annual Fixed Revenue Requirement for each Unit is set forth in Table B-6 below. For any Contract Year commencing on or after January 1, 2002, the Annual Fixed Revenue Requirement shall be determined by the Formula Rate set forth in Schedule F, unless Owner files a superseding rate schedule under Section 205 of the Federal Power Act.

<b>Table B-6</b>	
Unit	Annual Fixed Revenue Requirement

8. Limited Section 205 Filing for an Extension of Contract Term

If CAISO has extended the term of this Agreement pursuant to Section 2.1(b), then not later than October 31 of the expiring Contract Year, Owner shall make a filing with FERC under Section 205 of the Federal Power Act containing the values in Tables B-1 through B-6 for the ensuing Contract Year.

In the event that a Long-term Planned Outage that is scheduled for the last quarter of the expiring Contract Year is postponed or rescheduled after October 31 of such year to the ensuing Contract Year, Owner shall make an additional Section 205 filing to revise the values in Tables B-1 through B-5 to reflect such rescheduled Long-term Planned Outage Hours.



## SCHEDULE C

### Variable Cost Payment Part 1 for Thermal Units

The Variable Cost Payment for each Unit for the Billing Month shall be the amount calculated in accordance with the following formula:

$$\text{Variable Cost Payment} = \begin{array}{l} \text{A. CAISO Unit Monthly Billed Fuel Cost +} \\ \text{B. CAISO Unit Monthly Fuel Imbalance} \\ \text{C. Charge +} \\ \text{D. CAISO Monthly Other Fuel Related Cost +} \\ \text{E. CAISO Monthly Emissions Cost +} \\ \text{F. CAISO Monthly Variable O\&M Cost +} \\ \text{G. CAISO Scheduling Coordinator Charge +} \\ \text{CAISO ACA Charge} \end{array}$$

Each component of the Variable Cost Payment for thermal Units will be calculated as described below:

#### **A. CAISO Unit Monthly Billed Fuel Cost**

The CAISO Unit Monthly Billed Fuel Cost is calculated in accordance with Equation C1-0.

Equation C1-0

$$\left( \begin{array}{l} \text{CAISO} \\ \text{Unit} \\ \text{Monthly} \\ \text{Billed} \\ \text{Fuel Cost} \\ (\$) \end{array} \right) = \frac{\left( \begin{array}{l} \text{Monthly sum of the} \\ \text{CAISO Unit Hourly Cap Heat} \\ \text{Input} \\ \text{for this Unit} \\ \text{(MMBtu)} \end{array} \right)}{\left( \begin{array}{l} \text{Monthly sum of the CAISO} \\ \text{Unit Hourly Cap Heat Input} \\ \text{for all Units at the Facility} \\ \text{(MMBtu)} \end{array} \right)} * \left( \begin{array}{l} \text{CAISO} \\ \text{Facility} \\ \text{Monthly} \\ \text{Billed} \\ \text{Fuel Cost} \end{array} \right)$$

Where:

- CAISO Unit Hourly Cap Heat Input for each Unit is calculated in accordance with Equation C1-6;
- The CAISO Facility Monthly Billed Fuel Cost is calculated in accordance with Equation C1-1.

## 1. The CAISO Facility Monthly Billed Fuel Cost

The CAISO Facility Monthly Billed Fuel Cost is calculated in accordance with Equation C1-1.

**Equation C1-1**

$$\left( \begin{array}{l} \text{CAISO} \\ \text{Facility} \\ \text{Monthly} \\ \text{Billed} \\ \text{Fuel Cost} \\ (\$) \end{array} \right) = \text{Lesser of} \left( \begin{array}{l} \text{CAISO} \\ \text{Facility} \\ \text{Cumulative} \\ \text{Actual} \\ \text{Fuel Cost} \\ (\$) \end{array} \right) \text{ or } \left( \begin{array}{l} \text{CAISO} \\ \text{Facility} \\ \text{Cumulative} \\ \text{Cap} \\ \text{Fuel Cost} \\ (\$) \end{array} \right) - \left( \begin{array}{l} \text{CAISO Facility} \\ \text{Cumulative} \\ \text{Billed} \\ \text{Fuel Cost} \\ (\$) \end{array} \right)$$

Where:

- The CAISO Facility Cumulative Actual Fuel Cost is the sum of all CAISO Unit Monthly Actual Fuel Costs for all Units at the Facility since the start of the Contract Year, including the current Month. CAISO Unit Monthly Actual Fuel Costs for each Unit is calculated in accordance with Equation C1-2.
- The CAISO Facility Cumulative Cap Fuel Cost is the sum of all CAISO Unit Monthly Cap Fuel Costs for all Units at the Facility since the start of the Contract Year, including the current Month. CAISO Unit Monthly Cap Fuel Costs is the sum of the CAISO Unit Hourly Cap Fuel Cost (calculated pursuant to Equation C1-5) for each hour of the Month for each Unit.
- The CAISO Facility Cumulative Billed Fuel Cost is the sum of all CAISO Unit Monthly Billed Fuel Costs for all Units at the Facility since the start of the Contract Year, excluding the current Month. CAISO Unit Monthly Billed Fuel Cost for each Unit is calculated in accordance with Equation C1-0.

## 2. CAISO Unit Monthly Actual Fuel Cost

The CAISO Unit Monthly Actual Fuel Cost is calculated in accordance with Equation C1-2.

**Equation C1-2**

$$\left( \begin{array}{l} \text{CAISO} \\ \text{Unit} \\ \text{Monthly} \\ \text{Actual} \\ \text{Fuel Cost} \\ (\$) \end{array} \right) = \frac{\text{Monthly sum of the CAISO Unit Hourly Cap Heat Input for the Unit (MMBtu)}}{\text{Monthly sum of the Unit Hourly Cap Heat Inputs for all units at the Facility metered by the Fuel Meter (MMBtu)}} * \left[ \left( \begin{array}{l} \text{Monthly} \\ \text{Metered} \\ \text{Fuel} \\ \text{MMBtu} \end{array} \right) * \left( \begin{array}{l} \text{CAISO} \\ \text{Monthly} \\ \text{Fuel} \\ \text{Price} \\ (\$/\text{MMBtu}) \end{array} \right) - \left( \begin{array}{l} \text{Monthly} \\ \text{Start-up} \\ \text{Fuel Cost} \\ (\$) \end{array} \right) \right]$$

Where:

- CAISO Unit Hourly Cap Heat Input is calculated in accordance with Equation C1-6.
- Unit Hourly Cap Heat Input is calculated in accordance with either Equation C1-7a or C1-7b.

- Monthly Metered Fuel is the non-duplicative sum of the quantities of fuel for the Month as measured by all gas metering systems or fuel oil measuring systems, as applicable ("Fuel Meters"), for the Unit.
  - (a) If the fuel is natural gas, the Owner may select from one of three options for the Fuel Meter:
    - (i) the revenue meter used by the entity providing natural gas to measure gas delivered to one or more Units ("Fuel Custody Meter");
    - (ii) a gas metering system installed at the Facility to measure gas used in one or more Units that meets the measurement accuracy standard in the tariff of the local gas distribution company in whose service area the Facility is located and the measurement accuracy standards set forth below, and is subject to an annual accuracy test performed under the CAISO's direction, as described below; or
    - (iii) a gas metering system installed at the Facility by the local gas distribution company in whose service area the Facility is located and maintained by the local gas distribution company to the same standards as revenue meters of the local gas distribution company.

For the selected Fuel Meter option, the Owner shall provide the required information for all Units, both RMR and non-RMR, connected to the specific Fuel Custody Meter.

If the Owner selects option (ii), the Owner shall assure the overall accuracy of the gas metering systems<sup>1</sup> in use for the Units are within acceptable industry and regulatory standards.<sup>2</sup> Gas metering systems shall be designed, installed, calibrated and maintained according to standards set forth by the American Gas Association (AGA), the American National Standards Institute (ANSI) and the California Public Utilities Commission (CPUC). An audit trail of all calibration records and measurement parameters used in volume and heating-value calculations as recorded electronically by the flow computer shall be maintained and all data shall be in no-longer-than-hourly intervals. All equations and calculations performed by the flow computer may be reviewed for accuracy and completeness, including compressibility, volumetric flow and energy flow, by the CAISO or its agent. A consistent base pressure (14.73 psi) and base temperature (60°F) shall be used at all times. If the Facility has multiple sources of fuel gas, a gas chromatograph ("GC") shall be installed which analyzes all constituents of the blended gas, with the sampling point downstream of the individual supplies such that proper mixing occurs prior to sampling. The GC speed loop shall permit analysis of the gas in "real time".

In order to ensure the accuracy of a gas metering system selected under option (ii), an initial acceptance test shall be conducted by Owner and shall be witnessed by the CAISO or its agent to assure the installation meets applicable industry standards. Such a test shall be conducted at five load points (maximum load, minimum load, and three evenly spaced load points), under steady state conditions (i.e., off Automatic Generation Control), and for a minimum of one hour at each load point. Analysis of the test results shall consist of a side-by-side comparison of volumetric flow, energy flow, gas-specific gravity and mole percents, and other factors mutually agreed to by the CAISO and Owner for the Fuel Custody Meter

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<sup>1</sup> The gas metering system includes the primary measurement element (orifice, turbine meter, etc.); secondary elements such as pressure, temperature and heating-value measurement devices; the gas chromatograph, the flow computer or other data-collection and storage device; and the communication or output system.

<sup>2</sup> The American Gas Association (AGA) and the American National Standards Institute (ANSI) publish industry standards that gas utilities and gas transportation companies use for gas metering. Applicable standards include: AGA Report No. 3, Orifice Metering of Natural Gas; AGA Report No. 7, Measurement of Gas by Turbine Meters, AGA Report No. 8, Compressibility Factors of Natural Gas; AGA Report No. 9, Measurement of Gas by Multipath Ultrasonic Meters; ANSI B109.2, Diaphragm Type Gas Displacement Meters; and ANSI B109.3 Rotary Type Gas Displacement Meters. Also, CPUC General Order 58-A requires customer meters to register accurately to within – 2% to 1%.

and the meter installed at the Facility under option (ii). The gas metering system installed under option (ii) shall be deemed acceptable if the side-by-side energy flow comparison for the period shall be within +1 percent to -2 percent. The gas-metering system shall meet the required accuracy throughout the entire operating range of the RMR Unit. Following CAISO acceptance, an annual routine test shall be conducted at a time chosen by the CAISO to verify and confirm the performance of Owner's gas-metering system. With the exception that the test shall be conducted at one load point specified by the CAISO, such a test shall be conducted in a similar fashion to the initial acceptance test and shall include inspection of the primary flow element; instrument end-to-end calibration; confirmation of integrity of sensing lines (meaning there shall be no leaks); confirmation of proper GC operation; and proper flow-computer operation and data handling. All systems and sub-systems utilized during the initial acceptance test, including, but not limited to, (a) all primary devices, including the differential producing device of the gas metering system, the GC, and differential pressure ("dP") and temperature instruments; (b) all secondary devices and circuits, including dP and temperature transmitters and circuits, sensing lines, GC sampling line and secondary circuits; and (c) all electronic devices, flow computers and devices, shall be sealed with an CAISO-certified seal and no maintenance work or modifications and changes, including making any changes to flow computer programming, shall be permitted without prior approval by the CAISO.

If any part of the option (ii) gas-metering system requires either routine or emergency maintenance, the Owner shall notify the CAISO immediately by telephone or other means specified by the CAISO. The Owner shall inform the CAISO of the time period during which such maintenance is expected to occur. The CAISO may, at its discretion, require gas-metering systems which are changed or modified during maintenance or repair to undergo re-certification, including acceptance testing. If the maintenance activity is necessary due to concerns that the gas-metering system is not operating in accordance with the required accuracy standards, such maintenance work shall be completed within 2 business days from the time when the concern was first noted.

A V-cone meter may not be used under option (ii), unless the meter was installed prior to January 1, 1997.

If, as a result of a change in the use of fuel gas from a supplier other than the local distribution company, the properties of the fuel gas change materially (Higher Heating Value (HHV) or Specific Gravity (SG) varies more than -3 percent to +3 percent due to the addition of new gas constituents) following the installation of a gas metering system under option (ii) or option (iii), Owner shall notify the CAISO within twenty-four (24) hours. Acceptance testing shall be conducted to verify the metering accuracy due to the change in fuel gas supply and to test whether Owner's gas metering system meets the technical requirements of this specification. Owner shall be obligated to install any equipment necessary to bring its gas metering system into compliance. Owner shall not enter into any third-party agreements for non-pipeline grade fuel gas without the prior approval of the CAISO. Such approval shall not be granted until the CAISO has evaluated Owner's gas metering system, including the effect of the non-pipeline grade fuel gas on metering accuracy.

If an Owner selects option (iii) and the Facility has multiple sources of fuel gas, the local gas distribution company shall install a GC which analyzes all constituents of the blended gas, with the sampling point downstream of the individual supplies such that proper mixing occurs prior to sampling. The GC speed loop should permit analysis of the gas in "real time".

(b) If the fuel is other than natural gas, the Fuel Meter value shall be determined monthly by measuring the fuel oil consumed during the month using, at Owner's one-time election, either (i) a metering process which is acceptable to the Owner and CAISO or (ii) a calculation acceptable to the Owner and CAISO based on a tank-volume measurement process performed on the day immediately prior to the beginning of the Month and the last day of the Month and fuel oil deliveries during the Month. The metering or measurement process adopted shall comply with, or be comparable to, one or more

applicable American Petroleum Institute (“API”) Manual of Petroleum Measurement Standards.<sup>3</sup> If Owner and CAISO cannot agree on an acceptable process, it shall be determined through ADR pursuant to Schedule K to this Agreement. Owner shall be permitted to change its election between metering as described in (i) above or tank volume measurement described in (ii) above only to reflect changes in the physical circumstances of the Unit or a change in the type of fuel burned at the Unit.

During any period in which the Fuel Meter fails to accurately measure gas flow, the Owner shall provide information to the CAISO sufficient to estimate the gas flow during such failure. This information may include unit electric-generating history, accurate recorded gas flow based on another meter and heat input characteristics of all Units served by the failed meter. This information will be used to estimate the gas flow during the failure period to the mutual satisfaction of the CAISO, the Responsible Utility and the Owner.

If a Fuel Meter serves RMR Units as well as other units, the heat input characteristics of the other units will be included in Table C1-7a or C1-7b, as applicable, and the Monthly sum of the Unit Hourly Cap Heat Inputs for all units at the Facility metered by the Fuel Meter used in Equation C1-2 will include Hourly Cap Heat Inputs for such other units calculated using Equation C1-7a or C1-7b, whichever is applicable.

- CAISO Monthly Fuel Price is calculated in accordance with Equation C1-3.
- Monthly Start-Up Fuel Cost is the sum of the Start-Up Fuel Costs for all Start-ups (for Market and Nonmarket Transactions) in the Month for all units metered by the Fuel Meter with the Start-up Fuel Costs for each Unit calculated in accordance with Equations D-1a or D-1b in Schedule D, as applicable. If a Start-up is initiated but is not successfully completed, the Start-up Fuel Costs shall be adjusted in accordance with Equation C1-2a:

**Equation C1-2a**

$$\begin{array}{lcl} \text{Adjusted} & & \text{Number of hours} \\ \text{Start-up} & & \text{committed to the} \\ \text{Fuel Cost} & & \text{Start-up} \\ \text{for Canceled} & = & \frac{\text{Applicable}}{\text{Start-up Lead Time}} \\ \text{Starts} & & \text{in hours shown in} \\ \text{(\$)} & & \text{Section 6 of} \\ & & \text{Schedule A} \end{array} \quad \begin{array}{l} \text{Start-up} \\ * \text{ Fuel Costs} \\ \text{(\$)} \end{array}$$

Where:

- The “number of hours committed to the Start-up” is the lesser of (a) time elapsed between the initiation of the Start-up and the cancellation or (b) the Applicable Start-up Lead Time as shown in Section 6 of Schedule A.

<sup>3</sup> The applicable API Manual of Petroleum Measurement Standards are: Chapter 2.2A (Measurement and Calibration of Upright Cylindrical Tanks by the Manual Strapping Method); Chapter 3.1B (Standard Practice for Level Measurement of Liquid Hydrocarbons in Stationary Tanks by Automatic Tank Gauging); Chapter 3.3 (Level Measurement of Liquid Hydrocarbons in Stationary Pressurized Storage Tanks by Automatic Tank Gauging); Chapter 5.2 (Measurement of Liquid Hydrocarbons by Displacement Meters); and Chapter 5.3 (Measurement of Liquid Hydrocarbons by Turbine Meters).

**3. CAISO Monthly Fuel Price**

The CAISO Monthly Fuel Price is calculated in accordance with Equation C1-3.

**Equation C1-3**

$$\begin{array}{lcl} \text{CAISO Monthly Fuel Price} & = & \frac{\text{Monthly sum of CAISO Unit Hourly Cap Fuel Cost (\$)}}{\text{Monthly sum of CAISO Unit Hourly Cap Heat Input}} \\ (\$/\text{MMBtu}) & & (\text{MMBtu}) \end{array}$$

Where:

- CAISO Unit Hourly Cap Fuel Cost (\$) is calculated in accordance with Equation C1-5;
- CAISO Unit Hourly Cap Heat Input (MMBtu) is calculated in accordance with Equation C1-6.

**4. Intentionally Omitted** (There is no Equation C1-4.)

**5. CAISO Unit Hourly Cap Fuel Cost**

For each hour, the CAISO Unit Hourly Cap Fuel Cost is calculated in accordance with Equation C1-5.

**Equation C1-5**

$$\text{CAISO Unit Hourly Cap Fuel Cost (\$)} = \text{CAISO Unit Hourly Cap Heat Input (MMBtu)} \times \text{Hourly Fuel Price (\$/MMBtu)}$$

Where:

- The Hourly Fuel Price is calculated in accordance with Equation C1-8;
- The CAISO Unit Hourly Cap Heat Input (MMBtu) is calculated in accordance with Equation C1-6.

## 6. CAISO Unit Hourly Cap Heat Input

For each hour, the CAISO Unit Hourly Cap Heat Input is calculated in accordance with Equation C1-6.

### Equation C1-6

$$\text{CAISO Unit Hourly Cap Heat Input} = \text{Unit Hourly Cap Heat Input (MMBtu)} \star \frac{\text{Billable MWh}}{\text{Hourly Metered Total Net Generation (MWh)}}$$

Where:

- Unit Hourly Cap Heat Input is calculated in accordance with either Equation C1-7a or C1-7b.

## 7. Unit Hourly Cap Heat Input (MMBtu)

The Unit Hourly Cap Heat Input to a Unit for any load is given by the following equations and shall be determined either by a polynomial equation (C1-7a) or exponential equation (C1-7b):

### Equation C1-7a

$$\text{Unit Hourly Cap Heat Input} = 1.02 \star (AX^3 + BX^2 + CX + D) \star E$$

### Equation C1-7b

$$\text{Unit Hourly Cap Heat Input} = 1.02 \star \frac{(A \star (B + CX + De^{FX}))}{E}$$

Where:

- X is Unit's Hourly Metered Total Net Generation, MWh;
- e is the base of natural logarithms;
- A, B, C, D are coefficients given for Equation C1-7a in Table C1-7a and given for Equation C1-7b in Table C1-7b;
- The coefficient E is applicable only when burning fuel oil. At all other times, it shall be set to 1.0.
- F is a coefficient given in Table C1-7b.

Table C1-7a					
	A	B	C	D	E

<b>Table C1-7b</b>						
	A	B	C	D	E	F

**8. Hourly Fuel Price**

The Hourly Fuel Price for Units shall be the same for each hour of a given day and is calculated in accordance with Equation C1-8.

**Equation C1-8 (Gas)**

Hourly Fuel Price (\$/MMBtu) = Commodity Price (\$/MMBtu) + Intrastate Transportation Rate (\$/MMBtu)

**Equation C1-8 (Oil)**

Hourly Fuel Price (\$/MMBtu) = Commodity Price (\$/MMBtu) + Transportation Rate (\$/MMBtu)

**Commodity Price for Natural Gas**

For the Facilities within the service area of SCE or SDG&E, the Commodity Price shall be the product of 1.02 and the simple average of the following indices:

Gas Daily, SoCal Gas, Large Packages index (midpoint)  
BTU Daily Gas Wire, SoCal Border index, Topock  
NGI Daily Gas Price Index, Southern California Border (average)

For the Facilities within the service territory of PG&E, the Commodity Price shall be the product of 1.02 and the simple average of the following indices:

Gas Daily, PG&E Citygate index (midpoint)  
NGI Daily Gas Price Index, PG&E Citygate (average)

The indices to be used for each Settlement Period in a given day are shown in Table C1-8. Where more than one day's index is shown for a Trading Day, the average of the two daily indices should be used. If an applicable index for a day, which is used to compute the index's average for a Trading Day, is not published, then that index will not be used to compute the Commodity Price for that trading day. If no index for a day is published, then the average of applicable indices on the Index Publication Date preceding and the Index Publication Date following such day will be substituted for the Index Publication Date index for that day in Table C1-8. In the event that an index ceases to be published, Parties shall agree on a replacement index.



Table C1-8  
 Natural Gas Price Indices

Trading Day	Index Publication Date*		
	<u>Gas Daily</u> **	Btu Daily ** <u>Gas Wire</u>	NGI Daily ** <u>Price Index</u>
Tuesday	Tuesday/ Wednesday	Monday/ Tuesday	Tuesday/ Wednesday
Wednesday	Wednesday/ Thursday	Tuesday/ Wednesday	Wednesday/ Thursday
Thursday	Thursday/ Friday	Wednesday/ Thursday	Thursday/ Friday
Friday	Friday/ Monday	Thursday/ Friday	Friday/ Monday
Saturday	Monday/ Tuesday	Friday/ Monday	Monday/ Tuesday
Sunday	Monday/ Tuesday	Friday/ Monday	Monday/ Tuesday
Monday	Monday/ Tuesday	Friday/ Monday	Monday/ Tuesday

\* *The Index Publication Date is the date of the publication which contains the prices for the applicable Trading Day.*

\*\* *Where more than one day's index is shown for a Trading Day, the average of the two daily indices should be used.*

Gas Daily: The "Flow Date(s)" column should match the Trading Day.

Btu Daily: The Index Publication Date should be the day prior to the Trading Date in the Table above, except for Sunday and Monday, where Friday should be used as the Index Publication Date.

NGI Daily: The Index Publication Date should be the same as the Trading Date in the tables above, except for Saturday and Sunday, where Monday should be used as the Index Publication Date.

### **Commodity Price for Distillate Fuel Oil**

The Commodity Price for Distillate Fuel Oil shall be the simple average of the midpoint of the ranges for CARB No. 2 Diesel and for Jet as published in Platt's Oilgram United States West Coast Product Assessments (page 22). If the Unit can burn only Jet, the Commodity Price shall be the midpoint of the range for Jet.

In an event the index ceases to be published, the Parties shall agree on a replacement index.

For distillate fuel, the index will be for the last day prior to the RMR Transaction Day.

**Commodity Price for No. 6 Residual Fuel Oil**

The fuel price shall be the prudent actual replacement cost of the fuel consumed, or, if the fuel is consumed and not replaced, then the fuel price will be "last-in-first-out" (LIFO) inventory price of the fuel consumed.

Where conversion from barrels of Fuel to MMBtu is required, the following conversion coefficients shall be used:

- No. 1 Distillate Fuel Oil - 5.754 MMBtu per barrel;
- No. 2 Distillate Fuel Oil - 5.796 MMBtu per barrel;
- Jet Fuel - 5.650 MMBtu per barrel;
- No. 6 Residual Fuel Oil - 6.258 MMBtu per barrel.

**Intrastate Transportation Rate for Gas**

The Intrastate Transportation Rate for Gas shall be the applicable intrastate transportation rate determined as follows:

Units served by SDG&E: The Southern California Gas Company intrastate transportation rate (currently GT-SD) plus the volumetric component of the SDG&E gas transportation rate for electric generation service, including the ITCS<sup>4</sup> (currently GTUEG - SD), or any successor rate for electric generation service applicable to deliveries to the Facility, divided by one minus the applicable in-kind shrinkage allowance, if any.

Units served by Southern California Gas: The Southern California Gas Company intrastate transportation rate for firm electric generation service, including the ITCS (GT-F) plus the G-ITC Wheeler Ridge Interconnection Access fee, if applicable, or any successor rate for firm electric generation service applicable to deliveries to the Facility, divided by one minus the applicable in-kind shrinkage allowance, if any.

Units served by PG&E: The PG&E intrastate transportation charge stated in Rate Schedule G-EG, or any successor rate for electric generation service applicable to deliveries to the Facility, divided by one minus the applicable in-kind shrinkage allowance, if any.<sup>5</sup>

**Transportation Rate for Distillate Fuel Oil**

The Transportation Rate for Distillate Fuel Oil shall be . There shall be no Transportation Rate for No. 6 Residual Fuel Oil.

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<sup>4</sup> ITCS means Interstate Transition Cost Surcharges.

<sup>5</sup> If the Facility does not qualify for service under Rate Schedule G-EG, the applicable rate shall be given by Rate Schedule G-NT.

**B. CAISO Monthly Fuel Imbalance Charge**

**Levels of Responsibility**

Each month, the Owner is responsible for all Nonmarket fuel imbalance charges incurred up to and including 2.25 percent of the CAISO Facility Monthly Billed Fuel Cost.

The Monthly Fuel Imbalance Charge is equal to 75% of 1st Tier Imbalance plus 100% of 2nd Tier Imbalances;

Where:

The **1st Tier Imbalances** is that portion of the Monthly Sum of Daily Imbalance Charges which exceeds 2.25 percent of the CAISO Facility Monthly Billed Fuel Cost for the Month and is less than or equal to 10.0 percent of the CAISO Facility Monthly Billed Fuel Cost for the Month.

The **2nd Tier Imbalances** is that portion of the Monthly Sum of Daily Imbalance Charges which is greater than 10.0 percent of the CAISO Facility Monthly Billed Fuel Cost for the Month.

The Monthly Sum of Daily Imbalance Charges is the sum for all days in the month of imbalance charges and similar fees and penalties imposed on Owner (or its fuel supplier and paid by Owner) by transportation providers delivering gas to the Units because deliveries were in excess of or less than scheduled for a given day, but only to the extent that (i) the imbalance was caused by Owner compliance with a Dispatch Notice issued after (or less than 30 minutes prior) to the Transporter's deadline for scheduling transportation, and (ii) Owner issued a notice to the CAISO as soon as possible after the Owner became aware it might incur imbalance charges advising CAISO of such possible charges.

In any month in which Owner incurs a 1<sup>st</sup> Tier or 2<sup>nd</sup> Tier Imbalance charge, Owner will provide the CAISO with a report showing the allocation of the imbalance charges between Market Transactions and Nonmarket Transactions. If CAISO or the Responsible Utility disagree on allocation, the dispute will be resolved through ADR.

To receive payment for a 2nd Tier Imbalance, Owner must document in an informational filing with FERC that the charges were appropriately allocated to Nonmarket Transactions and it was commercially reasonable to incur them. As used in this context and for purposes of calculating imbalance charges, "commercially reasonable" does not mean that Owner is required to acquire storage to avoid imbalances. If either the CAISO or Responsible Utility disagree with the imbalance charges, desires a formal review and gives such notice to the Owner within 30 days of the informational filing, the Owner must file under Section 205 of the Federal Power Act to collect any 2<sup>nd</sup> Tier Imbalance charges.

Pursuant to the above, the Monthly Fuel Imbalance Charge is calculated in accordance with Equation C1-9.

**Equation C1-9**

$$\text{Monthly Fuel Imbalance Charge} = 0.75 * \left[ \begin{array}{l} \text{Monthly Sum of} \\ \text{Daily Imbalance} \\ \text{Charges} \end{array} - 0.0225 * \begin{array}{l} \text{CAISO Facility} \\ \text{Monthly Billed} \\ \text{Fuel Cost} \end{array} \right] + 0.25 * \left[ \begin{array}{l} \text{Monthly Sum of} \\ \text{Daily Imbalance} \\ \text{Charges} \end{array} - 0.10 * \begin{array}{l} \text{CAISO Facility} \\ \text{Monthly Billed} \\ \text{Fuel Cost} \end{array} \right]$$

Note that if either of the two bracketed portions of the equation yields a value less than or equal to zero, then that portion of the equation is set to zero.

**C. CAISO Monthly Other Fuel Related Cost**

The CAISO Monthly Other Fuel Related Cost is calculated in accordance with Equation C1-10.

**Equation C1-10**

$$\text{CAISO Monthly Other Fuel Related Cost} = \frac{\text{Monthly sum of Billable MWh}}{\text{Monthly sum of Total Hourly Metered Net Generation}} * \left[ \begin{array}{l} \text{Other Gas Tariff} \\ \text{Charges} \end{array} + \begin{array}{l} \text{Applicable} \\ \text{Taxes} \end{array} \right]$$

Where:

- Other Gas Tariff Charges are those intrastate gas transportation tariff charges not included in Transportation Rate Charges set forth in Section A.8 of this Schedule listed below:

[Insert applicable charges]

- Applicable taxes and fees are:
  1. [Insert applicable local utility user taxes]
  2. [Insert applicable G-SUR fee]

All other fuel related taxes and fees are intended to be covered by the two percent adder in Hourly Fuel Cost and are the Owner's responsibility.

**D. CAISO Monthly Emissions Cost**

**Part 1 for SCAQMD-Jurisdictional Thermal Units**

The CAISO Monthly Emissions Cost for each Unit shall be the sum, for all hours in the month, of the CAISO Hourly Emissions Cost. These costs apply to a Facility within the South Coast Air Quality Management District (SCAQMD).

**The CAISO Hourly Emissions Cost shall be calculated in accordance with Equation C1-11.**

**Equation C1-11**

$$\begin{aligned} \text{CAISO Hourly Emissions Cost} &= \text{a. CAISO Hourly RECLAIM Trading Credit Cost (\$/hr) +} \\ (\$/\text{hr}) &= \text{b. CAISO Hourly NO}_x \text{ Emissions Cost (\$/hr) +} \\ &= \text{c. CAISO Hourly Organic Gases Emissions Cost (\$/hr) +} \\ &= \text{d. CAISO Hourly Sulfur Oxides Emissions Cost (\$/hr) +} \\ &= \text{e. CAISO Hourly Particulate Matter Emissions Cost} \\ &= \text{f. (\$/hr) +} \\ &= \text{g. CAISO Hourly Carbon Monoxide Emissions Cost} \\ &= \text{(\$/hr) +} \\ &= \text{CAISO Hourly Sulfur Dioxides Trading Credit Costs} \\ &= \text{(\$/hr)} \end{aligned}$$

**a. CAISO Hourly RECLAIM Trading Credit Cost**

For each hour, the CAISO Hourly RECLAIM Trading Credit ("RTC") Cost for NO<sub>x</sub> emissions required for the Unit to generate the Billable MWh is calculated in accordance with Equation C1-12.

**Equation C1-12**

$$\begin{aligned} \text{CAISO Hourly RECLAIM} &= \text{Hourly NO}_x & \text{RECLAIM NO}_x & \text{Billable MWh} \\ \text{Trading Credit Cost (\$/hr)} &= \text{Emissions} & \text{Trading} & \text{Hourly Metered} \\ &= \text{(lbs/hr)} & \text{Credit Rate} & \text{Total Net} \\ & & \text{(\$/lb)} & \text{Generation} \end{aligned}$$

**Where:**

- Hourly NO<sub>x</sub> Emissions is calculated in accordance with Equation C1-13.

**Equation C-13**

$$\text{Hourly NO}_x \text{ Emissions (lbs/hr)} = AX^2 + BX + C$$

**Where:**

- X is the Hourly Metered Total Net Generation for the hour.
- Coefficients A, B, and C are given in Table C1-13 for each Unit.

<b>Table C1-13</b>			
<b>Description of Unit</b>	<b>A</b>	<b>B</b>	<b>C</b>

The RECLAIM NOx Trading Credit Rate (\$/lb) will be equal to the 13-week sales-weighted average sales price for RTCs calculated as of the last day of the Month from sales records available from the SCAQMD for all actual sales in the SCAQMD during the thirteen preceding weeks, including the Settlement Period.

**b. CAISO Hourly NOx Emissions Cost**

For each hour, the CAISO Hourly NOx Emissions Cost for the Billable MWh is calculated in accordance with Equation C1-14.

**Equation C1-14**

$$\text{CAISO Hourly Nox Emissions Cost (\$/hr)} = (5 \times 10^{-4}) \times \text{Hourly Nox Emissions (lbs/hr)} \times \text{NOx Emissions Fee (\$/ton)} \times \frac{\text{Billable MWh}}{\text{Hourly Metered Total Net Generation}}$$

**Where:**

- $(5 \times 10^{-4})$  is the conversion factor from lbs to tons.
- Hourly NOx Emissions is calculated in accordance with Equation C1-13.
- NOx Emissions Fee is obtained from Table III of SCAQMD Rule 301(e). The fee is dependent upon the Cumulative Tons of Pollutant (NOx), which is calculated in accordance with Equation C1-15. The Cumulative Tons of Pollutant is reset to zero each July 1st.

**Equation C1-15**

$$\text{Cumulative Tons of Pollutant (tons/hr)} = \text{Tons of Pollutant From the prior July 1}^{\text{st}} \text{ to the Previous Hour} + \text{Tons of Pollutant For Current Hour}$$

**Where:**

- Tons of Pollutant for Current Hour is in accordance with Equation C1-16.

**Equation C1-16**

$$\begin{array}{l} \text{Tons of Pollutant} \\ \text{for Current Hour} \\ \text{(tons/hr)} \end{array} = (4.76 \star 10^{-7}) \star (AX^3 + BX^2 + CX + D) \star \begin{array}{l} \text{Pollutant Emissions Amount} \\ \text{for Natural Gas} \end{array}$$

**Where:**

- $(4.76 \star 10^{-7})$  is the conversion factor from lbs. to tons (1 ton/2000 lbs.) and from mmcf to MMBtu (1 mmcf/1050 MMBtu).
- X is the Hourly Metered Total Net Generation, MWh.
- Coefficients A, B, C, and D are the coefficients of the hourly heat rate curve given in Table C1-16 for each Unit.

Table C1-16			
Description of Unit	A	B	C

Pollutant Emissions Amount For Natural Gas is the applicable pollutant from SCAQMD General Instruction Book (for the latest year), Annual Emissions Reporting Program, Appendix A - Common Emission Factors For Combustion Equipment, Table 1 - Common Emission Factors For Combustion Equipment for Forms B1 and B1U.

**c. - f. CAISO Hourly Organic Gases Emissions Cost, CAISO Hourly Sulfur Oxides Emissions Cost, CAISO Hourly Particulate Matter Emissions Cost, and CAISO Hourly Carbon Monoxide Emissions Cost**

The CAISO Hourly Organic Gases (OG) Emissions Cost, CAISO Hourly Sulfur Oxides (SOx) Emissions Cost, CAISO Hourly Particulate Matter (PM) Emissions Cost, and CAISO Hourly Carbon Monoxide (CO) Emissions Cost are each calculated in accordance with Equation C1-17.

**Equation C1-17**

$$\begin{array}{l} \text{CAISO Hourly} \\ \text{Applicable} \\ \text{Emissions Cost} \\ \text{($/hr)} \end{array} = (4.76 \star 10^{-7}) \star \begin{array}{l} \text{CAISO Unit Hourly} \\ \text{Cap Heat Input} \\ \text{(MMBtu/hr)} \end{array} \star \begin{array}{l} \text{Associated} \\ \text{Emissions Factor} \\ \text{(lbs/mmcf)} \end{array} \star \begin{array}{l} \text{Associated} \\ \text{Emissions Fee} \\ \text{($/ton)} \end{array}$$

**Where:**

- CAISO Hourly Applicable Emissions Cost is the CAISO Hourly OG Emissions Cost, CAISO Hourly SOx Emissions Cost, CAISO Hourly PM Emissions Cost, or CAISO Hourly CO Emissions Cost.
- $(4.76 \star 10^{-7})$  is the conversion factor from lbs. to tons (1 ton/2000 lbs.) and from mmcf to MMBtu (1 mmcf/1050 MMBtu).

- Associated Emissions Factor is the associated OG Emissions Factor, SO<sub>x</sub> Emissions Factor, PM Emissions Factor or CO Emissions Factor from Table 1 from General Instruction Book for the SCAQMD (for the latest year) Annual Emissions Reporting Program.
- Associated Emissions Fee is the associated OG Emissions Fee, SO<sub>x</sub> Emissions Fee, PM Emissions Fee, or CO Emissions Fee from Table III of SCAQMD Rule 301(e), and is dependent upon the Cumulative Tons of Pollutant pursuant to Equation C1-15.

**g. CAISO Hourly Sulfur Dioxides Trading Credit Costs**

Beginning in the year 2000, certain Units will be subject to Title IV of the Federal Clean Air Act for providing SO<sub>2</sub> Allowances to cover related trading costs. Prior to 2000, the CAISO Hourly Sulfur Dioxides Trading Credit Cost will be zero. The Owner may make a filing under Section 205 of the Federal Power Act limited to recovering applicable CAISO Hourly Sulfur Dioxides Trading Credit Costs when such costs are incurred.

**Part 2 for Ventura County Air Pollution Control District<sup>6</sup>**

Beginning in the year 2000, certain Units will be subject to Title IV of the Federal Clean Air Act for providing SO<sub>2</sub> Allowances to cover related trading costs. Prior to 2000, the CAISO Hourly Sulfur Dioxides Trading Credit Cost will be zero. The Owner may make a filing under Section 205 of the Federal Power Act limited to recovering applicable CAISO Hourly Sulfur Dioxides Trading Credit Costs when such costs are incurred.

**E. CAISO Monthly Variable O&M Cost**

The CAISO Monthly Variable O&M Cost for each Unit shall be the product of the Unit's Billable MWh for the Billing Month and the Unit's Variable O&M Rate. Variable O&M Rate for each Unit shall be:

Table C1-18	
Unit	Variable O&M Rate (\$/MWh)

**F. CAISO Scheduling Coordinator Charge**

The CAISO Scheduling Coordinator Charge for each Unit shall be the product of \$0.31 and the Unit's Billable MWh for the Billing Month.

**F. CAISO ACA Charge**

The CAISO ACA Charge is the product of the Unit's Billable MWh for the Billing Month and the applicable annual charge for short-term sales under 18 CFR Section 382.201 of the FERC Regulations.

<sup>6</sup> Ventura County APCD, where Mandalay Generating Station is located, does not require payment of emissions fees, but rather permit renewal fees. The permit renewal fees are included in the fixed O&M costs.



**SCHEDULE C**

**Variable Cost Payment for All Conditions  
Part 2 for Geothermal Units**

For each Unit each Month, the Variable Cost Payment for Billable MWh from the Unit pursuant to Nonmarket Transactions during that Month shall be the amount calculated in accordance with the following formula:

$$\begin{array}{lcl} \text{Variable Cost Payment} & = & \begin{array}{l} \text{A. CAISO Monthly Billed Fuel Cost} + \\ \text{B. CAISO Monthly Variable O\&M Cost} + \\ \text{C. CAISO Scheduling Coordinator Charge} \\ \text{D.} + \\ \text{CAISO ACA Charge} \end{array} \end{array}$$

Each component of the Variable Cost Payment for geothermal Units is calculated as described below:

**A. CAISO Monthly Billed Fuel Cost [for Geysers Main only]**

The CAISO Monthly Billed Fuel Cost is given by Equation C2-1.

**Equation C2-1**

$$\begin{array}{lcl} \text{CAISO Monthly Billed Fuel} & & \\ \text{Cost} & = & \text{Billable MWh} \quad * \quad \text{Steam Price (\$/MWh)} \end{array}$$

Where:

- Steam Price is \$16.34/MWh.
- For purposes of Equation C2-1, Billable MWh is all Billable MWh Delivered after cumulative Hourly Metered Total Net Generation during the Contract Year from all Units exceeds the Minimum Annual Generation given by Equation C2-2.

**Equation C2-2**

$$\text{Minimum Annual Generation} = (\text{Annual Average Field Capacity} * 8760 \text{ hours} * 0.4) - (A+B+C)$$

Where:

- Annual Average Field Capacity is the arithmetic average of the two Field Capacities in MW for each Contract Year, determined as described below.

Field Capacity shall be determined for each six-month period from July 1 through December 31 of the preceding calendar year and January 1 through June 30 of the Contract Year. Field Capacity shall be the average of the five highest amounts of net generation (in MWh) simultaneously achieved by all Units during eight-hour periods within the six-month period. The capacity simultaneously achieved by all Units during each eight-hour period shall be the sum of Hourly Metered Total Net Generation for all Units during such eight-hour period, divided by eight hours. Such eight-hour periods shall not overlap or be counted more than once but may be consecutive.

Within 30 days after the end of each six-month period, Owner shall provide CAISO and the Responsible Utility with its determination of Field Capacity, including all information necessary to validate that determination.

- A is the amount of Energy that cannot be produced (as defined below) due to the curtailment of a Unit during a test of the Facility, a Unit or the steam field agreed to by CAISO and Owner.
- B is the amount of Energy that cannot be produced (as defined below) due to the retirement of a Unit or due to a Unit's Availability remaining at zero after a period of ten Months during which the Unit's Availability has been zero.
- C is the amount of Energy that cannot be produced (as defined below) because a Force Majeure Event reduces a Unit's Availability to zero for at least thirty (30) days or because a Force Majeure Event reduces a Unit's Availability for at least one hundred eighty (180) days to a level below the Unit Availability Limit immediately prior to the Force Majeure Event.
- The amount of Energy that cannot be produced is the sum, for each Settlement Period during which the condition applicable to A, B or C above exists, of the difference between the Unit Availability Limit immediately prior to the condition and the Unit Availability Limit during the condition.

**A. CAISO Monthly Billed Fuel Cost [for Geysers Units 13 & 16 only]**

The CAISO Monthly Billed Fuel Cost is given by Equation C2-1.

**Equation C2-1**

$$\text{CAISO Monthly Billed Fuel Cost} = \text{Billable MWh} * \text{Steam Price (\$/MWh)}$$

Where:

- Steam Price is \$11.25/MWh, which includes the cost of steam condensate re-injection.

**B. CAISO Monthly Variable O&M Cost**

The CAISO Monthly Variable O&M Cost for each Unit is given by Equation C2-3 and is the product of the sum of Billable MWh for the Billing Month and the Unit's Variable O&M Rate. Variable O&M Rate for each Unit is shown in Table C2-1:

**Equation C2-3**

$$\text{CAISO Monthly Variable O\&M Cost} = \text{Monthly sum of Billable MWh} * \text{Variable O\&M Rate}$$

Table C2-1	
Unit	Variable O&M Rate (\$/MWh)

**C. CAISO Scheduling Coordinator Charge**

The CAISO Scheduling Coordinator Charge for each Unit shall be the product of \$0.31 and the Unit's of Billable MWh for the Billing Month.

**D. CAISO ACA Charge**

The CAISO ACA Charge is the product of the Unit's Billable MWh for the Billing Month and the applicable annual charge for short-term sales under 18 CFR Section 382.201 of the FERC Regulations, to the extent payable by Owner for Billable MWh.

**SCHEDULE C**

**Variable Cost Payment for All Conditions  
Part 3 for Conventional Hydro Units**

For each month and each Unit, the Variable Cost Payment for Billable MWh from the Unit pursuant to Nonmarket Transactions during that Month shall be the amount calculated in accordance with the following formula:

$$\text{Variable Cost Payment} = \begin{array}{l} \text{A. CAISO Scheduling Coordinator Charge} \\ + \\ \text{CAISO ACA Charge} \end{array}$$

**A. CAISO Scheduling Coordinator Charge**

The CAISO Scheduling Coordinator Charge for each Unit shall be the product of \$0.31 and the Unit's Billable MWh for the Billing Month.

**B. CAISO ACA Charge**

The CAISO ACA Charge is the product of the Unit's Billable MWh for the Billing Month and the applicable annual charge for short-term sales under 18 CFR Section 382.201 of the FERC Regulations.

**SCHEDULE C**

**Variable Cost Payment for All Conditions  
Part 4 for Pumped Storage Hydro Units**

For each month and each Unit, the Variable Cost Payment for Billable MWh from the Unit pursuant to Nonmarket Transactions during that Month shall be the amount calculated in accordance with the following formula:

$$\text{Variable Cost Payment} = \begin{array}{l} \text{A. CAISO Monthly Billed Fuel Cost} + \\ \text{B. CAISO Scheduling Coordinator} \\ \text{C. Charge} + \\ \text{CAISO ACA Charge} \end{array}$$

**A. CAISO Monthly Billed Fuel Cost**

The CAISO Monthly Billed Fuel Cost is given by Equation C4-1:

**Equation C4-1**

CAISO Monthly Billed Fuel Cost = Year-to-Date CAISO Fuel Cost – Sum of Previous Months' CAISO Monthly Billed Fuel Cost in the Contract Year

Where:

- Year-to-Date CAISO Fuel Cost is given by Equation C4-2.
- Sum of Previous Months' CAISO Monthly Billed Fuel Cost in the Contract Year shall be the sum of the CAISO Monthly billed Fuel Cost for each Month from January 1 of the Contract Year<sup>7</sup> through the end of the Month in the Contract Year before the Billing Month.

**Equation C4-2**

$$\text{Year-to-Date CAISO Fuel Cost} = (\text{YTD Pumping Cost} / \text{YTD Energy Produced}) \times \text{Variable O\&M Rate}$$

Where:

- YTD Pumping Cost = Total cost of Energy purchased by Owner for pumping, including transmission charges, from January 1 of the Contract Year through the end of the Billing Month.
- YTD Energy Produced = Total Energy produced by the Facility for Market and Nonmarket Transactions from January 1 of the Contract Year through the end of the Billing Month.
- YTD Billable MWh = Total Billable MWh from January 1 of the Contract Year through the end of the Billing Month.

<sup>7</sup> For purposes of Equations C4-1 and C4-2 as applied in 1999, Contract Year includes those months in the year, beginning in January 1999, when the same services as under this Agreement were provided to ISO under a predecessor rate schedule, as well as months when such services are provided under this Agreement.

**B. CAISO Scheduling Coordinator Charge**

The CAISO Scheduling Coordinator Charge for each Unit shall be the product of \$0.31 and the Unit's Billable MWh for the Billing Month.

**C. CAISO ACA Charge**

The CAISO ACA Charge is the product of the Unit's Billable MWh for the Billing Month and the applicable annual charge for short-term sales under 18 CFR Section 382.201 of the FERC Regulations.

**Schedule C**

**Variable Cost Payment for All Conditions  
Part 5 for Biomass Generation Units**

For each month and each Unit, the Variable Cost Payment for Billable MWh from the Unit pursuant to Nonmarket Transaction during that Month shall be the amount calculated in accordance with the following formula:

$$\text{Variable Cost Payment} = \begin{array}{l} \text{A. CAISO Monthly Billed Fuel Cost +} \\ \text{B. CAISO Variable O\&M Cost +} \\ \text{C. CAISO Scheduling Coordinator} \\ \text{Charge} \end{array}$$

**A. CAISO Monthly Billed Fuel Cost**

The CAISO Monthly Billed Fuel Cost is given by Equation C5-1:

**Equation C4-1**

$$\text{CAISO Monthly Billed Fuel Cost} = \text{Billable MWh} * \text{Monthly Average Fuel Cost (\$MWh)}$$

Where:

- Monthly Average Fuel Cost (\$ / MWh) = Negotiated Cost Based Amount.

**B. CAISO Monthly Variable O&M Cost**

The CAISO ACA Charge is the product of the Unit's Billable MWh for the Billing Month and the applicable annual charge for short-term sales under 18 CFR Section 382.201 of the FERC Regulations.

**Equation C5-2**

$$\text{CAISO Monthly Variable O\&M Cost} = \text{Monthly Sum of billable MWh} \times \text{Variable O\&M Rate}$$

Table C5-1	
Unit	Variable O&M Rate (\$/MWh)

**C. CAISO Scheduling Coordinator Charge**

The CAISO Scheduling Coordinator Charge for each Unit shall be the product of \$0.31 and the Unit's Billable MWh for the Billing Month.

**SCHEDULE D**

**Part 1**

**Start-up Payment for Condition 1 Units**

**1. Prepaid Start-up Charge**

Prepaid Start-up Charge for each Unit operating under Condition 1 for each Contract Year will be calculated as the Prepaid Start-up Cost times the number of Prepaid Start-ups. The number of Prepaid Start-up equals the Maximum Annual Start-ups per Unit. The Prepaid Start-up Cost will be calculated in accordance with Equation D-1 for Start-up Cost with the following assumptions:

- a. Hourly Fuel Price: For the initial Contract Year the Hourly Fuel Price shall be the simple average of the applicable index prices from Table C1-8 of Schedule C for the period beginning on the later of the initial publication date of such indices or January 1, 1998 and ending December 31, 1998, plus the applicable Transportation Rate under Equation C1-8 as in effect on April 1, 1999. For each subsequent Contract Year, the Hourly Fuel Price shall be agreed upon by CAISO and Owner; if there is no agreement, the Hourly Fuel Price shall be the simple average of the Hourly Fuel Prices for the twelve months ending the prior June 30 as calculated in accordance with Equation C1-8 of Schedule C;
- b. Energy Price shall be based on the [insert Applicable UDC Tariff rate], including applicable demand charges, provided that the Applicable UDC Tariff rate shall only be the energy charge rate at those Facilities where Units have the capability to use Energy from other units at the same Facility to effect Start-ups or where generation from other units is otherwise permitted under the CAISO Tariff to be netted against auxiliary power needed to effect Start-up of the Unit. For the initial Contract Year, the Energy Price shall be calculated as the total auxiliary power (including Energy for Start-ups) costs charged to the Facility by its supplier of end-use Energy for the six-month period ending December 31, 1998 divided by the auxiliary power (including Energy for Start-ups) consumed at the Facility for that same time period. For Facilities that have not been charged for auxiliary power for the six-month period ending December 31, 1998, the Energy Price for the Initial Contract Year shall be the simple average of the prices for Energy for varying times of day shown in the Applicable UDC Tariff. For each subsequent Contract Year, the Energy Price shall be calculated as the total auxiliary power (including Energy for Start-ups) costs charged to the Facility by its supplier of end-use Energy for the twelve months ending the prior June 30 divided by the auxiliary power (including Energy for Start-ups) consumed at the Facility for that same twelve-month period;
- c. All Start-ups are assumed to be from maximum time off line as shown by value XMax in Table D-1, and
- d. Other Start-up Costs shall be zero (\$0) for non-hydroelectric Units; for hydroelectric Units, other Start-up costs shall be the cost shown in Table D-2 for Normal Work Hours.



The Prepaid Start-up Cost and Prepaid Start-up Charge for the current Contract Year are set forth in Table D-0:

Table D-0			
Unit	Number of Prepaid Start-ups	Prepaid Start-up Cost	Prepaid Start-up Charge
Unit			

## 2. **Start-up Cost**

The cost for a Start-up shall be calculated in accordance with Equation D-1:

### **Equation D-1**

$$\begin{array}{rclclcl} \text{Start-up} & & \text{Start-up} & & \text{Start-up} & & \text{Other} & & \text{Shutdown} \\ \text{Cost} & = & \text{Fuel Cost} & + & \text{Power Cost} & + & \text{Start-up Costs} & + & \text{Power Cost} \\ (\$) & & (\$) & & (\$) & & (\$) & & (\$) \end{array}$$

Each component of the Start-up Cost in Equation D-1 is set forth below.

#### **a. Start-up Fuel Costs**

The Start-up Fuel Cost shall be calculated in accordance with Equation D-1a:

### **Equation D-1a**

$$\begin{array}{rclclcl} \text{Start-up} & & & & & & & & \text{Hourly} \\ \text{Fuel Cost} & = & [ & (A & * & x) & + & B & ] * & \text{Fuel Price} \\ (\$) & & (\text{MMBtu/hr}) & & (\text{hrs}) & & (\text{MMBtu}) & & (\$/\text{MMBtu}) \end{array}$$

Where:

- “x” equals the number of hours since the Unit ceased operation and cannot exceed “x<sub>Max</sub>”.
- The Hourly Fuel Price is calculated pursuant to Schedule C Equation C1-8 for the hour in which the Start-up began.
- The values A, B and x<sub>Max</sub> for each Unit are given in Table D-1 below.

#### **b. Start-up Power Costs**

The Start-up Power Cost shall be calculated in accordance with Equation D-1b:

### **Equation D-1b**

$$\begin{array}{rclclcl} \text{Start-up} & & & & & & & & \text{Energy} \\ \text{Power Cost} & = & ( [ C & * & x ] + D ) & * & \text{Price} \\ (\$) & & (\text{MWh/hr}) & & (\text{hrs}) & & (\text{MWh}) & & (\$/\text{MWh}) \end{array}$$

Where:

- “x” is equal to the hours since the Unit ceased operation and cannot exceed “xMax”.
- The Energy Price shall be equal to the total auxiliary power (including Energy for Start-ups) costs charged to the Facility by its supplier of end-use Energy for the billing cycle in which the Start-up was initiated divided by the total auxiliary power (including Energy for Start-ups) consumed at the Facility during such billing cycle.
- The values C, D and xMax are given in Table D-1 below.

**c. Shutdown Power Costs**

The Shutdown Power Cost shall be calculated in accordance with Equation D-1c:

**Equation D-1c**

Shutdown Power Cost (\$)	=	Shutdown Power Requirement (MWh)	Energy ★ Price (\$/MWh)
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The Energy Price shall be equal to the total auxiliary power (including Energy for Shutdowns) costs charged to the Facility by its supplier of end-use Energy for the billing cycle in which the Shutdown was initiated divided by the total auxiliary power (including Energy for Shutdowns) consumed at the Facility during such billing cycle. The Shutdown Power Requirement is given in Table D-1 below.

**d. Other Start-up Costs for Hydroelectric Only**

Other Start-up Costs are the cost of labor to start hydroelectric Units that require an operator to manually parallel, and reflect the labor costs to travel to the site. If the Start-up of a hydroelectric Unit occurs outside normal work hours, the Start-up Costs include the minimum work hours and labor rates as set by the applicable collective bargaining agreement(s).

The Other Start-up Costs shall be calculated in accordance with Equation D1-d. The values for E are provided in Table D-2 for normal work hour and outside of normal work hour situations.

**Equation D-1d**

$$\text{Other Start-up Costs (\$)} = E$$

Once a Unit has been given a Dispatch Notice to Start-up, other Start-up Costs are incurred.

<b>Table D-1, Start-Up Costs</b>						
	X <sub>Max</sub>	A	B <sup>8</sup>	C	D	Shutdown Power Requirement
Unit	(Hrs)	(mmBtu)/hr	(mmBtu)	(MWh)/hr	(MWh)	(MWh)

<b>Table D-2, Other Start-Up Costs – Hydroelectric Units</b>		
Unit	E (Normal Work Hours) (\$)	E (Outside Normal Work Hours) (\$)

### 3. **Monthly Start-up Adjustment**

For each Start-up successfully completed in compliance with a Dispatch Notice during the Billing Month, and each Start-up initiated in compliance with a Dispatch Notice but not successfully completed because it is canceled or rescinded by CAISO, until the total Counted Start-ups for the Contract Year equals the number of Prepaid Start-ups for the Contract Year, the Monthly Start-up Adjustment, which shall be a credit or payment, is the sum of Prepaid Start-up Adjustments, and Prepaid Start-up Adjustments for Canceled Start-ups calculated in accordance with Equations D-2 and D-3:

#### **Equation D2**

Prepaid Start-up Adjustment = Prepaid Start-up Cost calculated in accordance with Section 1 minus the actual Start-up Cost calculated in accordance with Equation D-1.

#### **Equation D-3**

Prepaid Start-up Adjustment for Canceled Start-up	=	$\frac{\text{Number of hours committed to the Start-up}}{\text{applicable Start-up Lead Time (hrs) as shown in Schedule A, Section 6}} \times$	Prepaid Start-up Adjustment calculated in accordance with Equation D-2
--	---	--	--

Where:

- The “number of hours committed to the Start-up” is the lesser of (a) time elapsed between the initiation of the Start-up and the cancellation and (b) the applicable Start-up Lead Time.

<sup>8</sup> Includes fuel consumed from the time Unit reaches Synchronization to the time Unit reaches Minimum Load.

## SCHEDULE D

### Part 2

#### Start-up Payment for Condition 2 Units

**1. Start-up Payment**

The Start-up Payment for each Start-up successfully completed for each Unit operating under Condition 2 equals the Start-up Cost calculated using Equation D-1.

**2. Payment for Canceled Start-up**

If Start-up is initiated under a Dispatch Notice but is not successfully completed because it is canceled or rescinded by the CAISO, the Start-up Payment is calculated in accordance with Equation D-4:

#### Equation D-4

$$\begin{array}{rcl}
 \text{Start-up} & & \text{Number of hours} \\
 \text{Payment for} & & \text{committed to the} \\
 \text{Canceled Start-up} & = & \text{Start-up} \\
 \text{(\$)} & & \text{applicable Start-up} \\
 & & \text{Lead Time (hrs)} \\
 & & \text{as shown in} \\
 & & \text{Schedule A, Section 6}
 \end{array}
 \times
 \begin{array}{l}
 \text{Start-up Cost} \\
 \text{calculated in} \\
 \text{accordance with} \\
 \text{Equation D-1 (\$)}
 \end{array}$$

The “number of hours committed to the Start-up” is the lesser of (a) time elapsed between the initiation of the Start-up and the cancellation or (b) the applicable Start-up Lead Time.

**SCHEDULE E**

**Ancillary Services  
Part 1 for Condition 1**

The CAISO may call upon the Unit to provide the following Ancillary Services as defined in the CAISO Tariff:

Regulation  
Spinning Reserve  
Nonspinning Reserve  
Replacement Reserve  
Voltage Support (including synchronous condenser operation)  
Black Start

If the Unit is otherwise generating, the Owner shall be required to operate the Unit within the Power Factor range of the Unit specified in Schedule A to provide Ancillary Services without additional compensation.

Certain Units (hydroelectric and synchronous condensers) can provide Ancillary Services without generating Energy. Under this Condition, Owner will be compensated for Motoring Charges if the Unit is providing Ancillary Services while synchronized without generating Energy.

**Motoring Charge**

When Units are operated as synchronous condensers (i.e., motored using electric power) to provide Ancillary Services, if applicable, the payment for that service is given by the following formula:

$$\text{Motoring Charge} = (\text{Power consumption rate (MWh/hr)}) * (\text{hours operated}) * (\text{Energy Price})$$

Where the Power consumption rate is given by the following table:

Unit	Power consumption rate (MWh/hour)
------	-----------------------------------

The Energy Price shall be equal to the total power costs charged to the Facility by its supplier of end-use Energy under the Applicable UDC Tariff for the billing cycle in which the Motoring Charge was incurred divided by the total power consumed at the Facility under such tariff during such billing cycle.

**Pre-empted Dispatch Payment**

If the CAISO issues a Dispatch Notice to:

- (i) decrease a Unit's scheduled output of Energy in a Market Transaction to provide Ancillary Services;
- (ii) decrease a Unit's scheduled provision of Ancillary Services capacity in a Market Transaction in order to provide Regulation, Spinning Reserve, Nonspinning Reserve, or Replacement Reserve pursuant to a Dispatch Notice,
- (iii) decrease a Unit's scheduled provision of Ancillary Service capacity in a Market Transaction in order to provide Energy pursuant to a Dispatch Notice, the CAISO shall pay the appropriate Pre-empted Dispatch Payment described below. The Pre-empted Dispatch Payments are intended to make an Owner whole with respect to the original Market Transaction.

**A. For Pre-empted Energy Market Transactions:**

Pre-empted Dispatch Payment = Imbalance Energy Charge – Cost Savings

- Imbalance Energy Charge =  $(X_o - X_n) \times \text{Penalty Price}$
- Penalty Price = Unrestricted Imbalance Energy Price + additional penalties (per MWh) imposed by the CAISO for failure to comply with Market Schedules due to compliance with Dispatch Notice.
- Cost Savings = Fuel Cost Savings + Emissions Savings + Other Savings

Where:

- $X_o$  = Original Total Schedule in Market and Nonmarket Transactions;
- $X_n$  = New Total Schedule in Market and Nonmarket Transactions;

For fossil fuel Units, the Fuel Cost Savings is calculated as follows:

- Fuel Cost Savings = Fuel Savings x Hourly Fuel Price
- Fuel Savings =  $(AX_o^3 + BX_o^2 + CX_o + D) - (AX_n^3 + BX_n^2 + CX_n + D) \times E$
- or
- Fuel Savings =  $[ (A \times (B + CX_o + De^{FX_o})) - (A \times (B + CX_n + De^{FX_n})) ] \times E$
- A, B, C, D, E and F are the coefficients from Table C1-7a or C1-7b, as applicable;
- Hourly Fuel Price is calculated in Equation C1-8.

For geothermal Units, the Fuel Cost Savings is calculated by the following formula:

$$\text{Fuel Cost Savings} = (X_o - X_n) * \text{Hourly Fuel Price}$$

Where:

- Hourly Fuel Price is the Steam Price identified in Equation C2-1 in Schedule C. However, for purposes of this Pre-empted Dispatch Payment calculation, the value for the Steam Price will be set to zero for Geysers Main Units until the cumulative Hourly Metered Total Net Generation for the Contract Year from all Units exceeds the Minimum Annual Generation given in Equation C2-2.

For pumped storage hydroelectric Units, the Fuel Cost Savings is calculated by the following formula:

$$\text{Fuel Cost Savings} = (X_o - X_n) * \text{Hourly Fuel Price}$$

Where:

- Hourly Fuel Price is YTD Pumping Cost / YTD Energy Produced; and YTD Pumping Cost and YTD Energy Produced are as defined in Equation C4-2.

For conventional hydroelectric Units, the Fuel Cost Savings is zero.

Other Savings =  $((X_o - X_n) * (\text{Variable O\&M Rate} + \text{applicable annual charge for short-term sales under 18 CFR 382.201 of the FERC Regulations}))$

Emissions Savings = RECLAIM Savings + NOx Emissions Fee Savings + Organic Gases Fee Savings + Sulfur Oxides Fee Savings + Particulate Matter Savings + Carbon Monoxide Fee Savings

$$\text{RECLAIM Savings} = ((AX_o^2 + BX_o + C) - (AX_n^2 + BX_n + C)) * \text{RECLAIM NOx Trading Credit Rate}$$

Where:

- A, B and C are the coefficients from Table C1-13;
- $X_o$  = Original Total Schedule in Market and Nonmarket Transactions;
- $X_n$  = New Total Schedule in Market and Nonmarket Transactions;

$$\text{NOx Emissions Fee Savings} = \frac{((AX_o^2 + BX_o + C) - (AX_n^2 + BX_n + C))}{2000} * \text{NO}_x \text{ Emissions Fee;}$$

Where:

- A, B and C are the coefficients from Table C1-13;
- $X_o$  = Original Total Schedule in Market and Nonmarket Transactions;
- $X_n$  = New Total Schedule in Market and Nonmarket Transactions;

Organic Gases Fee Savings =

$$4.76 \times 10^{-7} \times \text{Gas Fuel Savings} \times \text{Associated Emission Factor for Organic Gases} \times \text{Associated Emissions Fee for Organic Gases}$$

Sulfur Oxides Fee Savings =

$$4.76 \times 10^{-7} \times \text{Gas Fuel Savings} \times \text{Associated Emission Factor for Sulfur Oxides} \times \text{Associated Emissions Fee for Sulfur Oxides}$$

Particulate Matter Oxides Fee Savings =

$$4.76 \times 10^{-7} \times \text{Gas Fuel Savings} \times \text{Associated Emission Factor for Particulate Matter} \times \text{Associated Emission Fee for Particulate Matter}$$

Carbon Monoxide Fee Savings =

$$4.76 \times 10^{-7} \times \text{Gas Fuel Savings} \times \text{Associated Emission Factor for Carbon Monoxide} \times \text{Associated Emission Fee for Carbon Monoxide}$$

All Emissions Fees and Emission Factors are determined in accordance with Schedule C.

[If applicable, insert emission cost savings formula for fuel other than natural gas.]

The Owner will be entitled to retain all payments received from the Owner's Scheduling Coordinator for the Unit's scheduled output.

**B. For Pre-empted Ancillary Services Market Transactions:**

CAISO shall pay Owner the product of (i) the difference between the MW of the Ancillary Service Owner had scheduled to provide in a Market Transaction and the MW of Ancillary Services Owner is able to provide after complying with the Dispatch Notice and (ii) the Market Clearing Price the Owner pays to buy back its commitment to deliver the preempted MW of Ancillary Services (if the Owner actually incurs such a cost), or the penalty the Owner pays for failure to deliver the preempted MW of Ancillary Services (if the Owner actually incurs such a cost) for the applicable Ancillary Service, market, and hour. In addition, if compliance with the Dispatch Notice causes reduction of a market regulation transaction, the CAISO shall also pay the Owner the product of the Regulation Energy Payment Adjustment (REPA) amount, if applicable, and the MW of Regulation which Owner had scheduled but is unable to provide because of its compliance with the Dispatch Notice.



**Schedule E**

**Ancillary Services  
Part 2 for Condition 2**

The CAISO may call upon the Unit to provide the following Ancillary Services as defined in the CAISO Tariff:

Regulation  
Spinning Reserve  
Nonspinning Reserve  
Replacement Reserve  
Voltage Support (including synchronous condenser operation)  
Black Start

The Owner shall be required to operate the Unit within the Power Factor range of the Unit specified in Schedule A to provide Voltage Support without additional compensation.

The Owner shall receive no payment for any Ancillary Services Capacity provided. However, operation of a Unit in synchronous condenser mode will be compensated as shown below.

**Motoring Charge**

When Units are operated as synchronous condensers (i.e., motored using electric power) to provide Ancillary Services, if applicable, the payment for that service is given by the following formula:

Motoring Charge = ( Power consumption rate (MWh/hr) ) \* (hours operated) \* (Energy Price)

Where the Power consumption rate is given by the following table:

Unit	<u>Power consumption rate (MWh/hour)</u>
------	--

The Energy Price shall be equal to the total power costs charged to the Facility by its supplier of end-use Energy under the Applicable UDC Tariff for the billing cycle in which the Motoring Charge was incurred divided by the total power consumed at the Facility under such tariff during such billing cycle.

**Schedule E**  
**Ancillary Services**  
**Part 3 for Black Start Services**

For those Units with Black Start capability, the cost of maintaining such capability is included in this Agreement and no additional costs shall be charged to the CAISO for maintaining such capability. The CAISO will pay for Black Start service, including for a Black Start Test Dispatch Notice, at the rates and prices in this Agreement for Start-Ups and Delivery of Energy in connection with the Black Start service. Owner shall maintain the Black Start capability of the Unit and the Facility and provide Black Starts in accordance with the CAISO Ancillary Services Requirements Protocol and the CAISO Dispatch Protocol, which shall be deemed incorporated by reference into this Agreement.

When the CAISO first gives written notice to the Owner that it has obtained adequate Black Start service through an auction or a separate agreement with Owner or other Generators and Black Start service under this Agreement is no longer required, the CAISO shall not be entitled to call upon this Unit to provide Black Start service. Once the CAISO has given this notice, the Owner may remove Black Start service from this Agreement by filing unilaterally a change in rate schedule with FERC. Such filing shall not be required to include any reduction in rate or revenue solely because Black Start service is removed. The CAISO shall not oppose the absence of any rate or revenue reduction that results solely from removing such service.

**Schedule F**

**Determination of Annual Revenue Requirements  
 of Must-Run Generating Units**

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## **Article I. Purpose and General Procedures**

### **Part A. Determination of Rates and Charges**

This Schedule F establishes the procedures and methodology for determining the Annual Fixed Revenue Requirements (in dollars) and Variable O&M Rates (in \$/MWh) for facilities designated for must-run service for purposes of calculating certain charges for such service under the RMR Contract.

The Annual Fixed Revenue Requirements and the Variable O&M Rate for each designated must-run generating facility shall be determined annually. The Annual Fixed Revenue Requirements and the Variable O&M Rate for each such facility that shall be used for calculating charges to the CAISO during each calendar year shall be determined by application of the Formula set forth in Article II hereof to the Owner's costs incurred during the twelve-month period ended on June 30 of the prior calendar year. Each twelve-month period ending on June 30 of each year is hereinafter referred to as the "Cost Year" relating to the rates and charges that are effective during the succeeding calendar year.

### **Part B. Informational Filings**

In connection with the determination of rates and charges for each calendar year, reflecting costs incurred during the June 30 Cost Year as described in the foregoing Part A of this Article I, the Owner shall provide to the CAISO an Information Package detailing and supporting all calculations involved in such determination. A single Information Package may contain all such informational materials pertaining to all of the Owner's designated must-run facilities. On or before October 1, 2001, the Owner shall provide to the CAISO the Information Package relating to the rates and charges to become effective on January 1, 2002. Thereafter, on November 1 of each year, the Owner shall provide to the CAISO the Information Package relating to the rates and charges to be effective during the calendar year beginning on the following January 1.

Each such Information Package shall be in a clear and readable format and shall contain:

1. detailed workpapers showing the derivation of costs under the Formula for the relevant Cost Year along with supporting schedules showing the data used in applying the formula, presented in a format consistent with the presentation of information in the FERC Form No. 1;
2. a clear identification of the depreciation rates reflected in claimed costs for the Cost Year and the rate of return and every other stated item (i.e., any item which appears as a numerical value in the Formula and which only may be changed by a filing with the FERC);
3. a comparison of the major components of the resulting revenue requirements for the relevant Cost Year with the corresponding components of the revenue requirements that result from the application of the Formula using costs from the Owner's FERC Form No. 1 relating to the preceding calendar year;
4. such additional documentation as to specific items of costs required by the Formula.

The Owner shall provide each Information Package to the CAISO in printed form and a suitable electronic format. The CAISO shall post the Information Package on its website. A suitable electronic format shall be any format that the FERC permits for electronic filings.

Coincident with providing each such Information Package to the CAISO, the Owner shall also submit the Information Package to the FERC in an informational filing so as to allow for review of the related rates and charges by the FERC staff and affected parties. As to the informational filing relating to rates and charges to be effective during calendar year 2002, (i) discovery requests by the FERC staff and affected parties shall be made within 45 days of the filing, with responses by the Owner due within 60 days of the filing, and (ii) protests, if any, by affected parties shall be filed with the FERC within 75 days of the filing. As to each subsequent informational filing, (i) discovery requests by the FERC staff and affected parties shall be made within 20 days of the filing, with responses by the Owner due within 35 days of the filing, and (ii) protests, if any, by affected parties shall be filed with the FERC within 45 days of the filing. In the event that the need arises during the discovery process for the nondisclosure or confidentiality of information, the Owner and affected parties, other than FERC Staff and state regulatory agencies, shall utilize the procedures contained in Schedules N-1 and N-2 of the RMR Contract. If the Owner seeks the confidentiality or nondisclosure of information provided to FERC or state regulatory agencies, it shall follow the applicable rules, regulations and statutory provisions of those agencies.

Protests to the Information Package challenging arithmetic calculations or conformity to the Rate Formula, not resolved by summary disposition of the FERC, shall be resolved by the use of the Alternative Dispute Resolution procedures in Schedule K of the RMR contract. In such a proceeding, the Owner will bear the burden of proof as in a proceeding under Section 205 of the Federal Power Act (FPA). If it is found that an erroneous calculation or non-conforming formula element has been used, refunds shall be ordered. The amount of refunds shall restore the parties to the positions they would have occupied had the erroneous calculations or non-conforming formula elements not been used, with interest calculated pursuant to Section 35.19a of the Commission's regulations, 18 C.F.R. Section 35.19a.

If a matter is set for hearing, additional discovery shall be permitted in accordance with the Commission's Rules of Practice and Procedure. Under hearings established pursuant to this provision, refund rights will be as in a proceeding under Section 205 of the FPA. Any refunds due as the result of a final Commission order will be credited or paid to the CAISO with interest in accordance with 18 C.F.R. 35.19a.

In addition to the discovery provided above, affected parties shall have the ability to audit the Owner's books and records as provided in Section 12.2 of the RMR Contract. To the extent that an audit discloses that the formula was not correctly applied for a particular year, the affected prior billings shall be corrected, and appropriate refunds or credits shall be provided to the CAISO, with interest determined in accordance with 18 C.F.R. 35.19a.

Notwithstanding the above procedures, all parties retain full rights to make filings at any time under Sections 205 and 206 of the FPA, as appropriate.

## **Article II. Formula for Determination of Annual Revenue Requirements**

### **Part A. Purpose and Overview**

The purpose of this Formula For Determination of Annual Revenue Requirements ("Formula") is to specify the method for determining the Annual Revenue Requirements, and certain components thereof, of particular must-run generating units for each Cost Year.

Part B of this Formula contains the specifications for the components of costs that may be included in the Annual Revenue Requirements of individual designated must-run generating units (*i.e.*, for each "Subject Resource").

Part C of this Formula sets forth (i) general instructions for the use and application of the Formula, and (ii) certain general definitions of terms used herein.

### **Part B. Determination of Annual Revenue Requirements**

#### **Section 1. Annual Fixed Revenue Requirements and Variable O&M Rate**

##### **(A) Annual Fixed Revenue Requirements**

The "Annual Fixed Revenue Requirements" for the Subject Resource is the amount determined as the following difference:

1. Total Annual Revenue Requirements, as defined below; less
2. Total Annual Variable Costs, as defined below.

##### **(B) Variable O&M Rate**

The "Variable O&M Rate" for the Subject Resource is the rate (in \$/MWh) determined as the follows:

$$\text{Variable O\&M Rate} = [\text{Annual Variable O\&M Expenses}]/[\text{Annual Net Generation}]$$

where "Annual Variable O&M Expenses" is defined hereinbelow, and "Annual Net Generation" is the net generation (in MWh) of the Subject Resource during the Cost Year.

Notwithstanding the foregoing, whenever the Annual Net Generation of the Subject Resource is zero or negative, the Variable O&M Rate shall be deemed to be zero.

##### **(C) Total Annual Revenue Requirements**

The "Total Annual Revenue Requirements" for the Subject Resource is the amount that is the sum of the following amounts:

1. Operating Expenses, determined pursuant to Section 2 below; and
2. Return and Income Tax Allowance, determined pursuant to Section 3 below.

## **Section 2. Operating Expenses**

**"Operating Expenses"** for the Subject Resource is the quantity that is the sum of the following amounts:

1. Total O&M Expenses, as defined below;
2. Depreciation Expenses, as defined below;
3. Taxes Other Than Income Taxes, as defined below; and
4. Revenue Credits, as defined below.

### **(A) Total O&M Expenses**

"Total O&M Expenses" is the amount of expenses arising from the operation and maintenance of the Subject Resource, including Production O&M Expenses, Transmission O&M Expenses, Distribution O&M Expenses, and Administrative & General Expenses, all as defined below.

- (1) Production O&M Expenses:** Expenses incurred directly in operating and maintaining the Subject Resource:
  - (a) Steam Production O&M:** For steam units only, amounts properly recorded in Accounts 500-515.
  - (b) Hydro Production O&M:** For hydro units only, amounts properly recorded in Accounts 535-545.
  - (c) Other Power Generation O&M:** For other types of units, amounts properly recorded in Accounts 546-554.
  - (d) Other Power Supply Expenses:** Amounts properly recorded in Accounts 555-557, if any, that are reasonably assignable or allocable to the Subject Resource.
- (2) Transmission O&M Expenses:** Expenses incurred directly in operating and maintaining the transmission facilities associated with the Subject Resource, as properly recorded in Accounts 560-573 and reasonably assignable or allocable to the Subject Resource.
- (3) Distribution O&M Expenses:** Expenses incurred directly in operating and maintaining the distribution facilities associated with the Subject Resource, as properly recorded in Accounts 580-598 and reasonably assignable or allocable to the Subject Resource.
- (4) Administrative and General (A&G) Expenses:** Those portions, if any, of administrative and general expenses, as properly recorded in Accounts 920-935, that are reasonably related to the operation of the Subject Resource, determined from appropriate direct assignment or reasonable allocation. Such expenses shall exclude (i) franchise fees related solely to the Owner's retail sales, (ii) retail regulatory expenses, (iii) assessments under 18 CFR Section 382.201 of the FERC Regulations, (iv) association dues, and (v) general advertising expenses.



Notwithstanding the foregoing, O&M Expenses hereunder shall exclude all Scheduling Coordinator Charges as charged under the CAISO Tariff, irrespective of in which Account or Accounts such charges are included.

**(B) Depreciation Expenses**

"Depreciation Expenses" are provisions for depreciation and amortization for the Subject Resource, as properly recorded in Accounts 403, 404, 405, 406, and 407, including only:

- (1) Production Plant Depreciation:** Depreciation and amortization, if any, of investment in the Subject Resource;
- (2) Transmission Plant Depreciation:** Depreciation and amortization, if any, of investment in the transmission facilities associated with the Subject Resource, as reasonably assignable or allocable to the Subject Resource;
- (3) Distribution Plant Depreciation:** Depreciation and amortization, if any, of investment in the distribution facilities associated with the Subject Resource, as reasonably assignable or allocable to the Subject Resource;
- (4) General and Intangible Plant Depreciation:** Depreciation and amortization, if any, of general and intangible plant investments that are reasonably assignable or allocable to the Subject Resource.

Notwithstanding the foregoing, costs recorded in Accounts 405, 406 and 407 shall be included hereunder only if, and to the extent that, FERC shall have permitted the inclusion of such costs for ratemaking purposes for the Owner under the RMR Contract.

**(C) Taxes Other Than Income Taxes**

"Taxes Other Than Income Taxes" are taxes other than income and revenue taxes, as properly recorded in Account 408.1, that are reasonably assignable and allocable to the Subject Resource, including for example:

1. Property and Property-Related Taxes;
2. Payroll and Labor-Related Taxes;
3. Other Taxes, if any, identifiable as reasonably assignable or allocable to the Subject Resource.

Taxes Other Than Income Taxes assignable and allocable to the Subject Resource shall not include any taxes related solely to, or arising solely from, the Owner's retail sales.

**(D) Revenue Credits**

"Revenue Credits" are those revenues, if any, that are (i) properly recorded in Account 451 (Miscellaneous Service Revenues), Account 453 (Sales of Water and Water Power), Account 454 (Rent From Electric Property), Account 455 (Interdepartmental Sales), and Account 456 (Other Electric Revenues), and (ii) directly related to, or reasonably allocable to, the Subject Resource. Such Revenue Credits shall be treated as negative values hereunder.

**(E) Treatment of Capital Leases**

The foregoing components of Operating Expenses may include expenses associated with capital leases as approved by the Commission, as set forth more fully under Article II, Part B, Section 4(A) of this Formula.

**Section 3. Return and Income Tax Allowance**

"Return and Income Tax Allowance" is the quantity that is the sum of:

1. the product of:
  - a. Allowable Pre-Tax Rate of Return, and
  - b. Net Investment,as both such quantities are hereinafter defined; and
2. the quantity equal to:

$$[ITC \text{ Amortization}]/(1-t)$$

where:

- a. "t" is the effective, combined state and federal income tax rate.
- b. "ITC Amortization," is amortization, if any, of investment tax credits, as properly recorded in Account 411.4, that are reasonably assignable or allocable to the Subject Resource and to those portions of general and intangible plant investments that are reasonably assignable or allocable to the Subject Resource. Notwithstanding the foregoing, this term shall include only those amounts of amortization of investment tax credits which the Owner shall have elected to receive under Section 46(f)(1) of the Internal Revenue Code. ITC Amortization amounts that reduce net income shall be treated as negative values hereunder, while ITC Amortization amounts, if any, that increase net income shall be treated as positive values hereunder.

**Section 4. Net Investment**

"Net Investment" is the quantity that is determined as follows:

$$\text{Net Investment} = \text{Gross Plant Investment} - \text{Depreciation Reserve} + \text{CWIP} + \text{PHFU} - \text{ADIT} + \text{Working Capital}$$

where the quantities appearing in the foregoing equation are defined hereinafter below.

In determining Net Investment hereunder, each component thereof, other than Cash Allowance, shall be determined as the end-of-year balances in the Accounts specified for the relevant Cost Year.

**(A) Gross Plant Investment**

"Gross Plant Investment" is gross original cost plant investment as properly recorded in Accounts 101, 102, 106, and 114, including only the following amounts:

- (1) Production Plant Investment:** investment in the generating unit itself and in common facilities associated with the unit, as recorded in Accounts 310-316, 330-336, or 340-346, 106 and 114;
- (2) Transmission Plant Investment:** investment in transmission facilities associated with the Subject Resource, as properly recorded in Accounts 350-359, 106, and 114, and reasonably assignable or allocable to the Subject Resource;
- (3) Distribution Plant Investment:** investment in distribution facilities associated with the Subject Resource, as properly recorded in Accounts 360-373, 106, and 114, and reasonably assignable or allocable to the Subject Resource; and
- (4) General and Intangible Plant Investment:** reasonably assignable and allocable portions, if any, of general and intangible plant investment, recorded in Accounts 389-399 and 301-303, 106 and 114.

Subject to the limitations detailed in this paragraph, when the Owner has a capital lease in lieu of gross plant investment, it may include Account 101.1 hereunder. A lease may be capitalized and the costs included for ratemaking purposes if the Owner demonstrates that the lease qualifies as a capital lease under 18 C.F.R. Part 101, General Instruction No. 19 (1998), and the Owner has obtained, prior to the informational filing, approval to include such costs for ratemaking purposes from the FERC under the FPA. Capital leases shall be accounted for in accordance with 18 C.F.R. Part 101, General Instruction No. 20 (1998).

**(B) Depreciation Reserve**

"Depreciation Reserve" is accumulated provision for depreciation and amortization, as properly recorded in Accounts 108, 111, and 115, related to the Subject Resource, including the following amounts:

- (1) Production Plant Depreciation Reserve:** amounts of Depreciation Reserve for the investment in the unit itself and in common facilities associated with the unit;
- (2) Transmission Plant Depreciation Reserve:** amounts of Depreciation Reserve for the investment in transmission facilities associated with the Subject Resource, as reasonably assignable or allocable to the Subject Resource;
- (3) Distribution Plant Depreciation Reserve:** amounts of Depreciation Reserve for the investment in distribution facilities associated with the Subject Resource, as reasonably assignable or allocable to the Subject Resource;
- (4) General and Intangible Plant Reserve:** amounts of Depreciation Reserve for the portions, if any, of general and intangible plant investments reasonably assignable and allocable to the Subject Resource.

Credit balances in the aforementioned accounts shall be treated as positive values hereunder, and debit balances in such accounts shall be treated as negative values.

**(C) CWIP**

"CWIP" is the amount of construction work in progress, as properly recorded in Account 107 for construction projects associated with the Subject Resource related solely and directly to pollution control for the Subject Resource.

**(D) PHFU**

"PHFU" is the cost of plant held for future use, as properly recorded in Account 105 that is reasonably assignable or allocable to the Subject Resource.

**(E) ADIT**

"ADIT" is accumulated provision for deferred income taxes, as properly recorded in Accounts 190, 281, 282, 283, and 255, that are reasonably assignable or allocable to the investment in, or operation of, the Subject Resource, including the following amounts:

- (1) Production Plant ADIT:** amounts of ADIT arising directly from the investment in, or operation of, the Subject Resource itself and common facilities associated with the Subject Resource;
- (2) Transmission Plant ADIT:** amounts of ADIT arising directly from the investment in, or operation of, the transmission facilities, if any, associated with the Subject Resource;
- (3) Distribution Plant ADIT:** amounts of ADIT arising directly from the investment in, or operation of, distribution facilities, if any, associated with the Subject Resource; and
- (4) General and Intangible Plant ADIT:** amounts of ADIT arising from the portions, if any, of general and intangible plant investments reasonably assignable and allocable to the Subject Resource.

For purposes of this Formula, ADIT means accumulated provision for deferred income taxes, as properly recorded in the aforementioned Accounts, *including* amounts previously recorded in such accounts and reclassified as a result of the adoption of SFAS No. 109, but *excluding* amounts recorded in such accounts as a result of the adoption of SFAS No. 109, such that the required adoption of SFAS No. 109 will have no effect on the costs determined hereunder.

Notwithstanding the foregoing, as to Account 255, ADIT hereunder shall include only those amounts, if any, related to investment tax credits which the Owner shall have elected to receive under Section 46(f)(2) of the Internal Revenue Code.

ADIT balances that are credit balances shall be treated as positive values hereunder, while ADIT balances that are debit balances shall be treated as negative values hereunder.

Owner shall support all amounts of ADIT included and not included hereunder in the manner described in sections 35.13(h)(6) and (7) of the Commission's regulations (Statements AF and AG, respectively), except that the time period for the relevant data for the informational package will be consistent with the requirements of this formula, rather than the "Periods" referenced in those regulations.

**(F) Working Capital**

"Working Capital" is the sum of the portions, if any, of the following items that are reasonably assignable or allocable to the Subject Resource:

- (1) Fuel Stocks**, which is the amount of fossil fuel stock, if any, maintained for the Subject Resource, as properly recorded in Account 151;
- (2) Plant Materials and Supplies**, consisting of the value of plant materials and supplies reasonably assignable or allocable to the Subject Resource, as properly recorded in Accounts 154 and 163;
- (3) Prepayments**, consisting of the amount, if any, of prepayments reasonably assignable or allocable to the Subject Resource, as properly recorded in Account 165;
- (4) Working Cash Allowance**, which is one-eighth of O&M Expenses (as defined herein), less (a) Total Annual Fuel Costs (as defined hereinbelow), and (b) all amounts or portions, if any, of Account 555 (Purchased Power) that may be included in such O&M Expenses; and

**Unamortized Deferred Costs**, which shall be that portion, if any, of Account 186 directly related to, or reasonably allocable to, the Subject Resource.

**Section 5. Allowable Pre-Tax Rate of Return**

The Allowable Pre-Tax Rate of Return shall be the sum of:

- (a) 12.25%, and
- (b) 30% of the amount, if any, by which (a) the latest available 6-month average of yields on 10-year U.S. Treasury Bonds, as of the date of the first Informational Filing, exceeds (b) the latest available 6-month average of yields on 10-year U.S. Treasury Bonds as of *[the effective date of the settlement]*.

Notwithstanding the foregoing, the Owner may make application to the FERC, prior to or in conjunction with the first Informational Filing, in a limited proceeding to seek to establish a different Allowable Pre-Tax Rate of Return under Section 205 of the Federal Power Act.

**Section 6. Additional Quantities**

**(A) Annual Variable O&M Expenses**

"Annual Variable O&M Expenses" is the sum of the following quantities:

- (1) Variable Production O&M Expenses:** those portions of Production O&M Expenses, as defined above, other than fuel expenses, that are reasonably determined to be variable expenses, in the sense that they are incurred as a result of, or otherwise are reasonably associated with, the production of energy by the Subject Resource.
- (2) Variable A&G Expenses:** that portion of A&G Expenses that is related or allocable to the foregoing Variable Production O&M Expenses.

Notwithstanding the foregoing, starting with the first information filing hereunder and continuing until the Owner elects to use a different method to determine its Annual Variable O&M Expenses, the Owner may compute Annual Variable O&M Expenses as the amount equal to the product of (a) the Initial Variable O&M Rate, in \$/MWh, for the Subject Resource, as set forth in Exhibit A hereto (Exhibit A can be found in Appendix B to the Stipulation and Agreement), times (b) the Net Generation of the Subject Resource (as defined hereinabove). Whenever the Owner does not compute Annual Variable O&M Expenses based on the Initial Variable O&M Rate in the foregoing manner, the Owner shall include in each of Informational Package a detailed explanation of the method or methods used to classify O&M expenses as between fixed (*i.e.*, capacity-related) expenses and variable (*i.e.*, energy-related) expenses and the reason(s) such method results in just and reasonable rates.

**(B) Annual Fixed O&M Expenses**

"Annual Fixed O&M Expenses" is the quantity that is equal to the following:

- (1)** Total O&M Expenses, as defined hereinabove, less
- (2)** the sum of:
  - a. Annual Variable O&M Expenses, as defined hereinabove, and
  - b. Annual Variable Fuel Costs, as defined hereinbelow,
  - c. Annual Emissions Costs, as defined hereinbelow, and
  - d. Annual Non-Fuel Start-Up Costs, as defined hereinbelow.

**(C) Fuel Expenses**

**(1) Total Annual Fuel Costs**

"Total Annual Fuel Costs" is the total fuel expense for the Subject Resource for the Cost Year properly recorded in Account 501 or Account 547, as appropriate depending on the nature of the Subject Resource.

**(2) Annual Fixed Fuel Costs**

"Annual Fixed Fuel Costs" is that portion, if any, of Total Annual Fuel Costs related to fuel handling and administration of fuel planning, procurement and transportation which do not vary with the amount of fuel purchased.

**(3) Annual Variable Fuel Costs**

"Annual Variable Fuel Costs" is the quantity that is the following difference:

1. Total Annual Fuel Costs, less
2. Annual Fixed Fuel Costs.

**(D) Annual Emissions Costs**

"Annual Emissions Costs" is the total emissions costs that are related to the operation of the Subject Resource during the Cost Year.

**(E) Annual Non-Fuel Start-Up Costs**

"Annual Non-Fuel Start-Up Costs" is the aggregate sum of costs, other than fuel costs, attributable to start-ups of the Subject Resource during the Cost Year, consisting of start-up power costs, shut-down power costs, and other non-fuel start-up costs, all as determined pursuant to the applicable sections of Schedule D of the RMR Contract, as applied to all start-ups of the Subject Resource during the Cost Year.

**(F) Total Annual Variable Costs**

"Total Annual Variable Costs" is the sum of:

1. Annual Variable O&M Expenses,
2. Annual Variable Fuel Costs, and
3. Annual Emissions Costs.

## **Part C. General Instructions and Explanatory Notes**

### **Section 1. General Instructions**

In applying this Formula to a Subject Resource, the following instructions and explanations shall be followed:

#### **(A) No Duplicative Charges**

The costs determined and referenced by this Formula shall exclude costs that are recoverable, or that are actually recovered, elsewhere under the applicable contract or agreement between the Owner and the CAISO. There shall be no double counting of costs hereunder.

#### **(B) Determination of Depreciation Expenses**

Depreciation Expenses, Depreciation Reserve, and Deferred Income Taxes reflected in the revenue requirements determined pursuant to this Formula shall be computed using either fixed depreciation rates or depreciation rates determined annually from fixed mortality characteristics (i.e., service lives, net salvage ratios, etc.). Such depreciation rates and/or mortality characteristics, which may differ for particular assets or groups of assets comprising, or related to, the Subject Resource, are set forth on Exhibit B, which is attached hereto and made a part hereof. Such depreciation rates and/or mortality characteristics may not be changed except pursuant to Section 205 or Section 206 of the FPA. Nothing herein shall be construed as affecting any requirements of the FERC regarding the use by the Owner of depreciation rates for financial reporting purposes.

#### **(C) Costs in Excess of Original Cost**

The components of rate base and the costs reflected under the Formula shall not include an acquisition adjustment or costs associated with an acquisition adjustment unless the Owner shall have obtained approval from the FERC to include under the Formula such an adjustment or such costs for ratemaking purposes under the FPA. The effective date for the inclusion of such costs shall be as set forth in the FERC order.

#### **(D) Use of FERC Accounting**

The costs determined and referenced by this Formula shall reflect only FERC-basis accounting, and shall not reflect any accounting for costs approved by any state regulatory commission or other body if not approved or accepted by the FERC for use in connection with the RMR Contract. Except as otherwise provided herein, the accounting for costs for purposes of applying this Formula shall be consistent with the requirements of the Uniform System of Accounts.

#### **(E) Accounting Methods**

The costs determined and referenced by this Formula shall reflect only such accounting methods prescribed by such authorities as AICPA and FASB that shall have been approved or accepted by the FERC for use in connection with the RMR Contract. The Owner shall be required to seek and gain such approval or acceptance from the FERC prior to reflecting any changed accounting methods in the determination of costs in connection with this Formula.



The Owner shall carry the burden of demonstrating that its accounting methods and entries reflected in the costs determined and referenced by this Formula produce just, reasonable, and nondiscriminatory rates for its customers.

**(F) Out-of-Period Adjustments**

The costs determined and referenced by this Formula shall not reflect any accounting entries the purpose of which is to adjust or correct for accounting entries in years other than the Cost Year if such adjusting or correcting entries would have an unjust, unreasonable, or discriminatory effect on the CAISO.

**(G) Extraordinary Costs**

Extraordinary costs included in the costs determined and referenced by this Formula shall be subject to amortization over a reasonable period of time. In determining how costs should be amortized, the parties shall also determine how the costs being amortized should be recovered in the event that the plant closes and does not reopen.

As used herein, "extraordinary costs" mean costs arising from events and transactions that are of an unusual nature and infrequent occurrence, the effects of which are abnormal and significantly different from the ordinary and typical activities of the Owner, and would not reasonably be expected to recur in the foreseeable future. In determining significance, items should be considered individually and not in the aggregate. However, the effects of a series of related transactions arising from a single specific and identifiable event or plan of action should be considered in the aggregate. An item can be extraordinary even if it is less than five (5) percent of income computed before the extraordinary item. In its annual Information Package, the Owner shall identify and provide explanations for all extraordinary costs which it seeks to include in the rates and charges determined pursuant to this Formula, and the Owner shall bear the burden of proof, as in a proceeding under Section 205 of the FPA, that its proposed treatment of extraordinary costs is just and reasonable.

**(H) Imprudently Incurred Costs**

The costs determined and referenced by this Formula shall not include any costs which have been determined by the FERC in a proceeding under Section 206 of the FPA to have been imprudently incurred by the Owner.

**(I) Transmission Cost Assignments and Allocations**

Costs of transmission facilities assigned and/or allocated to the Subject Resource hereunder are intended to include only those costs, if any, related to the step-up substation facilities and other transmission facilities directly connected to the Subject Resource and used to deliver the output of the Subject Resource to the transmission grid. In each annual Informational Package, the Owner shall clearly identify and fully describe all transmission facilities which it claims satisfy the foregoing criteria.

**(J) Distribution Cost Assignments and Allocations**

Costs of distribution facilities assigned and/or allocated to the Subject Resource hereunder are intended to include only those costs, if any, related to the step-up substation facilities and other distribution facilities directly connected to the Subject Resource and used to deliver the output of the Subject Resource to the transmission or distribution system. In each annual Informational Package, the Owner shall clearly identify and fully describe all distribution facilities which it claims satisfy the foregoing criteria.

**(K) Inclusion of Certain Costs**

The Owner shall include in its annual Informational Package detailed workpapers and explanations supporting the reasonableness of including in the revenue requirements determined pursuant to this formula any amounts recorded in Accounts 501, 547, 555, 561, 927, 105, and 186. The Owner shall bear the burden of proof, as in a proceeding under Section 205 of the FPA, to affirmatively demonstrate that all such included amounts are directly related to the provisions of service under the RMR Contract and are reasonably assignable or allocable to the Subject Resource. As to Account 105, the requirement for a definitive plan required by the description of Account 105 in the Uniform System of Accounts, and the affirmative demonstration required by this paragraph, shall be deemed to be met upon a showing that the CAISO has approved, in accordance with the provisions of Section 7.4 of the RMR Contract, a plan for the future use of the property.

**(L) Direct Assignments and Allocations**

Where Part B of this Formula provides for the identification and/or assignment of costs incurred directly in connection with a particular facility or facilities (including a Subject Resource), or directly related to such a facility or facilities, the Owner shall bear the burden of demonstrating the reasonableness of each such identification and/or assignment, and each failure to make such an identification and/or assignment. Notwithstanding the foregoing, where this Formula provides for such a direct identification or assignment of costs, the Owner may use an allocation method to apportion such costs among particular facilities; provided, however, that (i) the Owner shall in its Informational Package clearly identify and describe such allocation method and the basis for it, and (ii) the Owner shall bear the burden of demonstrating the reasonableness of the method. It is recognized that such allocation methods may, for example, be appropriate for apportioning certain types of costs between individual generating units at a multi-unit generating station. Such allocations of costs between individual generating units at a plant site shall be consistent with the requirements for such allocations, if any, provided in the RMR Contract.

**(M) No Adverse Distinction**

In applying this Formula and in maintaining its books and records insofar as they affect the results of applying this Formula, the Owner shall not make an adverse distinction between the Subject Resource and any other facility or facilities owned or operated by the Owner; e.g., the Owner shall assign certain costs directly to the Subject Resource only if, and to the extent that, the Owner directly assigns such costs to other, similar facilities.

**Section 2. General Definitions**

Except as may be expressly stated otherwise, the following terms have the followings meanings as used herein:

**(A) Account**

"Account" refers to a particular account for "major" utilities as prescribed by the Uniform System of Accounts.

**(B) FERC**

"FERC" means the Federal Energy Regulatory Commission or its successor.

**(C) Uniform System of Accounts**

"Uniform System of Accounts" means the FERC's "Uniform System of Accounts Prescribed For Public Utilities and Licensees Subject to the Provisions of the Federal Power Act," as such uniform system of accounts was in effect as of the first effective date of the RMR Contract.

**(D) RMR Contract**

"RMR Contract" means the contract to which this Formula is attached and made a part thereof.

**(E) Subject Resource**

"Subject Resource" means any particular generating unit to which this Formula is applied for purposes of determining the annual costs thereof.

**(F) Cost Year**

"Cost Year" means the twelve-month period ended June 30 to which this Formula is applied to determine the Annual Fixed Revenue Requirements and Variable O&M Rate for a Subject Resource to be applicable during the next succeeding calendar year.

**(G) Owner**

"Owner" means the entity, other than the CAISO, that is a party to the RMR Contract.

**(H) CAISO**

The "CAISO" means the California Independent System Operator Corporation.

**Exhibit A - Initial Variable O&M Rates<sup>9</sup>**

Line	RMR Facility	Unit	Initial Variable O&M Rate (\$/MWh)

**Exhibit B - Depreciation Rate and Mortality Characteristics<sup>10 11</sup>**

Line	RMR Facility	Unit	Plant Account	Depreciation Rate (%)	Mortality Characteristics			
					Retirement Date	Average Service Life	Salvage Value or Rate	Interim Retirement Rate

<sup>9</sup> Exhibit A for each owner is filed in Appendix to the Stipulation and Agreement.

<sup>10</sup> Exhibit B for each owner is filed in Appendix B to the Stipulation and Agreement.

<sup>11</sup> Effective as of the effective date of the Settlement.

**Exhibit C - 1998 Cost Information**

Pursuant to Article IV.E of the Stipulation and Agreement filed with the FERC on April 2, 1999, the Owner shall file with the FERC in Docket No. ER98-441-000, et. al., a superceding Exhibit C, setting forth the following information for each unit for the period ending December 31, 1998:

- (1) Name of the facility and unit;
- (2) Gross Plant In Service, *i.e.* the original cost plus plant additions minus retirements, by major plant function (*i.e.* production, transmission, distribution and general);
- (3) Net Plant In Service Gross Plant, *i.e.* gross plant minus depreciation reserve, by major plant function;
- (4) Rate Base, *i.e.* net plant and other components of Net Investment as defined in the Formula, such as working capital, Accumulated Deferred Income Taxes (ADIT), etc.

This Exhibit C shall be for informational purposes only and shall be initially filed with FERC by June 1, 1999.

**Schedule G**

**Charge for Service in Excess of  
Contract Service Limits**

Payment for service in excess of the Maximum Annual MWh, Maximum Annual Service Hours or Maximum Annual Start-ups shall be determined in accordance with Option A or Option B. Payment for service from hydroelectric Units in excess of the Maximum Monthly MWh shall be determined in accordance with Option A only. Owner shall make a one-time election between Option A or Option B. Owner must choose Option A for both Billable MWh and Start-ups or Option B for both Billable MWh and Start-ups. This election shall be applicable to all of the Owner's Units under this Agreement and all other Reliability Must-Run Units subject to a "reliability must-run contract" as defined in the CAISO Tariff with Owner or any of its affiliates as defined in 18 C.F.R. Section 161.2.

**1. Option A**

- A. For all Billable MWh Delivered after the Counted MWh for the Contract Year equals the Maximum Annual MWh, the Counted Service Hours equals the Maximum Annual Service Hours or, for hydroelectric Units, the Counted MWh for the Month equals the Maximum Monthly MWh ("Schedule G Billable MWh"):

Fossil Fuel Units

In addition to the Variable Cost Payment computed in accordance with Schedule C, the CAISO shall pay the Option A Variable Cost Payment, which shall be calculated in accordance with Equation G-1:

**Equation G-1**

$$\text{Option A Variable Cost Payment} = \frac{0.5 \star (\text{Variable Cost Payment for the Billing Month})}{\text{Billable MWh for the Billing Month}} \star \text{Schedule G Billable MWh}$$

Pumped Storage Hydroelectric Facilities

In addition to the Variable Cost Payment computed in accordance with Schedule C, CAISO shall pay the product of (a) the Schedule G Billable MWh, (b) 0.5, and (c) YTD Pumping Costs divided by YTD Energy Produced as computed in accordance with Equation C4-2 in Schedule C.

Conventional Hydroelectric Facilities

In addition to the Variable Cost Payment computed in accordance with Schedule C, CAISO shall pay the sum of the products for each hour in the Billing Month of (a) the Hourly Fuel Price for natural gas for the hour calculated in accordance with Equation C1-8 of Schedule C, (b) 12,000 Btu/kWh, (c) the Schedule G Billable MWh for that hour, and (d) 0.5.

- B. For all Service Hours provided after the Counted Service Hours for the Contract Year equals the Maximum Annual Service Hours.

Synchronous Condensers

In addition to the Motoring Charge computed in accordance with Schedule E, CAISO shall pay the product of (a) the Motoring Charges calculated in accordance with Schedule E, and (b) 0.5.

- C. For all Start-ups required to comply with a Dispatch Notice after the Counted Start-ups for the Unit equals the Maximum Annual Start-ups ("Schedule G Start-ups"), the CAISO shall pay:

Fossil Fuel Units and Geothermal Units

Two times (a) the Start-up Payment computed in accordance with Equation D-1 in Schedule D, or (b) if the Schedule G Start-up is initiated under a Dispatch Notice but is not successfully completed because it is canceled or rescinded by the CAISO, the Start-up Payment for Canceled Start-up is computed in accordance with Equation D-4 in Schedule D.

Conventional Hydroelectric Facilities and Units Capable Only of Synchronous Condenser Operation

The Start-up Payment computed in accordance with Schedule D, plus (a)  $(0.00338) \star$  the Unit's Annual Fixed Revenue Requirement stated in Section 7 of Schedule B, divided by (b) the Unit's Maximum Annual Start-ups.

Pumped Storage Hydroelectric Facilities

The Start-up Payment computed in accordance with Equation D-1 in Schedule D, plus (a)  $0.00167 \star$  the Unit's Annual Fixed Revenue Requirement stated in Section 7 of Schedule B, divided by (b) the Unit's Maximum Annual Start-ups.

**2. Option B**

- A. For all Schedule G Billable MWh Delivered in the Billing Month, the CAISO shall pay the Variable Cost Payment computed in accordance with Schedule C. Since Schedule G Billable MWh are included in calculating the Variable Cost Payment for Billable MWh for the Billing Month under Schedule C, there is no additional payment for Schedule G Billable MWh under Option B.
- B. For all Service Hours provided after the Counted Service Hours for the Contract Year equals the Maximum Annual Service Hours:

Synchronous Condensers

In addition to the Motoring Charge computed in accordance with Schedule E, CAISO shall pay the product of (a) the Motoring Charges calculated in accordance with Schedule E, and (b) 0.5.

- C. For all Schedule G Start-ups in the Billing Month, the CAISO pay:

Units Capable Only of Synchronous Condenser Operation

The Start-up Payment computed in accordance with Schedule D, plus (a) (0.00338) ★ the Unit's Annual Fixed Revenue Requirement stated in Section 7 of Schedule B, divided by (b) the Unit's Maximum Annual Start-ups.

Fossil Fuel Units and Geothermal Units

Three times (a) the Start-up Payment computed in accordance with Equation D-1 in Schedule D, or (b) if the Schedule G Start-up is initiated under a Dispatch Notice but is not successfully completed because it is canceled or rescinded by the CAISO, the Start-up Payment for Canceled Start-up is computed in accordance with Equation D-4 in Schedule D.

**3. Owner's Election**

Option A \_\_\_\_\_

Option B \_\_\_\_\_



**Schedule H**

***Fuel Oil Service***

The following is a description of existing capability of the Facility to burn fuel oil in lieu of or addition to natural gas:

**Schedule I**

***Insurance Requirements***

**Owner - Obtained Insurance**

*Commercial General Liability*

Commercial general liability insurance covering personal injury and property damage to third parties in connection with the activities at the Facility. The coverage will have a limit of not less than \$        per occurrence, and will include coverage for sudden and accidental pollution losses. The CAISO will be added as an additional insured under the terms of this coverage to the per-occurrence limit above.

*Property*

Property Insurance for direct physical loss or damage to the Facility, in an amount not less than the probable maximum loss at the Facility.

**CAISO – Obtained Insurance**

*Errors and Omissions Insurance and Directors & Officers Insurance*

Errors and omissions insurance and directors and officers insurance coverage will have a combined limit of not less than \$150 million for the shorter of (i) until the termination of this Agreement or (ii) until January 1, 2002.

**Schedule J**  
**Notices**

Owner

Name:  
Title:  
Address:  
Telephone:  
Facsimile:  
E-mail:

With a copy to: Owner's Representative:

CAISO:

Nancy Traweek  
Director, Operations Support  
California ISO Corporation  
151 Blue Ravine Road  
Folsom, CA 95630  
Telephone: (916) 351-2113  
Facsimile: (916) 351-2267  
Email: [ntraweek@caiso.com](mailto:ntraweek@caiso.com)

With a copy to:

Sidney Mannheim Davies  
Assistant General Counsel  
Tariff and Tariff Compliance  
California ISO Corporation  
151 Blue Ravine Road  
Folsom, CA 95630  
Telephone: (916) 608-7144  
Facsimile: (916) 608-7222  
Email: [sdavies@caiso.com](mailto:sdavies@caiso.com)

## **SCHEDULE K DISPUTE RESOLUTION**

### **Applicability**

#### **1.1 General Applicability.**

Except as limited below or otherwise as limited by law (including the rights of any party to file a complaint with FERC under the relevant provisions of the Federal Power Act (FPA)), these ADR Procedures shall apply to (a) all disputes between parties which arise under this Agreement and (b) disputes between CAISO and a Responsible Utility relating to a Responsible Utility Invoice, "Final Estimated RMR Invoice, Final Adjusted RMR Invoice" as defined in the CAISO Tariff, or RMR Charge or RMR Refund as defined in Section 11.13 in the CAISO Tariff. The foregoing shall not impair the applicability of the CAISO Tariff ADR procedures to other disputes between the parties that do not arise under this Agreement. All alternative dispute resolution proceedings hereunder shall be administered by the American Arbitration Association ("AAA"). The Owner, Responsible Utility and the CAISO shall enter into such arrangements with the AAA as are necessary to provide for AAA administration of this Schedule K.

1.1.2 This Schedule K shall not apply to disputes as to whether rates and charges under the Agreement are just and reasonable under the Federal Power Act except as provided in Schedule F. Nothing herein shall limit the right of the FERC to initiate or adjudicate complaints or other proceedings in accordance with applicable statutes or regulations or to compel FERC to exceed its statutory authority as defined by any applicable federal statutes, regulations or orders lawfully promulgated thereunder.

#### **1.2 Disputes Involving Government Agencies.**

If a party to a dispute is a government agency the procedures herein which provide for the resolution of claims and arbitration of disputes are subject to any limitations imposed on the agency by law, including but not limited to the authority of the agency to effect a remedy. If the governmental agency is a federal entity, the procedures herein shall not apply to disputes involving issues arising under the United States Constitution.

#### **1.3 Injunctive and Declaratory Relief.**

Where the court having jurisdiction so determines, use of the ADR Procedures shall not be a condition precedent to a court action for injunctive relief nor shall the provisions of California Code of Civil Procedure sections 1281 *et seq.* apply to such court actions.

#### **1.4 Negotiation and Mediation.**

##### **1.4.1 Negotiation.**

CAISO, Responsible Utility and Owner ("Parties") shall make good-faith efforts to negotiate and resolve any dispute between them arising under this Agreement prior to invoking the ADR Procedures herein. Each Party shall designate an individual with authority to negotiate the matter in dispute to participate in such negotiations. The Responsible Utility may participate in the ADR proceedings arising under this Agreement to the extent the dispute involves billing or payment obligations, in which case CAISO or the Responsible Utility, but not both shall be the disputing party. In addition, to the extent Article 7 or other provisions of this Agreement provide the Responsible Utility third-party beneficiary rights, the Responsible Utility may also participate in the ADR as a Party.

The Owner may participate in the ADR proceedings relating to a Responsible Utility Invoice, "Final Estimated RMR Invoice, Final Adjusted RMR Invoice" as defined in the CAISO Tariff or RMR Charge or RMR Refund as defined in Section 11.13, in which case, CAISO or the Owner, but not both, shall be the disputing party. In addition, to the extent the CAISO Tariff provides the Owner third-party beneficiary rights, the Owner may also participate in the ADR as a Party.

**1.4.2 Statement of Claim.**

In the event a dispute is not resolved through such good-faith negotiations, any party may submit a statement of claim, in writing, to each other disputing party, which submission shall commence the ADR Procedures. The statement of claim shall set forth in reasonable detail (i) each claim, (ii) the relief sought, including the proposed award, if applicable, (iii) a summary of the grounds for such relief and the basis for each claim, (iv) the parties to the dispute, and (v) the individuals having knowledge of each claim. The other parties to the dispute shall similarly submit their respective statements of claim within 14 days of the date of the initial statement of claim or such longer period as the AAA may permit following an application by the responding party. If any responding party wishes to submit a counterclaim in response to the statement of claim, it shall be included in such party's responsive statement of claim. No party shall be considered as having received notice of a claim decided or relief granted by a decision made under these procedures unless the statement of claim includes such claim or relief.

**1.4.3 Selection of Mediator.**

After submission of the statements of claim, the parties may request mediation, if the disputing parties so agree. If the parties agree to mediate, the AAA shall distribute to the parties by facsimile or other electronic means a list containing the names of at least seven prospective mediators with mediation experience, or with technical or business experience in the electric power industry, or both, as he or she shall deem appropriate to the dispute. The parties shall either agree upon a mediator from the list provided or from any alternative source, or alternate in striking names from the list with the last name on the list becoming the mediator. The first party to strike off a name from the list shall be determined by lot. The parties shall have seven days from the date of receipt of the AAA's list of prospective mediators to complete the mediator selection process and appoint the mediator, unless the time is extended by mutual agreement. The mediator shall comply with the requirements of Section 1.5.2.

**1.4.4 Mediation.**

The mediator and representatives of the disputing parties, with authority to settle the dispute, shall within 14 days after the mediator's date of appointment schedule a date to mediate the dispute. Matters discussed during the mediation shall be confidential and shall not be referred to in any subsequent proceeding. With the consent of all disputing parties, a resolution may include referring the dispute directly to a technical body (such as a WSCC technical advisory panel) for resolution or an advisory opinion, or referring the dispute directly to FERC.

**1.4.5 Demand for Arbitration.**

If the disputing parties have not succeeded in negotiating a resolution of the dispute within 30 days of the initial statement of claim or, if within that period the parties agreed to mediate, within 30 days of the parties' first meeting with the mediator, such parties shall be deemed to be at impasse and any such disputing party may then commence the arbitration process, unless the parties by mutual agreement agree to extend the time. A party seeking arbitration shall provide notice of its demand for arbitration to the other disputing parties.

**1.5 Arbitration.**

**1.5.1 Selection of Arbitrator.**

**1.5.1.1 Disputes Under \$1,000,000.** Where the total amount of claims and counterclaims in controversy is less than \$1,000,000 (exclusive of costs and interest), the disputing parties shall select an arbitrator from a list containing the names of at least 10 qualified individuals supplied by AAA, within 14 days following submission of the demand for arbitration. If the disputing parties cannot agree upon an arbitrator within the stated time, they shall take turns striking names from the list of proposed arbitrators. The first party to strike off a name shall be determined by lot. This process shall be repeated until one name remains on the list, and that individual shall be the designated arbitrator.

**1.5.1.2 Disputes of \$1,000,000 or Over.** Where the total amount of claims and counterclaims in controversy is \$1,000,000 or more (exclusive of interest and costs), the disputing parties may agree on any person to serve as a single arbitrator, or shall endeavor in good faith to agree on a single arbitrator from a list of ten qualified individuals provided by the AAA, 14 days following submission of the demand for arbitration. If the disputing parties are unable to agree on a single arbitrator within the stated time, the party or parties demanding arbitration, and the party or parties responding to the demand for arbitration, shall each designate an arbitrator. Each designation shall be from the AAA list of arbitrators, as applicable, no later than the tenth day thereafter. The two arbitrators so chosen shall then choose a third arbitrator.

**1.5.2 Disclosures Required of Arbitrators.**

The designated arbitrator(s) shall be required to disclose to the parties any circumstances that might preclude him or her from rendering an objective and impartial determination. Each designated arbitrator shall disclose:

**1.5.2.1** Any direct financial or personal interest in the outcome of the arbitration;

**1.5.2.2** Any information required to be disclosed by California Code of Civil Procedure Section 1281.9.; and

**1.5.2.3** Any existing or past financial, business, professional, or personal interest that are likely to affect impartiality or might reasonably create an appearance of partiality or bias. The designated arbitrator shall disclose any such relationships that he or she personally has with any party or its counsel, or with any individual whom they have been told will be a witness. They should also disclose any such relationship involving members of their families or their current employers, partners, or business associates. All designated arbitrators shall make a reasonable effort to inform themselves of any interests or relationships described above. The obligation to disclose interests, relationships, or circumstances that might preclude an arbitrator from rendering an objective and impartial determination is a continuing duty that requires the arbitrator to disclose, at any stage of the arbitration, any such interests, relationships, or circumstances that arise, or are recalled or discovered.

**1.5.2.4** If, as a result of the continuing disclosure duty, an arbitrator makes a disclosure which is likely to affect his or her impartiality, or might reasonably create an appearance of partiality or bias or if a party independently discovers the existence of such circumstances, a party wishing to object to the continuing use of the arbitrator must provide written notice of its objection to the other parties within ten days of receipt of the arbitrator's disclosure or the date of a party's discovery of the circumstances giving rise to that party's objection. Failure to provide such notice shall be deemed a waiver of such objection. If a party timely provides a notice of objection to the continuing use of the arbitrator the parties shall attempt to agree whether the arbitrator should be dismissed and replaced in the manner described in Section 1.5.1. If within ten days of a party's objection notice the parties have not agreed how to proceed the matter shall be referred to the AAA for resolution.

**1.5.3 Arbitration Procedures.**

The AAA shall compile and make available to the arbitrator and the parties standard procedures for the arbitration of disputes, which procedures (i) shall conform to the requirements specified herein; and (ii) may be modified or adopted for use in a particular proceeding as the arbitrator deems appropriate, in accordance with Section 1.5.4. The procedures shall be based on the latest edition of the American Arbitration Association Commercial Arbitration Rules, to the extent such rules are not inconsistent with this Schedule K. Except as provided herein, all parties shall be bound by such procedures.

**1.5.4 Modification of Arbitration Procedures.**

In determining whether to modify the standard procedures for use in the pending matter, the arbitrator shall consider (i) the complexity of the dispute, (ii) the extent to which facts are disputed, (iii) the extent to which the credibility of witnesses is relevant to a resolution, (iv) the amount in controversy, and (v) any representations made by the parties. Alternatively, the parties may, by mutual agreement, modify the standard procedures. In the event of a disagreement between the arbitrator and the agreement of the parties regarding arbitration procedures to be utilized, the parties' agreement shall prevail.

### **1.5.5 Remedies.**

**1.5.5.1 Arbitrator's Discretion.** The arbitrator shall have the discretion to grant the relief sought by a party; or determine such other remedy as is appropriate, unless the parties agree to conduct the arbitration "baseball" style. Unless otherwise expressly limited herein, the arbitrator shall have the authority to award any remedy or relief available from FERC, or any court of competent jurisdiction. Where this Agreement leaves any matter to be agreed between the parties at some future time and provides that in default of agreement the matter shall be referred to the ADR, the arbitrator shall have authority to decide upon the terms of the agreement which, in the arbitrator's opinion, it is reasonable that the parties should reach, having regard to the other terms this Agreement concerned and the arbitrator's opinion as to what is fair and reasonable in all the circumstances.

**1.5.5.2 "Baseball" Arbitration.** If the parties agree to conduct the arbitration "baseball" style, the parties shall submit to the arbitrator and exchange with each other their last best offers in the form of the award they consider the arbitrator should make, not less than seven days in advance of the date fixed for the hearing, or such later date as the arbitrator may decide. If a party fails to submit its last best offer in accordance with this Section, that party shall be deemed to have accepted the offer proposed by the other party. The arbitrator shall be limited to awarding only one of the proposed offers, and may not determine an alternative or compromise remedy.

### **1.5.6 Summary Disposition.**

The procedures for arbitration of a dispute shall provide a means for summary disposition of a demand for arbitration, or a response to a demand for arbitration, that in the reasoned opinion of the arbitrator does not have a good faith basis in either law or fact. If the arbitrator determines that a demand for arbitration or response to a demand for arbitration does not have a good faith basis in either law or fact, the arbitrator shall have discretion to award the costs of the time, expenses, and other charges of the arbitrator to the prevailing party. A determination made under this Section is subject to appeal pursuant to Section 1.6.

### **1.5.7 Discovery Procedures.**

The procedures for the arbitration of a dispute shall include adequate provision for the discovery of relevant facts, including the taking of testimony under oath, production of documents and other things, the presentation of evidence, the taking of samples, conducting of tests, and inspection of land and tangible items. The nature and extent of such discovery shall be determined as provided herein and shall take into account (i) the complexity of the dispute, (ii) the extent to which facts are disputed, (iii) the extent to which the credibility of witnesses is relevant to a resolution, and (iv) the amount in controversy. The forms and methods for taking such discovery shall be as described in the Federal Rules of Civil Procedure, except as modified pursuant to Section 1.5.4.

**1.5.8 Evidentiary Hearing.**

The arbitration procedures shall provide for an evidentiary hearing, with provision for the cross-examination of witnesses, unless all parties consent to the resolution of the matter on the basis of a written record. The forms and methods for taking evidence shall be determined by the arbitrator(s) and modified pursuant to Section 1.5.4. The arbitrator may require such written or other submissions from the parties as he or she may deem appropriate, including submission of direct and rebuttal testimony of witnesses in written form. The arbitrator may exclude any evidence that is irrelevant, immaterial, unduly repetitious or prejudicial, or privileged. The arbitrator shall compile a complete evidentiary record of the arbitration that shall be available to the parties on its completion upon request.

**1.5.9 Confidentiality.**

Subject to the other provisions of this Agreement, any party may claim that information contained in a document otherwise subject to discovery is "Confidential" if such information would be so characterized under the Federal Rules of Evidence or the provisions of the Agreement. The party making such claim shall provide to the arbitrator in writing the basis for its assertion. If the claim of confidentiality is confirmed by the arbitrator, he or she shall establish requirements for the protection of such documents or other information designated as "Confidential" as may be reasonable and necessary to protect the confidentiality and commercial value of such information. Any party disclosing information in violation of these provisions or requirements established by the arbitrator, unless such disclosure is required by federal or state law or by a court order, shall thereby waive any right to introduce or otherwise use such information in any judicial, regulatory, or other legal or dispute resolution proceeding, including the proceeding in which the information was obtained.

**1.5.10 Timetable.**

Promptly after the appointment of the arbitrator, the arbitrator shall set a date for the issuance of the arbitration decision, which shall be no later than six months (or such earlier date as the parties and the arbitrator may agree) from the date of the appointment of the arbitrator, with other dates, including the dates for an evidentiary hearing or other final submissions of evidence, set in light of this date. The date for the evidentiary hearing or other final submission of evidence shall not be changed, absent extraordinary circumstances. The arbitrator shall have the power to impose sanctions, including dismissal of the proceeding, for dilatory tactics or undue delay in completing the arbitration proceedings.



**1.5.11 Decision.**

**1.5.11.1** Except as provided below with respect to "baseball" style arbitration, the arbitrator shall issue a written decision granting the relief requested by one of the parties, or such other remedy as is appropriate, if any, and shall include findings of fact and law. The arbitration decision shall be based on (i) the evidence in the record, (ii) the terms of this Agreement and to the extent relevant, the CAISO Tariff and Protocols, (iii) applicable United States federal law, including the Federal Power Act and any applicable FERC regulations and decisions, and international treaties or agreements as applicable, and (iv) applicable state law. Additionally, the arbitrator may consider relevant decisions in previous arbitration proceedings involving this Agreement. To the extent it may do so without violating confidentiality requirements, a summary of the disputed matter and the arbitrator's decision may be published in an CAISO newsletter on CAISO Website.

**1.5.11.2** In arbitration conducted "baseball" style, the arbitrator shall issue a written decision adopting one of the awards proposed by the parties, and shall include findings of fact and law. The arbitration decision shall be based on (i) the evidence in the record, (ii) the terms of this Agreement and to the extent relevant, the CAISO Tariff and Protocols, (iii) applicable United States federal law, including the Federal Power Act and any applicable FERC regulations and decisions, and international treaties or agreements as applicable, and (iv) applicable state law. If the arbitrator concludes that no proposed award is consistent with the factors enumerated in (i) through (iv) above, or addresses all of the issues in dispute, the arbitrator shall specify how each proposed award is deficient and direct that the parties submit new proposed awards that cure the identified deficiencies. To the extent it may do so without violating confidentiality requirements, a summary of the disputed matter and the arbitrator's decision may be published in an CAISO newsletter on CAISO Website.

**1.5.11.3** Where a panel of arbitrators is appointed pursuant to Section 1.5.1.2, a majority of the arbitrators must agree on the decision. An award shall not be deemed to be precedent except in so far as a future dispute between the parties involves the same issue.

**1.5.12 Compliance.**

Unless the arbitrator's decision is appealed under Section 1.6, the disputing parties shall, upon receipt of the decision, immediately take whatever action is required to comply with the award to the extent the award does not require regulatory action. An award that is not appealed shall be deemed to have the same force and effect as an order entered by FERC or any court of competent jurisdiction.

**1.5.13 Enforcement.**

Following the expiration of the time for appeal of an award pursuant to Section 1.6.3, any party may apply to FERC or any court of competent jurisdiction for entry and enforcement of judgment based on the award.

**1.5.14 Costs.**

The costs of the time, expenses, and other charges of the arbitrator shall be borne by the parties to the dispute, with each side on an arbitrated issue bearing its pro-rata share of such costs, and each party to an arbitration proceeding bearing its own costs and fees. If the arbitrator determines that a demand for arbitration or response to a demand for arbitration was made in bad faith, the arbitrator shall have discretion to award the costs of the time, expenses, and other charges of the arbitrator to the prevailing party.

**1.6 Appeal of Award.**

**1.6.1 Basis for Appeal.**

A party may apply to the FERC or any court of competent jurisdiction to hear an appeal of an arbitration decision only upon the grounds that the decision is contrary to or beyond the scope of this Agreement and to the extent relevant, the CAISO Tariff and Protocols, United States federal law, including, without limitation, the Federal Power Act, and any applicable FERC regulations and decisions, or state law. Appeals shall, unless otherwise ordered by FERC or the court of competent jurisdiction, conform to the procedural limitations set forth in this Section 1.6.

**1.6.2 Appellate Record.**

The parties intend that FERC or a court of competent jurisdiction should afford substantial deference to the factual findings of the arbitrator. No party shall seek to expand the record before FERC or a court of competent jurisdiction beyond that assembled by the arbitrator, except (i) by making reference to legal authority which did not exist at the time of the arbitrator's decision, or (ii) if such party contends the decision was based upon or affected by fraud, collusion, corruption, misconduct or misrepresentation.

**1.6.3 Procedures for Appeals.**

**1.6.3.1** If a party to an arbitration desires to appeal a decision, it shall provide a notice of appeal to all parties and the arbitrator(s) within 14 days following the date of the decision. Within ten days of the filing of the notice of appeal, the appealing party must file an appropriate application, petition or motion with FERC for review under the Federal Power Act or with a court of competent jurisdiction. Such filing shall state that the subject matter has been the subject of an arbitration pursuant to this Agreement and, to the extent relevant, the CAISO Tariff and protocols.

**1.6.3.2** Within 30 days of filing the notice of appeal (or such period as FERC or the court of competent jurisdiction may specify) the appellant shall file the complete evidentiary record of the arbitration and a copy of the decision with FERC or with the court. The appellant shall serve on all parties to the arbitration copies of a description of all materials included in the submitted evidentiary record.

**1.6.4 Award Implementation.**

Implementation of the decision shall be deemed stayed pending an appeal unless and until, at the request of a party, FERC or the court of competent jurisdiction with which an appeal has been filed, issues an order dissolving, shortening, or extending such stay.

A summary of each appeal shall be published in a CAISO newsletter on the CAISO Website.

**1.6.5 Judicial Review of FERC Orders.**

FERC orders resulting from appeals shall be subject to judicial review pursuant to the Federal Power Act.

**SCHEDULE L-1**  
**REQUEST FOR APPROVAL OF CAPITAL ITEMS OR REPAIRS**

This form should be used to request CAISO approval of Planned Capital Items, Unplanned Repairs or Unplanned Capital Items pursuant to Sections 7.4, 7.5 or 7.6 of the Agreement.

CALIFORNIA INDEPENDENT SYSTEM OPERATOR  
RELIABILITY MUST-RUN UNIT  
CAPITAL ITEM AND REPAIR PROJECT REQUEST

---

**Date:**

**CAISO Project Number:**

**Facility:**

**Unit:**

**Owner:**

**Location:**

**This request covers:**

- ( ) Capital Items for the next Contract Year (preliminary)
- ( ) Capital Items for the next Contract Year (final)
- ( ) Unplanned Repairs
- ( ) Unplanned Capital Items

**If this request covers Capital Items for the next Contract Year, provide:**

**Small Project Estimate (reliability)**

**Small Project Estimate (other)**

Identify separately each Capital Item included in a small project estimate projected to cost more than \$50,000.

**If this request covers Unplanned Repairs, or Capital Items projected to cost more than \$500,000, provide the information in the remainder of this form for each project.**

**Project Description:** (describe the project and its major scope items – materials, new systems, modifications to existing systems, etc.)

**If the project is required because of loss or damage to a Unit, describe the cause and nature of the loss or damage and all repairs performed or required for all Units during the year:**

**Project Budget:**

Year	Labor	Material	Contract	Int Svc	Other	Material	Over head AEGE	Total Cost	AD VAL TAX	Total Expenditu res	Total Financi al Costs

**Describe any work or repairs performed relating to this project in the last five years:**

**As applicable, state the proposed depreciation life, Annual Capital Item Cost, Surcharge Payment Factor or Repair Payment Factor (percentage owed by CAISO) of the Capital Item or Repair:**

**Describe why this project is required (justification):**

**Is this project required to comply with any laws, regulations or permits? If so, please list them and explain requirement.**

**Provide a cost/benefit analysis summary for this project:**

Include all assumptions including changes to unit performance [efficiency, aux. power loads, etc.], impact on Maximum Net Dependable Capacity, grid interconnection/metering impacts, etc.

**Describe the impacts on the Unit's ability to perform its obligations under this Agreement if this project is not approved:**

**Describe alternatives to this project that were evaluated and the projected costs of those alternatives:**

Describe alternatives along with their major scope items. Also, compare the projected cost of these alternatives with the selected alternative, and compare the unit performance impacts (efficiency, auxiliary power demands, Maximum Net Dependable Capacity effects, etc.) of these alternatives against the chosen alternative.

**List any proceeds received or expected to be received by Owner from insurers or other third parties pursuant to applicable insurance, warranties and other contracts in connection with the project.**

**Provide the schedule for implementing this project:**

Event	Begin	Complete

**Describe any outages required to implement this project:**

**Other comments:**

**SCHEDULE L-2**

**CAPITAL ITEM AND REPAIR PROGRESS REPORT**

CALIFORNIA INDEPENDENT SYSTEM OPERATOR  
RELIABILITY MUST-RUN UNIT  
CAPITAL ITEM AND REPAIR PROGRESS REPORT

---

**Date:**

**CAISO Project Number:**

**Facility:**

**Unit:**

**Owner:**

**Location:**

**Capital Item or Repair:**

**Original In-Service Date:**

**Current In-Service Date:**

**If Current In-Service Date has changed, describe the reason why:**

**Describe any additional costs or savings resulting from the change in the Current In-Service Date:**

Describe what portion of any additional costs Owner is requesting CAISO to pay, and why Owner believes that CAISO should be obligated to pay those additional costs:

**SCHEDULE M**  
**Mandatory Market Bid for Condition 2 Units**  
**When Dispatched by the CAISO**

**Energy Bid**

The bid the Owner of a Condition 2 Fossil Fuel Unit must submit into Energy markets when dispatched by the CAISO is given in Equation M-1a (for Units with input/output data in polynomial form) or Equation M-1b (for Units with input/output data in exponential form):

**Equation M-1a**

$$\text{Energy Bid (\$/MWh)} = \frac{(AX^3 + BX^2 + CX + D)}{X} * P * E$$

+ [Variable O&M Rate + Emissions Rates + Scheduling Coordinator Charge  
 + ACA Charge]

**Equation M-1b**

$$\text{Energy Bid (\$/MWh)} = \frac{A * (B + CX + De^{FX})}{X} * P * E$$

+ [Variable O&M Rate + Emissions Rate + Scheduling Coordinator Charge + ACA Charge]

Where:

- for Equation M-1a, A, B, C, D and E are the coefficients given in Table C1-7a;
- for Equation M-1b, A, B, C, D, E and F are the coefficients given in Table C1-7b;
- X is the Unit Availability Limit, MW;
- P is the Hourly Fuel Price as calculated by Equation C1-8 in Schedule C using the Commodity Prices most recently published before the day the bid is submitted.
- Scheduling Coordinator Charge (\$/MWh): \$0.31.
- ACA Charge (\$/MWh): The applicable annual charge for short-term sales under 18 CFR Section 382.201 of the FERC Regulations.
- Variable O&M Rate (\$/MWh): as shown on Table C1-18

For Units in the SCAQMD only

Emissions Rate (\$/MWh) = Emissions Cost / Unit Availability Limit

Emissions Cost = (a) RECLAIM Cost + (b) NO<sub>x</sub> Emissions Cost + (c) Organic Gases Cost +  
(d) Sulfur Oxides Cost + (e) Particulate Matter Cost + (f) Carbon Monoxide Cost

(a) RECLAIM Cost =  $((AX^2 + BX + C) \times \text{RECLAIM NO}_x \text{ Trading Credit Rate})$

(b) NO<sub>x</sub> Emissions Cost =  $\frac{(AX^2 + BX + C)}{2000} \star \text{NO}_x \text{ Emissions Fee}$

Where:

A, B and C are the coefficients from Table C1-13;

X = Unit Availability Limit;

(c) Organic Gases Cost =

$4.76 \times 10^{-7} \star (\text{Gas Fuel}) \star \text{Associated Emission Factor for Organic Gases} \star$   
Associated Emissions Fee for Organic Gases

(d) Sulfur Oxides Cost =

$4.76 \times 10^{-7} \star (\text{Gas Fuel}) \star \text{Associated Emission Factor for Sulfur Oxides} \star$   
Associated Emissions Fee for Sulfur Oxides

(e) Particulate Matter Oxides Cost =

$4.76 \times 10^{-7} \star (\text{Gas Fuel}) \star \text{Associated Emission Factor for Particulate Matter} \star$   
Associated Emission Fee for Particulate Matter

(f) Carbon Monoxide Cost =

$4.76 \times 10^{-7} \star (\text{Gas Fuel}) \star \text{Associated Emission Factor for Carbon Monoxide} \star$   
Associated Emission Fee for Carbon Monoxide

Where:

Gas Fuel =  $AX^3 + BX^2 + CX + D$  or  $A \star (B + CX + De^{FX})$ , depending on the form of heat input  
the Owner is using

- A, B, C, D are the coefficients from C1-7a or C1-7b;
- F is the coefficient from C1-7b;
- X = Unit Availability Limit;
- Factors and Associated Emission fees are determined in Schedule C, Section D.3.



The bid the Owner of a geothermal Condition 2 Unit must submit into Energy markets when dispatched by the CAISO is given in Equation M-2.

### Equation M-2

Energy Bid (\$/MWh) = Fuel Cost + [Variable O&M Rate + Scheduling Coordinator Charge + ACA Charge]

Where:

- The Fuel Cost is the Steam Price identified in Equation C2-1 in Schedule C. However, for purposes of this mandatory market bid, the value for the Steam Price will be zero for Geysers Main Units until the cumulative Hourly Metered Total Net Generation during the Contract Year from all Units exceeds the Minimum Annual Generation given in Equation C2-2.
- Variable O&M Cost (\$/MWh): the cost shall be as shown on Table C2-1.
- Scheduling Coordinator Charge: \$0.31.
- ACA Charge (\$/MWh): The applicable annual charge for short-term sales under 18 C.F.R. Section 382.201 of the FERC Regulations.

### Ancillary Services Bid

The bid the Owner of a Condition 2 Unit must submit into Ancillary Service markets when dispatched by CAISO is as follows:

$$\text{Ancillary Services Bid (\$/MW per hr)} = \left[ \frac{\text{Annual Fixed Revenue Requirement (\$)}}{\text{30 minutes x Unit's Highest Ramp Rate from Schedule A, MW/min}} \times \text{Target Available Hours} \right] + \left[ \frac{\text{Annual Fixed Revenue Requirement (\$)}}{\text{Maximum Net Dependable Capacity}} \times \text{Target Available Hours} \right]$$

**2**

Annual Fixed Revenue Requirement is shown in Schedule B.

Target Available Hours is shown in Schedule B.

The product of 30 minutes times the Unit's highest Ramp Rate in Schedule A shall not exceed the Unit's Maximum Net Dependable Capacity.

**Schedule N-1**  
**NON-DISCLOSURE and CONFIDENTIALITY AGREEMENT**  
**for RESPONSIBLE UTILITY**

[Name of Responsible Utility] (the "Responsible Utility") acknowledges that [Name of Owner] ("Owner") and the California Independent System Operator Corporation ("CAISO") (jointly, the "Providing Parties" and severally, the "Providing Party") have agreed to provide certain information to the Responsible Utility pursuant to certain provisions of the Must-Run Service Agreement ("MRSA") between Owner and CAISO and as required for settlement and billing of charges under Article 9 of such Agreement. In order to permit the Responsible Utility to receive such Confidential Information from Owner or CAISO pursuant to the above-referenced provisions of the MRSA, the Responsible Utility and the Providing Parties hereby agree as follows:

- (1) For purposes of this Non-Disclosure and Confidentiality Agreement, the term "Confidential Information" shall have the same meaning it has in Section 12.5 of the MRSA, a copy of which is appended;
- (2) The Providing Parties shall provide such Confidential Information pursuant to the terms of this Non-Disclosure and Confidentiality Agreement;
- (3) The Responsible Utility shall keep such Confidential Information confidential, shall use it only for the purposes related to the MRSA, and shall limit the disclosure of any such Confidential Information to only those personnel within its organization with responsibility for using such information in connection with the MRSA. Such personnel may not include any person whose duties include (i) the marketing or sale of electric power or natural gas or gas transportation capacity at wholesale or retail, (ii) the purchase of electric power or natural gas or gas transportation capacity at wholesale or retail, (iii) the direct supervision of any employee with such responsibilities, or (iv) the provision of electricity or natural gas marketing consulting services to any employee with such responsibilities;
- (4) The Responsible Utility shall assure that personnel within its organization read and comply with the provisions of this Non-Disclosure and Confidentiality Agreement;
- (5) The Responsible Utility shall use all reasonable efforts to maintain the confidentiality of the Confidential Information in any litigation, and shall promptly notify the providing Party of any attempt by a third party to obtain the Confidential Information through legal process or otherwise;
- (6) The Responsible Utility may use Confidential Information in litigation or regulatory proceedings related to the Must-Run Service Agreement between Owner and CAISO but only after notice to the Providing Party and affording the Providing Party an opportunity to obtain a protective order or other relief to prevent or limit disclosure of the Confidential Information.

The Responsible Utility agrees to be bound by the terms of Section 12.5 of the MRSA in the same manner and to the same extent as the Providing Parties. The person signing on behalf of the Responsible Utility represents that he/she is authorized to bind the Responsible Utility to the terms of this Non-Disclosure and Confidentiality Agreement.

CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION  
FERC ELECTRIC TARIFF  
FOURTH REPLACEMENT VOLUME NO. II

Original Sheet No. 1372

The undersigned signatory represents that he/she is authorized to bind the Responsible Utility, to the terms of this Non-Disclosure and Confidentiality Agreement.

Signature: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Responsible Utility: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Telephone: \_\_\_\_\_

Signature: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Owner: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Telephone: \_\_\_\_\_

Signature: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
California Independent System Operator Corporation  
Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Telephone: \_\_\_\_\_

**SCHEDULE N-2**

**NON-DISCLOSURE and CONFIDENTIALITY AGREEMENT  
for PERSONS OTHER THAN THE RESPONSIBLE UTILITY**

**[Name of]** (the "Receiving Party") acknowledges (a) that **[Name of Owner]** ("Owner") has agreed to provide Confidential Information to the California Agency pursuant to certain provisions of the Must-Run Service Agreement ("MRSA") between Owner and the California Independent System Operator Corporation ("CAISO"), and (b) that Owner and CAISO (jointly, the "Providing Parties" and severally, the "Providing Party") may provide Confidential Information on a need-to-know basis to Owner's Scheduling Coordinator, financial institutions, agents and potential purchasers of interests in a Unit; and, as required for settlement and billing, to Scheduling Coordinators responsible for paying for services provided under the MRSA between Owner and CAISO. In order to permit the Receiving Party to receive such Confidential Information from Owner or CAISO, the Receiving Party and the Providing Parties hereby agree as follows:

- (1) For purposes of this Non-Disclosure and Confidentiality Agreement, the term "Confidential Information" shall have the same meaning it has in Section 12.5 of the MRSA between Owner and CAISO, a copy of which is appended;
- (2) The Providing Parties shall provide such Confidential Information pursuant to the terms of this Non-Disclosure and Confidentiality Agreement;
- (3) The Receiving Party shall keep such Confidential Information confidential, shall use it only for the purposes related to the MRSA, and shall limit the disclosure of any such Confidential Information to only those personnel within its organization with responsibility for using such information in connection with the MRSA upon their execution of this Non-Disclosure and Confidentiality Agreement. Such personnel may not include any person whose duties include (i) the marketing or sale of electric power or natural gas or gas transportation capacity at wholesale or retail, (ii) the purchase of electric power or natural gas or gas transportation capacity at wholesale or retail, (iii) the direct supervision of any employee with such responsibilities, or (iv) the provision of electricity or natural gas marketing consulting services to any employee with such responsibilities;
- (4) The Receiving Party shall assure that personnel within its organization authorized to receive Confidential Information read and comply with the provisions of this Non-Disclosure and Confidentiality Agreement;
- (5) The Receiving Party shall use all reasonable efforts to maintain the confidentiality of the Confidential Information in any litigation, and shall promptly notify the providing Party of any attempt by a third party to obtain the Confidential Information through legal process or otherwise;

The Receiving Party agrees to be bound by the terms of Section 12.5 of the MRSA in the same manner and to the same extent as the Providing Parties. The person signing on behalf of the Receiving Party represents that he/she is authorized to bind the Receiving Party to the terms of this Non-Disclosure and Confidentiality Agreement.

Signature: \_\_\_\_\_

Name: \_

Company: \_\_\_\_\_

Title: \_\_

Receiving Party: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_

Signature: \_\_\_\_\_

Name: \_

Owner: \_

Title: \_\_

Address: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_

Signature: \_\_\_\_\_

Name: \_

California Independent System Operator Corporation

Title: \_\_

Address: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_

## **SCHEDULE O**

### **RMR Owner's Invoice Process**

The following principles and practices shall govern the submission of invoices to the CAISO for Energy and Ancillary Services provided under this Agreement ("RMR services"):

1. Invoices submitted by Owner to the CAISO for RMR services shall be clear, understandable and complete.
2. The CAISO, all RMR Owners and Responsible Utilities shall agree on the RMR invoice template, which agreement shall not be unreasonably withheld, prior to its implementation. The CAISO shall publish the current version of the RMR invoice template by including it on the CAISO Website. The CAISO will specifically tell each Owner and Responsible Utility where on the CAISO Website this RMR invoice template can be found. Each Owner shall use the then current RMR invoice template for invoicing RMR services for each Facility. The RMR invoice template may change from time to time. The CAISO shall notify the California Agency, all RMR Owners and Responsible Utilities when a new agreed upon RMR invoice template has been placed on the CAISO Website.
3. Subject to the provisions of paragraph 4 below, a Completed RMR invoice based on the version of the RMR invoice template posted on the CAISO Website seven days prior to submission of the invoice shall be deemed to satisfy the requirements of this Agreement. As used herein, the term "Completed RMR invoice" means that: (a) all of the raw data required to calculate debits and credits have been included; (b) all calculations have been performed in accordance with the formulae in the current RMR invoice template, or in the event that Owner believes a conflict exists between one or more formula(s) in the RMR Owner's invoice and the corresponding formula in the RMR invoice template, such conflict has been identified and substitute equations have been documented and used at the appropriate location(s) in the invoice; (c) linkages between invoice levels are identified; (d) all billing and service assumptions, data inputs and formulae reasonably necessary to understand the derivation of each charge on the invoice has been included; and (e) the invoice has been provided to the CAISO and the Responsible Utility.
4. The Estimated RMR invoice or the Adjusted RMR invoice timeline set forth in the CAISO's RMR Payments Calendar (for the appropriate invoice) shall not commence, payments shall not be made and interest shall not begin to accrue until a Completed RMR invoice has been submitted to the CAISO and Responsible Utility.
5. In the event of any conflict between the RMR invoice template and this Agreement, this Agreement shall govern. The Owner or Responsible Utility detecting the conflict shall promptly give notice to the CAISO. The CAISO shall notify all RMR Owners and all Responsible Utilities as soon as practicable after a conflict has been identified.
6. If Owner identifies a conflict, Owner shall identify the conflict in its letter transmitting its completed Estimated or Adjusted RMR invoice to the CAISO and include therein Owner's revised formula, which will be effective until agreement has been reached among the CAISO, Owner, the other RMR Owners and the Responsible Utilities on the correct formula, or a decision has been rendered through ADR from which no further appeal is possible.

7. An RMR Invoice Task Force has been formed with representatives from each of the RMR Owners, the Responsible Utilities and the CAISO. When a conflict has been identified, the CAISO, Owner, the other RMR Owners and the Responsible Utility will participate in meetings of the RMR Invoice Task Force to reach agreement on a revised RMR invoice template. The RMR Invoice Task Force shall meet at least monthly until all conflicts are resolved. Once all conflicts have been resolved, the RMR Invoice Task Force will meet approximately every six months to address invoicing and payment issues.
8. The RMR Invoice Task Force also shall be responsible for simplifying the RMR invoices so that they are easier to process and less burdensome to prepare.
9. To the extent that the Owner, the CAISO and the Responsible Utility have agreed, certain columns in the Owner's RMR invoice template shall be standard for the Facility and shall not change. The Owner shall not be required to complete such columns each month on its invoice for it to be considered a Completed RMR invoice, unless the underlying information requirements change.
10. Owner shall supply monthly RMR Level 0-3 invoice information in accordance with the RMR invoice template for each Responsible Utility service territory as follows:
  1. Level 0: the summary invoice for Owner's total amount invoiced to the CAISO for all of Owner's Facilities;
  2. Level 1: the summary invoice for all RMR Units at a Facility;
  3. Level 2: the detailed calculated information for individual RMR Units at the Facility; and
  4. Level 3: the detailed hourly data for individual RMR Units at each Facility.

Each invoice shall contain such other information as is necessary to perform the calculations, including indicated netted meter reads, CAISO Dispatch Notice information (both day-ahead, real time, and adjustments), Owner's Availability Notice information and final market schedule information. No quantities shall be left blank. Each assumption made by the Owner to perform a calculation shall be listed and explained either in the appropriate Level 0-3 template under Notes or in a transmittal letter accompanying the invoice.

The methods described shall be used to calculate quantities such as Hourly Fuel Price, Hourly Emissions Cost and Start-up calculations used as input data in the RMR invoice template.

Owner shall indicate any data appearing on the invoice which it considers confidential. Responsible Utility may use the data in accordance with Section 12.5 and Schedule N of this Agreement.

## **SCHEDULE P**

### **Reserved Energy for Air Emissions Limitations**

This Schedule P applies only to Units located within the San Diego Air Quality Control Basin ("Basin").

1. For purposes of this Schedule P, the term Emission Limitation means present or future limitations on the discharge of air pollutants or contaminants into the atmosphere specified by any federal, state, regional or local law ("Clean Air Law"), by any regulation, air quality implementation plan, or permit condition promulgated or imposed by any agency authorized under any such Clean Air Law or by the judgment of any court of competent jurisdiction.
2.
  - (a) Except as set out in Sections 2 (b) and (c), if a Facility is located in the Basin and is subject to an Emission Limitation that would limit the MWh that can be produced from the Facility during the Contract Year or part thereof (such Contract Year or part being referred to as the "Limitation Period"), Owner shall, so long as some or all of the Units at the Facility are operating under Condition 1, reserve for the Facility for each Month of the Limitation Period for dispatch under this Agreement, a quantity of MWh equal to the average monthly Requested MWh for the Facility for that Month in the 36 Months preceding the next Contract Year (the "Monthly Reserved MWh").
  - (b) If there are less than 36 Months of Requested MWh preceding the next Contract Year, the Monthly Reserved MWh for the Limitation Period shall be determined by agreement between CAISO and Owner. If Owner and CAISO are unable to reach agreement by October 31 preceding the next Contract Year, Owner or CAISO may refer the matter to ADR under a schedule (specified by the arbitrator if the participants cannot agree) requiring a decision within 30 days following appointment of the arbitrator.
  - (c)
    - (i) If the Monthly Reserved MWh has been determined in accordance with Section 2(a) and this Agreement terminates as to a Unit at the Facility, the Monthly Reserved MWh shall be adjusted downward to the average of the Requested MWh for the Units that remain subject to this Agreement for the same 36 Month period previously used to calculate the Monthly Reserved MWh.
    - (ii) If the Monthly Reserved MWh has been determined in accordance with Section 2 (b) and the Agreement terminates as to a Unit at the Facility, the adjustment shall be determined by agreement of Owner and CAISO. If the Parties are unable to reach agreement at least 45 days before the Agreement terminates as to the Unit, Owner or CAISO may refer the matter to ADR under a schedule (specified by the arbitrator if the participants cannot agree) requiring a decision within 30 days following appointment of the arbitrator
3. The Monthly Reserved MWh are set forth on Schedule A. No less than 15 days before the beginning of each Contract Year, Owner shall make a Section 205 filing limited to changing the terms of Schedule A to revise the Monthly Reserved MWh determined in accordance with Section 2. The revised Monthly Reserved MWh shall be effective from the first day of the Contract Year.
4. If the sum of the Billable MWh and Hybrid MWh during a Month is less than the Monthly Reserved MWh, CAISO may:



(a) carry forward into the following Months of the Limitation Period all unused Monthly Reserved MWh, provided the cumulative unused MWh that are carried forward into the following Months may not exceed 20% of the aggregate Monthly Reserved MWh for the remainder of the Limitation Period including the Monthly Reserved MWh for the Months into which unused Monthly Reserved MWh are to be carried forward, or

(b) carry forward less than all unused Monthly Reserved MWh and release to Owner the Monthly Unused Reserved MWh not carried forward.

CAISO shall notify Owner of the amount of unused Monthly Reserved MWh to be carried forward within 3 Business Days after the beginning of the next Month.

5. CAISO may elect to reduce the aggregate Monthly Reserved MWh for the remainder of the Limitation Period by notifying Owner not less than 5 days prior to the beginning of the Month in which the reduction is to be effective. Notwithstanding the foregoing, if CAISO or Owner forecasts that usage will approach the Emission Limitation in the last Month of the Limitation Period, CAISO and Owner shall closely coordinate to release any unused Monthly Reserved MWh as soon as possible.
6. If there are unused Monthly Reserved MWh for the Facility remaining at the end of the Limitation Period, CAISO shall pay the Unused Emission Reserve Payment. The Unused Emission Reserve Payment shall be the product of (a) the Unused Monthly Reserved MWh Payment Rate and (b) the lesser of (i) the unused Monthly Reserved MWh carried forward by the CAISO into the last Month of the Limitation Period and (ii) the unused Monthly Reserved MWh remaining at the end of the Limitation Period. The Unused Monthly Reserved MWh Payment Rate shall be \$10 per MWh. The Unused Emission Reserve Payment shall be included in the invoice for the last Billing Month of the Limitation Period.
7. If the CAISO determines that the Monthly Reserved MWh have become insufficient due to a Force Majeure Event at the Facility or at Reliability Must-Run Units at another facility or because of an outage on the CAISO Controlled Grid or the Distribution Grid due to a Force Majeure Event, CAISO may request Owner to undertake, and if so requested, Owner shall undertake all such necessary and commercially reasonable measures approved in advance by CAISO and the Responsible Utility to (a) obtain, where possible, a modification or variance from applicable Emission Limitations, or (b) procure necessary emission reduction credits or allowances sufficient to offset emissions in excess of Emission Limitations to enable Owner to provide additional MWh dispatched by the CAISO to meet reliability requirements arising by reason of such Force Majeure Event. CAISO shall reimburse Owner for all reasonable costs of procuring such emission reduction credits or allowances.
8. If the CAISO wishes to dispatch a Unit at a Facility that is within 5% of exceeding its Monthly Reserved MWh for the Limitation Period, the CAISO shall first dispatch Units at other Facilities that are not within 5% of the Monthly Reserved MWh during the Limitation Period if the other Unit(s), in the CAISO's sole judgment, provide equivalent reliability benefits.
9. If any Emission Limitation affecting the Facility materially changes, CAISO and Owner promptly shall renegotiate this Schedule P to reflect such change. If CAISO and Owner are unable to agree on revisions to this Schedule P, the Owner may file a revised Schedule P with FERC under Section 205 of the Federal Power Act for the limited purpose of taking such changes in the Emissions Limitation into account. Such filing may be with or without the concurrence of the CAISO, but CAISO reserves its right to protest any such filing.

**CAISO TARIFF APPENDIX H**

**[NOT USED]**

**[Ten Sheet Numbers Reserved for Future Filings.]**

**CAISO TARIFF APPENDIX I**  
**Station Power Protocol**

## **STATION POWER PROTOCOL**

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## **STATION POWER PROTOCOL (SPP)**

### **1 General Conditions**

#### **1.1 Procurement**

Station Power may be voluntarily self-supplied through a) permitted netting as provided in Section 10.1.3 of this CAISO Tariff using Energy generated contemporaneously at the same location, b) On-Site Self-Supply or c) Remote Self-Supply. Third Party Supply may serve Station Power only to the extent permissible under the rules and regulations of the applicable Local Regulatory Authority.

#### **1.2 Eligibility**

**1.2.1** Only Station Power Loads associated with Generating Units in the CAISO Balancing Authority Area that are part of an approved Station Power Portfolio may be self-supplied in accordance with this SPP. Each Generating Unit must be subject to a PGA, QF PGA, or MSS Agreement. Any generating facility outside the CAISO Balancing Authority Area owned by the same entity is eligible to provide Remote Self-Supply to Station Power Loads, subject to the terms of this SPP. Generating Units wishing to self-supply Station Power shall complete the application process specified in Section 2 of this SPP.

**1.2.2** Station Power may be self-supplied by a single corporate entity, government agency, or joint powers agency or other legal entity organized under the laws of the State of California. A Station Power Portfolio may not include any facilities that are owned by the owner's corporate Affiliates. In the case of a joint powers agency, a Station Power Portfolio may not include facilities independently owned by one or more members or other legally distinct entities. If an entity owns a portion of a jointly owned Generating Unit, such ownership share may be included in a Station Power Portfolio up to the amount of the associated entitlement to Energy from the jointly-owned Generating Unit provided that: (i) the entity has the right to call upon that Energy for its own use; and (ii) the Energy entitlement is not characterized as a sale from the jointly owned Generating Unit to any of its joint owners.

**1.2.3** Net Output from generating facilities outside the CAISO Balancing Authority Area may be included in a Station Power Portfolio and used as a source of Remote Self-Supply to serve Station Power of Generating Units in the CAISO Balancing Authority Area and part of the Station Power Portfolio, so long as the following conditions are fulfilled:

- (a) Imports of Net Output must be submitted in Self-Schedules using a Resource ID specified by the CAISO;
- (b) HASP Intertie Schedules using such Resource ID do not exceed the available Net Output of such generating facilities in any hour;
- (c) Firm transmission service to a Scheduling Point that assures delivery into the CAISO Balancing Authority Area is secured; and
- (d) Meter Data for generating facilities located outside the CAISO Balancing Authority Area shall be subject to CAISO audit to verify performance in accordance with these requirements.

### **1.3 Limitations**

**1.3.1** Station Power supplied by contemporaneous on-site Generation is treated as permitted netting under Section 10.1.3 of this CAISO Tariff. This SPP neither expands opportunities for nor imposes additional conditions on permitted netting. In accordance with this CAISO Tariff, such contemporaneous self-supplied Station Power need not be **submitted in Self-S**chedules with the **CAISO**.

**1.3.2** Self-supply of Station Power shall be strictly voluntary. Nothing in this SPP is intended to: 1) preclude a Generating Unit from purchasing Station Power pursuant to an applicable retail rate or tariff; or 2) supersede otherwise applicable jurisdiction of a Local Regulatory Authority, except in the event of a conflict between federal and state tariff provisions, in which case the federal tariff provisions will control.

## **2 Station Power Requirements and Review**

### **2.1 Applications to Self-Supply Station Power**

**2.1.1** An application to establish a Station Power Portfolio or to modify the configuration of Station Power meters or the **g**enerating facilities included in a Station Power **P**ortfolio must be submitted according to the process specified by the **CAISO** and posted on the **CAISO Website**, and shall include the following information:

- (a) One-line diagrams clearly showing the location and ownership of all Generating Units and Station Power meters, their connection to the **CAISO Controlled Grid** or distribution system, and the status of breakers and switchgear for normal system operation.
- (b) Identification of any generating facilities outside the **CAISO Balancing Authority Area**, to be used to provide Remote Self-Supply of Station Power within the proposed Station Power Portfolio. No loads associated with generating facilities outside the **CAISO Balancing Authority Area** may be supplied under this SPP.
- (c) Certification that the applicant is the sole owner of all generating facilities proposed to be included in the Station Power Portfolio, and that the applicant has the right to call on Energy for its own use from its ownership share of any jointly owned facilities that are proposed to be used to self-supply Station Power.
- (d) Demonstration that each Station Power meter is certified in accordance with the **CAISO Tariff**.
- (e) Verification that each Station Power meter is subject to a Meter Service Agreement for **CAISO Metered Entities**, and that each Generating Unit is bound to the **CAISO Tariff** by a PGA, QF PGA, or MSS Agreement.
- (f) Verification that the applicant has arranged for terms of service with the responsible UDC or MSS Operator for the use of any distribution facilities required to self-supply Station Power.

**2.1.2** On the **CAISO's** written request, the applicant will provide additional information that the **CAISO** reasonably determines is necessary to verify the planned operation of the Station Power Portfolio and meet the requirements of **Section 2.1.1 of this SPP**.

## **2.2 CAISO Monitoring and Review**

**2.2.1** The CAISO will take the following actions with respect to each application to establish a Station Power Portfolio:

- (a) The CAISO shall post on the CAISO Website a listing of the specific Station Power meters and Generating Units located in the CAISO Balancing Authority Area, and any generating facilities outside the CAISO Balancing Authority Area, that compose each Station Power Portfolio, and which are eligible to participate in the self-supply of Station Power in accordance with this SPP.
- (b) The CAISO will provide the appropriate UDC or MSS Operator and the Local Regulatory Authority with one-line diagrams and other information regarding each application.
- (c) The CAISO will make a determination in consultation with the UDC or MSS Operator and the Local Regulatory Authority on the factual question of whether distribution facilities are involved in the requested self-supply of Station Power. Any disputes regarding such determinations shall be subject to the dispute resolution procedures of this CAISO Tariff.
- (d) The CAISO will verify metering schemes and assign unique Load identifiers consistent with the CAISO Data Templates and Validation Rules that the Scheduling Coordinator responsible for each meter will be required to use for scheduling and Settlement.

**2.2.2** The CAISO shall promptly review each application to establish or modify a Station Power Portfolio. Within ten (10) Business Days after the submittal of the application, the CAISO shall notify the applicant in writing that the application is complete, or shall list any specific deficiencies or additional information that the CAISO reasonably requires to complete the application. The CAISO shall use all reasonable efforts to make the changes necessary for the new or modified configurations to take effect and the Station Power Portfolio to begin self-supplying Station Power within twenty (20) Business Days after a complete application is submitted. In no event shall a Station Power Portfolio begin self-supplying Station Power until any and all required changes to the configuration of metering or other equipment are completed as required under Section 6 of this SPP. The CAISO will have an ongoing right to request additional information reasonably necessary to verify that conditions on the self-supply of Station Power as specified in this SPP are met.

## **3 Self-Supply Verification and CAISO Charges**

### **3.1 Self-Supply Verification**

At the end of each Netting Period, the CAISO will calculate the Net Output for each Generating Unit in the Station Power Portfolio. If the Net Output is positive, then all Station Power associated with that Generating Unit, other than Load netted in accordance with this CAISO Tariff, will have been served by On-Site Self-Supply. Any positive Net Output from facilities in the Station Power Portfolio will be available to provide Remote Self-Supply to any Generating Unit with negative Net Output. If the available Remote Self-Supply is less than the aggregate negative Net Output in the Station Power Portfolio, then such shortfall will be deemed to have been served by Third Party Supply. The CAISO will incorporate these determinations in its accounting and billing for the Netting Period by reassigning Station Power to unique Load identifiers for Remote Self-Supply and Third Party Supply, as required.

### **3.2 Charges on Metered Demand**

Station Power that is not eligible for permitted netting in accordance with Section 10.1.3 of this CAISO Tariff must be submitted in Self-Schedules in accordance with the CAISO Tariff, and will be assessed all charges applicable to metered Demand under the CAISO Tariff, except as provided in Section 4.1 of this SPP.



### **3.3 Administrative Charge**

Scheduling Coordinators of Generating Units that have Station Power meters shall be assessed an administrative charge in accordance with Schedule 5 of Appendix F.

## **4 Transmission Service**

**4.1** Station Power Load that is directly connected to the transmission facilities or directly connected to the Distribution System of a UDC or MSS Operator located in a PTO Service Territory and that is determined to have been served by On-Site Self-Supply shall be deemed not to have used the CAISO Controlled Grid and shall not be included in the Gross Load of the applicable UDC or MSS Operator. Station Power that is served by Wheeling service and that is determined to have been served by On-Site Self-Supply shall be deemed not to have used the CAISO Controlled Grid and shall not be included in the hourly Self-Schedules (in kWh) of the applicable Scheduling Coordinator that are subject to the Wheeling Access Charge.

**4.2** Station Power Load that is directly connected to the transmission facilities or directly connected to the Distribution System of a UDC or MSS Operator located in a PTO Service Territory and that is determined to have been served by Remote Self-Supply or Third Party Supply shall be included in the Gross Load of the applicable UDC or MSS Operator. Station Power that is served by Wheeling service and that is determined to have been served by Remote Self-Supply or Third Party Supply shall be included in the hourly Self-Schedules (in kWh) of the applicable Scheduling Coordinator that are subject to the Wheeling Access Charge.

**4.3** If the Generating Unit requires the use of distribution facilities or other facilities that are not part of the CAISO Controlled Grid, then the Generating Unit will be subject to the appropriate charges of the applicable UDC, MSS Operator or owner of such non-CAISO Controlled Grid facilities.

## **5 Energy Pricing**

All deviations between metered Generation or Station Power and that submitted in Self-Schedules will be settled at the resource-specific LMP at the applicable Custom LAP for the Station Power Load. The determination of Net Output and attribution of On-Site Self-Supply, Remote Self-Supply and Third Party Supply to serving Station Power under this SPP shall apply only to determine whether Station Power was self-supplied during the Netting Period and will have no effect on the price of Energy sold or consumed by any facility in the Station Power Portfolio.

## **6 Metering**

**6.1** In order to self-supply Station Power under this SPP, a Generating Unit must be subject to a Meter Service Agreement for CAISO Metered Entities pursuant to CAISO Tariff Section 10.3.1. A meter certified in accordance with the CAISO Tariff is required for Station Power Load taken under the SPP. Separate metering is required for any on-site Load that does not meet the definition of Station Power. Under no circumstances may ineligible Loads be included in the Meter Data collected by the CAISO from a Station Power meter.

**6.2** Any costs associated with owning or operating metering or related facilities necessary to self-supply Station Power according to the terms of this SPP are the responsibility of the owner-applicant.

**6.3** A single Scheduling Coordinator must represent the unique Load identifiers assigned by the CAISO for On-Site Self-Supply and Remote Self-Supply associated with each Station Power meter.

**7 Provision Of Data To UDC Or MSS Operator**

The CAISO will provide the applicable UDC or MSS Operator with the amount of On-Site Self-Supply, Remote Self-Supply, and Third Party Supply serving Station Power at the granularity required to allow the UDC or MSS Operator to assess charges, if any, under the applicable retail tariff(s).

**CAISO TARIFF APPENDIX J**

**[NOT USED]**

**[Ten Sheet Numbers Reserved for Future Filings.]**

**CAISO TARIFF APPENDIX K**  
**Ancillary Service Requirements Protocol (ASRP)**

**CAISO TARIFF APPENDIX K**  
**Ancillary Service Requirements Protocol (ASRP)**

**PART A**

**CERTIFICATION FOR REGULATION**

- A 1** A Generator wishing to provide Regulation as an Ancillary Service from a Generating Unit whether pursuant to a CAISO award or as part of a self-provision arrangement must meet the following operating characteristics and technical requirements in order to be certified by the CAISO to provide Regulation service unless granted a temporary exemption by the CAISO in accordance with criteria which the CAISO shall publish on the CAISO Website;
- A 1.1** **Operating Characteristics**
- A 1.1.1** the rated capacity of the Generating Unit must be 1 MW or greater unless the Generating Unit is participating in an aggregation arrangement approved by the CAISO;
- A 1.1.2** the maximum amount of Regulation to be offered must be reached within a period that may range from a minimum of 10 minutes to a maximum of 30 minutes, as such period may be specified by the CAISO and published on the CAISO Website;
- A 1.2** **Technical Requirements**
- A 1.2.1** **Control**
- A 1.2.1.1** a direct, digital, unfiltered control signal generated from the CAISO EMS through a standard CAISO direct communication and direct control system, must meet the minimum performance standards for communications and control which will be developed and posted by the CAISO on the CAISO Website;
- A 1.2.1.2** the Generating Unit power output response (in MW) to a control signal must meet the minimum performance standards for control and unit response which will be developed and posted by the CAISO on the CAISO Website. As indicated by the Generating Unit power output (in MW), the Generating Unit must respond immediately, without manual Generating Unit operator intervention, to control signals and must sustain its specified Ramp Rate, within specified Regulation Limits, for each minute of control response (MW/minute);
- A 1.2.2** **Monitoring:**
- the Generating Unit must have a standard CAISO direct communication and direct control system to send signals to the CAISO EMS to dynamically monitor, at a minimum the following:

- A 1.2.2.1** actual power output (MW);
- A 1.2.2.2** high limit, low limit and rate limit values as selected by the Generating Unit operator; and
- A 1.2.2.3** in-service status indication confirming availability of Regulation service.

**A 1.2.3 Voice Communications:**

CAISO approved primary and back-up voice communication must be in place between the CAISO Control Center and the operator controlling the Generating Unit at the generating site and between the Scheduling Coordinator and the operator. The primary dedicated voice communication between the CAISO Control Center and the operator controlling the Generating Unit at the generating site must be digital voice communication, as provided by a standard CAISO direct communication and direct control system; and

- A 1.3** the communication and control system and the Generating Unit must pass a qualification test to demonstrate the overall ability to provide Regulation meeting the performance requirements of the ASRP for Regulation.

- A 2** A Generator wishing to be considered for certification for Regulation service by the CAISO must make a written request to the CAISO, giving details of the technical capability of the Generating Units concerned and identifying the Scheduling Coordinator through whom the Generator intends to offer Regulation service. The Generator shall at the same time send a copy of its request to that Scheduling Coordinator. Technical review request forms will be available from the CAISO.

- A 3** No later than one week after receipt of the Generator's request, the CAISO shall provide the Generator with a listing of required interface equipment for Regulation, including a standard CAISO direct communication and direct control system. The CAISO shall send a copy of the listing to the Generator's Scheduling Coordinator.

- A 4** The Generator may propose alternatives that the Generator believes may provide an equivalent level of communication and control for consideration by the CAISO. Such proposals shall be in writing and contain sufficient detail for the CAISO to make a determination of suitability. The CAISO may request additional information, if required, to assist in its evaluation of the proposal.

- A 5** The CAISO shall respond by accepting the alternative proposal, rejecting the alternative proposal, or suggesting modifications to the alternative proposal. Such acceptance, rejection, or suggested revision must be provided not later than six weeks after the proposal is received by the CAISO. The Generator and the CAISO shall keep the Scheduling Coordinator informed of this process by each sending to the Scheduling Coordinator a copy of any written communication which it sends to the other.

- A 6** Upon agreement as to any alternative method of communication and control to be used by the Generator, the CAISO shall provisionally approve the proposal in writing providing a copy to the Generator's Scheduling Coordinator at the same time. If agreed by the CAISO, the Generator may then proceed to procure and install the equipment and make arrangements for the required communication and control.
- A 7** Design, acquisition, and installation of the CAISO-approved communication and control equipment shall be under the control of the CAISO. The CAISO shall bear no cost responsibility or functional responsibility for such equipment, except that the CAISO shall arrange for and monitor the maintenance of the communication and control system at the Generator's expense, unless otherwise agreed by the CAISO and the Generator. The CAISO shall be responsible for the design, acquisition and installation of any necessary modifications to the CAISO EMS at its own cost.
- A 8** The CAISO, in cooperation with the Generator shall perform testing of the communication and control equipment to ensure that the communication and control system performs to meet the CAISO requirements.
- A 9** When the CAISO is satisfied that the communication and control systems meet the CAISO's requirements, the Generator shall request in writing that the CAISO conduct a certification test with a suggested primary date and time and at least two alternative dates and times. The CAISO shall, within two Business Days of receipt of the Generator's request, accept a proposed time if possible or suggest at least three alternatives to the Generator. If the CAISO responds by suggesting alternatives, the Generator shall, within two Business Days of receipt of the CAISO's response, respond in turn by accepting a proposed alternative if possible or suggesting at least three alternatives, and this procedure shall continue until agreement is reached on the date and time of the test. The Generator shall inform its Scheduling Coordinator of the agreed date and time of the test.
- A 10** Testing shall be performed by the CAISO, with the cooperation of the Generator. Such tests shall include, but not be limited to, the following:
- A 10.1** confirmation of control communication path performance;
- A 10.2** confirmation of primary and secondary voice circuits for receipt of Dispatch Instructions;
- A 10.3** confirmation of the Generating Unit control performance; and
- A 10.4** confirmation of the CAISO EMS control to include changing the Generating Unit output over the range of Regulation proposed at different Set Points, from minimum to maximum output, and at different rates of change from the minimum to the maximum permitted by the design of the Generating Unit.
- A 11** Upon successful completion of the test, the CAISO shall certify the Generating Unit as being permitted to provide Regulation as an Ancillary Service and shall provide a copy of the certificate to the Scheduling Coordinator at the same time. The CAISO shall change its Generating Unit data base to reflect the permission for the Generating Unit to provide Regulation service.

- A 12** The Scheduling Coordinator may submit Bids for Regulation service from the certified Generating Unit into the CAISO Markets starting with the Day-Ahead Market for the hour ending 0100 on the second Trading Day after the CAISO issues the certificate.
- A 13** The certification to provide Regulation shall remain in force until:
- (a) withdrawn by the Scheduling Coordinator or the Generator by written notice to the CAISO to take effect at the time notified in the notice, which must be the end of a Trading Day; or
  - (b) if the Generating Unit obtained CAISO certification on the basis of a prior communication and control technology, until revoked by the CAISO for failure to comply with the requirement set forth in A 13.1 that the Generating Unit install a CAISO-specified standard CAISO direct communication and direct control system (unless exempted by the CAISO).
- A 13.1** Unless exempted by the CAISO, if the Generating Unit obtained CAISO certification on the basis of a prior communication and control technology, the CAISO shall provide written notice to the Generator of the Generator's obligation to install a CAISO-specified standard direct communication and direct control system along with a required date for said work to be completed as mutually agreed upon by the CAISO and the Generator. Failure to meet the completion date shall be grounds for the revocation of certification, provided that the CAISO must provide the Generator with at least ninety (90) days advance notice of the proposed revocation.
- A 14** The certification may be revoked by the CAISO only under provisions of the ASRP or other provisions of the CAISO Tariff.



**PART B**

**CERTIFICATION FOR SPINNING RESERVE**

- B 1** A Generator wishing to provide Spinning Reserve as an Ancillary Service from a Generating Unit or System Resource whether pursuant to a CAISO award or as part of a self-provision arrangement must meet the following requirements in order to be certified by the CAISO to provide Spinning Reserve service:
- B 1.1** the rated capacity of the Generating Unit must be 1 MW or greater unless the Generating Unit is participating in an aggregation arrangement approved by the CAISO;
- B 1.2** the minimum governor performance of the Generating Unit or System Resource shall be as follows:
- B 1.2.1** 5% drop;
- B 1.2.2** governor deadband must be plus or minus 0.036Hz; and
- B 1.2.3** the power output must change within one second for any frequency deviation outside the governor deadband.
- B 1.3** the operator of the Generating Unit or System Resource must have a means of receiving Dispatch Instructions to initiate an increase in real power output (MW) within one minute of the CAISO Control Center determination that Energy from Spinning Reserve capacity must be dispatched;
- B 1.4** the Generating Unit or System Resource must be able to increase its real power output (MW) by the maximum amount of Spinning Reserve to be offered within ten minutes;
- B 1.5** CAISO approved voice communications services must be in place to provide both primary and alternate voice communication between the CAISO Control Center and the operator controlling the Generating Unit or System Resource; and
- B 1.6** The communication system and the Generating Unit or System Resource must pass a qualification test to demonstrate the overall ability to meet the performance requirements of the ASRP for Spinning Reserve.
- B 2** A Generator or System Unit wishing to be considered for certification for Spinning Reserve service by the CAISO must make a written request to the CAISO, giving details of the technical capability of the Generating Units or System Resources concerned and identifying the Scheduling Coordinator through whom the Generator or System Unit intends to offer Spinning Reserve service. The Generator or System Unit shall at the same time send a copy of its request to that Scheduling Coordinator. Technical review request forms will be available from the CAISO.
- B 3** No later than one week after receipt of the request, the CAISO shall provide the Generator or System Unit with a listing of acceptable communication options and interface equipment options for Spinning Reserve. The CAISO shall send a copy of the listing to the Generator's or System Unit's Scheduling Coordinator.

- B 4** The Generator or System Unit may elect to implement any of the approved options defined by the CAISO, and, if it wishes to proceed with its request for certification, shall give written notice to the CAISO of its selected communication option, with a copy to its Scheduling Coordinator.
- B 5** When it receives the Generator's or System Unit's notice, the CAISO shall notify the Generator or System Unit and the Scheduling Coordinator in writing no later than two weeks after receipt of the notice confirming receipt of the notice and issuing provisional approval of the selected options. Upon receipt of the CAISO acknowledgment, the Generator or System Unit may proceed as indicated below to secure the necessary facilities and capabilities required.
- B 6** The Generator or System Unit may also propose alternatives that it believes may provide an equivalent level of control for consideration by the CAISO. Such proposals shall be in writing and contain sufficient detail for the CAISO to make a determination of suitability. The CAISO may request additional information, if required, to assist in its evaluation of the proposal.
- B 7** The CAISO shall respond by accepting the alternative proposal, rejecting the alternative proposal, or suggesting modifications to the alternative proposal. Such acceptance, rejection, or suggested revision must be provided not later than six weeks after the proposal is received by the CAISO. The Generator or the System Unit and the CAISO shall keep the Scheduling Coordinator informed of this process by each sending to the Scheduling Coordinator a copy of any written communication which it sends to the other.
- B 8** Upon agreement as to the method of communication and control to be used by the Generator or System Resource, the CAISO shall provisionally approve the Generator's proposal or the System Resource's proposal in writing providing a copy to the Generator's or System Resource's Scheduling Coordinator at the same time. The Generator or System Resource may then proceed to procure and install the equipment and make arrangements for the required communication.
- B 9** Design, acquisition, and installation of the Generator's equipment or the System Resource's equipment shall be under the control of the respective Generator or System Resource. The CAISO shall bear no cost responsibility or functional responsibility for such equipment. The CAISO shall be responsible for the design, acquisition and installation of any necessary modifications to its own equipment at its own cost.
- B 10** The Generator or System Resource shall perform its own testing of its equipment to ensure that the control system performs to meet the CAISO requirements.
- B 11** When it is satisfied that its plant, equipment and communication systems meet the CAISO's requirements, the Generator or System Resource shall request in writing that the CAISO conduct a certification test with a suggested primary date and time and at least two alternative dates and times. The CAISO shall, within two Business Days of receipt of the request, accept a proposed time if possible or suggest at least three alternatives to the Generator or System Resource. If the CAISO responds by suggesting alternatives, the Generator or System Resource shall, within two Business Days of receipt of the CAISO's response, respond in turn by accepting a proposed alternative if possible or suggesting at least three alternatives, and this procedure shall continue until agreement is reached on the date and time of the test. The Generator or System Resource shall inform its Scheduling Coordinator of the agreed date and time of the test.

- B 12** Testing shall be performed under the direction of the CAISO. Such tests shall include, but not be limited to, the following:
- B 12.1** confirmation of control communication path performance for Dispatch Instruction;
- B 12.2** confirmation of primary and secondary voice circuits for receipt of Dispatch Instructions;
- B 12.3** confirmation of the Generating Unit or System Resource performance to include changing the Generating Unit or System Resource output over the range of Spinning Reserve proposed from minimum to maximum output, and at different rates of change from the minimum to the maximum permitted by the design of the Generating Unit or System Resource; and
- B 12.4** testing the drop characteristic of the Generating Unit or System Resource by simulating frequency excursions outside the allowed deadband and measuring the response of the Generating Unit or System Resource.
- B 13** Upon successful completion of the test the CAISO shall certify the Generating Unit or System Resource as being permitted to provide Spinning Reserve as an Ancillary Service and shall provide a copy of the certificate to the Scheduling Coordinator at the same time. The CAISO shall change the Generating Unit or System Resource data base to reflect the ability of the Generating Unit to provide Spinning Reserve.
- B 14** The Scheduling Coordinator may bid Spinning Reserve from the certified Generating Unit or System Resource into the CAISO Markets starting with the Day-Ahead Market for the hour ending 0100 on the Second Trading Day after the CAISO issues the certificate.
- B 15** The certification to provide Spinning Reserve shall remain in force until withdrawn by the Scheduling Coordinator or the Generator or System Resource by written notice to the CAISO to take effect at the time notified in the notice, which must be the end of a Trading Day.
- B 16** The certification may be revoked by the CAISO only under provisions of the ASRP or other provisions of the CAISO Tariff.

**PART C**

**CERTIFICATION FOR NON-SPINNING RESERVE**

- C 1** An Ancillary Service Provider wishing to provide Non-Spinning Reserve as an Ancillary Service from a Generating Unit or System Resource whether pursuant to the CAISO's auction or as part of a self-provision arrangement must meet the following requirements in order to be certified by the CAISO to provide Non-Spinning Reserve service:
- C 1.1** the rated capacity of the Generating Unit or System Resource must be 1 MW or greater unless the Generating Unit is participating in an aggregation arrangement approved by the CAISO;
- C 1.2** the Generating Unit must be able to increase output as soon as possible to the value indicated in a Dispatch Instruction, reaching the indicated value within ten minutes after issue of the instruction and be capable of maintaining output for 2 hours.
- C 2** An Ancillary Service Provider wishing to provide Non-Spinning Reserve as an Ancillary Service from Curtailable Demand whether pursuant to a CAISO award or as part of a self-provision arrangement must meet the following requirements in order to be certified by the CAISO to provide Non-Spinning Reserve service:
- C 2.1** the operator must be able to completely disconnect the required Load pursuant to a Dispatch Instruction within ten minutes after issue of the instruction;
- C 2.2** the minimum change in the electrical consumption of the Load must be at least 1 MW; and
- C 2.3** the Load must be capable of being interrupted for at least two hours.
- C 3** An Ancillary Service Provider wishing to provide Non-Spinning Reserve as an Ancillary Service, whether pursuant to a CAISO award or as part of a self-provision arrangement, must also meet the following requirements in order to be certified by the CAISO to provide Non-Spinning Reserve service:
- C 3.1** the operator of the Generating Unit, System Resource or the Curtailable Demand must have a means of receiving a Dispatch Instruction to initiate an increase in real power output or a reduction in Demand (MW) within one minute of the CAISO Control Center's determination that Non-Spinning Reserve capacity must be dispatched; and
- C 3.2** the communication system and the Generating Unit, System Resource or Load must pass a qualification test to demonstrate the overall ability to meet the performance requirements of the ASRP for Non-Spinning Reserve.
- C 4** An Ancillary Service Provider wishing to be considered for certification for Non-Spinning Reserve service must make a written request to the CAISO, giving details of the technical capability of the Generating Unit, System Resource or Load concerned and identifying the Scheduling Coordinator through whom the Ancillary Service Provider intends to offer Non-Spinning Reserve. The Ancillary Service Provider shall at the same time send a copy of the request to that Scheduling Coordinator. Technical review request forms will be available from the CAISO.

- C 5** No later than one week after receipt of the Ancillary Service Provider's request, the CAISO shall provide the Ancillary Service Provider with a listing of acceptable communication options and interface equipment options for Non-Spinning Reserve. The CAISO shall send a copy of the listing to the Ancillary Service Provider's Scheduling Coordinator.
- C 6** The Ancillary Service Provider may elect to implement any of the certification, the Ancillary Service Provider shall give written notice to the CAISO of its selected communication option and interface equipment option, with a copy to its Scheduling Coordinator.
- C 7** When it receives the Ancillary Service Provider's notice, the CAISO shall notify the Ancillary Service Provider and the Scheduling Coordinator in writing no later than two weeks after receipt of the notice confirming receipt of the notice and issuing provisional approval of the selected options. Upon receipt of the CAISO acknowledgment the Ancillary Service Provider may proceed as indicated below to secure the necessary facilities and capabilities required.
- C 8** The Ancillary Service Provider may also propose alternatives that it believes may provide an equivalent level of control for consideration by the CAISO. Such proposals shall be in writing and contain sufficient detail for the CAISO to make a determination of suitability. The CAISO may request additional information, if required, to assist in its evaluation of the proposal.
- C 9** The CAISO shall respond by accepting the alternative proposal, rejecting the alternative proposal, or suggesting modifications to the alternative proposal. Such acceptance, rejection, or suggested revision must be provided not later than six weeks after the proposal is received by the CAISO. The Ancillary Service Provider and the CAISO shall keep the Scheduling Coordinator informed of this process by each sending to the Scheduling Coordinator a copy of any written communication which it sends to the other.
- C 10** Upon agreement as to the method of communication and control to be used by the Ancillary Service Provider, the CAISO shall provisionally approve the proposal in writing providing a copy to the Ancillary Service Provider's Scheduling Coordinator at the same time. The Ancillary Service Provider may then proceed to procure and install the equipment and make arrangements for the required communication.
- C 11** Design, acquisition, and installation of the Ancillary Service Provider's equipment shall be under the control of the Ancillary Service Provider. The CAISO shall bear no cost responsibility or functional responsibility for such equipment. The CAISO shall be responsible for the design, acquisition and installation of any necessary modifications to the CAISO's equipment at its own cost.
- C 12** The Ancillary Service Provider shall perform its own testing of its equipment to ensure that the control system performs to meet the CAISO requirements.

- C 13** When it is satisfied that its plant, equipment and communication systems meet the CAISO's requirements, the Ancillary Service Provider shall request in writing that the CAISO conduct a certification test with a suggested primary date and time and at least two alternative dates and times. The CAISO shall, within two Business Days of receipt of the Ancillary Service Provider's request, accept a proposed time if possible or suggest at least three alternatives. If the CAISO responds by suggesting alternatives, the Ancillary Service Provider shall, within two Business Days of receipt of the CAISO's response, respond in turn by accepting a proposed alternative if possible or suggesting at least three alternatives, and this procedure shall continue until agreement is reached on the date and time of the test. The Ancillary Service Provider shall inform its Scheduling Coordinator of the agreed date and time of the test.
- C 14** Testing shall be performed under the direction of the CAISO. Such tests shall include, but not be limited to, the following:
- C 14.1** confirmation of control communication path performance;
- C 14.2** confirmation of primary and secondary voice circuits for receipt of Dispatch Instructions;
- C 14.3** confirmation of the Generating Unit, System Resource or Load control performance; and
- C 14.4** confirmation of the range of Generating Unit or System Resource control to include changing the output over the range of Non-Spinning Reserve proposed.
- C 15** Upon successful completion of the test, the CAISO shall certify the Generating Unit, System Resource or Load as being permitted to provide Non-Spinning Reserve as an Ancillary Service and shall provide a copy of the certificate to the Scheduling Coordinator at the same time. The CAISO shall change its data base to reflect the permission for the Generating Unit or Load to provide Non-Spinning Reserve service.
- C 16** The Scheduling Coordinator may bid Non-Spinning Reserve service from the certified Generating Unit or Load into the CAISO Markets starting with the Day-Ahead Market for the hour ending 0100 on the second Trading Day after the CAISO issues the certificate.
- C 17** The certification to provide Non-Spinning Reserve shall remain in force until withdrawn by the Scheduling Coordinator or the Ancillary Service Provider by written notice to the CAISO to take effect at the time notified in the notice, which must be the end of a Trading Day.
- C 18** The certification may be revoked by the CAISO only under provisions of the CAISO Tariff.

**Part D**

**CERTIFICATION FOR VOLTAGE SUPPORT**

- D 1** A Generator wishing to provide Voltage Support as an Ancillary Service from a Generating Unit must meet the following requirements in order to be certified by the CAISO to provide Voltage Support service:
- D 1.1** the rated capacity of the Generating Unit must be 1 MW or greater unless the Generating Unit is participating in an aggregation arrangement approved by the CAISO;
- D 1.2** the Generating Unit must be able to produce VARs at lagging power factors less than 0.90 and absorb VARs at leading power factors more than 0.95 within the safe operating parameters for the Generating Unit;
- D 1.3** the Generating Unit must be able to produce or absorb VARs outside the 0.90 lag to 0.95 lead bandwidth over a range of real power outputs which the Generator expects to produce when offering Voltage Support;
- D 1.4** the Generating Unit must be able to produce or absorb VARs at the boundary of the Generating Unit's capability curve by reducing real power output to either absorb or produce additional VARs within the safe operating parameters for the Generating Unit; and
- D 1.5** metering and SCADA equipment must be in place to provide both real and reactive power data from the Generating Unit providing Voltage Support to the CAISO Control Center.
- D 2** A Generator wishing to be considered for certification for Voltage Support service by the CAISO must make a written request to the CAISO, giving details of the technical capability of the Generating Unit concerned and identifying the Scheduling Coordinator through whom the Generator intends to offer Voltage Support service. The Generator shall at the same time send a copy of its request to that Scheduling Coordinator. The details of the Generating Unit's technical capability must include the Generating Unit name plate data, performance limits, and capability curve. The Generator must also define the operating limitations in both real and reactive power (lead and lag) to be observed when Voltage Support is being provided to the CAISO for both normal and reduced real power output conditions. Technical review request forms will be available from the CAISO.
- D 3** No later than one week after receipt of the Generator's request, the CAISO shall provide the Generator with a listing of acceptable communication options and interface equipment options for Voltage Support. The CAISO shall send a copy of the listing to the Generator's Scheduling Coordinator.
- D 4** The Generator may elect to implement any of the approved options defined by the CAISO, and, if it wishes to proceed with its request for certification, the Generator shall give written notice to the CAISO of its selected communication option and interface equipment option, with a copy to its Scheduling Coordinator.

- D 5** When it receives the Generator's notice the CAISO shall notify the Generator and the Scheduling Coordinator in writing no later than two weeks after receipt of the notice confirming receipt of the notice and issuing provisional approval of the selected options. Upon receipt of the CAISO acknowledgment the Generator may proceed as indicated below to secure the necessary facilities and capabilities required.
- D 6** The Generator may also propose alternatives that the Generator believes may provide an equivalent level of control for consideration by the CAISO. Such proposals shall be in writing no later than two weeks after receipt of the notice and contain sufficient detail for the CAISO to make a determination of suitability. The CAISO may request additional information, if required, to assist in its evaluation of the proposal.
- D 7** The CAISO shall respond by accepting the alternative proposal, rejecting the alternative proposal, or suggesting modifications to the alternative proposal. Such acceptance, rejection, or suggested revision shall be provided not later than six weeks after the proposal is received by the CAISO. The Generator and the CAISO shall keep the Scheduling Coordinator informed of this process by each sending to the Scheduling Coordinator a copy of any written communication which it sends to the other.
- D 8** Upon agreement as to the method of communication and control to be used by the Generator, the CAISO shall provisionally approve the proposal in writing providing a copy to the Generator's Scheduling Coordinator at the same time. The Generator may then proceed to procure and install the equipment and make arrangements for the required communication.
- D 9** Design, acquisition, and installation of the Generator's equipment are under the control of the Generator. The CAISO shall bear no cost responsibility or functional responsibility for such equipment.
- D 10** The CAISO shall be responsible for the design, acquisition and installation of any necessary modifications to the CAISO's equipment at its own cost.
- D 11** The Generator shall perform its own testing of its equipment to ensure that the control system performs to meet the CAISO requirements.
- D 12** When it is satisfied that its plant, equipment and communication systems meet the CAISO's requirements, the Generator shall request in writing that the CAISO conduct a certification test with a suggested primary date and time and at least two alternative dates and times. The CAISO shall, within two Business Days of receipt of the Generator's request, accept a proposed time if possible or suggest at least three alternatives to the Generator. If the CAISO responds by suggesting alternatives, the Generator shall, within two Business Days of receipt of the CAISO's response, respond in turn by accepting a proposed alternative if possible or suggesting at least three alternatives, and this procedure shall continue until agreement is reached on the date and time of the test. The Generator shall inform its Scheduling Coordinator of the agreed date and time of the test.



- D 13** Testing shall be performed under the direction of the CAISO. Such tests shall include, but not be limited to, the following:
- D 13.1** confirmation of control communication path performance;
- D 13.2** confirmation of primary and secondary voice circuits for receipt of Dispatch Instructions;
- D 13.3** confirmation of the Generating Unit automatic voltage regulator performance; and
- D 13.4** confirmation of the range of Voltage Support service over a range of Generating Unit real power outputs to verify the ability to both produce and absorb reactive power at different operating levels including minimum and maximum real power output.
- D 14** Upon successful completion of the test, the CAISO shall certify the Generating Unit as being permitted to provide Voltage Support as an Ancillary Service and shall provide a copy of the certificate to the Scheduling Coordinator at the same time. The CAISO shall change the Generating Unit data base to reflect the permission for the Generating Unit to provide Voltage Support.
- D 15** The Scheduling Coordinator may bid Energy for Voltage Support from the certified Generating Unit into the market starting with the market for the hour ending 0100 on the first Trading Day after the CAISO issues the certificate.
- D 16** The certification to provide Voltage Support shall remain in force until withdrawn by the Scheduling Coordinator or the Generator by written notice to the CAISO to take effect at the time notified in the notice, which must be the end of a Trading Day.
- D 17** The certification may be revoked by the CAISO only under provisions of the ASRP or other provisions of the CAISO Tariff.

**PART E**

**CERTIFICATION FOR BLACK START**

- E 1** A Generator wishing to provide Black Start capacity from a Generating Unit as an Ancillary Service must meet the requirements stated in Appendix D of the CAISO Tariff in order to be certified by the CAISO to provide Black Start capacity. In addition, the Generating Unit must have a rated capacity 1 MW or greater unless the Generating Unit is participating in an aggregation arrangement approved by the CAISO.
- E 2** A Generator wishing to be considered for certification for Black Start service by the CAISO must make a written request to the CAISO. Such request must clearly identify the facilities related to the Generating Unit from which the Generator wishes to provide Black Start and shall identify the Scheduling Coordinator through whom the Generator wishes to offer Black Start service. The Generator shall send a copy of its request to its Scheduling Coordinator at the same time as it sends it to the CAISO. The Generator's written request must include at least the following:
- E 2.1** identification of the Generating Unit including Location Code;
- E 2.2** a single-line electrical diagram of the Generating Unit connections including auxiliary power busses and the connection to the station switchyard;
- E 2.3** a description of the fuel supply used for Black Start including on-site storage and resupply requirements;
- E 2.4** a single-line electrical diagram showing the transmission connection from the Generating Unit station switchyard to a connection point on the CAISO Controlled Grid;
- E 2.5** a description of the Generating Unit capability to provide both real and reactive power, any Start-Up and Shut-Down requirements, any staffing limitations; and
- E 2.6** a description of the primary, alternate and emergency back-up communications systems currently available to the Generator for communications to the CAISO Control Center.
- E 3** Upon receipt of the Generator's written request the CAISO shall review the information provided and respond in writing within two weeks of receipt of the request, providing a copy of its response to the Generator's Scheduling Coordinator. The CAISO response may be any of the following:
- E 3.1** acceptance of the proposal as presented;
- E 3.2** rejection of the proposal as presented with a rationale for such rejection; or
- E 3.3** a request for additional information needed by the CAISO to properly evaluate the request.

- E 4** A Generator receiving a rejection may submit a written request for reconsideration by the CAISO within 60 days of the date of the rejection notice. A request for reconsideration must address the rationale provided by the CAISO. The CAISO shall respond to a request for reconsideration within 60 days of the date of that request.
- E 5** A Generator receiving a request for additional information shall provide such information within 60 days of such request providing a copy at the same time to its Scheduling Coordinator. The CAISO shall review the information and respond within 120 days of the date of the CAISO's request for additional information providing a copy at the same time to the Generator's Scheduling Coordinator.
- E 6** Upon acceptance by the CAISO of the Generator's request and agreement as to the method of communication and control to be used by the Generator, the CAISO shall provisionally approve the proposal in writing providing a copy at the same time to the Generator's Scheduling Coordinator. The Generator may then proceed to procure and install the equipment and make arrangements for the required communication.
- E 7** Design, acquisition, and installation of the Generator's equipment shall be under the control of the Generator. The CAISO shall bear no cost responsibility or functional responsibility for such equipment. The CAISO shall be responsible for the design, acquisition and installation of any necessary modifications to its own equipment at its own cost.
- E 8** The Generator shall perform its own testing of its equipment to ensure that the Black Start system performs to meet the CAISO requirements.
- E 9** When it is satisfied that its plant, equipment and communication systems meet the CAISO's requirements, the Generator shall request in writing that the CAISO conduct a certification test with a suggested primary date and time and at least two alternative dates and times. The CAISO shall, within two Business Days of receipt of the Generator's request, accept a proposed time if possible or suggest at least three alternatives to the Generator. If the CAISO responds by suggesting alternatives, the Generator shall, within two Business Days of receipt of the CAISO's response, respond in turn by accepting a proposed alternative if possible or suggesting at least three alternatives, and this procedure shall continue until agreement is reached on the date and time of the test. The Generator shall inform its Scheduling Coordinator of the agreed date and time of the test.
- E 10** Testing shall be performed under the direction of the CAISO. Such tests shall include, but not be limited to, the following:
- E 10.1** confirmation of control communication path performance;
- E 10.2** confirmation of primary, secondary, and emergency voice circuits for receipt of Dispatch Instructions;

- E 10.3** confirmation of the Generating Unit performance; and
- E 10.4** simulation of a Black Start event.
- E 11** Upon successful completion of the test, the CAISO shall certify the Generating Unit as being permitted to provide Black Start capacity as an Ancillary Service and shall provide a copy of the certificate to the Scheduling Coordinator at the same time. The CAISO shall change its Generating Unit data base to reflect the permission for the Generating Unit to provide Black Start service.
- E 12** The certification to provide Black Start shall remain in force until withdrawn by the Scheduling Coordinator or the Generator by written notice to the CAISO to take effect at the time noticed in the notice, which must be the end of a Trading Day.
- E 13** The certification may be revoked by the CAISO only under provisions of the ASRP or other provisions of the CAISO Tariff.

## CAISO TARIFF APPENDIX L

### Methodology to Assess Available Transfer Capability

#### METHODOLOGY TO ASSESS AVAILABLE TRANSFER CAPABILITY

##### **L.1 Description of Terms**

The following descriptions augment existing definitions found in Appendix A “Master Definitions Supplement.”

**L.1.1 Available Transfer Capability (ATC)** is a measure of the transfer capability in the physical transmission network resulting from system conditions and that remains available for further commercial activity over and above already committed uses.

ATC is defined as the Total Transfer Capability (TTC) less applicable operating Constraints due to system conditions and Outages (i.e., OTC), less the Transmission Reliability Margin (TRM), less the total of Existing Transmission Commitments (ETComm), less the Capacity Benefit Margin (CBM).

**L.1.2 Total Transfer Capability (TTC)** is defined as the amount of electric power that can be moved or transferred reliably from one area to another area of the interconnected transmission system by way of all transmission lines (or paths) between those areas. In collaboration with owners of rated paths and the WECC Operating Transfer Capability Policy Committee (OTCPC), the CAISO utilizes rated path methodology to establish the TTC of CAISO Transmission Interfaces.

**L.1.3 Operating Transfer Capability (OTC)** is the TTC reduced by any operational Constraints caused by seasonal derates or Outages. CAISO Regional Transmission Engineers (RTE) determine OTC through studies using computer modeling.

**L.1.4 Existing Transmission Commitments (ETComm)** include Existing Contracts and Transmission Ownership Rights.

**L.1.5 Transmission Reliability Margin (TRM)** is that amount of transmission transfer capability necessary to ensure that the interconnected transmission network is secure under a reasonable range of uncertainties in system conditions. TRM reserves sufficient transmission capacity from the Day-Ahead Market (DAM) to ensure that the interconnected transmission network is secure under a reasonable range of uncertainties in system conditions. This DAM implementation avoids Real-Time Schedule curtailments that would otherwise be necessary due to:

- Demand Forecast error
- Anticipated uncertainty in transmission system topology
- Unscheduled flow
- Simultaneous path interactions
- Variations in Generation Dispatch
- Operating Reserve actions

The level of TRM for each Transmission Interface will be determined by CAISO Regional Transmission Engineers (RTE).

**L.1.6 Capacity Benefit Margin (CBM)** is that amount of transmission transfer capability reserved by Load Serving Entities (LSEs) to ensure access to Generation from interconnected systems to meet generation reliability requirements. In the Day-Ahead Market, CBM may be used to provide reliable delivery of Energy to CAISO **Balancing Authority** Area Loads and to meet CAISO responsibility for resource reliability requirements in Real-Time. The purpose of this DAM implementation is to avoid Real-Time Schedule curtailments and firm Load interruptions that would otherwise be necessary. CBM may be used to reestablish Operating Reserves. CBM is not available for non-firm transmission in the CAISO **Balancing Authority** Area. CBM may be used only after:

- all non-firm sales have been terminated,
- Direct-control Load management has been implemented,
- customer interruptible Demands have been interrupted,
- if the LSE calling for its use is experiencing a Generation deficiency and its transmission service provider is also experiencing transmission Constraints relative to imports of Energy on its transmission system.

The level of CBM for each Transmission Interface is determined by the amount of estimated capacity needed to serve firm Load and provide Operating Reserves based on historical, scheduled, and/or forecast data using the following equation to set the maximum CBM:

$$\text{CBM} = (\text{Demand} + \text{Reserves}) - \text{Resources}$$

Where:

- Demand = forecasted area Demand
- Reserves = reserve requirements
- Resources = internal area resources plus resources available on other Transmission Interfaces

## **L.2 ATC Algorithm**

$$\text{ATC} = \text{OTC} - (\text{TRM} + \text{ETComm} + \text{CBM})$$

or

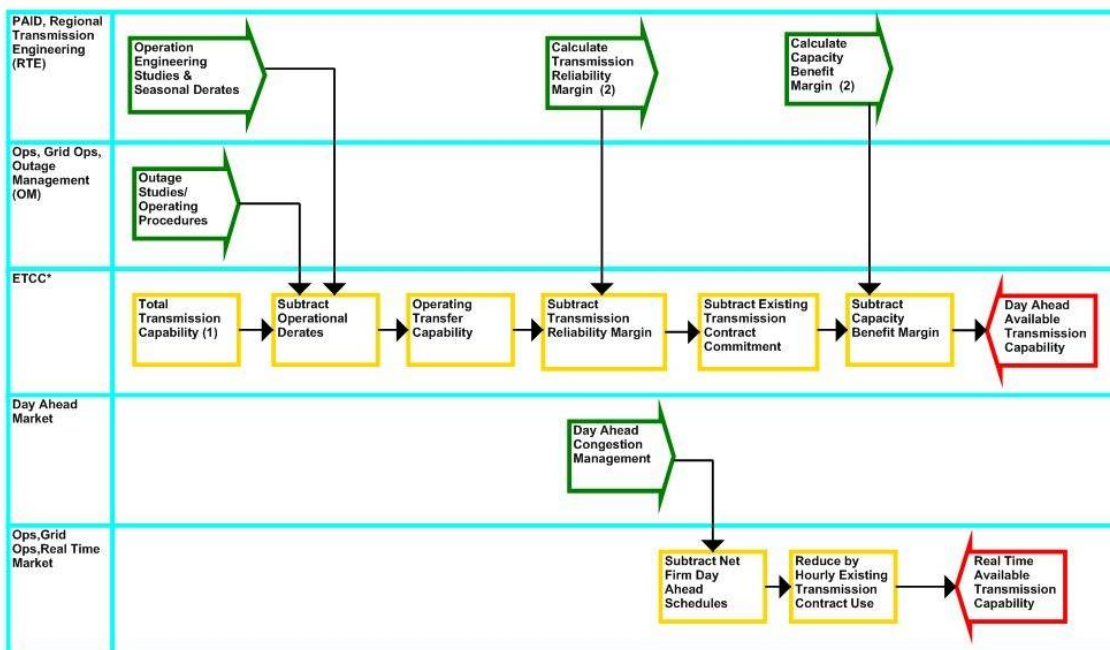
$$\text{ATC} = (\text{TTC} - \text{Operating Constraints}) - (\text{TRM} + \text{ETComm} + \text{CBM})$$

Where:

OTC = TTC – Operating Constraints  
TTC = Total Transfer Capability  
OTC = Operating Transfer Capability  
TRM = Transmission Reliability Margin  
ETComm = Existing Transmission Commitments  
CBM = Capacity Benefit Margin

### L.3 ATC Process Flowchart

#### Available Transmission Capability



\* ETCC - Existing Transmission Contract Calculator

(1) WECC rated path methodology

(2) S-322

### L.4 TTC – OTC Determination

All transfer capabilities are developed to ensure that power flows are within their respective operating limits, both pre-Contingency and post-Contingency. Operating limits are developed based on thermal, voltage and stability concerns according to industry reliability criteria (WECC/NERC) for transmission paths. The process for developing TTC or OTC is the same with the exception of inclusion or exclusion of operating Constraints based on system conditions being studied. Accordingly, further description of the process to determine either OTC or TTC will refer only to TTC.

**L.4.1** Transfer capabilities for studied configurations may be used as a maximum transfer capability for similar conditions without conducting additional studies. Increased transfer capability for similar conditions must be supported by conducting appropriate studies.

**L.4.1.2** At the CAISO, studies for all major inter-area paths (mostly 500 kV) OTC are governed by the California Operating Studies Subcommittee (OSS) as one of four sub-regional study groups of the WECC OTCPC (i.e., for California sub-region), which provides detailed criteria and methodology. For transmission system elements below 500 kV the methodology for calculating these flow limits is detailed in Section L.4.3 and is applicable to the operating horizon.

**L.4.2** Transfer capability may be limited by the physical and electrical characteristics of the systems including any one or more of the following:

- **Thermal Limits** – Thermal limits establish the maximum amount of electric current that a transmission line or electrical facility can conduct over a specified time-period as established by the Transmission Owner.
- **Voltage Limits** – System voltages and changes in voltages must be maintained within the range of acceptable minimum and maximum limits to avoid a widespread collapse of system voltage.
- **Stability Limits** – The transmission network must be capable of surviving disturbances through the transient and dynamic time-periods (from milliseconds to several minutes, respectively) following the disturbance so as to avoid generator instability or uncontrolled, widespread interruption of electric supply to customers.

**L.4.3** **Determination of transfer capability** is based on computer simulations of the operation of the interconnected transmission network under a specific set of assumed operating conditions. Each simulation represents a single “snapshot” of the operation of the interconnected network based on the projections of many factors. As such, they are viewed as reasonable indicators of network performance and may ultimately be used to determine Available Transfer Capability. The study is meant to capture the worst operating scenario based on the RTE experience and good engineering judgment.

**L.4.3.1** **System Limits** – The transfer capability of the transmission network may be limited by the physical and electrical characteristics of the systems including thermal, voltage, and stability consideration. Once the critical Contingencies are identified, their impact on the network must be evaluated to determine the most restrictive of those limitations. Therefore, the  $TTC_1$  becomes:

$TTC_1 = \text{lesser of } \{\text{Thermal Limit, Voltage Limit, Stability Limit}\} \text{ following } N-1_{\text{worst}}$

**L.4.3.2** Parallel path flows will be considered in determining transfer capability and must be sufficient in scope to ensure that limits throughout the interconnected network are addressed. In some cases, the parallel path flows may result in transmission limitations in systems other than the transacting systems, which can limit the TTC between two transacting areas. This will be labeled  $TTC_2$ . Combined with **Section L.4.3.1** above TTC becomes:

$TTC = \text{lesser of } \{TTC_1 \text{ or } TTC_2\}$

## **L.5** **Developing a Power Flow Base-Case**

**L.5.1** **Base-cases** will be selected used to model reality to the greatest extent possible including attributes like area Generation, area Load, Intertie flows, etc. At other times (e.g., studying longer range horizons), it is prudent to stress a base-case by making one or more attributes (Load, Generation, line flows, path flows, etc.) of that base-case more extreme than would otherwise be expected.



**L.5.2. Power Flow Base-Cases Separated By Geographic Region**

The standard RTE base-cases are split into five geographical regions in the CAISO Controlled Grid including the Bay Area, Fresno Area, North Area, SDG&E Area, and SCE Area.

**L.5.3. Power Flow Base-Cases Selection Methodology**

The RTE determines the studied geographical area of the procedure. This determines the study base-cases from the Bay Area, Fresno Area, North Area, SCE Area, or SDG&E Area.

The transfer capability studies may require studying a series of base-cases including both peak and off-peak operation conditions.

**L.5.4 Update a Power Flow Base-Case**

After the RTE has obtained one or more base-case studies, the base-case will be updated to represent the current grid conditions during the applicable season. The following will be considered to update the base-cases:

- Recent transmission network changes and updates
- Overlapping scheduled and Forced Outages
- Area Load level
- Major path flows
- Generation level
- Voltage levels
- Operating requirements

**L.5.4.1 Outage Consideration**

Unless detailed otherwise, the RTE considers modeling Outages of:

- Transmission lines, 500 kV
- Transformers, 500/230 kV
- Large Generating Units
- Generating Units within the studied area
- Transmission elements within the studied area

At the judgment of the RTE, only the necessary Outages will be modeled to avoid an unnecessarily burdensome and large number of base-cases.

**L.5.4.2 Area Load Level**

Base-case Demand levels should be appropriate to the current studied system conditions and customer Demand levels under study and may be representative of peak, off-peak or shoulder, or light Demand conditions. The RTE estimates the area Load levels to be utilized in the peak, partial-peak and/or off-peak base-cases. The RTE will utilize the current CAISO Load forecasting program (e.g., ALFS), ProcessBook (PI) or other competent method to estimate Load level for the studied area. Once the RTE has determined the correct Load levels to be utilized, the RTE may scale the scale the base-case Loads to the area studied, as appropriate.

#### **L.5.4.3      Modify Path Flows**

The scheduled electric power transfers considered representative of the base system conditions under analysis and agreed upon by the parties involved will be used for modeling. As needed, the RTE may estimate select path flows depending on the studied area. In the event that it is not possible to estimate path flows, the RTE will make safe assumptions about the path flows. A safe assumption is more extreme or less extreme (as conservative to the situation) than would otherwise be expected. If path flow forecasting is necessary, if possible the RTE will trend path flows on previous similar days.

#### **L.5.4.4      Generation Level**

Utility and non-utility Generating Units will be updated to keep the swing Generating Unit at a reasonable level. The actual unit-by-unit Dispatch in the studied area is more vital than in the un-studied areas. The RTE will examine past performance of select Generating Units to estimate the Generation levels, focusing on the Generating Units within the studied area. In the judgment of the RTE, large Generating Units outside the studied area will also be considered.

#### **L.5.4.5      Voltage Levels**

Studies will maintain appropriate voltage levels, based on operation procedures for critical buses for the studied base-cases. The RTE will verify that bus voltage for critical busses is within tolerance. If a bus voltage is outside the tolerance band, the RTE will model the use of voltage control devices (e.g., synchronous condensers, shunt capacitors, shunt reactors, series capacitors, generators).

#### **L.6            Contingency Analysis**

The RTE will perform Contingency analysis studies in an effort to determine the limiting conditions, especially for scheduled Outages, including pre- and post-Contingency power flow analysis modeling pre- and post-Contingency conditions and measuring the respective line flows, and bus voltages.

Other studies like reactive margin and stability may be performed as deemed appropriate.

#### **L.6.1            Operating Criteria and Study Standards**

Using standards derived from NERC and WECC Reliability Standards and historical operating experience, the RTE will perform Contingency analysis with the following operating criteria:

##### **Pre-Contingency**

- All pre-Contingency line flows shall be at or below their normal ratings.
- All pre-Contingency bus voltages shall be within a pre-determined operating range.

##### **Post-Contingency**

- All post-Contingency line flows shall be at or below their emergency ratings.
- All post-Contingency bus voltages shall be within a pre-determined operating range.

**The RTE models the following Contingencies:**

- Generating Unit Outages (including combined cycle Generating Unit Outages which are considered single Contingencies).
- Line Outages
- Line Outages combined with one Generating Unit Outage
- Transformer Outages
- Synchronous condenser Outages
- Shunt capacitor or capacitor bank Outages
- Series capacitor Outages
- Static VAR compensator Outages
- Bus Outages – bus Outages can be considered for the following ongoing Outage conditions.
  - For a circuit breaker bypass-and-clear Outage, bus Contingencies shall be taken on both bus segments that the bypassed circuit breaker connects to.
  - For a bus segment Outage, the remaining parallel bus segment shall be considered as a single Contingency.
  - Credible overlapping Contingencies – Overlapping Contingencies typically include transmission lines connected to a common tower or close proximity in the same right-of-way.

**L.6.2 Manual Contingency Analysis**

If manual Contingency analysis is used, the RTE will perform pre-Contingency steady-state power flow analysis and determines if pre-Contingency operating criteria is violated. If pre-Contingency operating criteria cannot be preserved, the RTE records the lines and buses that are not adhering to the criteria. If manual post-Contingency analysis is used the RTE obtains one or more Contingencies in each of the base cases. For each Contingency resulting in a violation or potential violation in the operating criteria above, the RTE records the critical post-Contingency facility loadings and bus voltages.

**L.6.3 Contingency Analysis Utilizing a Contingency Processor**

For a large area, the RTE may utilize a Contingency processor.

**L.6.4 Determination of Crucial Limitations**

After performing Contingency analysis studies, the RTE analyzes the recorded information to determine limitations. The limitations are conditions where the pre-Contingency and/or post-Contingency operating criteria cannot be conserved and may include a manageable overload on the facilities, low post-Contingency bus voltage, etc. If no crucial limitations are determined, the RTE determines if additional studies are necessary.

**L.7 Traditional Planning Methodology to Protect Against Violating Operating Limits**

After performing Contingency analysis studies, the RTE next develops the transfer capability and develops procedures, Nomograms, RMR Generation requirements, or other Constraints to ensure that transfer capabilities respect operating limits.

**L.8 Limits for Contingency Limitations**

Transfer limits are developed when the post-Contingency loading on a transmission element may breach the element's emergency rating. The type of limit utilized is dependent on the application and includes one of the following limits:

- Simple Flow Limit - best utilized when the derived limit is repeatable or where parallel transmission elements feed radial Load.
- RAS or SPS – existing Remedial Action Schemes (RAS) or special protection systems (SPS) may impact the derivation of simple flow limits. When developing the limit, the RTE determines if the RAS or SPS will be in-service during the Outage and factors the interrelationship between the RAS or SPS and the derived flow limit. RTE will update the transfer limits in recognition of the changing status and/or availability of the RAS or SPS.

**CAISO TARIFF APPENDIX M**

**Procedures for Addressing Parallel Flows**

**PROCEDURES FOR ADDRESSING PARALLEL FLOWS**

The North American Electric Reliability Corporation's (NERC) Qualified Path Unscheduled Flow Relief for the Western Electricity Coordinating Council (WECC), Reliability Standard WECC-IRO-STD-006-0 filed by NERC in Docket No. RR07-11-000 on March 26, 2007, and approved by the Commission on June 8, 2007, and any amendments thereto, are hereby incorporated and made part of this Tariff. See [www.nerc.com](http://www.nerc.com) for the current version of the NERC's Qualified Path Unscheduled Flow Relief Procedures for WECC.

**[Eight Sheet Numbers Reserved for Future Filings.]**

**CAISO TARIFF APPENDIX N**

**[NOT USED]**

**[Ten Sheet Numbers Reserved for Future Filings.]**



**CAISO TARIFF APPENDIX O**

**[NOT USED]**

**[Ten Sheet Numbers Reserved for Future Filings.]**

**CAISO TARIFF APPENDIX P**

**CAISO Department of Market Monitoring and Market Surveillance Committee**

## **CAISO TARIFF APPENDIX P**

### **CAISO Department of Market Monitoring and Market Surveillance Committee**

## **1 CAISO DEPARTMENT OF MARKET MONITORING**

### **1.1 Establishment**

There shall be established within the CAISO a Department of Market Monitoring that shall be responsible for the ongoing development, implementation, and execution of the CAISO Market monitoring and information scheme described in this CAISO Tariff and the adherence to its objectives, as set forth in Section 38.

### **1.2 Composition**

The Department of Market Monitoring shall be adequately staffed by the CAISO with full-time CAISO staff with the experience and qualifications necessary to fulfill the functions referred to in this CAISO Tariff. Such qualifications may include professional training pertinent to and experience in the operation of markets analogous to CAISO Markets, in the electric power industry, and in the field of competition and antitrust law, economics and policy. The Department of Market Monitoring shall be under the general management of the CAISO CEO, provided that the CAISO CEO may designate another CAISO officer for day-to-day oversight of the Department.

### **1.3 Accountability and Responsibilities**

#### **1.3.1 Department of Market Monitoring**

The Department of Market Monitoring shall report to and be accountable to the CAISO CEO and his or her designee on all matters pertaining to policy and other matters that may affect the effectiveness and integrity of the monitoring function, including matters pertaining to market monitoring, information development and dissemination and pertaining to generic or entity-specific investigations, corrective actions or enforcement.

#### **1.3.2 CAISO CEO and MSC**

The CAISO CEO and the MSC shall each have the independent authority to refer any of the matters referred to in Section 1.3.1 of this Appendix to the CAISO Governing Board for approval of recommended actions.

### **1.3.3 CAISO Chief Executive Officer (CAISO CEO)**

**1.3.3.1** The Department of Market Monitoring shall report to and be accountable to the CAISO CEO and his or her designee on all matters relating to administration of the Department and the internal resources and organization of the CAISO in accordance with Appendix P, Section 1.3.3.2.

**1.3.3.2** The CAISO, through the CAISO CEO and Governing Board, shall determine that the Department of Market Monitoring has adequate resources and full access to data and the full cooperation of all parts of the CAISO organization in developing the database necessary for the effective functioning of the Department of Market Monitoring and the fulfillment of its monitoring function.

### **1.3.4 Regulatory and Antitrust Enforcement Agencies**

Where considered necessary and appropriate, or where so ordered by the regulatory or antitrust agency with jurisdiction over the matter in question, or by a court of competent jurisdiction, the CAISO shall refer a matter to the regulatory or antitrust enforcement agency concerned, e.g., in cases of serious abuse requiring expeditious investigation or action by the agency. In all such cases of direct referral, the CAISO CEO shall promptly inform the CAISO Governing Board and the MSC of the fact of and the content of the referral.

### **1.3.5 Complaints**

Any Market Participant, or any other interested entity, may at any time submit information to or make a complaint to the Department of Market Monitoring concerning any matter that it believes may be relevant to the Department of Market Monitoring's monitoring responsibilities. Such submissions or complaints may be made on a confidential basis in which case the Department of Market Monitoring shall preserve the confidentiality thereof. The Department of Market Monitoring, at its discretion, may request further information from such entity and carry out any investigation that it considers appropriate as to the concern raised. The Department of Market Monitoring shall periodically make reports to the CAISO CEO and CAISO Governing Board on complaints received.

**CAISO TARIFF APPENDIX P1**  
**CAISO Department of Market Monitoring**

**P1.1 CAISO Department of Market Monitoring**

**P1.1.1 Information Gathering and Market Monitoring Indices for Evaluation**

**P1.1.1.1 Information System**

The Department of Market Monitoring shall be responsible for developing an information system and criteria for evaluation that will permit it to effectively monitor the CAISO Markets to identify and investigate abuses of that market, whether caused by exercises of market power or by other actions or inactions.

**P1.1.1.2 Data Categories**

To develop the information system set forth in Section P1.1.1.1, the Department of Market Monitoring shall initially develop, and shall refine on the basis of experience, a detailed catalog of all the categories of data it will have the means of acquiring, and the procedures it will use (including procedures for protecting confidential data) to handle such data.

**P1.1.1.3 Catalog of Market Monitoring Indices**

The Department of Market Monitoring shall initially develop, and shall refine on the basis of experience, a catalog of the CAISO Market monitoring indices that it will use to evaluate the data so collected.

**P1.1.2 Evaluation of Information**

**P1.1.2.1 Ongoing Evaluation**

The Department of Market Monitoring shall evaluate and reevaluate on an ongoing basis the data categories and market monitoring indices that it has developed under Appendix P1, Sections P1.1.1.2 and P1.1.1.3, and the information it collects and receives from various other sources, including and in particular the CAISO's operation of the CAISO Markets. Such ongoing evaluations shall provide the basis for its reporting and publication responsibilities as set forth in this CAISO Tariff, for recommendations on proposed changes to the CAISO Tariff and CAISO Business Practice Manuals and other potential rules affecting the CAISO Markets, and for the development of criteria or standards for the initiation of proposed corrective or enforcement actions. In evaluating such information, the Department of Market Monitoring may consult the MSC or such external bodies as may be appropriate.

### **P1.1.2.2 Submission of Evaluation Results**

The final results of the Department of Market Monitoring's ongoing evaluations under Appendix P1, Section P1.1.2.1 shall routinely and promptly be submitted to the CAISO CEO and to the MSC for comment.

### **P1.1.3 Review of Rules of Conduct**

The Department of Market Monitoring shall review Rules of Conduct for their effectiveness and consistency with its market monitoring activities and standards. The Department of Market Monitoring may at that time, and from time to time thereafter based on its experience in monitoring the CAISO Markets, propose to the CAISO CEO and/or the CAISO Governing Board that changes be made in such Rules of Conduct.

### **P1.1.4 Reports and Recommendations**

#### **P1.1.4.1 CAISO CEO and Governing Board**

On the basis of the evaluation conducted under Appendix P1, Section P1.1.2 or the review conducted under Section P1.1.3, the Department of Market Monitoring shall prepare periodic reports, as required by the CAISO CEO, and specific ad hoc reports as appropriate, for the CAISO CEO and CAISO Governing Board on the state of competition in or the efficiency of the CAISO Markets; and on its monitoring activities, the results of its evaluation and review activities, and its development and implementation of recommendations. Where appropriate, the CAISO Department of Market Monitoring may recommend to the CAISO CEO and/or the CAISO Governing Board actions to be taken, including the amendment of the CAISO Tariff and CAISO Business Practice Manuals and corrective or enforcement action against specific entities. Such reports shall be made not less frequently than quarterly in the case of the CAISO CEO and annually in the case of the CAISO Governing Board and shall contain such information and be in such form as specified by such entities. Such reports shall be made public and publicized as specified by such entities except to the extent that they contain confidential or commercially sensitive information or to the extent such entities determine that effective enforcement of the monitoring function dictates otherwise.

#### **P1.1.4.2 Regulatory Agencies**

As required in the CAISO Tariff or by the CAISO CEO and CAISO Governing Board, or as required by the regulatory agency with jurisdiction over the matters in question, the Department of Market Monitoring shall prepare reports to the FERC and other regulatory agencies, which shall be reviewed and approved by the CAISO CEO or his or her designee and then submitted as required. When publicly available reports are made to one regulatory agency with competent jurisdiction, such as the FERC, the Department of Market Monitoring may simultaneously make such reports available to other regulatory agencies with legitimate interests in their contents, such as the Electricity Oversight Board, the California Public Utilities Commission, the California Energy Commission and/or the California Attorney General.

**P1.1.4.3 CAISO Market Surveillance Committee**

All reports and recommendations to be made to regulatory agencies under Appendix P1, Section P1.1.4.2, unless urgency requires otherwise, shall first be submitted to the MSC for comments, which comments shall be reflected in any submittal to the CAISO Governing Board seeking approval of any such reports or recommendations. All final reports made to external regulatory agencies shall be simultaneously submitted to the MSC.

**P1.1.5 Market Participants**

**P1.1.5.1 Collection of Data**

The Department of Market Monitoring may request that Market Participants or other entities whose activities may affect the operation of the CAISO Markets submit any information or data determined by the Department of Market Monitoring to be potentially relevant. This data will be subject to due safeguards to protect confidential and commercially sensitive data. Failures by Market Participants to provide such data shall be treated under Section 37. In the event of failures by other entities to provide such data, the CAISO may take whatever action is available to it and appropriate for it to take, including reporting the failure to the pertinent regulatory agency, after providing such entity the opportunity to respond in writing as to the reason for the alleged failure and may include possible exclusion from the CAISO Markets or termination of any relevant CAISO agreements or certifications. Before any such action is taken, the CAISO Market Participant shall be provided the opportunity to respond in writing as to the reason for the alleged failure.

**P1.1.5.2 Dissemination of Data**

Any Market Participant may request that the CAISO provide data that the CAISO has collected concerning that Market Participant; and, such data may, subject to constraints on the CAISO's resources and at the CAISO's sole discretion, be provided by the CAISO subject to due safeguards to protect confidential and commercially sensitive data. Where such activity imposes a significant burden or expense on the CAISO, the data may be provided on the condition that a reasonable contribution to the cost incurred by the CAISO is made to the CAISO by the requesting party.

**P1.1.6 External Consulting Assistance and Expert Advice**

In carrying out any of its responsibilities under this CAISO Tariff, including the development of an information system, market monitoring indices and evaluation criteria, and the catalogs associated therewith, and in its analysis and ongoing evaluation of these catalogs and of the Rules of Conduct, the Department of Market Monitoring may hire consulting assistance subject to the budgetary approval of the CAISO CEO and may seek such expert external advice as it believes necessary.

**P1.1.7            Liability for Damages**

As provided in Section 14 of the CAISO Tariff, the Department of Market Monitoring, the MSC, the CAISO CEO and other CAISO staff, and the CAISO Governing Board shall not be liable to any Market Participant under any circumstances whatsoever for any matter described in those sections, including but not limited to any financial loss or loss of economic advantage resulting from the performance or non-performance by such CAISO entities of their functions under this CAISO Tariff.



**CAISO TARIFF APPENDIX P2**  
**Market Surveillance Committee**

**P2.2            Market Surveillance Committee**

**P2.2.1        Establishment**

There shall be established a Market Surveillance Committee (MSC), whose role it shall be to provide independent external expertise on the CAISO market monitoring process and, in particular, to provide independent expert advice and recommendations to the CAISO CEO and Governing Board. Members of the Committee shall not be, and shall not be understood to be, employees or agents of the CAISO.

**P2.2.2        Composition**

**P2.2.2.1      Qualifications**

The MSC shall comprise a body of three or more independent and recognized experts whose combined professional expertise and experience shall encompass the following:

- (a)      economics, with emphasis on antitrust, competition, and market power issues in the electricity industry;
- (b)      experience in operational aspects of Generation and transmission in electricity markets;
- (c)      experience in antitrust or competition law in regulated industries; and
- (d)      financial expertise relevant to energy or other commodity trading.

**P2.2.2.2      Criteria for Independence**

Each member of the MSC must meet the following criteria for independence:

**P2.2.2.2.1**      no material affiliation, through employment, consulting or otherwise, with any Market Participant or Affiliate thereof consistent with the pertinent FERC Standards of Conduct; and

**P2.2.2.2** no material financial interest in any Market Participant or Affiliate thereof consistent with the pertinent FERC Standards of Conduct.

**P2.2.2.3** during their time on the Committee, members may not provide paid expert witness testimony or other commercial services to the CAISO or to any other party in connection with any legal or regulatory proceeding relating to the CAISO or any trade or other transaction involving the CAISO Markets (except that the Committee may consult with and make recommendations concerning the functioning of the markets to CAISO management or the CAISO Governing Board in connection with legal or regulatory proceedings).

### **P2.2.3 Appointments to the MSC**

For each position on the MSC, the CAISO CEO shall conduct a thorough search and requisite due diligence to develop a nomination to the CAISO Governing Board, which nomination shall be consistent with meeting the combined professional expertise and experience of the MSC set forth in Appendix P2, Section P2.2.2.1 and with the criteria for independence set forth in Appendix P2, Section P2.2.2.2. The CAISO Governing Board shall expeditiously consider such nominations. If the nomination is approved, the CAISO CEO shall appoint the candidate so nominated to the MSC. If the nomination is rejected, the CAISO CEO shall expeditiously proceed to develop another nomination.

### **P2.2.4 Compensation and Reimbursements**

Members of the MSC shall be compensated on such basis as the CAISO Governing Board shall from time to time determine.

Members of the MSC shall receive prompt reimbursement for all expenses reasonably incurred in the execution of their responsibilities under this Appendix P2, Section P2.2.

### **P2.2.5 Liability for Damages**

As provided in Section 14 of the CAISO Tariff, the Department of Market Monitoring, the MSC, the CAISO CEO and other CAISO staff, and the CAISO Governing Board shall not be liable to any Market Participant under any circumstances whatsoever for any matter described in those sections, including but not limited to any financial loss or loss of economic advantage resulting from the performance or non-performance by such CAISO entities of their functions under this CAISO Tariff.

### **P2.2.6 SPECIFIC FUNCTIONS OF MARKET SURVEILLANCE COMMITTEE (MSC)**

#### **P2.2.6.1 Information Gathering and Evaluation Criteria**

The MSC shall review the initial catalogs of information and data and of evaluation criteria developed by the Department of Market Monitoring pursuant to Appendix P1, Section P1.1 and shall propose such changes, additions or deletions to such catalogs or items therein as it sees fit. In so doing, the MSC shall have full discretion to specify database items or evaluation criteria for inclusion in the pertinent catalog.

**P2.2.6.2 Evaluation of Information**

The MSC may, upon request of the Department of Market Monitoring, the CAISO management or the CAISO Governing Board, or on its own volition, evaluate such information or data, including as may be collected by the Department of Market Monitoring on the basis of the evaluation criteria developed by the Department of Market Monitoring or on such further articulated evaluation criteria developed by the MSC.

**P2.2.6.3 Reports and Recommendations**

**P2.2.6.3.1 Required Reports**

All evaluations carried out by the MSC pursuant to Appendix P2, Section P2.2.6.2, and any recommendations emanating from such evaluations, shall be embodied by the MSC in written reports to the CAISO CEO and CAISO Governing Board and shall be made publicly available subject to due restrictions on dissemination of confidential or commercially sensitive information. The MSC may submit any MSC report to FERC, subject to due restrictions on dissemination of confidential or commercially sensitive information.

**P2.2.6.3.2 Additional Reports**

The MSC may make such additional reports and recommendations as it sees fit relating to the monitoring program referred to in this CAISO Tariff, the analysis of information, the evaluation criteria or any corrective or enforcement actions proposed by the Department of Market Monitoring or proposed of its own volition.

**P2.2.6.4 Publication of Reports and Recommendations**

Upon request of the MSC, the CAISO shall publish reports and recommendations of the MSC or incorporate them, if consistent, into the CAISO's own reports or recommendations.

**P2.2.7 IMPLEMENTATION OF RECOMMENDATIONS**

**P2.2.7.1 Plan and Rules of Conduct Changes**

Following a recommendation of the MSC, the CAISO Governing Board may make such changes as it believes are appropriate to the CAISO Tariff, any CAISO Business Practice Manual or Agreement, or any Rules of Conduct applicable in accordance with Section 22.11 of this CAISO Tariff. .

**P2.2.7.2 Tariff Changes**

Upon recommendation of the MSC, the CAISO Governing Board shall consider and may adopt proposed CAISO Tariff changes in accordance with Section 22.11 of this CAISO Tariff.

**P2.2.7.3 Sanctions and Penalties**

Upon recommendation of the MSC, the CAISO may impose such sanctions or penalties as it believes necessary and as are permitted under the CAISO Tariff and related protocols approved by FERC; Section 37.9 or it may make any such referral to such regulatory or antitrust agency as it sees fit to recommend the imposition of sanctions and penalties.

**P2.2.8 PUBLICATION OF INFORMATION**

**P2.2.8.1 Market Monitoring Data and Indices**

The CAISO Department of Market Monitoring shall, pursuant to Appendix P1, Section P1.1.1, develop a catalog of data and indices. Upon approval of the CAISO CEO, such catalogs shall be duly published on the CAISO Website and disseminated to all Market Participants.

**P2.2.8.2 Reports to Regulators**

The CAISO shall develop annual reports of market performance for delivery to FERC, and such other reports as may be required by FERC, which shall be submitted for review to the MSC. The Department of Market Monitoring shall prepare and submit such reports to the CAISO CEO, CAISO Governing Board and to the regulatory agency concerned.

**CAISO TARIFF APPENDIX Q**  
**Eligible Intermittent Resources Protocol (EIRP)**

## **APPENDIX Q**

### **Eligible Intermittent Resources Protocol (EIRP)**

#### **1 SCOPE**

##### **1.1 Scope of Application to Parties**

This EIRP applies to the CAISO and to:

- (a) Scheduling Coordinators (SCs);
- (b) Eligible Intermittent Resources; and
- (c) Participating Intermittent Resources.

##### **1.2 Liability of the CAISO**

Any liability of the CAISO arising out of or in relation to this EIRP shall be subject to Section 14 of the CAISO Tariff as if references to the CAISO Tariff were references to this EIRP.

#### **2 PARTICIPATING INTERMITTENT RESOURCE CERTIFICATION**

##### **2.1 No Mandatory Participation**

Eligible Intermittent Resources may elect to be scheduled and settled as the CAISO Tariff provides for Generating Units, and are not required to seek certification as Participating Intermittent Resources.

##### **2.2 Minimum Certification Requirements**

Those Eligible Intermittent Resources that intend to become Participating Intermittent Resources must meet the following requirements.

###### **2.2.1 Agreements**

The following agreements must be executed:

- (a) A Participating Generator Agreement that, among other things, binds the Participating Intermittent Resource to comply with the CAISO Tariff;

- (b) A Meter Service Agreement for CAISO Metered Entities; and
- (c) A letter of intent to become a Participating Intermittent Resource, which when executed and delivered to the CAISO shall initiate the process of certifying the Participating Intermittent Resource. The form of the letter of intent shall be specified by the CAISO and published on the CAISO Website.

### **2.2.2 Composition**

The CAISO shall develop criteria to determine whether one or more Eligible Intermittent Resources may be included within a Participating Intermittent Resource. Such criteria shall include:

- (a) A Participating Intermittent Resource must be at least 1 MW rated capacity.
- (b) A Participating Intermittent Resource may include one or more Eligible Intermittent Resources that have similar response to weather conditions or other variables relevant to forecasting Energy, as determined by the CAISO.
- (c) Each Participating Intermittent Resource shall be electrically connected at a single point on the CAISO Controlled Grid, except as otherwise permitted by the CAISO on a case-by-case basis as may be allowed under the CAISO Tariff.
- (d) The same Scheduling Coordinator must schedule all Eligible Intermittent Resources aggregated into a single Participating Intermittent Resource.

### **2.2.3 Equipment Installation**

A Participating Intermittent Resource must install and maintain the communication equipment required pursuant to [Section 3 of this EIRP](#), and the equipment supporting forecast data required pursuant to [Section 6 of this EIRP](#).

### **2.2.4 Forecast Model Validation**

The CAISO must determine that sufficient historic and real-time telemetered data are available to support an accurate and unbiased forecast of Energy generation by the Participating Intermittent Resource, according to the forecasting process validation criteria described in [Section 4 of this EIRP](#).

### **2.2.5 Information Requirements For Participating Intermittent Resource Export Fee**

In order for the CAISO to administer, implement and calculate the Participating Intermittent Resource Export Fee, each Participating Intermittent Resource jointly with, and through, its Scheduling Coordinator must provide the CAISO with the following information and documents under the schedule and conditions set forth in this section.

The CAISO will maintain the confidentiality of all information and documents received under this section in accordance with CAISO Tariff Section 20 et seq.

- (a) A certification, in the form posted on the CAISO Website, signed by an officer of the Participating Intermittent Resource and its Scheduling Coordinator, identifying (1) the PIR Export Percentage under Section 5.3.2 of this EIRP, if any, and basis thereof, and (2) each contract to sell Energy or capacity from the Participating Intermittent Resource, including for each such contract, the counterparty, start and end dates, delivery point(s), quantity in MW, other temporal terms, i.e., seasonal or hourly limitations.

The certification must be updated by resubmission to the CAISO (1) upon a request to modify the composition of the Participating Intermittent Resource under Section 2.4.2 of this EIRP; or (2) within ten (10) calendar days of final execution of a new contract or any change in counterparty, start and end dates, delivery point(s), quantity in MW, or other temporal terms, as described above, for any prior certified contract. All other contractual changes will not trigger the obligation for recertification;

- (b) Copies of all contracts, including changes, identified in the above-referenced certification; however, price information may be redacted from the contracts provided.

Each Participating Intermittent Resource, as of November 1, 2006, must initially provide the information requested by this Section 2.2.5 in accordance with a Market Notice provided by the CAISO to Participating Intermittent Resources. All other Eligible Intermittent Resources must satisfy this Section 2.2.5 in order to become a Participating Intermittent Resource after November 1, 2006.

## **2.3 Notice of Certification**

When all requirements described in Section 2.2 of this EIRP have been fulfilled, the CAISO shall notify the Scheduling Coordinator and the representatives of the Eligible Intermittent Resources comprising the Participating Intermittent Resource that the Participating Intermittent Resource has been certified, and is eligible for the settlement terms provided under Section 11.12 of the CAISO Tariff, as conditioned by the terms of this EIRP.

## **2.4 Requirements After Certification**

### **2.4.1 Forecast Fee**

Beginning on the date first certified, a Participating Intermittent Resource must pay the Forecast Fee for all metered Energy generated by the Participating Intermittent Resource over the duration of the commitment indicated in the letter of intent described in Section 2.2.1(c) of this EIRP.



The amount of the Forecast Fee shall be determined so as to recover the projected annual costs related to developing Energy forecasting systems, generating forecasts, validating forecasts, and monitoring forecast performance, that are incurred by the CAISO as a direct result of participation by Participating Intermittent Resources in CAISO Markets, divided by the projected annual Energy production by all Participating Intermittent Resources.

The initial rate for the Forecast Fee, and all subsequent rate changes as may be necessary from time to time to recover costs incurred by the CAISO for the forecasting conducted on the behalf of Participating Intermittent Resources, shall be posted on the CAISO Website. In no event shall the level of the Forecast Fee exceed the amount specified in CAISO Tariff Appendix F, Schedule 4.

#### **2.4.2 Modification of Participating Intermittent Resource Composition**

A Participating Intermittent Resource may seek to modify the composition of the Participating Intermittent Resource (e.g., by adding or eliminating an Eligible Intermittent Resource from the Participating Intermittent Resource). Such changes shall not be implemented without prior compliance with the written approval by the CAISO. The CAISO will apply consistent criteria and expeditiously review any proposed changes in the composition of a Participating Intermittent Resource.

#### **2.4.3 Changes in Scheduling Coordinator**

This EIRP does not impose any additional requirement for CAISO approval to change the Scheduling Coordinator for an approved Participating Intermittent Resource than would otherwise apply under the CAISO Tariff to changes in the Scheduling Coordinator representing a Generating Unit.

#### **2.4.4 Continuing Obligation**

A Participating Intermittent Resource must meet all obligations established for Participating Intermittent Resources under the CAISO Tariff and this EIRP, and must fully cooperate in providing all data, other information, and authorizations the CAISO reasonably requests to fulfill its obligation to validate forecast models, explain deviations, and implement the Participating Intermittent Resource Export Fees.

#### **2.4.5 Failure to Perform**

If the CAISO determines that a material deficiency has arisen in the Participating Intermittent Resource's fulfillment of its obligations under the CAISO Tariff and this EIRP, and such Participating Intermittent Resource fails to promptly correct such deficiencies when notified by the CAISO, then the eligibility of the Participating Intermittent Resource for the settlement accommodations provided in Section 11.12 of the CAISO Tariff shall be suspended until such time that the unavailable data is provided or other material deficiency is corrected to the CAISO's reasonable satisfaction. Such suspension shall

not relieve the Scheduling Coordinator for the deficient Participating Intermittent Resource from paying the Forecast Fee over the duration of the period covered by the letter of intent described in **Section 2.2.1(c) of this EIRP**.

### **3 COMMUNICATIONS**

#### **3.1 Forecast Data**

The CAISO may require various data relevant to forecasting Energy from the Participating Intermittent Resource to be telemetered to the **CAISO**, including appropriate operational data, meteorological data or other data reasonably necessary to forecast Energy.

#### **3.2 Standards**

The standards for communications shall be the monitoring and communications requirements for Generating Units providing only Energy; as such standards may be amended from time to time, and published on the CAISO Website.

#### **3.3 Cost Responsibility**

An applicant for certification as a Participating Intermittent Resource is responsible for expenses associated with engineering, installation, operation and maintenance of required communication equipment.

### **4 FORECASTING**

The CAISO is responsible for overseeing the development of tools or services to forecast Energy for Participating Intermittent Resources. The CAISO will use its best efforts to develop accurate and unbiased forecasts, as limited by the availability of relevant explanatory data. Objective criteria and thresholds for unbiased, accurate forecasts shall be published on the CAISO Website, and shall be used to certify Participating Intermittent Resources in accordance with **Section 2.2.4 of this EIRP**.

#### **4.1 Hour-Ahead Forecast**

The CAISO shall develop expert, independent hourly forecasts of Energy generation on each Participating Intermittent Resource. A forecast shall be published each hour on the half hour for each of the next seven operating hours. Other forecasts, including a Day-Ahead forecast, may be developed at the CAISO's discretion. The Scheduling Coordinator representing the Participating Intermittent Resource must use the **hour-ahead** forecast that is available 30 minutes prior to the deadline for submitting the **HASP/RTM** Bids. The CAISO shall use best efforts to provide reliable and timely

forecasts. However, if the CAISO fails to deliver the hour-ahead forecast to the Scheduling Coordinator prior to 15 minutes before the deadline for submitting HASP/RTM Bids, then the hour-ahead forecast shall be the most recent Energy forecast provided by the CAISO to the Scheduling Coordinator for the operating hour for which Bids are next due.

#### **4.2 Forecast Calibration**

The CAISO shall calibrate the forecast to eliminate bias as measured by net MWh deviations across any and all relevant time periods to minimize the expected cumulative net charges or payments that are recovered or allocated through Section 11.12 of the CAISO Tariff.

#### **4.3 Confidentiality**

The CAISO shall maintain the confidentiality of proprietary data for each Participating Intermittent Resource in accordance with Section 20 of the CAISO Tariff.

### **5 SCHEDULING AND SETTLEMENT**

#### **5.1 Schedules**

Scheduling Coordinators shall be required to submit HASP/RTM Bids(MWh) for the Generating Units that comprise each Participating Intermittent Resource that are identical, in the aggregate, to the hour-ahead forecast published for that Participating Intermittent Resource (MWh).

#### **5.2 Settlement**

After a Participating Intermittent Resource is certified, Settlement shall be determined for each Settlement Period based on consistency of Bids submitted on behalf of such Participating Intermittent Resources with the rules specified in the CAISO Tariff and this EIRP.

#### **5.3 Participating Intermittent Resource Export Fee**

##### **5.3.1 Exemptions**

After November 1, 2006, Participating Intermittent Resources shall be subject to the Participating Intermittent Resource Export Fee, as set forth in Schedule 4 of Appendix F, for Energy generated, except to the extent the Participating Intermittent Resource is exempt under one or more of the following conditions:

- (a) The owner of a Participating Intermittent Resource, as of November 1, 2006, utilizes the Energy generated from the Participating Intermittent Resource to meet its own Native Load outside the CAISO Balancing Authority Area. Should any Participating Intermittent Resource subject to this exemption increase its PMax set forth in the CAISO's Master File by modification under Section 2.4.2 of this EIRP, the exemption will not apply to the added capacity unless exempt under another subsection of this Section 5.3.1.

If the Participating Intermittent Resource subject to this exemption changes ownership, the Participating Intermittent Resource Export Fee will apply, except where the prior exempt owner demonstrates that the entire output of the Participating Intermittent Resource continues to be delivered to the exempt owner under a power purchase agreement for the purpose of serving the prior exempt owner's Native Load. The exemption will then continue only for the period of the power purchase agreement as provided in accordance with Section 2.2.5 of this EIRP and cannot exceed the MW quantity originally exempted.

- (b) A Participating Intermittent Resource demonstrates in its certification under Section 2.2.5(a) of this EIRP an export contract with a starting term prior to November 1, 2006. An export contract is any power purchase agreement to sell Energy to any entity other than a Load Serving Entity with an obligation under law or franchise to serve Demand within the CAISO Balancing Authority Area.

The exemption will apply to any extension of the current export contract through an evergreen or other existing extension provision. The exemption terminates upon termination of the export contract. Should any Participating Intermittent Resource subject to this exemption increase its PMax set forth in the CAISO's Master File by modification under Section 2.4.2 of this EIRP, the exemption will apply only to Energy generated up to the contract quantity, unless the Participating Intermittent Resource demonstrates a basis for exemption under subsection (c) for the expanded capacity.

- (c) A Participating Intermittent Resource demonstrates in its certification under Section 2.2.5(a) of this EIRP a contract to sell Energy to a Load Serving Entity with Native Load within the CAISO Balancing Authority Area. Energy service providers with contractual obligations with customers within the CAISO Balancing Authority Area would be deemed a Load Serving Entity with an obligation to serve Native Load within the CAISO Balancing Authority Area.

The exemption will apply to any extension of the current contract through an evergreen or other existing extension provision. The exemption terminates upon termination of the contract. Should any Participating Intermittent Resource subject to this exemption increase its PMax set forth in the CAISO's Master File by modification under Section 2.4.2 of this EIRP, the exemption will continue to apply only to Energy generated up to the contract quantity unless the Participating Intermittent Resource demonstrates a basis for exemption under this subsection (c) for the expanded capacity.

### **5.3.2 Participating Intermittent Resource Export Percentage**

Based on the information required in Section 2.2.5 of this EIRP and application of the exemptions to the Participating Intermittent Resource Export Fee in Section 5.3.1 of this EIRP, the CAISO will determine a PIR Export Percentage for each Participating Intermittent Resource that will be calculated as the ratio of the Participating Intermittent Resource's PMax in the CAISO Master File minus the MW, subject to an exemption under Section 5.3.1 of this EIRP on a MW basis to the Participating Intermittent Resource's PMax in the CAISO Master File. For example, a Participating Intermittent Resource with a PMax of 100 MW and a contract with a CAISO Balancing Authority Area Load Serving Entity for 40 MW would have a PIR Export Percentage of  $(100-60)/100 = 60\%$ . A Participating Intermittent Resource with a PIR Export Percentage greater than zero (0) will be deemed an Exporting Participant Intermittent Resource. The CAISO will notify the Participating Intermittent Resource and its Scheduling Coordinator of the facility's PIR Export Percentage. Any dispute regarding the CAISO's determination of the PIR Export Percentage shall be subject to the dispute resolution procedures under Section 13 of the CAISO Tariff.

### **5.3.3 Quarterly Application of Participating Intermittent Resource Export Fee**

Each quarter the CAISO will charge Exporting Participating Intermittent Resources the Participating Intermittent Resource Export Fee, as set forth in Schedule 4 of Appendix F.

### **5.3.4 Allocation of Credit for Participating Intermittent Resource Export Fees Received**

Payments received by the CAISO from application of the Participating Intermittent Export Fee in accordance with this Section 5.3 shall be allocated as a credit on a quarterly basis to Scheduling Coordinators with Net Negative Uninstructed Deviations in proportion to the to the amount of Net Negative Uninstructed Deviations that each Scheduling Coordinator was assessed for Participating Intermittent Resources Settlement charges for the applicable CAISO Charge Code during the prior quarter.

### **5.3.5 Recording of Exemptions and Notice of Termination**

The CAISO will record any exemption period ending date, if applicable, for each Participating Intermittent Resource. At the conclusion of the exemption period, the CAISO will notify the Scheduling Coordinator for the Participating Intermittent Resource that the facility is no longer exempt from the Participating Intermittent Resource Export Fee.

### **5.3.6 Annual Confirmation**

On December 31 of each calendar year, each Participating Intermittent Resource shall confirm in the form posted on the CAISO Website, signed by an officer of the Participating Intermittent Resource, that the operations of the Participating Intermittent Resource are consistent with any certification(s) provided to the CAISO under Section 2.2.5 of this EIRP.

### **5.3.7 Audit Rights**

In addition to the rights set forth in CAISO Tariff Section 4.6.9, the CAISO shall have the right to contact any counterparty to a contract relied upon under Section 5.3.1 of this EIRP for purposes of determining compliance with this EIRP.

## **6 DATA COLLECTION FACILITIES**

The Participating Intermittent Resource must install and maintain equipment to collect, record and transmit data that the CAISO reasonably determines is necessary to develop and support a forecast model that meets the requirements of Section 4 of this EIRP.

### **6.1 Wind Resources**

A Participating Intermittent Resource powered by wind must install at least one meteorological tower at a project location that is representative of the microclimate within the project boundary.

The meteorological tower must rely on equipment typically used in the wind industry to continuously monitor weather conditions at a wind resource site. Data collected shall be consistent with requirements published on the CAISO Website. Such data must be gathered and telemetered to the CAISO in accordance with Section 3 of this EIRP.

If objective standards developed by the CAISO indicate that the meteorological data may not be sufficiently representative of conditions affecting Energy output or changes in Energy output by that Participating Intermittent Resource, then the CAISO may require that additional meteorological equipment be temporarily installed at another location within the project boundary. The cost of such equipment, which may be temporarily installed by the Participating Intermittent Resource or the CAISO, shall be the responsibility of the Participating Intermittent Resource.

If objective standards indicate that the data collected from such a temporary site contribute significantly to the development of an accurate and unbiased forecast, then the Participating Intermittent Resource shall be responsible for installing and arranging for the telemetry of data from an additional permanent meteorological tower at such site, and for the reasonable cost, if any, that the CAISO may have incurred to install and remove the temporary equipment. Relocation of the original meteorological tower to the new site will be allowed if the CAISO determines that a sufficiently accurate and unbiased forecast can be generated from a single relocated meteorological tower.

### **6.2 Other Eligible Intermittent Resources**

Eligible Intermittent Resources other than wind projects that wish to become Participating Intermittent Resources will be required to provide data of comparable relevance to estimating Energy generation. Standards will be developed as such projects are identified and will be posted on the CAISO Website.

## **7 PROGRAM MONITORING**

The CAISO shall monitor the operation of these rules, and will in particular seek to eliminate any gaming opportunities provided by the flexibility provided Participating Intermittent Resources to self-select participation on an hourly basis.

Participating Intermittent Resources are expected to bid, schedule, and otherwise perform in good faith, and not seek to act strategically in a manner that causes financial gain through systematic behavior, where such gain results solely from the settlement accommodations provided under CAISO Tariff Section 11.12.

If requirements specified in this technical standard are not met, then Participating Intermittent Resource certification may be revoked pursuant to Section 2.4.5 of this EIRP. Any patterns of strategic behavior by Participating Intermittent Resources will be tracked, and the statistical significance of such deviations will be used by the CAISO to evaluate whether changes in the rules defined in this EIRP are appropriate.

The CAISO will monitor the impact of rules for Participating Intermittent Resources on Imbalance Energy and Regulation costs to the CAISO.

## **8 AMENDMENTS**

If the CAISO determines a need for an amendment to this EIRP, the CAISO will follow the requirements as set forth in Section 15 of the CAISO Tariff.

**CAISO TARIFF APPENDIX R**  
**UDP Aggregation Protocol**



## CAISO TARIFF APPENDIX R

### UDP Aggregation Protocol

#### 1 SCOPE

There are two types of UDP Aggregation classifications:

- (1) Basic UDP Aggregations: composed of Generating Units connected at the same substation and stepping up to the same voltage level bus bar, or
- (2) Custom UDP Aggregations: composed of Generating Units connected at different substations and/or different voltage levels, particularly where the Generating Units to be aggregated are separated by CAISO Controlled Grid facilities. Examples of a proposed custom UDP Aggregation include hydroelectric units operating on a common watershed (but having multiple different interconnection points), or geothermal units fed from a common geothermal steam supply.

#### 2 SUBMITTAL OF A REQUEST FOR UDP AGGREGATION

Requests for UDP Aggregation are submitted to the CAISO and must include the following documentation:

- (1) A completed UDP Aggregation request form, which is available for downloading on the CAISO Website;
- (2) A simplified electrical one-line diagram, which illustrates each resource, the connection of the resources to each other and to the CAISO **Balancing Authority** Area;
- (3) For custom UDP Aggregations, a detailed description that explains physical operating interrelationships between the units, or, if there are no interrelationships, how the units are compatible and why an aggregation of these units for the purpose of calculating Uninstructed Deviation Penalties is reasonable.

#### 3 CAISO REVIEW OF A UDP AGGREGATION REQUEST

Upon receipt of a completed request form and accompanying attachments, the CAISO shall review the request according to the criteria outlined herein. For basic UDP Aggregations, the CAISO shall review and approve or reject it within one week of receipt. The CAISO shall review and approve or reject a request for a custom UDP Aggregation within thirty (30) days of receipt.

### **3.1 Criteria for Reviewing a Request**

#### **3.1.1 Scheduling Coordinator and Interconnection Point**

Uninstructed Deviations may be aggregated for resources that are:

- (1) Represented by the same Scheduling Coordinator and
- (2) Connected to the same CAISO Controlled Grid bus and voltage level. The CAISO will consider, on a case-by-case basis, requests to aggregate Uninstructed Deviations among resources represented by the same Scheduling Coordinator but not sharing a common CAISO Controlled Grid bus and voltage level based on a CAISO review of impact on the CAISO Controlled Grid. In particular, the CAISO will consider whether the request concerns resources related by a common flow of fuel which cannot be interrupted without a substantial loss of efficiency of the combined output of all components; whether the Energy production from one resource necessarily causes Energy production from other resource(s); and whether the operational arrangement of resources determines the overall physical efficiency of the combined output of all of the resources.

#### **3.1.2 Additional Criteria**

Additional eligibility criteria for a UDP Aggregation are as follows:

- (1) Only Generating Units shall be eligible for UDP Aggregation. As a general rule, pump-generating Units (or a Physical Scheduling Plant [PSP] containing a pump-generating Unit) cannot be part of a UDP Aggregation. However, it is possible that Generating Units could form a UDP Aggregation comprised entirely of pump-generating Units whose operation is uniform, that is, Units all operating in either Generation mode or all in pump mode, but never mixed.
- (2) UDP Aggregations cannot include any of the following:
  - (a) Load;
  - (b) Condition 2 Reliability Must-Run (RMR) Units;
  - (c) Participating Intermittent Resources; or
  - (d) Generating Units less than five (5) MW.
- (3) The resources must have CAISO direct telemetry and must be fully compliant with the CAISO's direct telemetry standards.

- (4) The Generating Units must have the same relative effect on all network elements for which the Generating Units have at least a five percent (5%) effectiveness factor, that is, for those network elements for which a one (1) MW change in the output of the Generating Unit changes the flow across that element by at least 0.05 MW. For the purposes of this item (4), the "same relative effect" means that the effectiveness factors of any Generating Unit relative to a network element cannot differ by more than ten percent (10%) from the midpoint effectiveness factor of all the units. The midpoint effectiveness is the arithmetic mean of the two most different effectiveness factors to be aggregated.
- (5) Custom UDP Aggregations involving units not directly connecting to the CAISO Controlled Grid must recognize the transfer limits and status of the intermediate local facilities.
- (6) The applicable P<sub>Max</sub> of aggregated groups of resources will exclude units that are not operating.

### **3.1.3 Approval of a Request**

If a UDP Aggregation request is approved, the CAISO shall create a new unique Resource ID, which reflects the identity or location of the units and stipulates the UDP Aggregation, but which cannot be used for scheduling purposes. The CAISO shall inform the Scheduling Coordinator of the approval and ask the Scheduling Coordinator to confirm the desired start date of the UDP Aggregation. When that confirmation has been received, the new aggregation will be entered into the CAISO systems. Unless otherwise agreed to by the Scheduling Coordinator and the CAISO, the UDP Aggregation will become effective on the first day of the month following approval. The units in an approved UDP Aggregation are obligated to follow their individual Schedules and instructions at all times.

### **3.1.4 Rejection of a Request**

If the CAISO determines that the proposed UDP Aggregation is likely to impact grid reliability or the reliability of transmission systems or equipment of intermediate entities between the relevant resources and the CAISO Controlled Grid, the request will be rejected. If the CAISO rejects a request, the CAISO shall inform the Scheduling Coordinator, and forward to it the reason for the rejection. The CAISO may suggest alternative solutions if it has adequate time and data. The Scheduling Coordinator may choose to resubmit based on the CAISO's recommendations, or to close the request.

## **4 MODIFICATIONS TO AN EXISTING UDP AGGREGATION**

### **4.1 Status of UDP Aggregation**

An approved UDP Aggregation shall be considered active until otherwise requested by the Scheduling Coordinator.

## **4.2 Suspension by the CAISO**

The CAISO may temporarily suspend any UDP Aggregation as needed to ensure reliability. The CAISO may also suspend previously approved UDP Aggregations if, due to changes to the grid, to the aggregated Generating Units, or to the facilities connecting aggregated Generating Units to the grid, the UDP Aggregation no longer meets the criteria set forth in Sections 3.1.1 and 3.1.2 of this Appendix R.

If the CAISO must suspend the UDP Aggregation due to a Forced Outage or other unanticipated event, the CAISO shall provide notice that the UDP Aggregation has been suspended as soon as practical after the affecting event, but in no case longer than seventy-two (72) hours after that event. If the CAISO must suspend the UDP Aggregation due to future changes, the CAISO shall notify the affected Scheduling Coordinator (1) that the UDP Aggregation will be suspended and (2) when the UDP Aggregation will be suspended as soon as practical after the CAISO determines the UDP Aggregation must be suspended.

The CAISO shall write a report that explains the reason for the suspension and that specifies the effective date and time. The CAISO will forward the report to the Scheduling Coordinator and take steps to have the UDP Aggregation removed from the CAISO systems.

In the event that a resource in a UDP Aggregation changes from one Scheduling Coordinator to another, the UDP Aggregation will be suspended. In order to reinstate the aggregation, the new Scheduling Coordinator must submit a new request reflecting the change.

## **4.3 Request for Modification by a Scheduling Coordinator**

A Scheduling Coordinator may request a modification to an existing UDP Aggregation up to once per calendar month. A request for modification will follow the same procedures as a new request.

**CAISO TARIFF APPENDIX S**

**SMALL GENERATOR  
INTERCONNECTION PROCEDURES (SGIP)**

**SMALL GENERATOR  
INTERCONNECTION PROCEDURES (SGIP)**

**(For Generating Facilities No Larger Than 20 MW)**

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## SECTION 1. OBJECTIVES, DEFINITIONS, AND APPLICATION.

### 1.1 Objectives

The objective of this SGIP is to implement FERC's Order No. 2006 setting forth the requirements for Small Generating Facility interconnections to the CAISO Controlled Grid.

### 1.2 Definitions

#### 1.2.1 Master Definitions Supplement

Unless the context otherwise requires, any word or expression defined in the Master Definitions Supplement to the CAISO Tariff shall have the same meaning where used in this SGIP. A reference to a Section or an Appendix is a reference to a Section or an Appendix of the CAISO Tariff. References to SGIP are to this Protocol or to the stated paragraph of this Protocol.

#### 1.2.2 Special Definitions for this SGIP

In this SGIP, the following words and expressions shall have the meanings set opposite them:

"10 kW Inverter Process" shall mean the procedure for evaluating an Interconnection Request for a certified inverter-based Small Generating Facility no larger than 10 kW that uses the SGIP Section 2 screens. The application process uses an all-in-one document that includes a simplified Interconnection Request, simplified procedures, and a brief set of terms and conditions. See SGIP Attachment 5.

"Fast Track Process" shall mean the procedure for evaluating an Interconnection Request for a certified Small Generating Facility no larger than 2 MW that includes the SGIP Section 2 screens, customer options meeting, and optional supplemental review.

**"Governmental Authority"** shall mean any federal, state, local or other governmental, regulatory or administrative agency, court, commission, department, board, or other governmental subdivision, legislature, rulemaking board, tribunal, or other governmental authority having jurisdiction over the Parties, their respective facilities, or the respective services they provide, and exercising or entitled to exercise any administrative, executive, police, or taxing authority or power; provided, however, that such term does not include the Interconnection Customer, CAISO, or Participating TO, or any Affiliate thereof.

**"Party" or "Parties"** shall mean the CAISO, Participating TO(s), Interconnection Customer or the applicable combination of the above.

**"Study Process"** shall mean the procedure for evaluating an Interconnection Request that includes the Scoping Meeting, feasibility study, system impact study, and facilities study, as set forth in Section 3 of this SGIP.



### 1.3 Application

The applicability of this SGIP is set forth in Section 5.7 of the CAISO Tariff. As specified in more detail in Section 5.7 of the CAISO Tariff, these procedures are applicable to each new Generating Facility with a Generating Facility Capacity of 20 MW or less, or the expansion of an existing Generating Facility with a resultant Generating Facility Capacity of 20 MW or less, that seeks to interconnect to the CAISO Controlled Grid. Any proposed interconnection of a new Generating Facility to a Participating TO's Distribution System will be processed, as applicable, pursuant to the applicable Participating TO's Wholesale Distribution Access Tariff or CPUC Rule 21, or other Local Regulatory Authority requirements of the Participating TO. For any proposed interconnection of a new Generating Facility with a Generating Facility Capacity of 20 MW or less wherein the Interconnection Customer desires the CAISO to perform a Deliverability Assessment, the Interconnection Customer shall submit an Interconnection Request to the CAISO under the Large Generator Interconnection Procedures in lieu of these Small Generator Interconnection Procedures, as specified in Section 2.8 of this SGIP.

#### 1.3.1 Applicability

- 1.3.1.1 A request to interconnect a certified Small Generating Facility (See Attachments 3 and 4 for description of certification criteria) no larger than 2 MW shall be evaluated under the SGIP Section 2 Fast Track Process. A request to interconnect a certified inverter-based Small Generating Facility no larger than 10 kW shall be evaluated under the Attachment 5 10 kW Inverter Process. A request to interconnect a Small Generating Facility larger than 2 MW but no larger than 20 MW or a Small Generating Facility that does not pass the Fast Track Process or the 10 kW Inverter Process shall be evaluated under the Study Process set forth in Section 3 of this SGIP.
- 1.3.1.2 Neither these procedures nor the requirements included hereunder apply to Small Generating Facilities interconnected or approved for interconnection prior to 60 Business Days after the effective date of these procedures.
- 1.3.1.3 Prior to submitting its Interconnection Request (Attachment 2), the Interconnection Customer may ask the CAISO's interconnection contact employee or office whether the proposed interconnection is subject to these procedures. The CAISO shall respond within 15 Business Days.
- 1.3.1.4 Infrastructure security of electric system equipment and operations and control hardware and software is essential to ensure day-to-day reliability and operational security. The Federal Energy Regulatory Commission expects all transmission providers, market participants, and Interconnection Customers interconnected with electric systems to comply with the recommendations offered by the President's Critical Infrastructure Protection Board and best practice recommendations from the electric reliability authority. All public utilities are expected to meet basic standards for electric system infrastructure and operational security, including physical, operational, and cyber-security practices.
- 1.3.1.5 References in these procedures to interconnection agreement are to the Small Generator Interconnection Agreement (SGIA).

1.3.2 Pre-Application

The CAISO shall designate an employee or office from which information on the application process and on an Affected System can be obtained through informal requests from the Interconnection Customer presenting a proposed project for a specific site. The name, telephone number, and e-mail address of such contact employee or office shall be made available on the CAISO Internet web site. The CAISO Controlled Grid information provided to the Interconnection Customer should include relevant system studies, interconnection studies, and other materials useful to an understanding of an interconnection at a particular point on the CAISO Controlled Grid, to the extent such provision does not violate confidentiality provisions of prior agreements or critical infrastructure requirements. The CAISO shall comply with reasonable requests for such information.

1.3.3 Interconnection Request

The Interconnection Customer shall submit its Interconnection Request to the CAISO, together with the processing fee or deposit specified in the Interconnection Request. The Interconnection Request shall be date- and time-stamped upon receipt. The original date and time stamp applied to the Interconnection Request at the time of its original submission shall be accepted as the qualifying date- and time-stamp for the purposes of any timetable in these procedures. The Interconnection Customer shall be notified of receipt by the CAISO within three (3) Business Days of receiving the Interconnection Request. The CAISO shall notify the Interconnection Customer within ten (10) Business Days of the receipt of the Interconnection Request as to whether the Interconnection Request is complete or incomplete. If the Interconnection Request is incomplete, the CAISO shall provide a notice that the Interconnection Request is incomplete, along with a written list detailing all information that must be provided to complete the Interconnection Request. The Interconnection Customer will have ten (10) Business Days after receipt of the notice to submit the listed information or to request an extension of time to provide such information. If the Interconnection Customer does not provide the listed information or a request for an extension of time within the deadline, the Interconnection Request will be deemed withdrawn. An Interconnection Request will be deemed complete upon submission of the listed information to the CAISO.

1.3.4 Modification of the Interconnection Request

Any modification to machine data or equipment configuration, or to the interconnection site of the Small Generating Facility not agreed to in writing by the CAISO and the Interconnection Customer may be deemed a withdrawal of the Interconnection Request and may require submission of a new Interconnection Request, unless proper notification of each Party by the other and a reasonable time to cure the problems created by the changes are undertaken.

1.3.5 Site Control

Documentation of site control must be submitted with the Interconnection Request. Site control may be demonstrated through:

- 1.3.5.1 Ownership of, a leasehold interest in, or a right to develop a site for the purpose of constructing the Small Generating Facility;
  - 1.3.5.2 An option to purchase or acquire a leasehold site for such purpose; or
  - 1.3.5.3 An exclusivity or other business relationship between the Interconnection Customer and the entity having the right to sell, lease, or grant the Interconnection Customer the right to possess or occupy a site for such purpose.
- 1.3.6 Queue Position  
The CAISO shall assign a Queue Position based upon the date- and time- stamp of the Interconnection Request. The Queue Position of each Interconnection Request will be used to determine the cost responsibility for the Upgrades necessary to accommodate the interconnection. The CAISO shall maintain a single queue for the CAISO **Balancing Authority** Area. At the CAISO's option, in coordination with the applicable Participating TO, Interconnection Requests may be studied serially or in clusters for the purpose of the system impact study.
- 1.3.7 Interconnection Requests Submitted Prior to the Effective Date of the SGIP  
Nothing in this SGIP affects an Interconnection Customer's Queue Position assigned before the effective date of this SGIP. The Parties agree to complete work on any interconnection study agreement executed prior the effective date of this SGIP in accordance with the terms and conditions of that interconnection study agreement. Any new studies or other additional work will be completed pursuant to this SGIP.
- 1.3.8 Request for Deliverability Assessment  
An Interconnection Customer seeking to interconnect to the CAISO Controlled Grid that desires to have a Deliverability Assessment performed for the Small Generating Facility shall be required to have its Interconnection Request processed under the Large Generator Interconnection Procedures (LGIP) or CAISO Tariff Appendix W, as applicable.

## SECTION 2. FAST TRACK PROCESS

- 2.1 Applicability  
The Fast Track Process is available to an Interconnection Customer proposing to interconnect its Small Generating Facility with the CAISO Controlled Grid if the Small Generating Facility is no larger than 2 MW and if the Interconnection Customer's proposed Small Generating Facility meets the codes, standards, and certification requirements of Attachments 3 and 4 of these procedures, or the applicable Participating TO has reviewed the design or tested the proposed Small Generating Facility and is satisfied that it is safe to operate.

## 2.2 Initial Review

Within 15 Business Days after the CAISO notifies the Interconnection Customer it has received a complete Interconnection Request, the applicable Participating TO shall perform an initial review using the screens set forth below, shall notify the Interconnection Customer of the results, and include with the notification copies of the analysis and data underlying the Participating TO's determinations under the screens.

### 2.2.1 Screens

- 2.2.1.1 The proposed Small Generating Facility's Point of Interconnection must be on a portion of the Participating TO's Distribution System that is subject to the CAISO Tariff.
- 2.2.1.2 For interconnection of a proposed Small Generating Facility to a radial distribution circuit, the aggregated generation, including the proposed Small Generating Facility, on the circuit shall not exceed 15% of the line section annual peak load as most recently measured at the substation. A line section is that portion of a Participating TO's electric system connected to a customer bounded by automatic sectionalizing devices or the end of the distribution line.
- 2.2.1.3 For interconnection of a proposed Small Generating Facility to the load side of spot network protectors, the proposed Small Generating Facility must utilize an inverter-based equipment package and, together with the aggregated other inverter-based generation, shall not exceed the smaller of 5% of a spot network's maximum load or 50 kW<sup>1</sup>.
- 2.2.1.4 The proposed Small Generating Facility, in aggregation with other generation on the distribution circuit, shall not contribute more than 10% to the distribution circuit's maximum fault current at the point on the high voltage (primary) level nearest the proposed point of change of ownership.
- 2.2.1.5 The proposed Small Generating Facility, in aggregate with other generation on the distribution circuit, shall not cause any distribution protective devices and equipment (including, but not limited to, substation breakers, fuse cutouts, and line reclosers), or Interconnection Customer equipment on the system to exceed 87.5% of the short circuit interrupting capability; nor shall the interconnection proposed for a circuit that already exceeds 87.5% of the short circuit interrupting capability.

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<sup>1</sup> A spot Network is a type of distribution system found within modern commercial buildings to provide high reliability of service to a single customer. (Standard Handbook for Electrical Engineers, 11<sup>th</sup> edition, Donald Fink, McGraw Hill Book Company)

- 2.2.1.6 Using the table below, determine the type of interconnection to a primary distribution line. This screen includes a review of the type of electrical service provided to the Interconnecting Customer, including line configuration and the transformer connection to limit the potential for creating over-voltages on the Participating TO's electric power system due to a loss of ground during the operating time of any anti-islanding function.

Primary Distribution Line Type	Type of Interconnection to Primary Distribution Line	Result/Criteria
Three-phase, three wire	3-phase or single phase, phase-to-phase	Pass screen
Three-phase, four wire	Effectively-grounded 3 phase or Single-phase, line-to-neutral	Pass screen

- 2.2.1.7 If the proposed Small Generating Facility is to be interconnected on single-phase shared secondary, the aggregate generation capacity on the shared secondary, including the proposed Small Generating Facility, shall not exceed 20 kW.

- 2.2.1.8 If the proposed Small Generating Facility is single-phase and is to be interconnected on a center tap neutral of a 240 volt service, its addition shall not create an imbalance between the two sides of the 240 volt service of more than 20% of the nameplate rating of the service transformer.

- 2.2.1.9 The Small Generating Facility, in aggregate with other generation interconnected to the transmission side of a substation transformer feeding the circuit where the Small Generating Facility proposes to interconnect shall not exceed 10 MW in an area where there are known, or posted, transient stability limitations to generating units located in the general electrical vicinity (e.g., three or four transmission busses from the point of interconnection).

- 2.2.1.10 No construction of facilities by the Participating TO on its own system shall be required to accommodate the Small Generating Facility.

- 2.2.2 If the proposed interconnection passes the screens, the Interconnection Request shall be approved and the Participating TO will provide the Interconnection Customer an executable interconnection agreement within five Business Days after the determination.

- 2.2.3 If the proposed interconnection fails the screens, but the Participating TO determines that the Small Generating Facility may nevertheless be interconnected consistent with safety, reliability, and power quality standards, the Participating TO shall provide the Interconnection Customer an executable interconnection agreement within five Business Days after the determination.

2.2.4 If the proposed interconnection fails the screens, but the Participating TO does not or cannot determine from the initial review that the Small Generating Facility may nevertheless be interconnected consistent with safety, reliability, and power quality standards unless the Interconnection Customer is willing to consider minor modifications or further study, the Participating TO shall provide the Interconnection Customer with the opportunity to attend a customer options meeting.

### 2.3 Customer Options Meeting

If the Participating TO determines the Interconnection Request cannot be approved without minor modifications at minimal cost; or a supplemental study or other additional studies or actions; or at significant cost to address safety, reliability, or power quality problems, within the five Business Day period after the determination, the Participating TO shall notify the Interconnection Customer and provide copies of all data and analyses underlying its conclusion. Within ten Business Days of the Participating TO's determination, the Participating TO shall offer to convene a customer options meeting with the Participating TO to review possible Interconnection Customer facility modifications or the screen analysis and related results, to determine what further steps are needed to permit the Small Generating Facility to be connected safely and reliably. At the time of notification of the Participating TO's determination, or at the customer options meeting, the Participating TO shall:

2.3.1 Offer to perform facility modifications or minor modifications to the Participating TO's electric system (e.g., changing meters, fuses, relay settings) and provide a non-binding good faith estimate of the limited cost to make such modifications to the Participating TO's electric system; or

2.3.2 Offer to perform a supplemental review if the Participating TO concludes that the supplemental review might determine that the Small Generating Facility could continue to qualify for interconnection pursuant to the Fast Track Process, and provide a non-binding good faith estimate of the costs of such review; or

2.3.3 Obtain the Interconnection Customer's agreement to continue evaluating the Interconnection Request under the SGIP Section 3 Study Process.

### 2.4 Supplemental Review

If the Interconnection Customer agrees to a supplemental review, the Interconnection Customer shall agree in writing within 15 Business Days of the offer, and submit a deposit for the estimated costs. The Interconnection Customer shall be responsible for the Participating TO's actual costs for conducting the supplemental review. The Interconnection Customer must pay any review costs that exceed the deposit within 20 Business Days of receipt of the invoice or resolution of any dispute. If the deposit exceeds the invoiced costs, the Participating TO will return such excess within 20 Business Days of the invoice without interest.

2.4.1 Within ten Business Days following receipt of the deposit for a supplemental review, the Participating TO will determine if the Small Generating Facility can be interconnected safely and reliably.

2.4.1.1 If so, the Participating TO shall forward an executable an interconnection agreement to the Interconnection Customer within five Business Days.

- 2.4.1.2 If so, and Interconnection Customer facility modifications are required to allow the Small Generating Facility to be interconnected consistent with safety, reliability, and power quality standards under these procedures, the Participating TO shall forward an executable interconnection agreement to the Interconnection Customer within five Business Days after confirmation that the Interconnection Customer has agreed to make the necessary changes at the Interconnection Customer's cost.
- 2.4.1.3 If so, and minor modifications to the Participating TO's electric system are required to allow the Small Generating Facility to be interconnected consistent with safety, reliability, and power quality standards under the Fast Track Process, the Participating TO shall forward an executable interconnection agreement to the Interconnection Customer within ten Business Days that requires the Interconnection Customer to pay the costs of such system modifications prior to interconnection.
- 2.4.1.4 If not, the Interconnection Request will continue to be evaluated under the SGIP Section 3 Study Process.

### SECTION 3. STUDY PROCESS

#### 3.1 Applicability

The Study Process shall be used by an Interconnection Customer proposing to interconnect its Small Generating Facility to the CAISO Controlled Grid if the Small Generating Facility (1) is larger than 2 MW but no larger than 20 MW, (2) is not certified, or (3) is certified but did not pass the Fast Track Process or the 10 kW Inverter Process.

#### 3.1.1 Centralized Study Process

- 3.1.1.1 The CAISO will be the single point of contact for Interconnection Customer.
- 3.1.1.2 The CAISO will be the central point of coordination to involve any Affected Systems.
- 3.1.1.3 The CAISO will collect and disburse monies received from Interconnection Customers.
- 3.1.1.4 The CAISO will execute interconnection study agreements. Each Interconnection Request will be subject to the direction and oversight of the CAISO. The CAISO will conduct or cause to be performed the required small generator interconnection studies and any additional studies the CAISO determines to be reasonably necessary and will direct the applicable Participating TO to perform portions of studies where the Participating TO has specific and non-transferable expertise or data and can conduct the studies more efficiently and cost effectively than the CAISO. The study results and final study report must be approved by the CAISO.

### 3.2 Scoping Meeting

- 3.2.1 A Scoping Meeting will be held within ten (10) Business Days after the Interconnection Request is deemed complete, or as otherwise mutually agreed to by the Parties. The CAISO, applicable Participating TO, and the Interconnection Customer will bring to the meeting personnel, including system engineers and other resources as may be reasonably required to accomplish the purpose of the meeting.
- 3.2.2 The purpose of the Scoping Meeting is to discuss the Interconnection Request and review existing studies relevant to the Interconnection Request. The Parties shall further discuss whether the CAISO should conduct, or caused to be performed, a feasibility study or proceed directly to a system impact study, or a facilities study, or an interconnection agreement. If the Parties agree that a feasibility study should be performed, the CAISO shall provide the Interconnection Customer, as soon as possible, but not later than five (5) Business Days after the Scoping Meeting, a feasibility study agreement (Attachment 6) including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study.
- 3.2.3 The Scoping Meeting may be omitted by mutual agreement. In order to remain in consideration for interconnection, an Interconnection Customer who has requested a feasibility study must return the executed feasibility study agreement within fifteen (15) Business Days. If the Parties agree not to perform a feasibility study, the CAISO shall provide the Interconnection Customer, no later than five (5) Business Days after the Scoping Meeting, a system impact study agreement (Attachment 7) including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study.

### 3.3 Feasibility Study

- 3.3.1 The feasibility study shall identify any potential adverse system impacts or financial impacts, if any, on Local Furnishing Bonds that would result from the interconnection of the Small Generating Facility.
- 3.3.2 A deposit of the lesser of 50 percent of the good faith estimated feasibility study costs or earnest money of \$1,000 will be required from the Interconnection Customer.
- 3.3.3 The scope of, and cost responsibilities for, the feasibility study are described in the attached feasibility study agreement.
- 3.3.4 If the feasibility study shows no potential for adverse system impacts and financial impacts on Local Furnishing Bonds, the CAISO shall send the Interconnection Customer a facilities study agreement, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study. If no additional facilities are required, the Participating TO shall send the Interconnection Customer an executable interconnection agreement within five (5) Business Days.
- 3.3.5 If the feasibility study shows the potential for adverse system impacts or financial impacts on Local Furnishing Bonds, the review process shall proceed to the appropriate system impact study(s).



3.4 System Impact Study

- 3.4.1 A system impact study shall identify and detail the electric system impacts, including Local Furnishing Bond impacts, that would result if the proposed Small Generating Facility were interconnected without project modifications or electric system modifications, focusing on the adverse system impacts identified in the feasibility study, or to study potential impacts, including but not limited to those identified in the Scoping Meeting. A system impact study shall evaluate the impact of the proposed interconnection on the reliability of the electric system.
- 3.4.2 If no CAISO Controlled Grid system impact study is required, but potential electric power Distribution System adverse system impacts or Local Furnishing Bond impacts are identified in the Scoping Meeting or shown in the feasibility study, a Distribution System impact study must be performed by the applicable Participating TO. The applicable Participating TO shall send the Interconnection Customer a Distribution System impact study agreement within fifteen (15) Business Days of transmittal of the feasibility study report, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study, or following the Scoping Meeting if no feasibility study is to be performed.
- 3.4.3 In instances where the feasibility study or the Distribution System impact study shows potential for CAISO Controlled Grid adverse system impacts or Local Furnishing Bond adverse impacts, within five (5) Business Days following transmittal of the feasibility study report, the CAISO shall send the Interconnection Customer a system impact study agreement, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study, if such a study is required.
- 3.4.4 If a CAISO Controlled Grid system impact study is not required, but electric power Distribution System adverse system impacts are shown by the feasibility study to be possible and no Distribution System impact study has been conducted, the applicable Participating TO shall send the Interconnection Customer a Distribution System impact study agreement.
- 3.4.5 If the feasibility study shows no potential for CAISO Controlled Grid, Local Furnishing Bond, or Distribution System adverse system impacts, the CAISO shall send the Interconnection Customer either a facilities study agreement (Attachment 8), including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study, or the applicable Participating TO shall send an executable interconnection agreement, as applicable.
- 3.4.6 In order to remain under consideration for interconnection, the Interconnection Customer must return executed system impact study agreements, if applicable, within thirty (30) Business Days.
- 3.4.7 A deposit of the good faith estimated costs for each system impact study will be required from the Interconnection Customer.
- 3.4.8 The scope of, and cost responsibilities for, a system impact study are described in the attached system impact study agreement.

- 3.4.9 Where transmission systems and Distribution Systems have separate owners, such as is the case with transmission-dependent utilities ("TDUs") – whether investor-owned or not – the Interconnection Customer may apply to the nearest transmission provider (transmission owner, Regional Transmission Operator, or independent system operator) providing transmission service to the TDU to request project coordination. Affected Systems shall participate in the study and provide all information necessary to prepare the study.

3.5 Facilities Study

- 3.5.1 Once the required system impact study(s) is completed, a system impact study report shall be prepared and transmitted to the Interconnection Customer along with a facilities study agreement within five (5) Business Days, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the facilities study. In the case where one or both impact studies are determined to be unnecessary, a notice of the fact shall be transmitted to the Interconnection Customer within the same timeframe.
- 3.5.2 In order to remain under consideration for interconnection, or, as appropriate, in the CAISO's interconnection queue, the Interconnection Customer must return the executed facilities study agreement or a request for an extension of time within thirty (30) Business Days.
- 3.5.3 The facilities study shall specify and estimate the cost of the equipment, engineering, procurement and construction work (including overheads) needed to implement the conclusions of the system impact study(s).
- 3.5.4 **[INTENTIONALLY LEFT BLANK]**
- 3.5.5 A deposit of the good faith estimated costs for the facilities study will be required from the Interconnection Customer.
- 3.5.6 The scope of, and cost responsibilities for, the facilities study are described in the attached facilities study agreement.
- 3.5.7 Within 30 Business Days after completion of the facilities study, the Interconnection Customer shall take one of the following actions: (i) agree to pay for Interconnection Facilities and Upgrades identified in the facilities study and request that the Participating TO tender an executable interconnection agreement, (ii) withdraw its Interconnection Request, or (iii) request that the Participating TO tender an executable interconnection agreement despite its disagreement with the costs therein. If requested, the Participating TO shall provide the Interconnection Customer an executable interconnection agreement within five (5) Business Days. Upon option (iii) herein, the Interconnection Customer may request that the interconnection agreement be filed unilaterally at FERC.
- 3.5.8 **[INTENTIONALLY LEFT BLANK]**

**3.5.9 Engineering and Procurement Agreement**

Prior to executing an SGIA, an Interconnection Customer may, in order to advance the implementation of its interconnection, request and the applicable Participating TO(s) shall offer the Interconnection Customer, an E&P Agreement that authorizes the applicable Participating TO(s) to begin engineering and procurement of long lead-time items necessary for the establishment of the interconnection. However, the applicable Participating TO(s) shall not be obligated to offer an E&P Agreement if the Interconnection Customer is in Dispute Resolution as a result of an allegation that the Interconnection Customer has failed to meet any milestones or comply with any prerequisites specified in other parts of the SGIP. The E&P Agreement is an optional procedure and it will not alter the Interconnection Customer's Queue Position or In-Service Date. The E&P Agreement shall provide for the Interconnection Customer to pay the cost of all activities authorized by the Interconnection Customer and to make advance payments or provide other satisfactory security for such costs.

The Interconnection Customer shall pay the cost of such authorized activities and any cancellation costs for equipment that is already ordered for its interconnection, which cannot be mitigated as hereafter described, whether or not such items or equipment later become unnecessary. If the Interconnection Customer withdraws its application for interconnection or either Party terminates the E&P Agreement, to the extent the equipment ordered can be canceled under reasonable terms, the Interconnection Customer shall be obligated to pay the associated cancellation costs. To the extent that the equipment cannot be reasonably canceled, the applicable Participating TO(s) may elect: (i) to take title to the equipment, in which event the applicable Participating TO(s) shall refund the Interconnection Customer any amounts paid by Interconnection Customer for such equipment and shall pay the cost of delivery of such equipment, or (ii) to transfer title to and deliver such equipment to the Interconnection Customer, in which event the Interconnection Customer shall pay any unpaid balance and cost of delivery of such equipment.

**SECTION 4. PROVISIONS THAT APPLY TO ALL INTERCONNECTION REQUESTS**

**4.1 Reasonable Efforts**

The CAISO shall make reasonable efforts to meet all time frames provided in these procedures unless the CAISO and the Interconnection Customer agree to a different schedule. If the CAISO cannot meet a deadline provided herein, it shall notify the Interconnection Customer, explain the reason for the failure to meet the deadline, and provide an estimated time by which it will complete the applicable interconnection procedure in the process.

**4.2 Disputes**

- 4.2.1 The Parties agree to attempt to resolve all disputes arising out of the interconnection process according to the provisions of this section.
- 4.2.2 In the event of a dispute, either Party shall provide the other Party with a written Notice of Dispute. Such Notice shall describe in detail the nature of the dispute.
- 4.2.3 If the dispute has not been resolved within two (2) Business Days after receipt of the Notice, either Party may contact FERC's Dispute Resolution Service (DRS) for assistance in resolving the dispute.

- 4.2.4 The DRS will assist the Parties in either resolving their dispute or in selecting an appropriate dispute resolution venue (e.g., mediation, settlement judge, early neutral evaluation, or technical expert) to assist the Parties in resolving their dispute. DRS can be reached at 1-877-337-2237 or via the internet at <http://www.ferc.gov/legal/adr.asp>.
- 4.2.5 Each Party agrees to conduct all negotiations in good faith and will be responsible for one-half of any costs paid to neutral third-parties.
- 4.2.6 If neither Party elects to seek assistance from the DRS, or if the attempted dispute resolution fails, then either Party may exercise whatever rights and remedies it may have in equity or law consistent with the terms of this SGIP.
- 4.3 Interconnection Metering  
Any metering necessitated by the use of the Small Generating Facility shall be installed at the Interconnection Customer's expense in accordance with Federal Energy Regulatory Commission, state, or local regulatory requirements or the CAISO's specifications.
- 4.4 Commissioning  
Commissioning tests of the Interconnection Customer's installed equipment shall be performed pursuant to applicable codes and standards. The CAISO and applicable Participating TO must be given at least five (5) Business Days written notice, or as otherwise mutually agreed to by the Parties, of the tests and may be present to witness the commissioning tests.
- 4.5. Confidentiality
- 4.5.1 Confidential Information shall mean any confidential and/or proprietary information provided by one Party to another Party that is clearly marked or otherwise designated "Confidential." For purposes of this SGIP, all design, operating specifications, and metering data provided by the Interconnection Customer shall be deemed Confidential Information regardless of whether it is clearly marked or otherwise designated as such.
- 4.5.2 Confidential Information does not include information previously in the public domain, required to be publicly submitted or divulged by Governmental Authorities (after notice to the other Parties and after exhausting any opportunity to oppose such publication or release), or necessary to be divulged in an action to enforce this SGIP. Each Party receiving Confidential Information shall hold such information in confidence and shall not disclose it to any third party nor to the public without the prior written authorization from the Party providing that information, except to fulfill obligations under this SGIP, or to fulfill legal or regulatory requirements.
- 4.5.2.1 Each Party shall employ at least the same standard of care to protect Confidential Information obtained from the other Parties as it employs to protect its own Confidential Information.
- 4.5.2.2 Each Party is entitled to equitable relief, by injunction or otherwise, to enforce its rights under this provision to prevent the release of Confidential Information without bond or proof of damages, and may seek other remedies available at law or in equity for breach of this provision.

- 4.5.3 Notwithstanding anything in this section to the contrary, and pursuant to 18 CFR § 1b.20, if FERC, during the course of an investigation or otherwise, requests information from one of the Parties that is otherwise required to be maintained in confidence pursuant to this SGIP, the Party shall provide the requested information to FERC, within the time provided for in the request for information. In providing the information to FERC, the Party may, consistent with 18 CFR § 388.112, request that the information be treated as confidential and non-public by FERC and that the information be withheld from public disclosure. Parties are prohibited from notifying the other Parties prior to the release of the Confidential Information to FERC. The Party shall notify the other Parties when it is notified by FERC that a request to release Confidential Information has been received by FERC, at which time any of the Parties may respond before such information would be made public, pursuant to 18 CFR § 388.112. Requests from a state regulatory body conducting a confidential investigation shall be treated in a similar manner if consistent with the applicable state rules and regulations.
- 4.6 Comparability  
The CAISO shall receive, process and analyze all Interconnection Requests in a timely manner as set forth in this SGIP. The CAISO shall use the same reasonable efforts in processing and analyzing Interconnection Requests from all Interconnection Customers, whether the Small Generating Facility is owned or operated by the applicable Participating TO, its subsidiaries or Affiliates, or others.
- 4.7 Record Retention  
The CAISO shall maintain for three (3) years records, subject to audit, of all Interconnection Requests received under these procedures, the times required to complete Interconnection Request approvals and disapprovals, and justification for the actions taken on the Interconnection Requests.
- 4.8 Interconnection Agreement  
The Participating TO, with the CAISO's review and concurrence, shall issue a SGIA to the Interconnection Customer. After receiving an interconnection agreement from the Participating TO, the Interconnection Customer shall have thirty (30) Business Days or another mutually agreeable timeframe to sign and return the interconnection agreement, or request that the CAISO and Participating TO file an unexecuted interconnection agreement with the Federal Energy Regulatory Commission. If the Interconnection Customer does not sign the interconnection agreement, or ask that it be filed unexecuted by the CAISO and Participating TO within thirty (30) Business Days, the Interconnection Request shall be deemed withdrawn. After the interconnection agreement is signed by the Parties, the interconnection of the Small Generating Facility shall proceed under the provisions of the interconnection agreement.
- 4.9 Coordination with Affected Systems  
The CAISO shall coordinate the conduct of any studies required to determine the impact of the Interconnection Request on Affected Systems with Affected System operators and, if possible, include those results (if available) in its applicable interconnection study within the time frame specified in these procedures. The CAISO will include such Affected System operators in all meetings held with the Interconnection Customer as required by these procedures. The

Interconnection Customer will cooperate with the CAISO in all matters related to the conduct of studies and the determination of modifications to Affected Systems. A transmission provider, which may be an Affected System, shall cooperate with the CAISO in all matters related to the conduct of studies and the determination of modifications to Affected Systems.

4.10 Capacity of the Small Generating Facility

- 4.10.1 If the Interconnection Request is for an increase in capacity for an existing Small Generating Facility, the Interconnection Request shall be evaluated on the basis of the new total capacity of the Small Generating Facility.
- 4.10.2 If the Interconnection Request is for a Small Generating Facility that includes multiple energy production devices at a site for which the Interconnection Customer seeks a single Point of Interconnection, the Interconnection Request shall be evaluated on the basis of the aggregate capacity of the multiple devices.
- 4.10.3 The Interconnection Request shall be evaluated using the maximum rated capacity of the Small Generating Facility.

**Attachment 1**

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**Attachment 2**

**SMALL GENERATOR INTERCONNECTION REQUEST  
(Application Form)**

**California Independent System Operator**

Designated Contact Person: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Fax: \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

An Interconnection Request is considered complete when it provides all applicable and correct information required below. Per SGIP Section 1.3.5, documentation of Site Control must be submitted with the Interconnection Request

**Preamble and Instructions**

Request for Deliverability Assessment – Yes \_\_\_\_ No \_\_\_\_

An Interconnection Customer seeking to interconnect to the CAISO Controlled Grid that desires to have a Deliverability Assessment performed for the Small Generating Facility is required to have its Interconnection Request processed under the Large Generator Interconnection Procedures (LGIP) or CAISO Tariff Appendix W, as applicable.

An Interconnection Customer who requests a Federal Energy Regulatory Commission jurisdictional interconnection must submit this Interconnection Request by hand delivery, mail, e-mail, or fax to the CAISO.

**Processing Fee or Deposit:**

If the Interconnection Request is submitted under the Fast Track Process, the non-refundable processing fee is \$500.

If the Interconnection Request is submitted under the Study Process, whether a new submission or an Interconnection Request that did not pass the Fast Track Process, the Interconnection Customer shall submit to the CAISO a deposit not to exceed \$1,000 towards the cost of the feasibility study.



**Interconnection Customer Information**

Legal Name of the Interconnection Customer (or, if an individual, individual's name)

Name: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Facility Location (if different from above): \_\_\_\_\_

Telephone (Day): \_\_\_\_\_ Telephone (Evening): \_\_\_\_\_

Fax: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

Alternative Contact Information (if different from the Interconnection Customer)

Contact Name: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone (Day): \_\_\_\_\_ Telephone (Evening): \_\_\_\_\_

Fax: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

Application is for:

\_\_\_\_\_ New Small Generating Facility

\_\_\_\_\_ Capacity addition to Existing Small Generating Facility

If capacity addition to existing facility, please describe: \_\_\_\_\_

Will the Small Generating Facility be used for any of the following?

Net Metering? Yes \_\_\_\_ No \_\_\_\_

To Supply Power to the Interconnection Customer? Yes \_\_\_\_ No \_\_\_\_

To Supply Power to Others? Yes \_\_\_\_ No \_\_\_\_

For installations at locations with existing electric service to which the proposed Small Generating Facility will interconnect, provide:

\_\_\_\_\_  
(Local Electric Service Provider\*)

\_\_\_\_\_  
(Existing Account Number\*)

[\*To be provided by the Interconnection Customer if the local electric service provider is different from the Participating TO]

Contact Name: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone (Day): \_\_\_\_\_ Telephone (Evening): \_\_\_\_\_

Fax: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

Requested Point of Interconnection: \_\_\_\_\_

Interconnection Customer's Requested In-Service Date: \_\_\_\_\_

**Small Generating Facility Information**

Data apply only to the Small Generating Facility, not the Interconnection Facilities.

Energy Source: \_\_\_ Solar \_\_\_ Wind \_\_\_ Hydro \_\_\_ Hydro Type (e.g. Run-of-River): \_\_\_\_\_  
Diesel \_\_\_ Natural Gas \_\_\_ Fuel Oil \_\_\_ Other (state type) \_\_\_\_\_

Prime Mover: \_\_\_ Fuel Cell \_\_\_ Recip Engine \_\_\_ Gas Turb \_\_\_ Steam Turb  
Microturbine \_\_\_ PV \_\_\_ Other

Type of Generator: \_\_\_ Synchronous \_\_\_ Induction \_\_\_ Inverter

Generator Nameplate Rating: \_\_\_\_\_ kW (Typical) Generator Nameplate kVAR: \_\_\_\_\_

Interconnection Customer or Customer-Site Load: \_\_\_\_\_ kW (if none, so state)

Typical Reactive Load (if known): \_\_\_\_\_

Maximum Physical Export Capability Requested: \_\_\_\_\_ kW

List components of the Small Generating Facility equipment package that are currently certified:

Equipment Type	Certifying Entity
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

Is the prime mover compatible with the certified protective relay package? \_\_\_\_Yes \_\_\_\_No

Generator (or solar collector)

Manufacturer, Model Name & Number: \_\_\_\_\_

Version Number: \_\_\_\_\_

Nameplate Output Power Rating in kW: (Summer) \_\_\_\_\_ (Winter) \_\_\_\_\_

Nameplate Output Power Rating in kVA: (Summer) \_\_\_\_\_ (Winter) \_\_\_\_\_

Individual Generator Power Factor

Rated Power Factor: Leading: \_\_\_\_\_ Lagging: \_\_\_\_\_

Total Number of Generators in wind farm to be interconnected pursuant to this

Interconnection Request: \_\_\_\_\_ Elevation: \_\_\_\_\_ \_\_\_\_Single phase \_\_\_\_Three phase

Inverter Manufacturer, Model Name & Number (if used): \_\_\_\_\_

List of adjustable set points for the protective equipment or software: \_\_\_\_\_

Note: A completed Power Systems Load Flow data sheet must be supplied with the Interconnection Request.

Small Generating Facility Characteristic Data (for inverter-based machines)

Max design fault contribution current: \_\_\_\_\_ Instantaneous \_\_\_\_ or RMS? \_\_\_\_\_

Harmonics Characteristics: \_\_\_\_\_

Start-up requirements: \_\_\_\_\_

Small Generating Facility Characteristic Data (for rotating machines)

RPM Frequency: \_\_\_\_\_

(\*) Neutral Grounding Resistor (If Applicable): \_\_\_\_\_

Synchronous Generators:

Direct Axis Synchronous Reactance,  $X_d$ : \_\_\_\_\_ P.U.  
Direct Axis Transient Reactance,  $X'_d$ : \_\_\_\_\_ P.U.  
Direct Axis Subtransient Reactance,  $X''_d$ : \_\_\_\_\_ P.U.  
Negative Sequence Reactance,  $X_2$ : \_\_\_\_\_ P.U.  
Zero Sequence Reactance,  $X_0$ : \_\_\_\_\_ P.U.  
KVA Base: \_\_\_\_\_  
Field Volts: \_\_\_\_\_  
Field Amperes: \_\_\_\_\_

Induction Generators:

Motoring Power (kW): \_\_\_\_\_  
 $I_2^2 t$  or K (Heating Time Constant): \_\_\_\_\_  
Rotor Resistance,  $R_r$ : \_\_\_\_\_  
Stator Resistance,  $R_s$ : \_\_\_\_\_  
Stator Reactance,  $X_s$ : \_\_\_\_\_  
Rotor Reactance,  $X_r$ : \_\_\_\_\_  
Magnetizing Reactance,  $X_m$ : \_\_\_\_\_  
Short Circuit Reactance,  $X_d''$ : \_\_\_\_\_  
Exciting Current: \_\_\_\_\_  
Temperature Rise: \_\_\_\_\_  
Frame Size: \_\_\_\_\_  
Design Letter: \_\_\_\_\_  
Reactive Power Required In Vars (No Load): \_\_\_\_\_  
Reactive Power Required In Vars (Full Load): \_\_\_\_\_  
Total Rotating Inertia, H: \_\_\_\_\_ Per Unit on kVA Base

Note: Please contact the CAISO prior to submitting the Interconnection Request to determine if the specified information above is required.

Excitation and Governor System Data for Synchronous Generators Only

Provide appropriate IEEE model block diagram of excitation system, governor system and power system stabilizer (PSS) in accordance with the regional reliability council criteria. A PSS may be determined to be required by applicable studies. A copy of the manufacturer's block diagram may not be substituted.

**Interconnection Facilities Information**

Will a transformer be used between the generator and the point of common coupling? \_\_\_\_ Yes \_\_\_\_ No

Will the transformer be provided by the Interconnection Customer? \_\_\_\_ Yes \_\_\_\_ No

Transformer Data (If Applicable, for Interconnection Customer-Owned Transformer):

Is the transformer: \_\_\_\_ single phase \_\_\_\_ three phase? Size: \_\_\_\_ kVA  
Transformer Impedance: \_\_\_\_ % on \_\_\_\_ kVA Base

If Three Phase:

Transformer Primary: \_\_\_\_ Volts \_\_\_\_ Delta \_\_\_\_ Wye \_\_\_\_ Wye Grounded  
Transformer Secondary: \_\_\_\_ Volts \_\_\_\_ Delta \_\_\_\_ Wye \_\_\_\_ Wye Grounded  
Transformer Tertiary: \_\_\_\_ Volts \_\_\_\_ Delta \_\_\_\_ Wye \_\_\_\_ Wye Grounded

Transformer Fuse Data (If Applicable, for Interconnection Customer-Owned Fuse):

(Attach copy of fuse manufacturer's Minimum Melt and Total Clearing Time-Current Curves)

Manufacturer: \_\_\_\_ Type: \_\_\_\_ Size: \_\_\_\_ Speed: \_\_\_\_

Interconnecting Circuit Breaker (if applicable):

Manufacturer: \_\_\_\_ Type: \_\_\_\_  
Load Rating (Amps): \_\_\_\_ Interrupting Rating (Amps): \_\_\_\_ Trip Speed (Cycles): \_\_\_\_

Interconnection Protective Relays (If Applicable):

If Microprocessor-Controlled:

List of Functions and Adjustable Setpoints for the protective equipment or software:

Setpoint Function	Minimum	Maximum
1. ____	____	____
2. ____	____	____
3. ____	____	____
4. ____	____	____
5. ____	____	____
6. ____	____	____

If Discrete Components:

(Enclose Copy of any Proposed Time-Overcurrent Coordination Curves)

Manufacturer: ____	Type: ____	Style/Catalog No.: ____	Proposed Setting: ____
Manufacturer: ____	Type: ____	Style/Catalog No.: ____	Proposed Setting: ____
Manufacturer: ____	Type: ____	Style/Catalog No.: ____	Proposed Setting: ____
Manufacturer: ____	Type: ____	Style/Catalog No.: ____	Proposed Setting: ____
Manufacturer: ____	Type: ____	Style/Catalog No.: ____	Proposed Setting: ____

Current Transformer Data (If Applicable):

(Enclose Copy of Manufacturer's Excitation and Ratio Correction Curves)

Manufacturer: \_\_\_\_\_

Type: \_\_\_\_\_ Accuracy Class: \_\_\_\_ Proposed Ratio Connection: \_\_\_\_

Manufacturer: \_\_\_\_\_

Type: \_\_\_\_\_ Accuracy Class: \_\_\_\_ Proposed Ratio Connection: \_\_\_\_

Potential Transformer Data (If Applicable):

Manufacturer: \_\_\_\_\_

Type: \_\_\_\_\_ Accuracy Class: \_\_\_\_ Proposed Ratio Connection: \_\_\_\_

Manufacturer: \_\_\_\_\_

Type: \_\_\_\_\_ Accuracy Class: \_\_\_\_ Proposed Ratio Connection: \_\_\_\_

**General Information**

Enclose copy of site electrical one-line diagram showing the configuration of all Small Generating Facility equipment, current and potential circuits, and protection and control schemes. This one-line diagram must be signed and stamped by a licensed Professional Engineer if the Small Generator Facility is larger than 50 kW. Is One-Line Diagram Enclosed? \_\_\_\_Yes \_\_\_\_No

Enclose copy of any site documentation that indicates the precise physical location of the proposed Small Generating Facility (e.g., USGS topographic map or other diagram or documentation).

Proposed location of protective interface equipment on property (include address if different from the Interconnection Customer's address) \_\_\_\_\_

Enclose copy of any site documentation that describes and details the operation of the protection and control schemes. Is Available Documentation Enclosed? \_\_\_\_Yes \_\_\_\_No

Enclose copies of schematic drawings for all protection and control circuits, relay current circuits, relay potential circuits, and alarm/monitoring circuits (if applicable).  
Are Schematic Drawings Enclosed? \_\_\_\_Yes \_\_\_\_No

**Applicant Signature**

I hereby certify that, to the best of my knowledge, all the information provided in this Interconnection Request is true and correct.

For Interconnection Customer: \_\_\_\_\_ Date: \_\_\_\_\_

**Attachment 3**

**Certification Codes and Standards**

IEEE1547 Standard for Interconnecting Distributed Resources with Electric Power Systems (including use of IEEE 1547.1 testing protocols to establish conformity)

UL 1741 Inverters, Converters, and Controllers for Use in Independent Power Systems

IEEE Std 929-2000 IEEE Recommended Practice for Utility Interface of Photovoltaic (PV) Systems

NFPA 70 (2002), National Electrical Code

IEEE Std C37.90.1-1989 (R1994), IEEE Standard Surge Withstand Capability (SWC) Tests for Protective Relays and Relay Systems

IEEE Std C37.90.2 (1995), IEEE Standard Withstand Capability of Relay Systems to Radiated Electromagnetic Interference from Transceivers

IEEE Std C37.108-1989 (R2002), IEEE Guide for the Protection of Network Transformers

IEEE Std C57.12.44-2000, IEEE Standard Requirements for Secondary Network Protectors

IEEE Std C62.41.2-2002, IEEE Recommended Practice on Characterization of Surges in Low Voltage (1000V and Less) AC Power Circuits

IEEE Std C62.45-1992 (R2002), IEEE Recommended Practice on Surge Testing for Equipment Connected to Low-Voltage (1000V and Less) AC Power Circuits

ANSI C84.1-1995 Electric Power Systems and Equipment – Voltage Ratings (60 Hertz)

IEEE Std 100-2000, IEEE Standard Dictionary of Electrical and Electronic Terms  
NEMA MG 1-1998, Motors and Small Resources, Revision 3

IEEE Std 519-1992, IEEE Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems

NEMA MG 1-2003 (Rev 2004), Motors and Generators, Revision 1

**Attachment 4**

**Certification of Small Generator Equipment Packages**

- 1.0 Small Generating Facility equipment proposed for use separately or packaged with other equipment in an interconnection system shall be considered certified for interconnected operation if (1) it has been tested in accordance with industry standards for continuous utility interactive operation in compliance with the appropriate codes and standards referenced below by any Nationally Recognized Testing Laboratory (NRTL) recognized by the United States Occupational Safety and Health Administration to test and certify interconnection equipment pursuant to the relevant codes and standards listed in SGIP Attachment 3, (2) it has been labeled and is publicly listed by such NRTL at the time of the interconnection application, and (3) such NRTL makes readily available for verification all test standards and procedures it utilized in performing such equipment certification, and, with consumer approval, the test data itself. The NRTL may make such information available on its website and by encouraging such information to be included in the manufacturer's literature accompanying the equipment.
- 2.0 The Interconnection Customer must verify that the intended use of the equipment falls within the use or uses for which the equipment was tested, labeled, and listed by the NRTL.
- 3.0 Certified equipment shall not require further type-test review, testing, or additional equipment to meet the requirements of this interconnection procedure; however, nothing herein shall preclude the need for an on-site commissioning test by the parties to the interconnection nor follow-up production testing by the NRTL.
- 4.0 If the certified equipment package includes only interface components (switchgear, inverters, or other interface devices), then an Interconnection Customer must show that the generator or other electric source being utilized with the equipment package is compatible with the equipment package and is consistent with the testing and listing specified for this type of interconnection equipment.
- 5.0 Provided the generator or electric source, when combined with the equipment package, is within the range of capabilities for which it was tested by the NRTL, and does not violate the interface components' labeling and listing performed by the NRTL, no further design review, testing or additional equipment on the customer side of the point of common coupling shall be required to meet the requirements of this interconnection procedure.
- 6.0 An equipment package does not include equipment provided by the utility.
- 7.0 Any equipment package approved and listed in a state by that state's regulatory body for interconnected operation in that state prior to the effective date of these small generator interconnection procedures shall be considered certified under these procedures for use in that state.



**Attachment 5**

**Application, Procedures, and Terms and Conditions for Interconnecting  
a Certified Inverter-Based Small Generating Facility No  
Larger than 10 kW ("10 kW Inverter Process")**

- 1.0 The Interconnection Customer ("Customer") completes the Interconnection Request ("Application") and submits it to the Participating TO ("Company").
- 2.0 The Company acknowledges to the Customer receipt of the Application within three Business Days of receipt.
- 3.0 The Company evaluates the Application for completeness and notifies the Customer within ten Business Days of receipt that the Application is or is not complete and, if not, advises what material is missing.
- 4.0 The Company verifies that the Small Generating Facility can be interconnected safely and reliably using the screens contained in the Fast Track Process in the Small Generator Interconnection Procedures (SGIP). The Company has 15 Business Days to complete this process. Unless the Company determines and demonstrates that the Small Generating Facility cannot be interconnected safely and reliably, the Company approves the Application and returns it to the Customer. Note to Customer: Please check with the Company before submitting the Application if disconnection equipment is required.
- 5.0 After installation, the Customer returns the Certificate of Completion to the Company. Prior to parallel operation, the Company may inspect the Small Generating Facility for compliance with standards which may include a witness test, and may schedule appropriate metering replacement, if necessary.
- 6.0 The Company notifies the Customer in writing that interconnection of the Small Generating Facility is authorized. If the witness test is not satisfactory, the Company has the right to disconnect the Small Generating Facility. The Customer has no right to operate in parallel until a witness test has been performed, or previously waived on the Application. The Company is obligated to complete this witness test within ten Business Days of the receipt of the Certificate of Completion. If the Company does not inspect within ten Business Days or by mutual agreement of the Parties, the witness test is deemed waived.
- 7.0 Contact Information – The Customer must provide the contact information for the legal applicant (i.e., the Interconnection Customer). If another entity is responsible for interfacing with the Company, that contact information must be provided on the Application.
- 8.0 Ownership Information – Enter the legal names of the owner(s) of the Small Generating Facility. Include the percentage ownership (if any) by any utility or public utility holding company, or by any entity owned by either.
- 9.0 UL1741 Listed – This standard ("Inverters, Converters, and Controllers for Use in Independent Power Systems") addresses the electrical interconnection design of various forms of generating equipment. Many manufacturers submit their equipment to a Nationally Recognized Testing Laboratory (NRTL) that verifies compliance with UL1741. This "listing" is then marked on the equipment and supporting documentation.

**Application for Interconnecting a Certified Inverter-Based Small Generating Facility No Larger than 10kW**

This Application is considered complete when it provides all applicable and correct information required below. Additional information to evaluate the Application may be required.

**Processing Fee**

A non-refundable processing fee of \$100 must accompany this Application.

**Interconnection Customer**

Name: \_\_\_\_\_  
Contact Person: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Telephone (Day): \_\_\_\_\_ (Evening): \_\_\_\_\_  
Fax: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

**Contact (if different from Interconnection Customer)**

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Telephone (Day): \_\_\_\_\_ (Evening): \_\_\_\_\_  
Fax: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

Owner of the facility (include % ownership by any electric utility): \_\_\_\_\_

**Small Generating Facility Information**

Location (if different from above): \_\_\_\_\_  
Electric Service Company: \_\_\_\_\_  
Account Number: \_\_\_\_\_  
Inverter Manufacturer: \_\_\_\_\_ Model \_\_\_\_\_  
Nameplate Rating: \_\_\_\_\_ (kW) \_\_\_\_\_ (kVA) \_\_\_\_\_ (AC Volts)  
Single Phase \_\_\_\_\_ Three Phase \_\_\_\_\_  
System Design Capacity: \_\_\_\_\_ (kW) \_\_\_\_\_ (kVA)  
Prime Mover: Photovoltaic Reciprocating Engine Fuel Cell  
Turbine Other \_\_\_\_\_  
Energy Source: Solar Wind Hydro Diesel Natural Gas  
Fuel Oil Other (describe) \_\_\_\_\_  
Is the equipment UL1741 Listed? Yes \_\_\_\_\_ No \_\_\_\_\_  
If Yes, attach manufacturer's cut-sheet showing UL1741 listing

Estimated Installation Date: \_\_\_\_\_ Estimated In-Service Date: \_\_\_\_\_

The 10 kW Inverter Process is available only for inverter-based Small Generating Facilities no larger than 10 kW that meet the codes, standards, and certification requirements of Attachments 3 and 4 of the Small Generator Interconnection Procedures (SGIP), or the Participating TO has reviewed the design or tested the proposed Small Generating Facility and is satisfied that it is safe to operate.

List components of the Small Generating Facility equipment package that are currently certified:

	Equipment Type	Certifying Entity
1.		
2.		
3.		
4.		
5.		

Interconnection Customer Signature

I hereby certify that, to the best of my knowledge, the information provided in this Application is true. I agree to abide by the Terms and Conditions for Interconnecting an Inverter-Based Small Generating Facility No Larger than 10kW and return the Certificate of Completion when the Small Generating Facility has been installed.

Signed: \_\_\_\_\_

Title: \_\_\_\_\_ Date: \_\_\_\_\_

Contingent Approval to Interconnect the Small Generating Facility

(For Company use only)

Interconnection of the Small Generating Facility is approved contingent upon the Terms and Conditions for Interconnecting an Inverter-Based Small Generating Facility No Larger than 10kW and return of the Certificate of Completion.

Company Signature: \_\_\_\_\_

Title: \_\_\_\_\_ Date: \_\_\_\_\_

Application ID number: \_\_\_\_\_

Company waives inspection/witness test? Yes \_\_\_ No \_\_\_

**Small Generating Facility Certificate of Completion**

Is the Small Generating Facility owner-installed? Yes \_\_\_\_\_ No \_\_\_\_\_

Interconnection Customer: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Address: \_\_\_\_\_

Location of the Small Generating Facility (if different from above):  
\_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone (Day): \_\_\_\_\_ (Evening): \_\_\_\_\_

Fax: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

Electrician:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone (Day): \_\_\_\_\_ (Evening): \_\_\_\_\_

Fax: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

License number: \_\_\_\_\_

Date Approval to Install Facility granted by the Company: \_\_\_\_\_

Application ID number: \_\_\_\_\_

**Inspection:**

The Small Generating Facility has been installed and inspected in compliance with the local building/electrical code of \_\_\_\_\_

Signed (Local electrical wiring inspector, or attach signed electrical inspection):

\_\_\_\_\_

Print Name: \_\_\_\_\_

Date: \_\_\_\_\_

As a condition of interconnection, you are required to send/fax a copy of this form along with a copy of the signed electrical permit to (insert Company information below):

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ ZIP: \_\_\_\_\_

Fax: \_\_\_\_\_

Approval to Energize the Small Generating Facility (For Company use only)  
Energizing the Small Generating Facility is approved contingent upon the Terms and Conditions for Interconnecting an Inverter-Based Small Generating Facility No Larger than 10kW

Company Signature: \_\_\_\_\_

Title: \_\_\_\_\_ Date: \_\_\_\_\_

**Terms and Conditions for Interconnecting an Inverter-Based  
Small Generating Facility No Larger than 10kW**

**1.0 Construction of the Facility**

The Interconnection Customer (the "Customer") may proceed to construct (including operational testing not to exceed two hours) the Small Generating Facility when the Participating TO (the "Company") approves the Interconnection Request (the "Application") and returns it to the Customer.

## **2.0 Interconnection and Operation**

The Customer may operate Small Generating Facility and interconnect with the Company's electric system once all of the following have occurred:

2.1 Upon completing construction, the Customer will cause the Small Generating Facility to be inspected or otherwise certified by the appropriate local electrical wiring inspector with jurisdiction, and

2.2 The Customer returns the Certificate of Completion to the Company, and

2.3 The Company has either:

2.3.1 Completed its inspection of the Small Generating Facility to ensure that all equipment has been appropriately installed and that all electrical connections have been made in accordance with applicable codes. All inspections must be conducted by the Company, at its own expense, within ten Business Days after receipt of the Certificate of Completion and shall take place at a time agreeable to the Parties. The Company shall provide a written statement that the Small Generating Facility has passed inspection or shall notify the Customer of what steps it must take to pass inspection as soon as practicable after the inspection takes place; or

2.3.2 If the Company does not schedule an inspection of the Small Generating Facility within ten business days after receiving the Certificate of Completion, the witness test is deemed waived (unless the Parties agree otherwise); or

2.3.3 The Company waives the right to inspect the Small Generating Facility.

2.4 The Company has the right to disconnect the Small Generating Facility in the event of improper installation or failure to return the Certificate of Completion.

2.5 Revenue quality metering equipment must be installed and tested in accordance with applicable ANSI standards.

## **3.0 Safe Operations and Maintenance**

The Customer shall be fully responsible to operate, maintain, and repair the Small Generating Facility as required to ensure that it complies at all times with the interconnection standards to which it has been certified.

## **4.0 Access**

The Company shall have access to the disconnect switch (if the disconnect switch is required) and metering equipment of the Small Generating Facility at all times. The Company shall provide reasonable notice to the Customer when possible prior to using its right of access.

## **5.0 Disconnection**

The Company may temporarily disconnect the Small Generating Facility upon the following conditions:

5.1 For scheduled outages upon reasonable notice.

5.2 For unscheduled outages or emergency conditions.

5.3 If the Small Generating Facility does not operate in the manner consistent with these Terms and Conditions.

5.4 The Company shall inform the Customer in advance of any scheduled disconnection, or as is reasonable after an unscheduled disconnection.

## **6.0 Indemnification**

The Parties shall at all times indemnify, defend, and save the other Party harmless from, any and all damages, losses, claims, including claims and actions relating to injury to or death of any person or damage to property, demand, suits, recoveries, costs and expenses, court costs, attorney fees, and all other obligations by or to third parties, arising out of or resulting from the other Party's action or inactions of its obligations under this agreement on behalf of the indemnifying Party, except in cases of gross negligence or intentional wrongdoing by the indemnified Party.

## **7.0 Insurance**

The Parties each agree to maintain commercially reasonable amounts of insurance.

## **8.0 Limitation of Liability**

Each party's liability to the other party for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to or arising from any act or omission in its performance of this Agreement, shall be limited to the amount of direct damage actually incurred. In no event shall either party be liable to the other party for any indirect, incidental, special, consequential, or punitive damages of any kind whatsoever, except as allowed under paragraph 6.0.

## **9.0 Termination**

The agreement to operate in parallel may be terminated under the following conditions:

9.1 By the Customer  
By providing written notice to the Company.

9.2 By the Company  
If the Small Generating Facility fails to operate for any consecutive 12 month period or the Customer fails to remedy a violation of these Terms and Conditions.

9.3 Permanent Disconnection  
In the event this Agreement is terminated, the Company shall have the right to disconnect its facilities or direct the Customer to disconnect its Small Generating Facility.

9.4 Survival Rights  
This Agreement shall continue in effect after termination to the extent necessary to allow or require either Party to fulfill rights or obligations that arose under the Agreement.

## **10.0 Assignment/Transfer of Ownership of the Facility**

This Agreement shall survive the transfer of ownership of the Small Generating Facility to a new owner when the new owner agrees in writing to comply with the terms of this Agreement and so notifies the Company.

**Attachment 6**

**Feasibility Study Agreement**

**THIS AGREEMENT** is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_ by and between \_\_\_\_\_, a \_\_\_\_\_ organized and existing under the laws of the State of \_\_\_\_\_, ("Interconnection Customer,") and the California Independent System Operator Corporation, a California nonprofit public benefit corporation existing under the laws of the State of California, ("CAISO"). Interconnection Customer and CAISO each may be referred to as a "Party," or collectively as the "Parties."

**RECITALS**

**WHEREAS**, Interconnection Customer is proposing to develop a Small Generating Facility or generating capacity addition to an existing Small Generating Facility consistent with the Interconnection Request completed by Interconnection Customer on \_\_\_\_\_; and

**WHEREAS**, Interconnection Customer desires to interconnect the Small Generating Facility with the CAISO Controlled Grid; and

**WHEREAS**, Interconnection Customer has requested the CAISO to conduct or cause to be performed a feasibility study to assess the feasibility of interconnecting the proposed Small Generating Facility with the CAISO Controlled Grid, and of any Affected Systems;

**NOW, THEREFORE**, in consideration of and subject to the mutual covenants contained herein the Parties agreed as follows:

- 1.0 When used in this Agreement, with initial capitalization, the terms specified shall have the meanings indicated or the meanings specified in the Master Definitions Supplement, Appendix A of the CAISO Tariff.
- 2.0 The Interconnection Customer elects and the CAISO shall conduct or cause to be performed an interconnection feasibility study consistent with the standard Small Generator Interconnection Procedures in accordance with the CAISO Tariff.
- 3.0 The scope of the feasibility study shall be subject to the assumptions set forth in Attachment A to this Agreement.
- 4.0 The feasibility study shall be based on the technical information provided by the Interconnection Customer in the Interconnection Request, as may be modified as the result of the Scoping Meeting. The CAISO reserves the right to request additional technical information from the Interconnection Customer as may reasonably become necessary consistent with Good Utility Practice during the course of the feasibility study and as designated in accordance with the standard Small Generator Interconnection Procedures. If the Interconnection Customer modifies its Interconnection Request, the time to complete the feasibility study may be extended by agreement of the Parties.



- 5.0 In performing the study, the CAISO shall rely, to the extent reasonably practicable, on existing studies of recent vintage. The Interconnection Customer shall not be charged for such existing studies; however, the Interconnection Customer shall be responsible for charges associated with any new study or modifications to existing studies that are reasonably necessary to perform the feasibility study.
- 6.0 The feasibility study report shall provide the following analyses for the purpose of identifying any potential adverse system impacts that would result from the interconnection of the Small Generating Facility as proposed:
  - 6.1 Initial identification of any circuit breaker short circuit capability limits exceeded as a result of the interconnection;
  - 6.2 Initial identification of any thermal overload or voltage limit violations resulting from the interconnection;
  - 6.3 Initial review of grounding requirements and electric system protection;
  - 6.4 preliminary identification of financial impacts, if any, on Local Furnishing Bonds; and
  - 6.5 Description and non-bonding estimated cost of facilities required to interconnect the proposed Small Generating Facility and to address the identified short circuit and power flow issues.
- 7.0 The feasibility study shall model the impact of the Small Generating Facility regardless of purpose in order to avoid the further expense and interruption of operation for reexamination of feasibility and impacts if the Interconnection Customer later changes the purpose for which the Small Generating Facility is being installed.
- 8.0 The study shall include the feasibility of any interconnection at a proposed project site where there could be multiple potential Points of Interconnection, as requested by the Interconnection Customer and at the Interconnection Customer's cost.
- 9.0 A deposit of the lesser of 50 percent of good faith estimated feasibility study costs or earnest money of \$1,000 shall be required from the Interconnection Customer.
- 10.0 Once the feasibility study is completed, a feasibility study report shall be prepared and transmitted to the Interconnection Customer. Barring unusual circumstances, the feasibility study must be completed and the feasibility study report transmitted within 30 Business Days of the Interconnection Customer's agreement to conduct a feasibility study.
- 11.0 Any study fees shall be based on the CAISO's actual costs and will be invoiced to the Interconnection Customer after the study is completed and delivered and will include a summary of professional time.

- 12.0 The Interconnection Customer must pay any study costs that exceed the deposit without interest within 30 calendar days on receipt of the invoice or resolution of any dispute. If the deposit exceeds the invoiced fees, the CAISO shall refund such excess within 30 calendar days of the invoice without interest.
- 13.0 Miscellaneous.
- 13.1 Dispute Resolution. Any dispute, or assertion of a claim, arising out of or in connection with this Agreement, shall be resolved in accordance with Section 4.2 of the SGIP.
- 13.2 Confidentiality. Confidential Information shall be treated in accordance with Section 4.5 of the SGIP.
- 13.3 Binding Effect. This Agreement and the rights and obligations hereof, shall be binding upon and shall inure to the benefit of the successors and assigns of the Parties hereto.
- 13.4 Conflicts. In the event of a conflict between the body of this Agreement and any attachment, appendices or exhibits hereto, the terms and provisions of the body of this Agreement shall prevail and be deemed the final intent of the Parties.
- 13.5 Rules of Interpretation. This Agreement, unless a clear contrary intention appears, shall be construed and interpreted as follows: (1) the singular number includes the plural number and vice versa; (2) reference to any person includes such person's successors and assigns but, in the case of a Party, only if such successors and assigns are permitted by this Agreement, and reference to a person in a particular capacity excludes such person in any other capacity or individually; (3) reference to any agreement (including this Feasibility Study Agreement), document, instrument or tariff means such agreement, document, instrument, or tariff as amended or modified and in effect from time to time in accordance with the terms thereof and, if applicable, the terms hereof; (4) reference to any applicable laws and regulations means such applicable laws and regulations as amended, modified, codified, or reenacted, in whole or in part, and in effect from time to time, including, if applicable, rules and regulations promulgated thereunder; (5) unless expressly stated otherwise, reference to any Article, Section, Attachment, or Appendix means such Article or Section of this Agreement or such Attachment or Appendix to this Agreement, or such Section of the SGIP or such Attachment or Appendix to the SGIP, as the case may be; (6) "hereunder", "hereof", "herein", "hereto" and words of similar import shall be deemed references to this Agreement as a whole and not to any particular Section; (7) "including" (and with correlative meaning "include") means including without limiting the generality of any description preceding such term; and (8) relative to the determination of any period of time, "from" means "from and including", "to" means "to but excluding" and "through" means "through and including".
- 13.6 Governing Law, Regulatory Authority, and Rules. The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the state where the Point of Interconnection is located, without regard to its conflicts of law principles. This Agreement is subject to all Applicable Laws and Regulations. Each Party expressly reserves the right to seek changes in, appeal, or otherwise contest any laws, orders, or regulations of a Governmental Authority.

13.7 No Third Party Beneficiaries. This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and, where permitted, their assigns.

13.8 Waiver. The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.

Any waiver at any time by either Party of its rights with respect to this Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Agreement. Termination or default of this Agreement for any reason by the Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the Participating TO or CAISO. Any waiver of this Agreement shall, if requested, be provided in writing.

Any waivers at any time by any Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.

13.9 Headings. The descriptive headings of the various Articles and Sections of this Agreement have been inserted for convenience of reference only and are of no significance in the interpretation or construction of this Agreement.

13.10 Multiple Counterparts. This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

13.11 Amendment. The Parties may by mutual agreement amend this Agreement by a written instrument duly executed by both of the Parties.

13.12 Modification by the Parties. The Parties may by mutual agreement amend the Appendices to this Agreement by a written instrument duly executed by both of the Parties. Such amendment shall become effective and a part of this Agreement upon satisfaction of all applicable laws and regulations.

13.13 Reservation of Rights. The CAISO shall have the right to make a unilateral filing with FERC to modify this Agreement with respect to any rates, terms and conditions, charges, classifications of service, rule or regulation under section 205 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder, and Interconnection Customer shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to section 206 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by another Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under sections 205 or 206 of the Federal Power Act and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.

- 13.14 No Partnership. This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon any Party. No Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, another Party.
- 13.15 Assignment. This Agreement may be assigned by a Party only with the written consent of the other Party; provided that a Party may assign this Agreement without the consent of the other Party to any Affiliate of the assigning Party with an equal or greater credit rating and with the legal authority and operational ability to satisfy the obligations of the assigning Party under this Agreement; and provided further that the Interconnection Customer shall have the right to assign this Agreement, without the consent of the other Party, for collateral security purposes to aid in providing financing for the Generating Unit, provided that the Interconnection Customer will require any secured party, trustee or mortgagee to notify the other Party of any such assignment. Any financing arrangement entered into by the Interconnection Customer pursuant to this Article will provide that prior to or upon the exercise of the secured party's, trustee's or mortgagee's assignment rights pursuant to said arrangement, the secured creditor, the trustee or mortgagee will notify the other Party of the date and particulars of any such exercise of assignment right(s). Any attempted assignment that violates this Article is void and ineffective. Any assignment under this Agreement shall not relieve a Party of its obligations, nor shall a Party's obligations be enlarged, in whole or in part, by reason thereof. Where required, consent to assignment will not be unreasonably withheld, conditioned or delayed.
- 13.16 Severability. If any provisions or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction or other Governmental Authority, (1) such portion or provision shall be deemed separate and independent, (2) the Parties shall negotiate in good faith to restore insofar as practicable the benefits to each Party that were affected by such ruling, and (3) the remainder of this Agreement shall remain in full force and effect.
- 13.17 Nothing in this Agreement shall prevent a Party from utilizing the services of any subcontractor as it deems appropriate to perform its obligations under this Agreement; provided, however, that each Party shall require its subcontractors to comply with all applicable terms and conditions of this Agreement in providing such services and each Party shall remain primarily liable to the other Parties for the performance of such subcontractor.

The creation of any subcontract relationship shall not relieve the hiring Party of any of its obligations under this Agreement. The hiring Party shall be fully responsible to the other Parties for the acts or omissions of any subcontractor the hiring Party hires as if no subcontract had been made; provided, however, that in no event shall the Participating TO or the CAISO be liable for the actions or inactions of the Interconnection Customer or its subcontractors with respect to obligations of the Interconnection Customer under this Agreement. Any applicable obligation imposed by this Agreement upon the hiring Party shall be equally binding upon, and shall be construed as having application to, any subcontractor of such Party.

The obligations under this article will not be limited in any way by any limitation of subcontractor's insurance.

**IN WITNESS WHEREOF**, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

**California Independent System Operator Corporation**

Signed \_\_\_\_\_

Name (Printed): \_\_\_\_\_

Title \_\_\_\_\_

**[Insert name of Interconnection Customer]**

Signed \_\_\_\_\_

Name (Printed): \_\_\_\_\_

Title \_\_\_\_\_

**Attachment A to  
Feasibility Study Agreement**

**Assumptions Used in Conducting the Feasibility Study**

The feasibility study will be based upon the information set forth in the Interconnection Request and agreed upon in the Scoping Meeting held on \_\_\_\_\_:

- 1) Designation of Point of Interconnection and configuration to be studied.
  
- 2) Designation of alternative Points of Interconnection and configuration.

1) and 2) are to be completed by the Interconnection Customer. Other assumptions (listed below) are to be provided by the Interconnection Customer and the CAISO.

**Attachment 7**

**System Impact Study Agreement**

**THIS AGREEMENT** is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_ by and between \_\_\_\_\_, a \_\_\_\_\_ organized and existing under the laws of the State of \_\_\_\_\_, ("Interconnection Customer,") and the California Independent System Operator Corporation, a California nonprofit public benefit corporation existing under the laws of the State of California, ("CAISO"). Interconnection Customer and CAISO each may be referred to as a "Party," or collectively as the "Parties."

**RECITALS**

**WHEREAS**, the Interconnection Customer is proposing to develop a Small Generating Facility or generating capacity addition to an existing Small Generating Facility consistent with the Interconnection Request completed by the Interconnection Customer on \_\_\_\_\_; and

**WHEREAS**, the Interconnection Customer desires to interconnect the Small Generating Facility with the CAISO Controlled Grid;

**WHEREAS**, the CAISO has completed a feasibility study and provided the results of said study to the Interconnection Customer (This recital to be omitted if the Parties have agreed to forego the feasibility study.); and

**WHEREAS**, the Interconnection Customer has requested the CAISO to conduct or cause to be performed a system impact study(s) to assess the impact of interconnecting the Small Generating Facility with the CAISO Controlled Grid, and of any Affected Systems;

**NOW, THEREFORE**, in consideration of and subject to the mutual covenants contained herein the Parties agreed as follows:

- 1.0 When used in this Agreement, with initial capitalization, the terms specified shall have the meanings indicated or the meanings specified in the Master Definitions Supplement, Appendix A of the CAISO Tariff.
- 2.0 The Interconnection Customer elects and the CAISO shall conduct or cause to be performed a system impact study(s) consistent with the standard Small Generator Interconnection Procedures in accordance with the CAISO Tariff.
- 3.0 The scope of a system impact study shall be subject to the assumptions set forth in Attachment A to this Agreement.

- 4.0 A system impact study will be based upon the results of the feasibility study and the technical information provided by Interconnection Customer in the Interconnection Request. The CAISO reserves the right to request additional technical information from the Interconnection Customer as may reasonably become necessary consistent with Good Utility Practice during the course of the system impact study. If the Interconnection Customer modifies its designated Point of Interconnection, Interconnection Request, or the technical information provided therein is modified, the time to complete the system impact study may be extended.
- 5.0 A system impact study shall consist of a short circuit analysis, a stability analysis, a power flow analysis, voltage drop and flicker studies, protection and set point coordination studies, an assessment of the potential magnitude of financial impacts, if any, on Local Furnishing Bonds and a proposed resolution, and grounding reviews, as necessary. A system impact study shall state the assumptions upon which it is based, state the results of the analyses, and provide the requirement or potential impediments to providing the requested interconnection service, including a preliminary indication of the cost and length of time that would be necessary to correct any problems identified in those analyses and implement the interconnection. A system impact study shall provide a list of facilities that are required as a result of the Interconnection Request and non-binding good faith estimates of cost responsibility and time to construct.
- 6.0 A Distribution System impact study shall incorporate a distribution load flow study, an analysis of equipment interrupting ratings, protection coordination study, voltage drop and flicker studies, protection and set point coordination studies, grounding reviews, and the impact on electric system operation, as necessary.
- 7.0 Affected Systems may participate in the preparation of a system impact study, with a division of costs among such entities as they may agree. All Affected Systems shall be afforded an opportunity to review and comment upon a system impact study that covers potential adverse system impacts on their electric systems, and the CAISO has 20 additional Business Days to complete a system impact study requiring review by Affected Systems.
- 8.0 If the CAISO uses a queuing procedure for sorting or prioritizing projects and their associated cost responsibilities for any required Network Upgrades, the system impact study shall consider all generating facilities (and with respect to paragraph 8.3 below, any identified Upgrades associated with such higher queued interconnection) that, on the date the system impact study is commenced -
- 8.1 Are directly interconnected with the CAISO Controlled Grid; or
- 8.2 Are interconnected with Affected Systems and may have an impact on the proposed interconnection; and
- 8.3 Have a pending higher queued Interconnection Request to interconnect with the CAISO Controlled Grid.
- 9.0 A Distribution System impact study, if required, shall be completed and the results transmitted to the Interconnection Customer within 30 Business Days after this Agreement is signed by the Parties. A CAISO Controlled Grid system impact study, if required, shall be completed and the results transmitted to the Interconnection Customer within 45 Business Days after this Agreement is signed by the Parties, or in accordance with the CAISO queuing procedures.



- 10.0 A deposit of the equivalent of the good faith estimated cost of a Distribution System impact study and one half the good faith estimated cost of a CAISO Controlled Grid system impact study shall be required from the Interconnection Customer.
- 11.0 Any study fees shall be based on the CAISO actual costs and will be invoiced to the Interconnection Customer after the study is completed and delivered and will include a summary of professional time.
- 12.0 The Interconnection Customer must pay any study costs that exceed the deposit without interest within 30 calendar days on receipt of the invoice or resolution of any dispute. If the deposit exceeds the invoiced fees, the CAISO shall refund such excess within 30 calendar days of the invoice without interest.
- 13.0 Miscellaneous.
- 13.1 Dispute Resolution. Any dispute, or assertion of a claim, arising out of or in connection with this Agreement, shall be resolved in accordance with Section 4.2 of the SGIP.
- 13.2 Confidentiality. Confidential Information shall be treated in accordance with Section 4.5 of the SGIP.
- 13.3 Binding Effect. This Agreement and the rights and obligations hereof, shall be binding upon and shall inure to the benefit of the successors and assigns of the Parties hereto.
- 13.4 Conflicts. In the event of a conflict between the body of this Agreement and any attachment, appendices or exhibits hereto, the terms and provisions of the body of this Agreement shall prevail and be deemed the final intent of the Parties.
- 13.5 Rules of Interpretation. This Agreement, unless a clear contrary intention appears, shall be construed and interpreted as follows: (1) the singular number includes the plural number and vice versa; (2) reference to any person includes such person's successors and assigns but, in the case of a Party, only if such successors and assigns are permitted by this Agreement, and reference to a person in a particular capacity excludes such person in any other capacity or individually; (3) reference to any agreement (including this System Impact Study Agreement), document, instrument or tariff means such agreement, document, instrument, or tariff as amended or modified and in effect from time to time in accordance with the terms thereof and, if applicable, the terms hereof; (4) reference to any applicable laws and regulations means such applicable laws and regulations as amended, modified, codified, or reenacted, in whole or in part, and in effect from time to time, including, if applicable, rules and regulations promulgated thereunder; (5) unless expressly stated otherwise, reference to any Article, Section, Attachment, or Appendix means such Article or Section of this Agreement or such Attachment or Appendix to this Agreement, or such Section of the SGIP or such Attachment or Appendix to the SGIP, as the case may be; (6) "hereunder", "hereof", "herein", "hereto" and words of similar import shall be deemed references to this Agreement as a whole and not to any particular Section; (7) "including" (and with correlative meaning "include") means including without limiting the generality of any description preceding such term; and (8) relative to the determination of any period of time, "from" means "from and including", "to" means "to but excluding" and "through" means "through and including".

- 13.6 Governing Law, Regulatory Authority, and Rules. The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the state where the Point of Interconnection is located, without regard to its conflicts of law principles. This Agreement is subject to all Applicable Laws and Regulations. Each Party expressly reserves the right to seek changes in, appeal, or otherwise contest any laws, orders, or regulations of a Governmental Authority.
- 13.7 No Third Party Beneficiaries. This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and, where permitted, their assigns.
- 13.8 Waiver. The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.
- Any waiver at any time by either Party of its rights with respect to this Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Agreement. Termination or default of this Agreement for any reason by the Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the Participating TO or CAISO. Any waiver of this Agreement shall, if requested, be provided in writing.
- Any waivers at any time by any Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.
- 13.9 Headings. The descriptive headings of the various Articles and Sections of this Agreement have been inserted for convenience of reference only and are of no significance in the interpretation or construction of this Agreement.
- 13.10 Multiple Counterparts. This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.
- 13.11 Amendment. The Parties may by mutual agreement amend this Agreement by a written instrument duly executed by both of the Parties.
- 13.12 Modification by the Parties. The Parties may by mutual agreement amend the Appendices to this Agreement by a written instrument duly executed by both of the Parties. Such amendment shall become effective and a part of this Agreement upon satisfaction of all applicable laws and regulations.

- 13.13 Reservation of Rights. The CAISO shall have the right to make a unilateral filing with FERC to modify this Agreement with respect to any rates, terms and conditions, charges, classifications of service, rule or regulation under section 205 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder, and Interconnection Customer shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to section 206 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by another Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under sections 205 or 206 of the Federal Power Act and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.
- 13.14 No Partnership. This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon any Party. No Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, another Party.
- 13.15 Assignment. This Agreement may be assigned by a Party only with the written consent of the other Party; provided that a Party may assign this Agreement without the consent of the other Party to any Affiliate of the assigning Party with an equal or greater credit rating and with the legal authority and operational ability to satisfy the obligations of the assigning Party under this Agreement; and provided further that the Interconnection Customer shall have the right to assign this Agreement, without the consent of the other Party, for collateral security purposes to aid in providing financing for the Generating Unit, provided that the Interconnection Customer will require any secured party, trustee or mortgagee to notify the other Party of any such assignment. Any financing arrangement entered into by the Interconnection Customer pursuant to this Article will provide that prior to or upon the exercise of the secured party's, trustee's or mortgagee's assignment rights pursuant to said arrangement, the secured creditor, the trustee or mortgagee will notify the other Party of the date and particulars of any such exercise of assignment right(s). Any attempted assignment that violates this Article is void and ineffective. Any assignment under this Agreement shall not relieve a Party of its obligations, nor shall a Party's obligations be enlarged, in whole or in part, by reason thereof. Where required, consent to assignment will not be unreasonably withheld, conditioned or delayed.
- 13.16 Severability. If any provisions or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction or other Governmental Authority, (1) such portion or provision shall be deemed separate and independent, (2) the Parties shall negotiate in good faith to restore insofar as practicable the benefits to each Party that were affected by such ruling, and (3) the remainder of this Agreement shall remain in full force and effect.
- 13.17 Nothing in this Agreement shall prevent a Party from utilizing the services of any subcontractor as it deems appropriate to perform its obligations under this Agreement; provided, however, that each Party shall require its subcontractors to comply with all applicable terms and conditions of this Agreement in providing such services and each Party shall remain primarily liable to the other Parties for the performance of such subcontractor.

The creation of any subcontract relationship shall not relieve the hiring Party of any of its obligations under this Agreement. The hiring Party shall be fully responsible to the other Parties for the acts or omissions of any subcontractor the hiring Party hires as if no subcontract had been made; provided, however, that in no event shall the Participating TO or the CAISO be liable for the actions or inactions of the Interconnection Customer or its subcontractors with respect to obligations of the Interconnection Customer under this Agreement. Any applicable obligation imposed by this Agreement upon the hiring Party shall be equally binding upon, and shall be construed as having application to, any subcontractor of such Party.

The obligations under this article will not be limited in any way by any limitation of subcontractor's insurance.

**IN WITNESS THEREOF**, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

**California Independent System Operator Corporation**

Signed \_\_\_\_\_

Name (Printed): \_\_\_\_\_

Title \_\_\_\_\_

**[Insert name of Interconnection Customer]**

Signed \_\_\_\_\_

Name (Printed): \_\_\_\_\_

Title \_\_\_\_\_

**Attachment A to System  
Impact Study Agreement**

**Assumptions Used in Conducting the System Impact Study**

The system impact study shall be based upon the results of the feasibility study, subject to any modifications in accordance with the standard Small Generator Interconnection Procedures, and the following assumptions:

- 1) Designation of Point of Interconnection and configuration to be studied.
  
- 2) Designation of alternative Points of Interconnection and configuration.

1) and 2) are to be completed by the Interconnection Customer. Other assumptions (listed below) are to be provided by the Interconnection Customer and the CAISO.

**Attachment 8**

**Facilities Study Agreement**

**THIS AGREEMENT** is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_ by and between \_\_\_\_\_, a \_\_\_\_\_ organized and existing under the laws of the State of \_\_\_\_\_, ("Interconnection Customer,") and the California Independent System Operator Corporation, a California nonprofit public benefit corporation existing under the laws of the State of California, ("CAISO"). Interconnection Customer and CAISO each may be referred to as a "Party," or collectively as the "Parties."

**RECITALS**

**WHEREAS**, the Interconnection Customer is proposing to develop a Small Generating Facility or generating capacity addition to an existing Small Generating Facility consistent with the Interconnection Request completed by the Interconnection Customer on \_\_\_\_\_; and

**WHEREAS**, the Interconnection Customer desires to interconnect the Small Generating Facility with the CAISO Controlled Grid;

**WHEREAS**, the CAISO has completed a system impact study and provided the results of said study to the Interconnection Customer; and

**WHEREAS**, the Interconnection Customer has requested the CAISO to conduct or cause to be performed a facilities study to specify and estimate the cost of the equipment, engineering, procurement and construction work needed to implement the conclusions of the system impact study in accordance with Good Utility Practice to physically and electrically connect the Small Generating Facility with the CAISO Controlled Grid.

**NOW, THEREFORE**, in consideration of and subject to the mutual covenants contained herein the Parties agreed as follows:

- 1.0 When used in this Agreement, with initial capitalization, the terms specified shall have the meanings indicated or the meanings specified in the Master Definitions Supplement, Appendix A of the CAISO Tariff.
- 2.0 The Interconnection Customer elects and the CAISO shall cause a facilities study consistent with the standard Small Generator Interconnection Procedures to be performed in accordance with the CAISO Tariff.
- 3.0 The scope of the facilities study shall be subject to data provided in Attachment A to this Agreement.

- 4.0 The facilities study shall specify and estimate the cost, including, if applicable, the cost of remedial measures that address the financial impacts, if any, on Local Furnishing Bonds, of the equipment, engineering, procurement and construction work (including overheads) needed to implement the conclusions of the system impact study(s). The facilities study shall also identify (1) the electrical switching configuration of the equipment, including, without limitation, transformer, switchgear, meters, and other station equipment, (2) the nature and estimated cost of the Participating TO's Interconnection Facilities and Upgrades necessary to accomplish the interconnection, and (3) an estimate of the time required to complete the construction and installation of such facilities or for effecting remedial measures that address the financial impacts, if any, on Local Furnishing Bonds.
- 5.0 The CAISO may propose to group facilities required for more than one Interconnection Customer in order to minimize facilities costs through economies of scale, but any Interconnection Customer may require the installation of facilities required for its own Small Generating Facility if it is willing to pay the costs of those facilities.
- 6.0 A deposit of the good faith estimated facilities study costs shall be required from the Interconnection Customer.
- 7.0 In cases where Upgrades are required, the facilities study must be completed within 45 Business Days of the receipt of this Agreement. In cases where no Upgrades are necessary, and the required facilities are limited to Interconnection Facilities, the facilities study must be completed within 30 Business Days.
- 8.0 Once the facilities study is completed, a facilities study report shall be prepared and transmitted to the Interconnection Customer. Barring unusual circumstances, the facilities study must be completed and the facilities study report transmitted within 30 Business Days of the Interconnection Customer's agreement to conduct a facilities study.
- 9.0 Any study fees shall be based on the CAISO's actual costs and will be invoiced to the Interconnection Customer after the study is completed and delivered and will include a summary of professional time.
- 10.0 The Interconnection Customer must pay any study costs that exceed the deposit without interest within 30 calendar days on receipt of the invoice or resolution of any dispute. If the deposit exceeds the invoiced fees, the CAISO shall refund such excess within 30 calendar days of the invoice without interest.
- 11.0 Miscellaneous.
- 11.1 Dispute Resolution. Any dispute, or assertion of a claim, arising out of or in connection with this Agreement, shall be resolved in accordance with Section 4.2 of the SGIP.
- 11.2 Confidentiality. Confidential Information shall be treated in accordance with Section 4.5 of the SGIP.
- 11.3 Binding Effect. This Agreement and the rights and obligations hereof, shall be binding upon and shall inure to the benefit of the successors and assigns of the Parties hereto.
- 11.4 Conflicts. In the event of a conflict between the body of this Agreement and any attachment, appendices or exhibits hereto, the terms and provisions of the body of this Agreement shall prevail and be deemed the final intent of the Parties.

- 11.5 Rules of Interpretation. This Agreement, unless a clear contrary intention appears, shall be construed and interpreted as follows: (1) the singular number includes the plural number and vice versa; (2) reference to any person includes such person's successors and assigns but, in the case of a Party, only if such successors and assigns are permitted by this Agreement, and reference to a person in a particular capacity excludes such person in any other capacity or individually; (3) reference to any agreement (including this Facilities Study Agreement), document, instrument or tariff means such agreement, document, instrument, or tariff as amended or modified and in effect from time to time in accordance with the terms thereof and, if applicable, the terms hereof; (4) reference to any applicable laws and regulations means such applicable laws and regulations as amended, modified, codified, or reenacted, in whole or in part, and in effect from time to time, including, if applicable, rules and regulations promulgated thereunder; (5) unless expressly stated otherwise, reference to any Article, Section, Attachment, or Appendix means such Article or Section of this Agreement or such Attachment or Appendix to this Agreement, or such Section of the SGIP or such Attachment or Appendix to the SGIP, as the case may be; (6) "hereunder", "hereof", "herein", "hereto" and words of similar import shall be deemed references to this Agreement as a whole and not to any particular Section; (7) "including" (and with correlative meaning "include") means including without limiting the generality of any description preceding such term; and (8) relative to the determination of any period of time, "from" means "from and including", "to" means "to but excluding" and "through" means "through and including".
- 11.6 Governing Law, Regulatory Authority, and Rules. The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the state where the Point of Interconnection is located, without regard to its conflicts of law principles. This Agreement is subject to all Applicable Laws and Regulations. Each Party expressly reserves the right to seek changes in, appeal, or otherwise contest any laws, orders, or regulations of a Governmental Authority.
- 11.7 No Third Party Beneficiaries. This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and, where permitted, their assigns.
- 11.8 Waiver. The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.

Any waiver at any time by either Party of its rights with respect to this Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Agreement. Termination or default of this Agreement for any reason by the Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the Participating TO or CAISO. Any waiver of this Agreement shall, if requested, be provided in writing.

Any waivers at any time by any Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.



- 11.9 Headings. The descriptive headings of the various Articles and Sections of this Agreement have been inserted for convenience of reference only and are of no significance in the interpretation or construction of this Agreement.
- 11.10 Multiple Counterparts. This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.
- 11.11 Amendment. The Parties may by mutual agreement amend this Agreement by a written instrument duly executed by both of the Parties.
- 11.12 Modification by the Parties. The Parties may by mutual agreement amend the Appendices to this Agreement by a written instrument duly executed by both of the Parties. Such amendment shall become effective and a part of this Agreement upon satisfaction of all applicable laws and regulations.
- 11.13 Reservation of Rights. The CAISO shall have the right to make a unilateral filing with FERC to modify this Agreement with respect to any rates, terms and conditions, charges, classifications of service, rule or regulation under section 205 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder, and Interconnection Customer shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to section 206 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by another Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under sections 205 or 206 of the Federal Power Act and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.
- 11.14 No Partnership. This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon any Party. No Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, another Party.
- 11.15 Assignment. This Agreement may be assigned by a Party only with the written consent of the other Party; provided that a Party may assign this Agreement without the consent of the other Party to any Affiliate of the assigning Party with an equal or greater credit rating and with the legal authority and operational ability to satisfy the obligations of the assigning Party under this Agreement; and provided further that the Interconnection Customer shall have the right to assign this Agreement, without the consent of the other Party, for collateral security purposes to aid in providing financing for the Generating Unit, provided that the Interconnection Customer will require any secured party, trustee or mortgagee to notify the other Party of any such assignment. Any financing arrangement entered into by the Interconnection Customer pursuant to this Article will provide that prior to or upon the exercise of the secured party's, trustee's or mortgagee's assignment rights pursuant to said arrangement, the secured creditor, the trustee or mortgagee will notify the other Party of the date and particulars of any such exercise of assignment right(s). Any attempted assignment that violates this Article is void and ineffective. Any assignment under this Agreement shall not relieve a Party of its obligations, nor shall a Party's obligations be enlarged, in whole or in part, by reason thereof. Where required, consent to assignment will not be unreasonably withheld, conditioned or delayed.

- 11.16 Severability. If any provisions or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction or other Governmental Authority, (1) such portion or provision shall be deemed separate and independent, (2) the Parties shall negotiate in good faith to restore insofar as practicable the benefits to each Party that were affected by such ruling, and (3) the remainder of this Agreement shall remain in full force and effect.
- 11.17 Nothing in this Agreement shall prevent a Party from utilizing the services of any subcontractor as it deems appropriate to perform its obligations under this Agreement; provided, however, that each Party shall require its subcontractors to comply with all applicable terms and conditions of this Agreement in providing such services and each Party shall remain primarily liable to the other Parties for the performance of such subcontractor.

The creation of any subcontract relationship shall not relieve the hiring Party of any of its obligations under this Agreement. The hiring Party shall be fully responsible to the other Parties for the acts or omissions of any subcontractor the hiring Party hires as if no subcontract had been made; provided, however, that in no event shall the Participating TO or the CAISO be liable for the actions or inactions of the Interconnection Customer or its subcontractors with respect to obligations of the Interconnection Customer under this Agreement. Any applicable obligation imposed by this Agreement upon the hiring Party shall be equally binding upon, and shall be construed as having application to, any subcontractor of such Party.

The obligations under this article will not be limited in any way by any limitation of subcontractor's insurance.

**IN WITNESS WHEREOF**, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

**California Independent System Operator Corporation**

Signed \_\_\_\_\_

Name (Printed): \_\_\_\_\_

Title \_\_\_\_\_

**[Insert name of Interconnection Customer]**

Signed \_\_\_\_\_

Name (Printed): \_\_\_\_\_

Title \_\_\_\_\_

**Attachment A to  
Facilities Study Agreement**

**Data to Be Provided by the Interconnection Customer  
with the Facilities Study Agreement**

Provide location plan and simplified one-line diagram of the plant and station facilities. For staged projects, please indicate future generation, transmission circuits, etc.

On the one-line diagram, indicate the generation capacity attached at each metering location.  
(Maximum load on CT/PT)

On the one-line diagram, indicate the location of auxiliary power. (Minimum load on CT/PT)  
Amps

One set of metering is required for each generation connection to the new ring bus or existing Participating TO station. Number of generation connections: \_\_\_\_\_

Will an alternate source of auxiliary power be available during CT/PT maintenance?  
Yes \_\_\_\_\_ No \_\_\_\_\_

Will a transfer bus on the generation side of the metering require that each meter set be designed for the total plant generation? Yes \_\_\_\_\_ No \_\_\_\_\_  
(Please indicate on the one-line diagram).

What type of control system or PLC will be located at the Small Generating Facility?

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What protocol does the control system or PLC use?

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Please provide a 7.5-minute quadrangle map of the site. Indicate the plant, station, transmission line, and property lines.

Physical dimensions of the proposed interconnection station:

---

Bus length from generation to interconnection station:

---

Line length from interconnection station to CAISO Controlled Grid.

---

Tower number observed in the field. (Painted on tower leg)\*:

---

Number of third party easements required for transmission lines\*:

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\* To be completed in coordination with Participating TO.

Is the Small Generating Facility located in Participating TO's service area?

Yes \_\_\_\_\_ No \_\_\_\_\_ If No, please provide name of local provider:

---

Please provide the following proposed schedule dates:

Begin Construction Date: \_\_\_\_\_

Generator step-up transformers receive back feed power Date: \_\_\_\_\_

Generation Testing Date: \_\_\_\_\_

Commercial Operation Date: \_\_\_\_\_

**Attachment 9**

**INTERCONNECTION PROCEDURES FOR A WIND GENERATING PLANT**

Attachment 9 sets forth procedures specific to a wind generating plant. All other requirements of this SGIP continue to apply to wind generating plant interconnections.

**A. Special Procedures Applicable to Wind Generators**

The wind plant Interconnection Customer, in completing the Interconnection Request required by Section 2.3 of this SGIP, may provide to the CAISO a set of preliminary electrical design specifications depicting the wind plant as a single equivalent generator. Upon satisfying these and other applicable Interconnection Request conditions, the wind plant may enter the queue and receive the Base Case data as provided for in this SGIP.

No later than six months after submitting an Interconnection Request completed in this manner, the wind plant Interconnection Customer must submit completed detailed electrical design specifications and other data (including collector system layout data) needed to allow the CAISO to complete the interconnection study.

**CAISO TARIFF APPENDIX T**

**SMALL GENERATOR  
INTERCONNECTION AGREEMENT (SGIA)**

**SMALL GENERATOR  
INTERCONNECTION AGREEMENT (SGIA)**

**(For Generating Facilities No Larger Than 20 MW)**

### Small Generator Interconnection Agreement

This Small Generator Interconnection Agreement ("Agreement") is made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_, by \_\_\_\_\_ ("Participating TO"), the California Independent System Operator Corporation, a California nonprofit public benefit corporation organized and existing under the laws of the State of California ("CAISO") and \_\_\_\_\_ ("Interconnection Customer") each hereinafter sometimes referred to individually as "Party" or referred to collectively as the "Parties."

#### Participating TO Information

Participating TO: \_\_\_\_\_  
Attention: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

#### CAISO Information

Attention: Phil Pettingill  
151 Blue Ravine Road  
Folsom, CA 95630  
Phone: 916-351-4400 Fax: \_\_\_\_\_

#### Interconnection Customer Information

Interconnection Customer: \_\_\_\_\_  
Attention: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Interconnection Customer Application No: \_\_\_\_\_

In consideration of the mutual covenants set forth herein, the Parties agree as follows:

#### Article 1. Scope and Limitations of Agreement

- 1.1 This Agreement shall be used for all Interconnection Requests submitted under the Small Generator Interconnection Procedures (SGIP) except for those submitted under the 10 kW Inverter Process contained in SGIP Attachment 5.
- 1.2 This Agreement governs the terms and conditions under which the Interconnection Customer's Small Generating Facility will interconnect with, and operate in parallel with, the Participating TO's Transmission System.



- 1.3 This Agreement does not constitute an agreement to purchase or deliver the Interconnection Customer's power. The purchase or delivery of power and other services that the Interconnection Customer may require will be covered under separate agreements, if any. The Interconnection Customer will be responsible for separately making all necessary arrangements (including scheduling) for delivery of electricity in accordance with the CAISO Tariff.
- 1.4 Nothing in this Agreement is intended to affect any other agreement between or among the Parties.
- 1.5 Responsibilities of the Parties
- 1.5.1 The Parties shall perform all obligations of this Agreement in accordance with all Applicable Laws and Regulations, Operating Requirements, and Good Utility Practice. The Parties shall use the Standard Large Generator Interconnection Agreement (CAISO Tariff Appendix V) to interpret the responsibilities of the Parties under this Agreement.
- 1.5.2 The Interconnection Customer shall construct, interconnect, operate and maintain its Small Generating Facility and construct, operate, and maintain its Interconnection Facilities in accordance with the applicable manufacturer's recommended maintenance schedule, and in accordance with this Agreement, and with Good Utility Practice.
- 1.5.3 The Participating TO shall construct, operate, and maintain its Interconnection Facilities and Upgrades in accordance with this Agreement, and with Good Utility Practice. The CAISO and the Participating TO shall cause the Participating TO's Transmission System to be operated and controlled in a safe and reliable manner and in accordance with this Agreement.
- 1.5.4 The Interconnection Customer agrees to construct its facilities or systems in accordance with applicable specifications that meet or exceed those provided by the National Electrical Safety Code, the American National Standards Institute, IEEE, Underwriter's Laboratory, and Operating Requirements in effect at the time of construction and other applicable national and state codes and standards. The Interconnection Customer agrees to design, install, maintain, and operate its Small Generating Facility so as to reasonably minimize the likelihood of a disturbance adversely affecting or impairing the system or equipment of the Participating TO and any Affected Systems. The Interconnection Customer shall comply with the Participating TO's Interconnection Handbook. In the event of a conflict between the terms of this Agreement and the terms of the Participating TO's Interconnection Handbook, the terms in this Agreement shall govern.
- 1.5.5 Each Party shall operate, maintain, repair, and inspect, and shall be fully responsible for the facilities that it now or subsequently may own unless otherwise specified in the Attachments to this Agreement. Each Party shall be responsible for the safe installation, maintenance, repair and condition of their respective lines and appurtenances on their respective sides of the point of change of ownership. The Participating TO and the Interconnection Customer, as appropriate, shall provide Interconnection Facilities that adequately protect the CAISO Controlled Grid, the Participating TO's electric system, the Participating TO's personnel, and other persons from damage and injury. The allocation of responsibility for the design, installation, operation, maintenance and ownership of Interconnection Facilities shall be delineated in the Attachments to this Agreement.

- 1.5.6 The Participating TO and the CAISO shall coordinate with Affected Systems to support the interconnection.
- 1.5.7 The Interconnection Customer shall execute the Reliability Management System Agreement of the Western Electricity Coordinating Council prior to parallel operation of the Small Generating Facility. The Reliability Management System Agreement is provided as Attachment 8 to this Agreement.
- 1.6 Parallel Operation Obligations  
Once the Small Generating Facility has been authorized to commence parallel operation, the Interconnection Customer shall abide by all rules and procedures pertaining to the parallel operation of the Small Generating Facility in the CAISO **Balancing Authority** Area, including, but not limited to; 1) the rules and procedures concerning the operation of generation set forth in the CAISO Tariff for the CAISO Controlled Grid and; 2) the Operating Requirements set forth in Attachment 5 of this Agreement.
- 1.7 Metering  
The Interconnection Customer shall be responsible for the reasonable and necessary cost for the purchase, installation, operation, maintenance, testing, repair, and replacement of metering and data acquisition equipment specified in Attachments 2 and 3 of this Agreement. The Interconnection Customer's metering (and data acquisition, as required) equipment shall conform to applicable industry rules and Operating Requirements.
- 1.8 Reactive Power
  - 1.8.1 The Interconnection Customer shall design its Small Generating Facility to maintain a composite power delivery at continuous rated power output at the terminals of each generating unit at a power factor within the range of 0.95 leading to 0.90 lagging, unless the CAISO has established different requirements that apply to all similarly situated generators in the CAISO **Balancing Authority** Area on a comparable basis. The requirements of this paragraph shall not apply to wind generators and the requirements of Attachment 7 shall apply instead.
  - 1.8.2 Payment to the Interconnection Customer for reactive power that the Small Generating Facility provides or absorbs when the CAISO requests the Interconnection Customer to operate its Small Generating Facility outside the range specified in article 1.8.1 will be made by the CAISO in accordance with the applicable provisions of the CAISO Tariff.
- 1.9 Capitalized terms used herein shall have the meanings specified in the Glossary of Terms in Attachment 1 or the body of this Agreement.

## **Article 2. Inspection, Testing, Authorization, and Right of Access**

### **2.1 Equipment Testing and Inspection**

- 2.1.1 The Interconnection Customer shall test and inspect its Small Generating Facility and Interconnection Facilities prior to interconnection. The Interconnection Customer shall notify the Participating TO and the CAISO of such activities no fewer than five Business Days (or as may be agreed to by the Parties) prior to such testing and inspection. Testing and inspection shall occur on a Business Day. The Participating TO and the CAISO may, at their own expense, send qualified personnel to the Small Generating Facility site to inspect the interconnection and observe the testing. The Interconnection Customer shall provide the Participating TO and the CAISO a written test report when such testing and inspection is completed.
- 2.1.2 The Participating TO and the CAISO shall provide the Interconnection Customer written acknowledgment that they have received the Interconnection Customer's written test report. Such written acknowledgment shall not be deemed to be or construed as any representation, assurance, guarantee, or warranty by the Participating TO or the CAISO of the safety, durability, suitability, or reliability of the Small Generating Facility or any associated control, protective, and safety devices owned or controlled by the Interconnection Customer or the quality of power produced by the Small Generating Facility.

### **2.2 Authorization Required Prior to Parallel Operation**

- 2.2.1 The Participating TO and the CAISO shall use Reasonable Efforts to list applicable parallel operation requirements in Attachment 5 of this Agreement. Additionally, the Participating TO and the CAISO shall notify the Interconnection Customer of any changes to these requirements as soon as they are known. The Participating TO and the CAISO shall make Reasonable Efforts to cooperate with the Interconnection Customer in meeting requirements necessary for the Interconnection Customer to commence parallel operations by the in-service date.
- 2.2.2 The Interconnection Customer shall not operate its Small Generating Facility in parallel with the Participating TO's Transmission System without prior written authorization of the Participating TO. The Participating TO will provide such authorization to the Interconnection Customer and the CAISO once the Participating TO receives notification that the Interconnection Customer has complied with all applicable parallel operation requirements. Such authorization shall not be unreasonably withheld, conditioned, or delayed.

### **2.3 Right of Access**

- 2.3.1 Upon reasonable notice, the Participating TO and the CAISO may send a qualified person to the premises of the Interconnection Customer at or immediately before the time the Small Generating Facility first produces energy to inspect the interconnection, and observe the commissioning of the Small Generating Facility (including any required testing), startup, and operation for a period of up to three Business Days after initial start-up of the unit. In addition, the Interconnection Customer shall notify the Participating TO and the CAISO at least five Business Days prior to conducting any on-site verification testing of the Small Generating Facility.

2.3.2 Following the initial inspection process described above, at reasonable hours, and upon reasonable notice, or at any time without notice in the event of an emergency or hazardous condition, the Participating TO and the CAISO shall have access to the Interconnection Customer's premises for any reasonable purpose in connection with the performance of the obligations imposed on it by this Agreement or if necessary to meet its legal obligation to provide service to its customers.

2.3.3 Each Party shall be responsible for its own costs associated with following this article.

### **Article 3. Effective Date, Term, Termination, and Disconnection**

3.1 Effective Date

This Agreement shall become effective upon execution by the Parties subject to acceptance by FERC (if applicable), or if filed unexecuted, upon the date specified by the FERC. The Participating TO and the CAISO shall promptly file this Agreement with the FERC upon execution, if required.

3.2 Term of Agreement

This Agreement shall become effective on the Effective Date and shall remain in effect for a period of \_\_\_\_ years from the Effective Date (term specified in individual agreements to be ten (10) years or such other longer period as the Interconnection Customer may request) and shall be automatically renewed for each successive one-year period thereafter, unless terminated earlier in accordance with article 3.3 of this Agreement.

3.3 Termination

No termination shall become effective until the Parties have complied with all Applicable Laws and Regulations applicable to such termination, including the filing with FERC of a notice of termination of this Agreement (if required), which notice has been accepted for filing by FERC.

3.3.1 The Interconnection Customer may terminate this Agreement at any time by giving the Participating TO and the CAISO 20 Business Days written notice.

3.3.2 Any Party may terminate this Agreement after Default pursuant to article 7.6.

3.3.3 Upon termination of this Agreement, the Small Generating Facility will be disconnected from the CAISO Controlled Grid. All costs required to effectuate such disconnection shall be borne by the terminating Party, unless such termination resulted from the non-terminating Party's Default of this Agreement or such non-terminating Party otherwise is responsible for these costs under this Agreement.

3.3.4 The termination of this Agreement shall not relieve any Party of its liabilities and obligations, owed or continuing at the time of termination.

3.3.5 The provisions of this article shall survive termination or expiration of this Agreement.

3.4 Temporary Disconnection

Temporary disconnection of the Small Generating Facility or associated Interconnection Facilities shall continue only for so long as reasonably necessary under Good Utility Practice.

3.4.1 Emergency Conditions

"Emergency Condition" shall mean a condition or situation: (1) that in the judgment of the Party making the claim is imminently likely to endanger life or property; (2) that, in the case of the CAISO, is imminently likely (as determined in a non-discriminatory manner) to cause a material adverse effect on the security of, or damage to, the CAISO Controlled Grid or the electric systems of others to which the CAISO Controlled Grid is directly connected; (3) that, in the case of the Participating TO, is imminently likely (as determined in a non-discriminatory manner) to cause a material adverse effect on the security of, or damage to, the Participating TO's Transmission System, the Participating TO's Interconnection Facilities, Distribution System, or the electric systems of others to which the Participating TO's electric system is directly connected; or (4) that, in the case of the Interconnection Customer, is imminently likely (as determined in a non-discriminatory manner) to cause a material adverse effect on the security of, or damage to, the Small Generating Facility or the Interconnection Customer's Interconnection Facilities. Under Emergency Conditions, the CAISO or the Participating TO may immediately suspend interconnection service and temporarily disconnect the Small Generating Facility. The Participating TO or the CAISO shall notify the Interconnection Customer promptly when it becomes aware of an Emergency Condition that may reasonably be expected to affect the Interconnection Customer's operation of the Small Generating Facility or the Interconnection Customer's Interconnection Facilities. The Interconnection Customer shall notify the Participating TO and the CAISO promptly when it becomes aware of an Emergency Condition that may reasonably be expected to affect the CAISO Controlled Grid, the Participating TO's Interconnection Facilities, or any Affected Systems. To the extent information is known, the notification shall describe the Emergency Condition, the extent of the damage or deficiency, the expected effect on the operation of the Interconnection Customer's or Participating TO's facilities and operations, its anticipated duration, and the necessary corrective action.

3.4.2 Routine Maintenance, Construction, and Repair

The Participating TO or the CAISO may interrupt interconnection service or curtail the output of the Small Generating Facility and temporarily disconnect the Small Generating Facility from the CAISO Controlled Grid when necessary for routine maintenance, construction, and repairs on the CAISO Controlled Grid or the Participating TO's electric system. The Party scheduling the interruption shall provide the Interconnection Customer with five Business Days notice prior to such interruption. The Party scheduling the interruption shall use Reasonable Efforts to coordinate such reduction or temporary disconnection with the Interconnection Customer.

The Interconnection Customer shall update its planned maintenance schedules in accordance with the CAISO Tariff. The CAISO may request the Interconnection Customer to reschedule its maintenance as necessary to maintain the reliability of the CAISO Controlled Grid in accordance with the CAISO Tariff. Such planned maintenance schedules and updates and changes to such schedules shall be provided by the Interconnection Customer to the Participating TO concurrently with their submittal to the CAISO.

3.4.3 Forced Outages

During any forced outage, the Participating TO or the CAISO may suspend interconnection service to effect immediate repairs on the CAISO Controlled Grid or the Participating TO's electric system. The Participating TO or the CAISO shall use Reasonable Efforts to provide the Interconnection Customer with prior notice. If prior notice is not given, the Participating TO or the CAISO shall, upon request, provide the Interconnection Customer written documentation after the fact explaining the circumstances of the disconnection. The Interconnection Customer shall notify CAISO, as soon as practicable, of all forced outages or reductions of the Small Generating Facility in accordance with the CAISO Tariff.

3.4.4 Adverse Operating Effects

The Participating TO or the CAISO shall notify the Interconnection Customer as soon as practicable if, based on Good Utility Practice, operation of the Small Generating Facility may cause disruption or deterioration of service to other customers served from the same electric system, or if operating the Small Generating Facility could cause damage to the CAISO Controlled Grid, the Participating TO's Transmission System or Affected Systems. Supporting documentation used to reach the decision to disconnect shall be provided to the Interconnection Customer upon request. If, after notice, the Interconnection Customer fails to remedy the adverse operating effect within a reasonable time, the Participating TO or the CAISO may disconnect the Small Generating Facility. The Participating TO or the CAISO shall provide the Interconnection Customer with five Business Day notice of such disconnection, unless the provisions of article 3.4.1 apply.

3.4.5 Modification of the Small Generating Facility

The Interconnection Customer must receive written authorization from the Participating TO and the CAISO before making any change to the Small Generating Facility that may have a material impact on the safety or reliability of the CAISO Controlled Grid or the Participating TO's electric system. Such authorization shall not be unreasonably withheld. Modifications shall be done in accordance with Good Utility Practice. If the Interconnection Customer makes such modification without the Participating TO's and the CAISO's prior written authorization, the Participating TO or the CAISO shall have the right to temporarily disconnect the Small Generating Facility.

3.4.6 Reconnection

The Parties shall cooperate with each other to restore the Small Generating Facility, Interconnection Facilities, the Participating TO's electric system, and the CAISO Controlled Grid to their normal operating state as soon as reasonably practicable following a temporary disconnection.

**Article 4. Cost Responsibility for Interconnection Facilities and Distribution Upgrades**

4.1 Interconnection Facilities

- 4.1.1 The Interconnection Customer shall pay for the cost of the Interconnection Facilities itemized in Attachment 2 of this Agreement. The Participating TO shall provide a best estimate cost, including overheads, for the purchase and construction of its Interconnection Facilities and provide a detailed itemization of such costs. Costs associated with Interconnection Facilities may be shared with other entities that may benefit from such facilities by agreement of the Interconnection Customer, such other entities, the CAISO, and the Participating TO.

- 4.1.2 The Interconnection Customer shall be responsible for its share of all reasonable expenses, including overheads, associated with (1) owning, operating, maintaining, repairing, and replacing its own Interconnection Facilities, and (2) operating, maintaining, repairing, and replacing the Participating TO's Interconnection Facilities.
- 4.2 Distribution Upgrades  
The Participating TO shall design, procure, construct, install, and own the Distribution Upgrades described in Attachment 6 of this Agreement. If the Participating TO and the Interconnection Customer agree, the Interconnection Customer may construct Distribution Upgrades that are located on land owned by the Interconnection Customer. The actual cost of the Distribution Upgrades, including overheads, shall be directly assigned to the Interconnection Customer.

## **Article 5. Cost Responsibility for Network Upgrades**

- 5.1 Applicability  
No portion of this article 5 shall apply unless the interconnection of the Small Generating Facility requires Network Upgrades.
- 5.2 Network Upgrades  
The Participating TO shall design, procure, construct, install, and own the Network Upgrades described in Attachment 6 of this Agreement. If the Participating TO and the Interconnection Customer agree, the Interconnection Customer may construct Network Upgrades that are located on land owned by the Interconnection Customer. Unless the Participating TO elects to pay for Network Upgrades, the actual cost of the Network Upgrades, including overheads, shall be borne initially by the Interconnection Customer.
- 5.3 Transmission Credits  
No later than thirty (30) days prior to the Commercial Operation Date, the Interconnection Customer may make a one-time election by written notice to the CAISO and the Participating TO to receive Firm Transmission Rights as defined in and as available under the CAISO Tariff at the time of the election in accordance with the CAISO Tariff, in lieu of a refund of the cost of Network Upgrades in accordance with Article 5.3.1.
- 5.3.1 Repayment of Amounts Advanced for Network Upgrades  
Upon the Commercial Operation Date, the Interconnection Customer shall be entitled to a repayment, equal to the total amount paid to the Participating TO for the cost of Network Upgrades. Such amount shall include any tax gross-up or other tax-related payments associated with Network Upgrades not refunded to the Interconnection Customer, and shall be paid to the Interconnection Customer by the Participating TO on a dollar-for-dollar basis either through (1) direct payments made on a levelized basis over the five-year period commencing on the Commercial Operation Date; or (2) any alternative payment schedule that is mutually agreeable to the Interconnection Customer and Participating TO, provided that such amount is paid within five (5) years from the Commercial Operation Date. Notwithstanding the foregoing, if this Agreement terminates within five (5) years from the Commercial Operation Date, the Participating TO's obligation to pay refunds to the Interconnection Customer shall cease as of the date of

termination. Any repayment shall include interest calculated in accordance with the methodology set forth in FERC's regulations at 18 C.F.R. §35.19a(a)(2)(iii) from the date of any payment for Network Upgrades through the date on which the Interconnection Customer receives a repayment of such payment. Interest shall continue to accrue on the repayment obligation so long as this Agreement is in effect. The Interconnection Customer may assign such repayment rights to any person.

If the Small Generating Facility fails to achieve commercial operation, but it or another Generating Facility is later constructed and makes use of the Network Upgrades, the Participating TO shall at that time reimburse Interconnection Customer for the amounts advanced for the Network Upgrades. Before any such reimbursement can occur, the Interconnection Customer, or the entity that ultimately constructs the Generating Facility, if different, is responsible for identifying the entity to which reimbursement must be made.

**5.3.2 Special Provisions for Affected Systems**

The Interconnection Customer shall enter into an agreement with the owner of the Affected System and/or other affected owners of portions of the CAISO Controlled Grid, as applicable, in accordance with the SGIP. Such agreement shall specify the terms governing payments to be made by the Interconnection Customer to the owner of the Affected System and/or other affected owners of portions of the CAISO Controlled Grid. In no event shall the Participating TO be responsible for the repayment for any facilities that are not part of the Participating TO's Transmission System.

**5.3.3 Rights Under Other Agreements**

Notwithstanding any other provision of this Agreement, nothing herein shall be construed as relinquishing or foreclosing any rights, including but not limited to firm transmission rights, capacity rights, transmission congestion rights, or transmission credits, that the Interconnection Customer shall be entitled to, now or in the future, under any other agreement or tariff as a result of, or otherwise associated with, the transmission capacity, if any, created by the Network Upgrades, including the right to obtain cash reimbursements or transmission credits for transmission service that is not associated with the Small Generating Facility.

**Article 6. Billing, Payment, Milestones, and Financial Security**

**6.1 Billing and Payment Procedures and Final Accounting**

- 6.1.1 The Participating TO shall bill the Interconnection Customer for the design, engineering, construction, and procurement costs of Interconnection Facilities and Upgrades contemplated by this Agreement on a monthly basis, or as otherwise agreed by the Parties. The Interconnection Customer shall pay each bill within 30 calendar days of receipt, or as otherwise agreed to by the Parties. Notwithstanding the foregoing, any invoices between the CAISO and another Party shall be submitted and paid in accordance with the CAISO Tariff.



6.1.2 Within **three** months of completing the construction and installation of the Participating TO's Interconnection Facilities and/or Upgrades described in the Attachments to this Agreement, the Participating TO shall provide the Interconnection Customer with a final accounting report of any difference between (1) the Interconnection Customer's cost responsibility for the actual cost of such facilities or Upgrades, and (2) the Interconnection Customer's previous aggregate payments to the Participating TO for such facilities or Upgrades. If the Interconnection Customer's cost responsibility exceeds its previous aggregate payments, the Participating TO shall invoice the Interconnection Customer for the amount due and the Interconnection Customer shall make payment to the Participating TO within 30 calendar days. If the Interconnection Customer's previous aggregate payments exceed its cost responsibility under this Agreement, the Participating TO shall refund to the Interconnection Customer an amount equal to the difference within 30 calendar days of the final accounting report.

6.2 Milestones

The Parties shall agree on milestones for which each Party is responsible and list them in Attachment 4 of this Agreement. A Party's obligations under this provision may be extended by agreement. If a Party anticipates that it will be unable to meet a milestone for any reason other than a Force Majeure Event, as defined in article 7.5.1, it shall immediately notify the other Parties of the reason(s) for not meeting the milestone and (1) propose the earliest reasonable alternate date by which it can attain this and future milestones, and (2) request appropriate amendments to Attachment 4. The Parties affected by the failure to meet a milestone shall not unreasonably withhold agreement to such an amendment unless (1) they will suffer significant uncompensated economic or operational harm from the delay, (2) attainment of the same milestone has previously been delayed, or (3) they have reason to believe that the delay in meeting the milestone is intentional or unwarranted notwithstanding the circumstances explained by the Party proposing the amendment.

6.3 Financial Security Arrangements

At least 20 Business Days prior to the commencement of the design, procurement, installation, or construction of a discrete portion of the Participating TO's Interconnection Facilities and Upgrades, the Interconnection Customer shall provide the **Participating TO**, at the Interconnection Customer's option, a guarantee, a surety bond, letter of credit or other form of security that is reasonably acceptable to the Participating TO and is consistent with the Uniform Commercial Code of the jurisdiction where the Point of Interconnection is located. Such security for payment shall be in an amount sufficient to cover the costs for constructing, designing, procuring, and installing the applicable portion of the Participating TO's Interconnection Facilities and Upgrades and shall be reduced on a dollar-for-dollar basis for payments made to the Participating TO under this Agreement during its term. In addition:

6.3.1 The guarantee must be made by an entity that meets the creditworthiness requirements of the Participating TO, and contain terms and conditions that guarantee payment of any amount that may be due from the Interconnection Customer, up to an agreed-to maximum amount.

6.3.2 The letter of credit or surety bond must be issued by a financial institution or insurer reasonably acceptable to the Participating TO and must specify a reasonable expiration date.

**Article 7. Assignment, Liability, Indemnity, Force Majeure, Consequential Damages, and Default**

**7.1**     Assignment

This Agreement may be assigned by any Party upon 15 Business Days prior written notice and opportunity to object by the other Parties; provided that:

7.1.1     Any Party may assign this Agreement without the consent of the other Parties to any affiliate of the assigning Party with an equal or greater credit rating and with the legal authority and operational ability to satisfy the obligations of the assigning Party under this Agreement, provided that the Interconnection Customer promptly notifies the Participating TO and the CAISO of any such assignment;

7.1.2     The Interconnection Customer shall have the right to assign this Agreement, without the consent of the Participating TO or the CAISO, for collateral security purposes to aid in providing financing for the Small Generating Facility, provided that the Interconnection Customer will promptly notify the Participating TO and the CAISO of any such assignment.

7.1.3     Any attempted assignment that violates this article is void and ineffective. Assignment shall not relieve a Party of its obligations, nor shall a Party's obligations be enlarged, in whole or in part, by reason thereof. An assignee is responsible for meeting the same financial, credit, and insurance obligations as the Interconnection Customer. Where required, consent to assignment will not be unreasonably withheld, conditioned or delayed.

**7.2**     Limitation of Liability

Each Party's liability to the other Parties for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to or arising from any act or omission in its performance of this Agreement, shall be limited to the amount of direct damage actually incurred. In no event shall any Party be liable to the other Parties for any indirect, special, consequential, or punitive damages, except as authorized by this Agreement.

**7.3**     Indemnity

7.3.1     This provision protects each Party from liability incurred to third parties as a result of carrying out the provisions of this Agreement. Liability under this provision is exempt from the general limitations on liability found in article 7.2.

7.3.2     The Parties shall at all times indemnify, defend, and hold the other Parties harmless from, any and all damages, losses, claims, including claims and actions relating to injury to or death of any person or damage to property, demand, suits, recoveries, costs and expenses, court costs, attorney fees, and all other obligations by or to third parties, arising out of or resulting from another Party's action or failure to meet its obligations under this Agreement on behalf of the indemnifying Party, except in cases of gross negligence or intentional wrongdoing by the indemnified Party.

- 7.3.3 If an indemnified Party is entitled to indemnification under this article as a result of a claim by a third party, and the indemnifying Party fails, after notice and reasonable opportunity to proceed under this article, to assume the defense of such claim, such indemnified Party may at the expense of the indemnifying Party contest, settle or consent to the entry of any judgment with respect to, or pay in full, such claim.
- 7.3.4 If an indemnifying Party is obligated to indemnify and hold any indemnified Party harmless under this article, the amount owing to the indemnified Party shall be the amount of such indemnified Party's actual loss, net of any insurance or other recovery.
- 7.3.5 Promptly after receipt by an indemnified Party of any claim or notice of the commencement of any action or administrative or legal proceeding or investigation as to which the indemnity provided for in this article may apply, the indemnified Party shall notify the indemnifying Party of such fact. Any failure of or delay in such notification shall not affect a Party's indemnification obligation unless such failure or delay is materially prejudicial to the indemnifying Party.

7.4 Consequential Damages

Other than as expressly provided for in this Agreement, no Party shall be liable under any provision of this Agreement for any losses, damages, costs or expenses for any special, indirect, incidental, consequential, or punitive damages, including but not limited to loss of profit or revenue, loss of the use of equipment, cost of capital, cost of temporary equipment or services, whether based in whole or in part in contract, in tort, including negligence, strict liability, or any other theory of liability; provided, however, that damages for which a Party may be liable to another Party under another agreement will not be considered to be special, indirect, incidental, or consequential damages hereunder.

7.5 Force Majeure

- 7.5.1 As used in this article, a Force Majeure Event shall mean "any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm or flood, explosion, breakage or accident to machinery or equipment, any order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities, or any other cause beyond a Party's control. A Force Majeure Event does not include an act of negligence or intentional wrongdoing by the Party claiming Force Majeure."
- 7.5.2 If a Force Majeure Event prevents a Party from fulfilling any obligations under this Agreement, the Party affected by the Force Majeure Event (Affected Party) shall promptly notify the other Parties, either in writing or via the telephone, of the existence of the Force Majeure Event. The notification must specify in reasonable detail the circumstances of the Force Majeure Event, its expected duration, and the steps that the Affected Party is taking to mitigate the effects of the event on its performance. The Affected Party shall keep the other Parties informed on a continuing basis of developments relating to the Force Majeure Event until the event ends. The Affected Party will be entitled to suspend or modify its performance of obligations under this Agreement (other than the obligation to make payments) only to the extent that the effect of the Force Majeure Event cannot be mitigated by the use of Reasonable Efforts. The Affected Party will use Reasonable Efforts to resume its performance as soon as possible.

7.6 Default

- 7.6.1 No Default shall exist where such failure to discharge an obligation (other than the payment of money) is the result of a Force Majeure Event as defined in this Agreement or the result of an act or omission of another Party. Upon a Default, the affected non-defaulting Party(ies) shall give written notice of such Default to the defaulting Party. Except as provided in article 7.6.2, the defaulting Party shall have 60 calendar days from receipt of the Default notice within which to cure such Default; provided however, if such Default is not capable of cure within 60 calendar days, the defaulting Party shall commence such cure within 20 calendar days after notice and continuously and diligently complete such cure within six months from receipt of the Default notice; and, if cured within such time, the Default specified in such notice shall cease to exist.
- 7.6.2 If a Default is not cured as provided in this article, or if a Default is not capable of being cured within the period provided for herein, the affected non-defaulting Party(ies) shall have the right to terminate this Agreement by written notice at any time until cure occurs, and be relieved of any further obligation hereunder and, whether or not such Party(ies) terminates this Agreement, to recover from the defaulting Party all amounts due hereunder, plus all other damages and remedies to which it is entitled at law or in equity. The provisions of this article will survive termination of this Agreement.

**Article 8. Insurance**

- 8.1 The Interconnection Customer shall, at its own expense, maintain in force general liability insurance without any exclusion for liabilities related to the interconnection undertaken pursuant to this Agreement. The amount of such insurance shall be sufficient to insure against all reasonably foreseeable direct liabilities given the size and nature of the generating equipment being interconnected, the interconnection itself, and the characteristics of the system to which the interconnection is made. The Interconnection Customer shall obtain additional insurance only if necessary as a function of owning and operating a generating facility. Such insurance shall be obtained from an insurance provider authorized to do business in the State where the interconnection is located. Certification that such insurance is in effect shall be provided upon request of the Participating TO or CAISO, except that the Interconnection Customer shall show proof of insurance to the Participating TO and CAISO no later than ten Business Days prior to the anticipated Commercial Operation Date. If the Interconnection Customer is of sufficient credit-worthiness, it may propose to self-insure for such liabilities, and such a proposal shall not be unreasonably rejected.
- 8.2 The Participating TO agrees to maintain general liability insurance or self-insurance consistent with the Participating TO's commercial practice. Such insurance or self-insurance shall not exclude coverage for the Participating TO's liabilities undertaken pursuant to this Agreement.
- 8.3 The CAISO agrees to maintain general liability insurance or self-insurance consistent with the CAISO's commercial practice. Such insurance shall not exclude coverage for the CAISO's liabilities undertaken pursuant to this Agreement.
- 8.4 The Parties further agree to notify each other whenever an accident or incident occurs resulting in any injuries or damages that are included within the scope of coverage of such insurance, whether or not such coverage is sought.

## **Article 9. Confidentiality**

- 9.1 Confidential Information shall mean any confidential and/or proprietary information provided by one Party to another Party that is clearly marked or otherwise designated "Confidential." For purposes of this Agreement all design, operating specifications, and metering data provided by the Interconnection Customer shall be deemed Confidential Information regardless of whether it is clearly marked or otherwise designated as such.
- 9.2 Confidential Information does not include information previously in the public domain, required to be publicly submitted or divulged by Governmental Authorities (after notice to the other Parties and after exhausting any opportunity to oppose such publication or release), or necessary to be divulged in an action to enforce this Agreement. Each Party receiving Confidential Information shall hold such information in confidence and shall not disclose it to any third party nor to the public without the prior written authorization from the Party providing that information, except to fulfill obligations under this Agreement, or to fulfill legal or regulatory requirements.
- 9.2.1 Each Party shall employ at least the same standard of care to protect Confidential Information obtained from the other Parties as it employs to protect its own Confidential Information.
- 9.2.2 Each Party is entitled to equitable relief, by injunction or otherwise, to enforce its rights under this provision to prevent the release of Confidential Information without bond or proof of damages, and may seek other remedies available at law or in equity for breach of this provision.
- 9.3 Notwithstanding anything in this article to the contrary, and pursuant to 18 CFR § 1b.20, if FERC, during the course of an investigation or otherwise, requests information from one of the Parties that is otherwise required to be maintained in confidence pursuant to this Agreement, the Party shall provide the requested information to FERC, within the time provided for in the request for information. In providing the information to FERC, the Party may, consistent with 18 CFR § 388.112, request that the information be treated as confidential and non-public by FERC and that the information be withheld from public disclosure. Parties are prohibited from notifying the other Parties to this Agreement prior to the release of the Confidential Information to FERC. The Party shall notify the other Parties to this Agreement when it is notified by FERC that a request to release Confidential Information has been received by FERC, at which time any of the Parties may respond before such information would be made public, pursuant to 18 CFR § 388.112. Requests from a state regulatory body conducting a confidential investigation shall be treated in a similar manner if consistent with the applicable state rules and regulations.

## **Article 10. Disputes**

All disputes arising out of or in connection with this Agreement whereby relief is sought by or from CAISO shall be settled in accordance with the provisions of Article 13 of the CAISO Tariff, except that references to the CAISO Tariff in such Article 13 of the CAISO Tariff shall be read as reference to this Agreement. Disputes arising out of or in connection with this Agreement not subject to provisions of Article 13 of the CAISO Tariff shall be resolved as follows:

- 10.1 The Parties agree to attempt to resolve all disputes arising out of the interconnection process according to the provisions of this article.
- 10.2 In the event of a dispute, either Party shall provide the other Party with a written Notice of Dispute. Such Notice shall describe in detail the nature of the dispute.
- 10.3 If the dispute has not been resolved within two Business Days after receipt of the Notice, either Party may contact FERC's Dispute Resolution Service (DRS) for assistance in resolving the dispute.
- 10.4 The DRS will assist the Parties in either resolving their dispute or in selecting an appropriate dispute resolution venue (e.g., mediation, settlement judge, early neutral evaluation, or technical expert) to assist the Parties in resolving their dispute. DRS can be reached at 1-877-337-2237 or via the internet at <http://www.ferc.gov/legal/adr.asp>.
- 10.5 Each Party agrees to conduct all negotiations in good faith and will be responsible for one-half of any costs paid to neutral third-parties.
- 10.6 If neither Party elects to seek assistance from the DRS, or if the attempted dispute resolution fails, then either Party may exercise whatever rights and remedies it may have in equity or law consistent with the terms of this Agreement.

#### **Article 11. Taxes**

- 11.1 The Parties agree to follow all applicable tax laws and regulations, consistent with FERC policy and Internal Revenue Service requirements.
- 11.2 Each Party shall cooperate with the other Parties to maintain the other Parties' tax status. Nothing in this Agreement is intended to adversely affect the Participating TO's tax exempt status with respect to the issuance of bonds including, but not limited to, local furnishing bonds.

#### **Article 12. Miscellaneous**

- 12.1 Governing Law, Regulatory Authority, and Rules  
The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the state of \_\_\_\_\_ (where the Point of Interconnection is located), without regard to its conflicts of law principles. This Agreement is subject to all Applicable Laws and Regulations. Each Party expressly reserves the right to seek changes in, appeal, or otherwise contest any laws, orders, or regulations of a Governmental Authority.
- 12.2 Amendment  
The Parties may amend this Agreement by a written instrument duly executed by all of the Parties, or under article 12.12 of this Agreement.
- 12.3 No Third-Party Beneficiaries  
This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and where permitted, their assigns.

12.4 Waiver

- 12.4.1 The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.
- 12.4.2 Any waiver at any time by any Party of its rights with respect to this Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Agreement. Termination or Default of this Agreement for any reason by Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the Participating TO. Any waiver of this Agreement shall, if requested, be provided in writing.

12.5 Entire Agreement

This Agreement, including all Attachments, constitutes the entire agreement among the Parties with reference to the subject matter hereof, and supersedes all prior and contemporaneous understandings or agreements, oral or written, between or among the Parties with respect to the subject matter of this Agreement. There are no other agreements, representations, warranties, or covenants which constitute any part of the consideration for, or any condition to, any Party's compliance with its obligations under this Agreement.

12.6 Multiple Counterparts

This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

12.7 No Partnership

This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership among the Parties or to impose any partnership obligation or partnership liability upon any Party. No Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, another Party.

12.8 Severability

If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction or other Governmental Authority, (1) such portion or provision shall be deemed separate and independent, (2) the Parties shall negotiate in good faith to restore insofar as practicable the benefits to each Party that were affected by such ruling, and (3) the remainder of this Agreement shall remain in full force and effect.

12.9 Security Arrangements

Infrastructure security of electric system equipment and operations and control hardware and software is essential to ensure day-to-day reliability and operational security. FERC expects all transmission providers, market participants, and interconnection customers interconnected to electric systems to comply with the recommendations offered by the President's Critical Infrastructure Protection Board and, eventually, best practice recommendations from the electric reliability authority. All public utilities are expected to meet basic standards for system infrastructure and operational security, including physical, operational, and cyber-security practices.

12.10 Environmental Releases

Each Party shall notify the other Parties, first orally and then in writing, of the release of any hazardous substances, any asbestos or lead abatement activities, or any type of remediation activities related to the Small Generating Facility or the Interconnection Facilities, each of which may reasonably be expected to affect the other Parties. The notifying Party shall (1) provide the notice as soon as practicable, provided such Party makes a good faith effort to provide the notice no later than 24 hours after such Party becomes aware of the occurrence, and (2) promptly furnish to the other Parties copies of any publicly available reports filed with any governmental authorities addressing such events.

12.11 Subcontractors

Nothing in this Agreement shall prevent a Party from utilizing the services of any subcontractor as it deems appropriate to perform its obligations under this Agreement; provided, however, that each Party shall require its subcontractors to comply with all applicable terms and conditions of this Agreement in providing such services and each Party shall remain primarily liable to the other Parties for the performance of such subcontractor.

12.11.1 The creation of any subcontract relationship shall not relieve the hiring Party of any of its obligations under this Agreement. The hiring Party shall be fully responsible to the other Parties for the acts or omissions of any subcontractor the hiring Party hires as if no subcontract had been made; provided, however, that in no event shall the Participating TO or the CAISO be liable for the actions or inactions of the Interconnection Customer or its subcontractors with respect to obligations of the Interconnection Customer under this Agreement. Any applicable obligation imposed by this Agreement upon the hiring Party shall be equally binding upon, and shall be construed as having application to, any subcontractor of such Party.

12.11.2 The obligations under this article will not be limited in any way by any limitation of subcontractor's insurance.

12.12 Reservation of Rights

The CAISO and Participating TO shall each have the right to make a unilateral filing with FERC to modify this Agreement with respect to any rates, terms and conditions, charges, classifications of service, rule or regulation under section 205 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder, and the Interconnection Customer shall have the right to make a unilateral filing with FERC to modify this Agreement under any applicable provision of the Federal Power Act and FERC's rules and regulations; provided that each Party shall have the right to protest any such filing by another Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under sections 205 or 206 of the Federal Power Act and FERC's rules and regulations, except to the extent that the Parties otherwise mutually agree as provided herein.



## Article 13. Notices

### 13.1 General

Unless otherwise provided in this Agreement, any written notice, demand, or request required or authorized in connection with this Agreement ("Notice") shall be deemed properly given if delivered in person, delivered by recognized national courier service, or sent by first class mail, postage prepaid, to the person specified below:

If to the Interconnection Customer:

Interconnection Customer: \_\_\_\_\_  
Attention: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

If to the Participating TO:

Participating TO: \_\_\_\_\_  
Attention: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

If to the CAISO:

California Independent System Operator  
Attention: \_\_\_\_\_  
151 Blue Ravine Road  
Folsom, CA 95630  
Phone: 916-351-4400 Fax: \_\_\_\_\_

### 13.2 Billing and Payment

Billings and payments shall be sent to the addresses set out below:

Interconnection Customer: \_\_\_\_\_  
Attention: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Participating TO: \_\_\_\_\_  
Attention: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

### 13.3 Alternative Forms of Notice

Any notice or request required or permitted to be given by any Party to the other Parties and not required by this Agreement to be given in writing may be so given by telephone, facsimile or e-mail to the telephone numbers and e-mail addresses set out below:

If to the Interconnection Customer:

Interconnection Customer: \_\_\_\_\_  
Attention: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

If to the Participating TO:

Participating TO: \_\_\_\_\_  
Attention: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

If to the CAISO:

California Independent System Operator  
Attention: \_\_\_\_\_  
151 Blue Ravine Road  
Folsom, CA 95630  
Phone: 916-351-4400 Fax: \_\_\_\_\_

13.4 Designated Operating Representative

The Parties may also designate operating representatives to conduct the communications which may be necessary or convenient for the administration of this Agreement. This person will also serve as the point of contact with respect to operations and maintenance of the Party's facilities.

Interconnection Customer's Operating Representative:

Interconnection Customer: \_\_\_\_\_  
Attention: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Participating TO's Operating Representative:

Participating TO: \_\_\_\_\_  
Attention: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

CAISO's Operating Representative

California Independent System Operator

Attention: \_\_\_\_\_

151 Blue Ravine Road

Folsom, CA 95630

Phone: 916-351-4400

Fax: \_\_\_\_\_

13.5 Changes to the Notice Information

Any Party may change this information by giving five Business Days written notice to the other Parties prior to the effective date of the change.

**Article 14. Signatures**

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their respective duly authorized representatives.

For the California Independent System Operator

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

For the Participating TO

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

For the Interconnection Customer

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**Attachment 1**

**Glossary of Terms**

**Affected System** – An electric system other than the CAISO Controlled Grid that may be affected by the proposed interconnection, including the Participating TO's electric system that is not part of the CAISO Controlled Grid.

**Applicable Laws and Regulations** – All duly promulgated applicable federal, state and local laws, regulations, rules, ordinances, codes, decrees, judgments, directives, or judicial or administrative orders, permits and other duly authorized actions of any Governmental Authority.

**Balancing Authority Area** - *The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.*

**Business Day** – Monday through Friday, excluding federal holidays and the day after Thanksgiving Day.

**Commercial Operation Date** – The date on which a Small Generating Facility commenced generating electricity for sale as agreed upon by the Participating TO and the Interconnection Customer.

**Default** – The failure of a breaching Party to cure its breach under this Agreement.

**Distribution System** – Those non-CAISO-controlled transmission and distribution facilities owned by the Participating TO.

**Distribution Upgrades** – The additions, modifications, and upgrades to the Participating TO's Distribution System. Distribution Upgrades do not include Interconnection Facilities.

**Good Utility Practice** – Any of the practices, methods and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not intended to be any one of a number of the optimum practices, methods, or acts to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region.

**Governmental Authority** – Any federal, state, local or other governmental regulatory or administrative agency, court, commission, department, board, or other governmental subdivision, legislature, rulemaking board, tribunal, or other governmental authority having jurisdiction over the Parties, their respective facilities, or the respective services they provide, and exercising or entitled to exercise any administrative, executive, police, or taxing authority or power; provided, however, that such term does not include the Interconnection Customer, CAISO, Participating TO, or any Affiliate thereof.

**Interconnection Facilities** – The Participating TO's Interconnection Facilities and the Interconnection Customer's Interconnection Facilities. Collectively, Interconnection Facilities include all facilities and equipment between the Small Generating Facility and the Point of Interconnection, including any modification, additions or upgrades that are necessary to physically and electrically interconnect the Small Generating Facility to the Participating TO's Transmission System. Interconnection Facilities are sole use facilities and shall not include Distribution Upgrades or Network Upgrades.

**Interconnection Handbook** – A handbook, developed by the Participating TO and posted on the Participating TO's website or otherwise made available by the Participating TO, describing technical and operational requirements for wholesale generators and loads connected to the Participating TO's Transmission System, as such handbook may be modified or superseded from time to time. The Participating TO's standards contained in the Interconnection Handbook shall be deemed consistent with Good Utility Practice and applicable reliability standards.

**Interconnection Request** – A request, in accordance with the CAISO Tariff, to interconnect a new Small Generating Facility, or to increase the capacity of, or make a Material Modification to the operating characteristics of, an existing Small Generating Facility that is interconnected with the CAISO Controlled Grid.

**CAISO Controlled Grid** – The system of transmission lines and associated facilities of the parties to the Transmission Control Agreement that have been placed under the CAISO's Operational Control.

**CAISO Tariff** – The CAISO's tariff, as filed with FERC, and as amended or supplemented from time to time, or any successor tariff.

**Material Modification** – A modification that has a material impact on the cost or timing of any Interconnection Request or any other valid interconnection request with a later queue priority date.

**Network Upgrades** – Additions, modifications, and upgrades to the Participating TO's Transmission System required at or beyond the point at which the Small Generating Facility interconnects with the CAISO Controlled Grid to accommodate the interconnection of the Small Generating Facility with the CAISO Controlled Grid. Network Upgrades do not include Distribution Upgrades.

**Operational Control** – The rights of the CAISO under the Transmission Control Agreement and the CAISO Tariff to direct the parties to the Transmission Control Agreement how to operate their transmission lines and facilities and other electric plant affecting the reliability of those lines and facilities for the purpose of affording comparable non-discriminatory transmission access and meeting applicable reliability criteria.

**Operating Requirements** – Any operating and technical requirements that may be applicable due to the CAISO, Western Electricity Coordinating Council, **Balancing Authority** Area, or the Participating TO's requirements, including those set forth in this Agreement.

**Party or Parties** – The Participating TO, CAISO, Interconnection Customer or the applicable combination of the above.

**Point of Interconnection** – The point where the Interconnection Facilities connect with the Participating TO's Transmission System.

**Reasonable Efforts** – With respect to an action required to be attempted or taken by a Party under this Agreement, efforts that are timely and consistent with Good Utility Practice and are otherwise substantially equivalent to those a Party would use to protect its own interests.

**Small Generating Facility** – The Interconnection Customer's device for the production of electricity identified in the Interconnection Request, but shall not include the Interconnection Customer's Interconnection Facilities.

**Transmission Control Agreement** – CAISO FERC Electric Tariff No. 7.

**Transmission System** – The facilities owned and operated by the Participating TO and that have been placed under the CAISO's Operational Control, which facilities form part of the CAISO Controlled Grid.

**Upgrades** – The required additions and modifications to the Participating TO's Transmission System and Distribution System at or beyond the Point of Interconnection. Upgrades may be Network Upgrades or Distribution Upgrades. Upgrades do not include Interconnection Facilities.

**Attachment 2**

**Description and Costs of the Small Generating Facility,  
Interconnection Facilities, and Metering Equipment**

Equipment, including the Small Generating Facility, Interconnection Facilities, and metering equipment shall be itemized and identified as being owned by the Interconnection Customer or the Participating TO. The Participating TO will provide a best estimate itemized cost, including overheads, of its Interconnection Facilities and metering equipment, and a best estimate itemized cost of the annual operation and maintenance expenses associated with its Interconnection Facilities and metering equipment.

**Attachment 3**

**One-line Diagram Depicting the Small Generating Facility, Interconnection  
Facilities, Metering Equipment, and Upgrades**



**Attachment 4**

**Milestones**

In-Service Date: \_\_\_\_\_

Critical milestones and responsibility as agreed to by the Parties:

	<b>Milestone/Date</b>	<b>Responsible Party</b>
(1)	_____	_____
(2)	_____	_____
(3)	_____	_____
(4)	_____	_____
(5)	_____	_____
(6)	_____	_____
(7)	_____	_____
(8)	_____	_____
(9)	_____	_____
(10)	_____	_____

Agreed to by:

For the CAISO \_\_\_\_\_ Date \_\_\_\_\_

For the Participating TO \_\_\_\_\_ Date \_\_\_\_\_

For the Interconnection Customer \_\_\_\_\_ Date \_\_\_\_\_

**Attachment 5**

**Additional Operating Requirements for the CAISO Controlled Grid and Affected Systems Needed  
to Support  
the Interconnection Customer's Needs**

The Participating TO and the CAISO shall also provide requirements that must be met by the Interconnection Customer prior to initiating parallel operation with the CAISO Controlled Grid.

**Attachment 6**

**Participating TO's Description of its Upgrades  
and Best Estimate of Upgrade Costs**

The Participating TO shall describe Upgrades and provide an itemized best estimate of the cost, including overheads, of the Upgrades and annual operation and maintenance expenses associated with such Upgrades. The Participating TO shall functionalize Upgrade costs and annual expenses as either transmission or distribution related.

**Attachment 7**

**INTERCONNECTION REQUIREMENTS FOR A WIND GENERATING PLANT**

Attachment 7 sets forth requirements and provisions specific to a wind generating plant. All other requirements of this Agreement continue to apply to wind generating plant interconnections.

**A. Technical Standards Applicable to a Wind Generating Plant**

**I. Low Voltage Ride-Through (LVRT) Capability**

A wind generating plant shall be able to remain online during voltage disturbances up to the time periods and associated voltage levels set forth in the standard below. The LVRT standard provides for a transition period standard and a post-transition period standard.

**Transition Period LVRT Standard**

The transition period standard applies to wind generating plants that have either: (i) interconnection agreements signed and filed with FERC, filed with FERC in unexecuted form, or filed with FERC as non-conforming agreements between January 1, 2006 and December 31, 2006, with a scheduled in-service date no later than December 31, 2007, or (ii) wind generating turbines subject to a wind turbine procurement contract executed prior to December 31, 2005, for delivery through 2007.

1. Wind generating plants are required to remain in-service during three-phase faults with normal clearing (which is a time period of approximately 4 – 9 cycles) and single line to ground faults with delayed clearing, and subsequent post-fault voltage recovery to prefault voltage unless clearing the fault effectively disconnects the generator from the system. The clearing time requirement for a three-phase fault will be specific to the wind generating plant substation location, as determined by and documented by the Participating TO. The maximum clearing time the wind generating plant shall be required to withstand for a three-phase fault shall be 9 cycles at a voltage as low as 0.15 p.u., as measured at the high side of the wind generating plant step-up transformer (i.e. the transformer that steps the voltage up to the transmission interconnection voltage or “GSU”), after which, if the fault remains following the location-specific normal clearing time for three-phase faults, the wind generating plant may disconnect from the transmission system.
2. This requirement does not apply to faults that would occur between the wind generator terminals and the high side of the GSU or to faults that would result in a voltage lower than 0.15 per unit on the high side of the GSU serving the facility.
3. Wind generating plants may be tripped after the fault period if this action is intended as part of a special protection system.
4. Wind generating plants may meet the LVRT requirements of this standard by the performance of the generators or by installing additional equipment (e.g., Static VAR Compensator, etc.) within the wind generating plant or by a combination of generator performance and additional equipment.
5. Existing individual generator units that are, or have been, interconnected to the network at the same location at the effective date of the Attachment 7 LVRT Standard are exempt from meeting the Attachment 7 LVRT Standard for the remaining life of the existing generation equipment. Existing individual generator units that are replaced are required to meet the Attachment 7 LVRT Standard.

### **Post-transition Period LVRT Standard**

All wind generating plants not covered by the transition period described above must meet the following requirements:

1. Wind generating plants are required to remain in-service during three-phase faults with normal clearing (which is a time period of approximately 4 – 9 cycles) and single line to ground faults with delayed clearing, and subsequent post-fault voltage recovery to prefault voltage unless clearing the fault effectively disconnects the generator from the system. The clearing time requirement for a three-phase fault will be specific to the wind generating plant substation location, as determined by and documented by the Participating TO. The maximum clearing time the wind generating plant shall be required to withstand for a three-phase fault shall be 9 cycles after which, if the fault remains following the location-specific normal clearing time for three-phase faults, the wind generating plant may disconnect from the CAISO Controlled Grid. A wind generating plant shall remain interconnected during such a fault on the CAISO Controlled Grid for a voltage level as low as zero volts, as measured at the high voltage side of the wind GSU.
2. This requirement does not apply to faults that would occur between the wind generator terminals and the high side of the GSU.
3. Wind generating plants may be tripped after the fault period if this action is intended as part of a special protection system.
4. Wind generating plants may meet the LVRT requirements of this standard by the performance of the generators or by installing additional equipment (e.g., Static VAR Compensator) within the wind generating plant or by a combination of generator performance and additional equipment.
5. Existing individual generator units that are, or have been, interconnected to the CAISO Controlled Grid at the same location at the effective date of the Attachment 7 LVRT Standard are exempt from meeting the Attachment 7 LVRT Standard for the remaining life of the existing generation equipment. Existing individual generator units that are replaced are required to meet the Attachment 7 LVRT Standard.

### **ii. Power Factor Design Criteria (Reactive Power)**

A wind generating plant shall operate within a power factor within the range of 0.95 leading to 0.95 lagging, measured at the Point of Interconnection as defined in this Agreement in order to maintain a specified voltage schedule, if the system impact study shows that such a requirement is necessary to ensure safety or reliability. The power factor range standard can be met by using, for example, power electronics designed to supply this level of reactive capability (taking into account any limitations due to voltage level, real power output, etc.) or fixed and switched capacitors, or a combination of the two, if agreed to by the Participating TO and CAISO. The Interconnection Customer shall not disable power factor equipment while the wind plant is in operation. Wind plants shall also be able to provide sufficient dynamic voltage support in lieu of the power system stabilizer and automatic voltage regulation at the generator excitation system if the system impact study shows this to be required for system safety or reliability.

### **iii. Supervisory Control and Data Acquisition (SCADA) Capability**

The wind plant shall provide SCADA capability to transmit data and receive instructions from the Participating TO and CAISO to protect system reliability. The Participating TO and CAISO and the wind plant Interconnection Customer shall determine what SCADA information is essential for the proposed wind plant, taking into account the size of the plant and its characteristics, location, and importance in maintaining generation resource adequacy and transmission system reliability in its area.

**Attachment 8**

**Reliability Management System Agreement**

**RELIABILITY MANAGEMENT SYSTEM AGREEMENT  
by and between  
[TRANSMISSION OPERATOR]  
and  
[GENERATOR]**

**THIS RELIABILITY MANAGEMENT SYSTEM AGREEMENT** (the "Agreement"), is entered into this \_\_\_\_ day of \_\_\_\_\_, 2002, by and between \_\_\_\_\_ (the "Transmission Operator") and \_\_\_\_\_ (the "Generator").

**WHEREAS**, there is a need to maintain the reliability of the interconnected electric systems encompassed by the WSCC in a restructured and competitive electric utility industry;

**WHEREAS**, with the transition of the electric industry to a more competitive structure, it is desirable to have a uniform set of electric system operating rules within the Western Interconnection, applicable in a fair, comparable and non-discriminatory manner, with which all market participants comply; and

**WHEREAS**, the members of the WSCC, including the Transmission Operator, have determined that a contractual Reliability Management System provides a reasonable, currently available means of maintaining such reliability.

**NOW, THEREFORE**, in consideration of the mutual agreements contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Transmission Operator and the Generator agree as follows:

**1. PURPOSE OF AGREEMENT**

The purpose of this Agreement is to maintain the reliable operation of the Western Interconnection through the Generator's commitment to comply with certain reliability standards.

**2. DEFINITIONS**

In addition to terms defined in the beginning of this Agreement and in the Recitals hereto, for purposes of this Agreement the following terms shall have the meanings set forth beside them below.

**Control Area** means an electric system or systems, bounded by interconnection metering and telemetry, capable of controlling generation to maintain its interchange schedule with other Control Areas and contributing to frequency regulation of the Western Interconnection.

**FERC** means the Federal Energy Regulatory Commission or a successor agency.

**Member** means any party to the WSCC Agreement.

**Party** means either the Generator or the Transmission Operator and

**Parties** means both of the Generator and the Transmission Operator.

**Reliability Management System** or **RMS** means the contractual reliability management program implemented through the WSCC Reliability Criteria Agreement, the WSCC RMS Agreement, this Agreement, and any similar contractual arrangement.

**Western Interconnection** means the area comprising those states and provinces, or portions thereof, in Western Canada, Northern Mexico and the Western United States in which Members of the WSCC operate synchronously connected transmission systems.

**Working Day** means Monday through Friday except for recognized legal holidays in the state in which any notice is received pursuant to Section 8.

**WSCC** means the Western Systems Coordinating Council or a successor entity.

**WSCC Agreement** means the Western Systems Coordinating Council Agreement dated March 20, 1967, as such may be amended from time to time.

**WSCC Reliability Criteria Agreement** means the Western Systems Coordinating Council Reliability Criteria Agreement dated June 18, 1999 among the WSCC and certain of its member transmission operators, as such may be amended from time to time.

**WSCC RMS Agreement** means an agreement between the WSCC and the Transmission Operator requiring the Transmission Operator to comply with the reliability criteria contained in the WSCC Reliability Criteria Agreement.

**WSCC Staff** means those employees of the WSCC, including personnel hired by the WSCC on a contract basis, designated as responsible for the administration of the RMS.

### **3. TERM AND TERMINATION**

**3.1 Term.** This Agreement shall become effective thirty (30) days after the date of issuance of a final FERC order accepting this Agreement for filing without requiring any changes to this Agreement unacceptable to either Party. Required changes to this Agreement shall be deemed unacceptable to a Party only if that Party provides notice to the other Party within fifteen (15) days of issuance of the applicable FERC order that such order is unacceptable].

[Note: if the interconnection agreement is not FERC jurisdictional, replace bracketed language with: [on the later of: (a) the date of execution; or (b) the effective date of the WSCC RMS Agreement.]]

**3.2 Notice of Termination of WSCC RMS Agreement.** The Transmission Operator shall give the Generator notice of any notice of termination of the WSCC RMS Agreement by the WSCC or by the Transmission Operator within fifteen (15) days of receipt by the WSCC or the Transmission Operator of such notice of termination.

**3.3 Termination by the Generator.** The Generator may terminate this Agreement as follows:  
(a) following the termination of the WSCC RMS Agreement for any reason by the WSCC or by the Transmission Operator, provided such notice is provided within forty-five (45) days of the termination of the WSCC RMS Agreement;  
(b) following the effective date of an amendment to the requirements of the WSCC Reliability Criteria Agreement that adversely affects the Generator, provided notice of such termination is given within forty-five (45) days of the date of issuance of a FERC order accepting such amendment for filing, provided further that the forty-five (45) day period within which notice of termination is required may be extended by the Generator for an additional forty-five (45) days if the Generator gives written notice to the Transmission Operator of such requested extension within the initial forty-five (45) day period; or  
(c) for any reason on one year's written notice to the Transmission Operator and the WSCC.

**3.4 Termination by the Transmission Operator.** The Transmission Operator may terminate this Agreement on thirty (30) days' written notice following the termination of the WSCC RMS Agreement for any reason by the WSCC or by the Transmission Operator, provided such notice is provided within thirty (30) days of the termination of the WSCC RMS Agreement.

**3.5 Mutual Agreement.** This Agreement may be terminated at any time by the mutual agreement of the Transmission Operator and the Generator.

#### **4. COMPLIANCE WITH AND AMENDMENT OF WSCC RELIABILITY CRITERIA**

**4.1 Compliance with Reliability Criteria.** The Generator agrees to comply with the requirements of the WSCC Reliability Criteria Agreement, including the applicable WSCC reliability criteria contained in Section IV of Annex A thereof, and, in the event of failure to comply, agrees to be subject to the sanctions applicable to such failure. Each and all of the provisions of the WSCC Reliability Criteria Agreement are hereby incorporated by reference into this Agreement as though set forth fully herein, and the Generator shall for all purposes be considered a Participant, and shall be entitled to all of the rights and privileges and be subject to all of the obligations of a Participant, under and in connection with the WSCC Reliability Criteria Agreement, including but not limited to the rights, privileges and obligations set forth in Sections 5, 6 and 10 of the WSCC Reliability Criteria Agreement.

**4.2 Modifications to WSCC Reliability Criteria Agreement.** The Transmission Operator shall notify the Generator within fifteen (15) days of the receipt of notice from the WSCC of the initiation of any WSCC process to modify the WSCC Reliability Criteria Agreement. The WSCC RMS Agreement specifies that such process shall comply with the procedures, rules, and regulations then applicable to the WSCC for modifications to reliability criteria.

**4.3 Notice of Modifications to WSCC Reliability Criteria Agreement.** If, following the process specified in Section 4.2, any modification to the WSCC Reliability Criteria Agreement is to take effect, the Transmission Operator shall provide notice to the Generator at least forty-five (45) days before such modification is scheduled to take effect.



**4.4 Effective Date.** Any modification to the WSCC Reliability Criteria Agreement shall take effect on the date specified by FERC in an order accepting such modification for filing.

**4.5 Transfer of Control or Sale of Generation Facilities.** In any sale or transfer of control of any generation facilities subject to this Agreement, the Generator shall as a condition of such sale or transfer require the acquiring party or transferee with respect to the transferred facilities either to assume the obligations of the Generator with respect to this Agreement or to enter into an agreement with the Control Area Operator in substantially the form of this Agreement.

## **5. SANCTIONS**

**5.1 Payment of Monetary Sanctions.** The Generator shall be responsible for payment directly to the WSCC of any monetary sanction assessed against the Generator pursuant to this Agreement and the WSCC Reliability Criteria Agreement. Any such payment shall be made pursuant to the procedures specified in the WSCC Reliability Criteria Agreement.

**5.2 Publication.** The Generator consents to the release by the WSCC of information related to the Generator's compliance with this Agreement only in accordance with the WSCC Reliability Criteria Agreement.

**5.3 Reserved Rights.** Nothing in the RMS or the WSCC Reliability Criteria Agreement shall affect the right of the Transmission Operator, subject to any necessary regulatory approval, to take such other measures to maintain reliability, including disconnection, which the Transmission Operator may otherwise be entitled to take.

## **6. THIRD PARTIES**

Except for the rights and obligations between the WSCC and Generator specified in Sections 4 and 5, this Agreement creates contractual rights and obligations solely between the Parties. Nothing in this Agreement shall create, as between the Parties or with respect to the WSCC: (1) any obligation or liability whatsoever (other than as expressly provided in this Agreement), or (2) any duty or standard of care whatsoever. In addition, nothing in this Agreement shall create any duty, liability, or standard of care whatsoever as to any other party. Except for the rights, as a third-party beneficiary with respect to Sections 4 and 5, of the WSCC against Generator, no third party shall have any rights whatsoever with respect to enforcement of any provision of this Agreement. Transmission Operator and Generator expressly intend that the WSCC is a third-party beneficiary to this Agreement, and the WSCC shall have the right to seek to enforce against Generator any provisions of Sections 4 and 5, provided that specific performance shall be the sole remedy available to the WSCC pursuant to this Agreement, and Generator shall not be liable to the WSCC pursuant to this Agreement for damages of any kind whatsoever (other than the payment of sanctions to the WSCC, if so construed), whether direct, compensatory, special, indirect, consequential, or punitive.

## 7. REGULATORY APPROVALS

This Agreement shall be filed with FERC by the Transmission Operator under Section 205 of the Federal Power Act. In such filing, the Transmission Operator shall request that FERC accept this Agreement for filing without modification to become effective on the day after the date of a FERC order accepting this Agreement for filing. [This section shall be omitted for agreements not subject to FERC jurisdiction.]

## 8. NOTICES

Any notice, demand or request required or authorized by this Agreement to be given in writing to a Party shall be delivered by hand, courier or overnight delivery service, mailed by certified mail (return receipt requested) postage prepaid, faxed, or delivered by mutually agreed electronic means to such Party at the following address:

\_\_\_\_\_: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Fax: \_\_\_\_\_  
\_\_\_\_\_: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Fax: \_\_\_\_\_

The designation of such person and/or address may be changed at any time by either Party upon receipt by the other of written notice. Such a notice served by mail shall be effective upon receipt. Notice transmitted by facsimile shall be effective upon receipt if received prior to 5:00 p.m. on a Working Day, and if not received prior to 5:00 p.m. on a Working Day, receipt shall be effective on the next Working Day.

## 9. APPLICABILITY

This Agreement (including all appendices hereto and, by reference, the WSCC Reliability Criteria Agreement) constitutes the entire understanding between the Parties hereto with respect to the subject matter hereof, supersedes any and all previous understandings between the Parties with respect to the subject matter hereof, and binds and inures to the benefit of the Parties and their successors.

## 10. AMENDMENT

No amendment of all or any part of this Agreement shall be valid unless it is reduced to writing and signed by both Parties hereto. The terms and conditions herein specified shall remain in effect throughout the term and shall not be subject to change through application to the FERC or other governmental body or authority, absent the agreement of the Parties.

## **11. INTERPRETATION**

Interpretation and performance of this Agreement shall be in accordance with, and shall be controlled by, the laws of the State of \_\_\_\_\_ but without giving effect to the provisions thereof relating to conflicts of law. Article and section headings are for convenience only and shall not affect the interpretation of this Agreement. References to articles, sections and appendices are, unless the context otherwise requires, references to articles, sections and appendices of this Agreement.

## **12. PROHIBITION ON ASSIGNMENT**

This Agreement may not be assigned by either Party without the consent of the other Party, which consent shall not be unreasonably withheld; provided that the Generator may without the consent of the WSCC assign the obligations of the Generator pursuant to this Agreement to a transferee with respect to any obligations assumed by the transferee by virtue of Section 4.5 of this Agreement.

## **13. SEVERABILITY**

If one or more provisions herein shall be invalid, illegal or unenforceable in any respect, it shall be given effect to the extent permitted by applicable law, and such invalidity, illegality or unenforceability shall not affect the validity of the other provisions of this Agreement.

## **14. COUNTERPARTS**

This Agreement may be executed in counterparts and each shall have the same force and effect as an original.

**IN WITNESS WHEREOF**, the Transmission Operator and the Generator have each caused this Reliability Management System Agreement to be executed by their respective duly authorized officers as of the date first above written.

---

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

---

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

**CAISO TARIFF APPENDIX U**  
**Standard Large Generator Interconnection Procedures (LGIP)**

**Standard Large Generator  
Interconnection Procedures (LGIP)**

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**Section 1. Objectives and Definitions.**

**1.1 Objectives**

The objective of this LGIP is to implement FERC's Order No. 2003 setting forth the requirements for Large Generating Facility interconnections to the CAISO Controlled Grid.

**1.2 Definitions.**

**1.2.1 Master Definitions Supplement.**

Unless the context otherwise requires, any word or expression defined in the Master Definitions Supplement, Appendix A to the CAISO Tariff, shall have the same meaning where used in this LGIP. A reference to a Section or an Appendix is a reference to a Section or an Appendix of the CAISO Tariff. References to LGIP are to this Appendix U.

**1.2.2 Special Definitions for this LGIP.**

In this LGIP, the following words and expressions shall have the meanings set opposite them:

**"Confidential Information"** shall mean any confidential, proprietary or trade secret information of a plan, specification, pattern, procedure, design, device, list, concept, policy or compilation relating to the present or planned business of a Party, which is designated as confidential by the Party supplying the information, whether conveyed orally, electronically, in writing, through inspection, or otherwise, subject to Section 13.1 of this LGIP.

**"Dispute Resolution"** shall mean the procedure set forth in this LGIP for resolution of a dispute between the Parties.

**"Force Majeure"** shall mean any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm or flood, explosion, breakage or accident to machinery or equipment, any order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities, or any other cause beyond a Party's control. A Force Majeure event does not include acts of negligence or intentional wrongdoing by the Party claiming Force Majeure.

**"Governmental Authority"** shall mean any federal, state, local or other governmental, regulatory or administrative agency, court, commission, department, board, or other governmental subdivision, legislature, rulemaking board, tribunal, or other governmental authority having jurisdiction over the Parties, their respective facilities, or the respective services they provide, and exercising or entitled to exercise any administrative, executive, police, or taxing authority or power; provided, however, that such term does not include the Interconnection Customer, CAISO, or Participating TO, or any Affiliate thereof.

**"Party" or "Parties"** shall mean the CAISO, Participating TO(s), Interconnection Customer or the applicable combination of the above.

**“Reasonable Efforts”** shall mean, with respect to an action required to be attempted or taken by a Party under the Standard Large Generator Interconnection Procedures, efforts that are timely and consistent with Good Utility Practice and are otherwise substantially equivalent to those a Party would use to protect its own interests.

**“Roles and Responsibilities Agreement”** shall mean the Agreement for the Allocation of Responsibilities with Regard to Large Generator Interconnection Procedures and Interconnection Study Agreements, a pro forma version of which is attached to this LGIP.

## **Section 2. Scope and Application.**

### **2.1 Application of Standard Large Generator Interconnection Procedures.**

Sections 2 through 13 of this LGIP apply to processing an Interconnection Request pertaining to a Large Generating Facility.

### **2.2 Comparability.**

The CAISO shall receive, process and analyze Interconnection Requests in a timely manner as set forth in this LGIP. The CAISO will use the same Reasonable Efforts in processing and analyzing Interconnection Requests from all Interconnection Customers, whether the Generating Facilities are owned by a Participating TO, its subsidiaries, or Affiliates or others.

### **2.3 Base Case Data.**

The CAISO and/or the applicable Participating TO(s) shall provide base power flow, short circuit and stability databases, including all underlying assumptions, and contingency list upon request subject to applicable confidentiality provisions in LGIP Section 13.1. The applicable Participating TO(s) and the CAISO are permitted to require that the Interconnection Customer sign a confidentiality agreement before the release of commercially sensitive information or Critical Energy Infrastructure Information (as that term is defined by FERC) in the Base Case data. Such Base Cases shall include (i) generation projects and (ii) transmission projects, including merchant transmission projects that are proposed for the transmission system for which a transmission expansion plan has been submitted and approved by the applicable authority.

### **2.4 No Applicability to Transmission Service.**

Nothing in this LGIP shall constitute a request for transmission service or confer upon an Interconnection Customer any right to receive transmission service.

## **Section 3. Interconnection Requests.**

### **3.1 General.**

Pursuant to CAISO Tariff Section 25.1, an Interconnection Customer shall submit to the CAISO an Interconnection Request in the form of Appendix 1 to this LGIP and a refundable deposit of \$10,000. The CAISO will forward a copy of the Interconnection Request to the applicable Participating TO within one (1) Business Day of receipt. The CAISO shall apply the deposit toward the cost of an Interconnection Feasibility Study.

The Interconnection Customer shall submit a separate Interconnection Request for each site and may submit multiple Interconnection Requests for a single site. The Interconnection Customer must submit a deposit with each Interconnection Request even when more than one request is submitted for a single site. An Interconnection Request to evaluate one site at two different voltage levels shall be treated as two Interconnection Requests.

At the Interconnection Customer's option, the applicable Participating TO(s), the CAISO and Interconnection Customer will identify alternative Point(s) of Interconnection and configurations at the Scoping Meeting to evaluate in this process and attempt to eliminate alternatives in a reasonable fashion given resources and information available. Interconnection Customer will select the definitive Point of Interconnection to be studied and one alternative Point of Interconnection no later than the execution of the first Interconnection Feasibility Study Agreement.

### **3.2 Roles and Responsibilities.**

- (a) Each Interconnection Request will be subject to the direction and oversight of the CAISO. The CAISO will conduct or cause to be performed the required Interconnection Studies and any additional studies the CAISO determines to be reasonably necessary, and will direct the applicable Participating TO to perform portions of studies where the Participating TO has specific and non-transferable expertise or data and can conduct the studies more efficiently and cost effectively than the CAISO. The CAISO will coordinate with Affected System Operators in accordance with LGIP Section 3.7.
- (b) The CAISO will complete or cause to be completed all studies as required within the timelines provided in this LGIP. Any portion of the studies performed at the direction of the CAISO by the Participating TOs or by a third party shall also be completed within timelines provided in this LGIP.
- (c) The CAISO has established a pro forma Roles and Responsibilities Agreement, attached hereto and incorporated herein by reference, for execution by the CAISO and the applicable Participating TOs.
- (d) Each Interconnection Customer shall pay the actual costs of all Interconnection Studies, and any additional studies the CAISO determines to be reasonably necessary in response to the Interconnection Request. The CAISO shall reimburse the Participating TO for the actual cost of any portion of all Interconnection Studies that such Participating TO performs at the direction of the CAISO.

### **3.3 Interconnection Service.**

- 3.3.1 The Product.** Interconnection Service allows the Interconnection Customer to connect the Large Generating Facility to the CAISO Controlled Grid and be eligible to deliver the Large Generating Facility's output using the available capacity of the CAISO Controlled Grid. Interconnection Service does not in and of itself convey any right to deliver electricity to any specific customer or point of delivery.

**3.3.2 The Interconnection Studies.** The Interconnection Studies consist of, but are not limited to, short circuit/fault duty, steady state (thermal and voltage) and stability analyses. The Interconnection Studies will identify direct Interconnection Facilities and required Reliability Network Upgrades necessary to mitigate thermal overloads and voltage violations, and address short circuit, stability, and reliability issues associated with the requested Interconnection Service.

The Interconnection Studies will also identify necessary Delivery Network Upgrades to allow full output of the proposed Large Generating Facility under a variety of potential system conditions, and the maximum allowed output, under a variety of potential system conditions, of the interconnecting Large Generating Facility without the Delivery Network Upgrades.

### **3.3.3 Deliverability Assessment.**

**3.3.3.1 The Product.** A Deliverability Assessment will be performed which shall determine the Interconnection Customer's Large Generating Facility's ability to deliver its energy to the CAISO Controlled Grid under peak load conditions. The Deliverability Assessment will provide the Interconnection Customer with information as to the level of deliverability without Network Upgrades, and the Deliverability Assessment will provide the Interconnection Customer with information as to the required Network Upgrades to enable the Interconnection Customer's Large Generating Facility the ability to deliver the full output of the proposed Large Generating Facility to the CAISO Controlled Grid based on specified study assumptions.

Thus, the Deliverability Assessment results will provide the Interconnection Customer two (2) data points on the scale of deliverability: 1) a deliverability level with no Network Upgrades, and 2) the required Network Upgrades to support 100% deliverability.

Deliverability of a new Large Generating Facility will be assessed on the same basis as all other existing resources interconnected to the CAISO Controlled Grid.

**3.3.3.2 The Assessment.** The Deliverability Assessment will identify the facilities that are required to enable the Interconnection Customer's Large Generating Facility to meet the requirements for deliverability and as a general matter, that such Large Generating Facility's interconnection is also studied with the CAISO Controlled Grid at peak load, under a variety of severely stressed conditions, to determine whether, with the Large Generating Facility at full output, the aggregate of generation in the local area can be delivered to the aggregate of load on the CAISO Controlled Grid, consistent with the CAISO's reliability criteria and procedures. This approach assumes that some portion of existing resources that are designated as deliverable is displaced by the output of the Interconnection Customer's Large Generating Facility. This Deliverability Assessment in and of itself does not convey any right to deliver electricity to any specific customer or point of delivery. The CAISO Controlled Grid may also be studied under non-peak load conditions. However, upon request by the Interconnection Customer, the Deliverability Assessment must explain in writing to the Interconnection Customer why the study of non-peak load conditions is required for reliability purposes.

### **3.4 Network Upgrades.**

#### **3.4.1 Initial Funding**

Unless the Participating TO elects to fund the capital for Reliability and Delivery Network Upgrades, they shall be solely funded by the Interconnection Customer.

#### **3.4.2 [Section Intentionally Omitted]**

#### **3.4.3 Repayment of Amounts Advanced for Network Upgrades.**

Upon the Commercial Operation Date, the Interconnection Customer shall be entitled to a repayment for the cost of Network Upgrades. Such amount shall be paid to the Interconnection Customer by the applicable Participating TO(s) on a dollar-for-dollar basis either through (1) direct payments made on a levelized basis over the five-year period commencing on the Commercial Operation Date; or (2) any alternative payment schedule that is mutually agreeable to the Interconnection Customer and Participating TO, provided that such amount is paid within five (5) years of the Commercial Operation Date. Any repayment shall include interest calculated in accordance with the methodology set forth in FERC's regulations at 18 C.F.R. §35.19a(a)(2)(iii) from the date of any payment for Network Upgrades through the date on which the Interconnection Customer receives a repayment of such payment. The Interconnection Customer may assign such repayment rights to any person.

Instead of direct payments, the Interconnection Customer may elect to receive Congestion Revenue Rights (CRRs) in accordance with the CAISO Tariff associated with the Network Upgrades that were funded by the Interconnection Customer, to the extent such CRRs or alternative rights are available under the CAISO Tariff at the time of the election. Such CRRs would take effect upon the Commercial Operation Date of the Large Generating Facility in accordance with the LGIA.

#### **3.4.4 Special Provisions for Affected Systems and Other Affected Participating TOs.**

The Interconnection Customer shall enter into an agreement with the owner of the Affected System and/or other affected Participating TO(s), as applicable. The agreement shall specify the terms governing payments to be made by the Interconnection Customer to the owner of the Affected System and/or other affected Participating TO(s) as well as the repayment by the owner of the Affected System and/or other affected Participating TO(s). If the affected entity is another Participating TO, the initial form of agreement will be the LGIA, as appropriately modified.

Any repayment by the owner of the Affected System shall be in accordance with FERC Order No. 2003-B (109 FERC ¶ 61,287).

### **3.5 Valid Interconnection Request.**

#### **3.5.1 Initiating an Interconnection Request.**

To initiate an Interconnection Request, the Interconnection Customer must submit all of the following: (i) a \$10,000 deposit, (ii) a completed application in the form of LGIP Appendix 1, and (iii) demonstration of Site Control or a posting of an additional deposit of \$10,000. Such deposits may be applied toward any Interconnection Studies pursuant to the Interconnection Request. If the Interconnection Customer demonstrates Site Control within the cure period specified in LGIP Section 3.5.3 after submitting its Interconnection Request, the additional deposit shall be refundable; otherwise, all such deposit(s), additional and initial, become non-refundable.

The expected In-Service Date of the new Large Generating Facility or increase in capacity of the existing Generating Facility shall be no more than the process window for the regional expansion planning period (or in the absence of a regional planning process, the process window for the CAISO's expansion planning period) not to exceed seven years from the date the Interconnection Request is received by the CAISO, unless the Interconnection Customer demonstrates that engineering, permitting and construction of the new Large Generating Facility or increase in capacity of the existing Generating Facility will take longer than the regional expansion planning period. The In-Service Date may succeed the date the Interconnection Request is received by the CAISO by a period up to ten years, or longer where the Interconnection Customer, the applicable Participating TO and the CAISO agree, such agreement not to be unreasonably withheld.

#### **3.5.2 Acknowledgment of Interconnection Request.**

The CAISO shall acknowledge receipt of the Interconnection Request within six (6) Business Days of receipt of the request and attach a copy of the received Interconnection Request to the acknowledgement.

#### **3.5.3 Deficiencies in Interconnection Request.**

An Interconnection Request will not be considered to be a valid request until all items in LGIP Section 3.5.1 have been received and deemed valid by the CAISO. If an Interconnection Request fails to meet the requirements set forth in LGIP Section 3.5.1, the CAISO shall notify the Interconnection Customer within six (6) Business Days of receipt of the initial Interconnection Request of the reasons for such failure and that the Interconnection Request does not constitute a valid request. The Interconnection Customer shall provide the CAISO the additional requested information needed to constitute a valid request within ten (10) Business Days after receipt of such notice. Failure by the Interconnection Customer to comply with this LGIP Section 3.5.3 shall be treated in accordance with LGIP Section 3.8.

### **3.5.4 Scoping Meeting.**

Within ten (10) Business Days after the CAISO notifies the Interconnection Customer of a valid Interconnection Request, the CAISO shall establish a date agreeable to the Interconnection Customer and the applicable Participating TO(s) for the Scoping Meeting, and such date shall be no later than thirty (30) calendar days from notification of the valid Interconnection Request, unless otherwise mutually agreed upon by the Parties. The CAISO shall determine whether the Interconnection Request is at or near the boundary of an affected Participating TO(s) service territory or of any other Affected System(s) so as to potentially affect such third parties. If such a determination is made, the CAISO shall invite the affected Participating TO(s), and/or Affected System Operator(s) in accordance with LGIP Section 3.7, to the Scoping Meeting by informing such third parties of the time and place of the scheduled Scoping Meeting as soon as practicable.

The purpose of the Scoping Meeting shall be to discuss alternative interconnection options, to exchange information including any transmission data that would reasonably be expected to impact such interconnection options, to analyze such information and to determine the potential feasible Points of Interconnection. The applicable Participating TO(s) and the CAISO will bring to the meeting such already available technical data, including, but not limited to: (i) general facility loadings, (ii) general instability issues, (iii) general short circuit issues, (iv) general voltage issues, and (v) general reliability issues, as may be reasonably required to accomplish the purpose of the meeting.

The Interconnection Customer will bring to the Scoping Meeting as much large generator technical data in Attachment A to LGIP Appendix 1, and system studies previously performed, as available. The applicable Participating TO(s), the CAISO and the Interconnection Customer will also bring to the meeting personnel and other resources as may be reasonably required to accomplish the purpose of the meeting in the time allocated for the meeting. On the basis of the meeting, the Interconnection Customer shall designate its Point of Interconnection, pursuant to LGIP Section 6.1, and one alternative Point of Interconnection. The duration of the meeting shall be sufficient to accomplish its purpose.

The CAISO shall prepare minutes from the meeting, verified by the Interconnection Customer and the other attendees, that will include, at a minimum, discussions among the applicable Participating TO(s) and the CAISO of what the expected results may be for the Interconnection Feasibility Study.

### **3.6 Internet Posting.**

The CAISO will maintain on the CAISO Website a list of all Interconnection Requests. The list will identify, for each Interconnection Request: (i) the maximum summer and winter megawatt electrical output; (ii) the location by county and state; (iii) the station or transmission line or lines where the interconnection will be made; (iv) the projected In-Service Date; (v) the status of the Interconnection Request, including Queue Position; (vi) the availability of any studies related to the Interconnection Request; (vii) the date of the Interconnection Request; (viii) the type of Generating Facility to be constructed (combined cycle, base load or combustion turbine and fuel type); and (ix) for Interconnection Requests that have not resulted in a completed interconnection, an explanation as to why it was not completed.

Except in the case of an Affiliate, the list will not disclose the identity of the Interconnection Customer until the Interconnection Customer executes an LGIA or requests that the applicable Participating TO(s) and the CAISO file an unexecuted LGIA with FERC. The CAISO shall post on the CAISO Website an advance notice whenever a Scoping Meeting will be held with an Affiliate of a Participating TO.

The CAISO shall post to the CAISO Website any deviations from the study timelines set forth herein. Interconnection Study reports and Optional Interconnection Study reports shall be posted to the CAISO Website subsequent to the meeting among the Interconnection Customer, the applicable Participating TO(s) and the CAISO to discuss the applicable study results. The CAISO shall also post any known deviations in the Large Generating Facility's In-Service Date.

### **3.7 Coordination with Affected Systems.**

The CAISO will notify the Affected System Operators that are potentially affected by the project proposed by the Interconnection Customer. The CAISO will coordinate the conduct of any studies required to determine the impact of the Interconnection Request on Affected Systems with Affected System Operators, to the extent possible, and, if possible, the CAISO will include those results (if available) in its applicable Interconnection Study within the time frame specified in this LGIP. The CAISO will include such Affected System Operators in all meetings held with the Interconnection Customer as required by this LGIP. The Interconnection Customer will cooperate with the CAISO in all matters related to the conduct of studies and the determination of modifications to Affected Systems, including signing separate study agreements with Affected System owners and paying for necessary studies. An entity which may be an Affected System shall cooperate with the CAISO in all matters related to the conduct of studies and the determination of modifications to Affected Systems.

### **3.8 Withdrawal.**

The Interconnection Customer may withdraw its Interconnection Request at any time by written notice of such withdrawal to the CAISO and the CAISO will notify the applicable Participating TO(s), within three (3) Business Days of receipt of such a notice. In addition, if the Interconnection Customer fails to adhere to all requirements of this LGIP, except as provided in LGIP Section 13.5 (Disputes), the CAISO shall deem the Interconnection Request to be withdrawn and shall provide written notice to the Interconnection Customer within five (5) Business Days of the deemed withdrawal and an explanation of the reasons for such deemed withdrawal. Upon receipt of such written notice, the Interconnection Customer shall have fifteen (15) Business Days in which to either respond with information or actions that cures the deficiency or to notify the CAISO of its intent to pursue Dispute Resolution.



Withdrawal shall result in the loss of the Interconnection Customer's Queue Position, if any. If an Interconnection Customer disputes the withdrawal and loss of its Queue Position, then during Dispute Resolution, the Interconnection Customer's Interconnection Request is eliminated from the queue until such time that the outcome of Dispute Resolution would restore its Queue Position. An Interconnection Customer that withdraws or is deemed to have withdrawn its Interconnection Request shall pay to the CAISO all costs that have been prudently incurred or irrevocably have been committed to be incurred with respect to that Interconnection Request prior to the CAISO's receipt of notice described above. The Interconnection Customer must pay all monies due to the Participating TO before it is allowed to obtain any Interconnection Study data or results. The CAISO will reimburse the applicable Participating TO(s) for all work performed associated with the Interconnection Request at the CAISO's direction.

The CAISO shall update the CAISO Website Queue Position posting. The CAISO shall refund to the Interconnection Customer any portion of the Interconnection Customer's deposit or study payments that exceed the costs that the CAISO has incurred or Participating TO(s) have incurred, including interest calculated in accordance with section 35.19a(a)(2) of FERC's regulations. In the event of such withdrawal, the CAISO, subject to the confidentiality provisions of LGIP Section 13.1, shall provide, at the Interconnection Customer's request, all information that the CAISO developed for any completed study conducted up to the date of withdrawal of the Interconnection Request.

#### **Section 4. Queue Position.**

##### **4.1 General.**

The CAISO shall assign a Queue Position based upon the date and time of receipt of the valid Interconnection Request; provided that, if the sole reason an Interconnection Request is not valid is the lack of required information on the application form, and the Interconnection Customer provides such information in accordance with LGIP Section 3.5.3, then the CAISO shall assign the Interconnection Customer a Queue Position based on the date the application form was originally filed. Moving a Point of Interconnection shall result in a lowering of Queue Position if it is deemed a Material Modification under LGIP Section 4.4.3.

The queue position of each Interconnection Request will be used to determine the order of performing the Interconnection Studies and determination of cost responsibility for the facilities necessary to accommodate the Interconnection Request. A higher Queue Position Interconnection Request is one that has been placed "earlier" in the CAISO's queue in relation to another Interconnection Request that is lower queued. The cost of the common upgrades for clustered Interconnection Requests may be allocated without regard to queue position.

##### **4.2 Clustering.**

At the CAISO's option, and in coordination with the applicable Participating TO(s), Interconnection Requests may be studied serially or in clusters for the purpose of the Interconnection System Impact Study.

Clustering shall be implemented on the basis of Queue Position. If the CAISO elects, in coordination with applicable Participating TO(s), to study Interconnection Requests using Clustering, all Interconnection Requests received within a period not to exceed one hundred and eighty (180) calendar days, hereinafter referred to as the "Queue Cluster Window" shall be studied together without regard to the nature of the underlying Interconnection Service. The deadline for completing all Interconnection System Impact Studies for which an Interconnection System Impact Study Agreement has been executed during a Queue Cluster Window shall be in accordance with LGIP Section 7.4, for all Interconnection Requests assigned to the same Queue Cluster Window. The CAISO may agree to conduct the study of an Interconnection Request separately to the extent warranted by Good Utility Practice based upon the electrical remoteness of the proposed Large Generating Facility.

Clustering Interconnection System Impact Studies shall be conducted in such a manner to ensure the efficient implementation of the applicable regional transmission expansion plan in light of the transmission system's capabilities at the time of each study.

The Queue Cluster Window shall have a fixed time interval based on fixed annual opening and closing dates. Any changes to the established Queue Cluster Window interval and opening or closing dates shall be announced with a posting on the CAISO Website beginning at least one hundred and eighty (180) calendar days in advance of the change and continuing thereafter through the end date of the first Queue Cluster Window that is to be modified.

#### **4.3 Transferability of Queue Position.**

An Interconnection Customer may transfer its Queue Position to another entity only if such entity acquires the specific Generating Facility identified in the Interconnection Request and the Point of Interconnection does not change.

#### **4.4 Modifications.**

The Interconnection Customer shall submit to the CAISO, in writing, modifications to any information provided in the Interconnection Request. The CAISO will forward the Interconnection Customer's modification to the applicable Participating TO(s) within one (1) Business Day of receipt. The Interconnection Customer shall retain its Queue Position if the modifications are in accordance with LGIP Sections 4.4.1, 4.4.2 or 4.4.5, or are determined not to be Material Modifications pursuant to LGIP Section 4.4.3.

Notwithstanding the above, during the course of the Interconnection Studies, the Interconnection Customer, the applicable Participating TO(s), or the CAISO may identify changes to the planned interconnection that may improve the costs and benefits (including reliability) of the interconnection, and the ability of the proposed change to accommodate the Interconnection Request. To the extent the identified changes are acceptable to the applicable Participating TO(s), the CAISO, and Interconnection Customer, such acceptance not to be unreasonably withheld, the CAISO shall modify the Point of Interconnection and/or configuration in accordance with such changes and proceed with any re-studies necessary to do so in accordance with LGIP Section 6.4, LGIP Section 7.6 and LGIP Section 8.5 as applicable and the Interconnection Customer shall retain its Queue Position.

- 4.4.1** Prior to the return of the executed Interconnection System Impact Study Agreement to the CAISO, modifications permitted under this Section shall include specifically: (a) a decrease of up to 60 percent of electrical output (MW) of the proposed project; (b) modifying the technical parameters associated with the Large Generating Facility technology or the Large Generating Facility step-up transformer impedance characteristics; and (c) modifying the interconnection configuration. For plant increases, the incremental increase in plant output will go to the end of the queue for the purposes of cost allocation and study analysis.
- 4.4.2** Prior to the return of the executed Interconnection Facility Study Agreement to the CAISO, the modifications permitted under this Section shall include specifically: (a) additional 15 percent decrease of electrical output (MW), and (b) Large Generating Facility technical parameters associated with modifications to Large Generating Facility technology and transformer impedances; provided, however, the incremental costs associated with those modifications are the responsibility of the requesting Interconnection Customer.
- 4.4.3** Prior to making any modification other than those specifically permitted by LGIP Sections 4.4.1, 4.4.2, and 4.4.5, the Interconnection Customer may first request that the CAISO evaluate whether such modification is a Material Modification. In response to the Interconnection Customer's request, the CAISO, in coordination with the affected Participating TO, shall evaluate the proposed modifications prior to making them and the CAISO shall inform the Interconnection Customer in writing of whether the modifications would constitute a Material Modification. Any change to the Point of Interconnection, except those deemed acceptable under LGIP Sections 4.4.1, 6.1, 7.2 or so allowed elsewhere, shall constitute a Material Modification. The Interconnection Customer may then withdraw the proposed modification or proceed with a new Interconnection Request for such modification.
- 4.4.4** Upon receipt of the Interconnection Customer's request for modification permitted under this LGIP Section 4.4, the CAISO shall commence and conduct or have conducted any necessary additional studies as soon as practicable, but in no event shall such studies commence later than thirty (30) calendar days after receiving notice of the Interconnection Customer's request. Any additional studies resulting from such modification shall be done at the Interconnection Customer's cost.
- 4.4.5** Extensions of less than three (3) cumulative years in the Commercial Operation Date of the Large Generating Facility to which the Interconnection Request relates are not material and should be handled through construction sequencing.

**Section 5. Procedures for Interconnection Requests Submitted Prior to Effective Date of Standard Large Generator Interconnection Procedures.**

**5.1 Queue Position for Pending Requests.**

- 5.1.1** Any Interconnection Customer assigned a queue position prior to the effective date of this LGIP shall retain that relative queue position.

- 5.1.1.1** If an Interconnection Study agreement has not been executed as of the effective date of this LGIP, then such Interconnection Study, and any subsequent Interconnection Studies, shall be processed in accordance with this LGIP.
- 5.1.1.2** If an Interconnection Study agreement has been executed prior to the effective date of this LGIP, such Interconnection Study shall be completed in accordance with the terms of such agreement. With respect to any remaining studies for which an Interconnection Customer has not signed an Interconnection Study agreement prior to the effective date of the LGIP, the Participating TO must offer the Interconnection Customer the option of either continuing under the Participating TO's existing interconnection study process pursuant to CAISO Tariff Appendix W or going forward with the completion of the necessary Interconnection Studies (for which it does not have a signed Interconnection Studies agreement) in accordance with this LGIP.
- 5.1.1.3** If an agreement to interconnect a Generating Unit has been submitted to FERC for approval before the effective date of the LGIP, then the agreement would be grandfathered.

**5.1.2 Transition Period.**

To the extent necessary, the Participating TO and/or the CAISO and Interconnection Customers with an outstanding request (i.e., an interconnection request or application for which an agreement to interconnect a Generating Unit has not been submitted to FERC for approval as of the effective date of this LGIP) shall transition to this LGIP within a reasonable period of time not to exceed sixty (60) calendar days. The use of the term "outstanding request" herein shall mean any interconnection request or application, on the effective date of this LGIP: (i) that has been submitted but not yet accepted by the CAISO or the Participating TO; (ii) where the related interconnection agreement has not yet been submitted to FERC for approval in executed or unexecuted form, (iii) where the relevant interconnection study agreements have not yet been executed, or (iv) where any of the relevant interconnection studies are in process but not yet completed. Any Interconnection Customer with an outstanding request as of the effective date of this LGIP may request a reasonable extension of any deadline, otherwise applicable, if necessary to avoid undue hardship or prejudice to its Interconnection Request. A reasonable extension shall be granted by the CAISO, as applicable, to the extent consistent with the intent and process provided for under this LGIP.

**5.2 Change in CAISO Operational Control.**

If the CAISO no longer has control of the portion of the CAISO Controlled Grid at the Point of Interconnection during the period when an Interconnection Request is pending, the CAISO shall transfer to applicable Participating TO which has ownership of the Point of Interconnection any amount of the deposit or payment with interest thereon that exceeds the cost that it incurred to evaluate the request for interconnection. Any difference between such net deposit amount and the costs that the successor Participating TO incurs to evaluate the request for interconnection shall be paid by or refunded to the Interconnection Customer, as appropriate. The CAISO shall coordinate with the applicable Participating TO which has ownership of the Point of Interconnection to complete any Interconnection Study, as appropriate, that the CAISO has begun but has not completed. If the CAISO has tendered a draft LGIA to the Interconnection Customer but the Interconnection Customer has neither executed the LGIA or requested the filing of an unexecuted LGIA with FERC, unless otherwise provided, the Interconnection Customer must complete negotiations with the applicable Participating TO which has the ownership of the Point of Interconnection.

## **Section 6. Interconnection Feasibility Study.**

### **6.1 Interconnection Feasibility Study Agreement.**

Simultaneously with the acknowledgement of a valid Interconnection Request, the CAISO shall provide to the Interconnection Customer a pro forma Interconnection Feasibility Study Agreement. The pro forma Interconnection Feasibility Study Agreement shall specify that the Interconnection Customer is responsible for the actual cost of the Interconnection Feasibility Study. Within five (5) Business Days following the Scoping Meeting, the Interconnection Customer shall specify for inclusion in the attachment to the Interconnection Feasibility Study Agreement the Point of Interconnection and one alternative Point of Interconnection. Within fifteen (15) Business Days following the CAISO's receipt of such designation, the CAISO, in coordination with the Participating TO shall provide to the Interconnection Customer a signed Interconnection Feasibility Study Agreement, which shall include a good faith estimate of the cost for completing the Interconnection Feasibility Study. The Interconnection Customer shall execute and deliver to the CAISO the Interconnection Feasibility Study Agreement along with an additional \$10,000 deposit no later than thirty (30) calendar days after its receipt.

On or before the return of the executed Interconnection Feasibility Study Agreement to the CAISO, the Interconnection Customer shall provide to the CAISO valid technical data called for in LGIP Appendix 1, Attachment A.

If the Interconnection Feasibility Study uncovers any unexpected result(s) not contemplated during the Scoping Meeting, a substitute Point of Interconnection identified by the Interconnection Customer, the applicable Participating TO(s) and CAISO, and acceptable to the others, such acceptance not to be unreasonably withheld, will be substituted for the designated Point of Interconnection specified above without loss of Queue Position, and re-studies shall be completed pursuant to LGIP Section 6.4 as applicable. For the purpose of this LGIP Section 6.1, if the CAISO, applicable Participating TO(s) and Interconnection Customer cannot agree on the substituted Point of Interconnection, then the Interconnection Customer may direct that the alternative as specified in the Interconnection Feasibility Study Agreement, as specified pursuant to LGIP Section 3.5.4, shall be the substitute.

If the Interconnection Customer, the applicable Participating TO, and the CAISO agree to forgo the Interconnection Feasibility Study, the CAISO will tender an Interconnection System Impact Study Agreement within fifteen (15) Business Days from receipt of the Interconnection Customer's designated Point of Interconnection and alternative, pursuant to the procedures specified in Section 7 of this LGIP, and apply the deposits made in accordance with LGIP Section 3.5.1, in addition to the deposit made in accordance with LGIP Section 7, towards the Interconnection System Impact Study.

## **6.2 Scope of Interconnection Feasibility Study.**

The Interconnection Feasibility Study shall preliminarily evaluate the feasibility of the proposed interconnection to the CAISO Controlled Grid.

The Interconnection Feasibility Study will consider Base Cases as well as all generating facilities (and with respect to (iv), any identified Network Upgrades) that, on the date the Interconnection Feasibility Study is commenced: (i) are directly interconnected to the CAISO Controlled Grid; (ii) are interconnected to Affected Systems and may have an impact on the Interconnection Request; (iii) have a pending request to interconnect to an Affected System; (iv) have a pending higher queued Interconnection Request to interconnect to the CAISO Controlled Grid; and (v) have no Queue Position but have executed an LGIA or requested that an unexecuted LGIA be filed with FERC. The Interconnection Feasibility Study will consist of a power flow and short circuit analysis. The Interconnection Feasibility Study will provide a list of facilities on the applicable Participating TOs' portion of the CAISO Controlled Grid and a non-binding good faith estimate of cost and cost responsibility and a non-binding good faith estimated time to construct. In addition, the Interconnection Feasibility Study will describe what results are expected in the Interconnection System Impact Study and any other financial impacts (i.e., on Local Furnishing Bonds).

## **6.3 Interconnection Feasibility Study Procedures.**

Existing studies shall be used to the extent practicable when conducting the Interconnection Feasibility Study. The CAISO shall use Reasonable Efforts to complete a draft Interconnection Feasibility Study no later than forty-five (45) calendar days after the CAISO receives the fully executed Interconnection Feasibility Study Agreement. The CAISO shall share applicable study results for review and comment, provide the study results to any other potentially-impacted Participating TO(s), and incorporate comments and issue a final Interconnection Feasibility Study to the Interconnection Customer within sixty (60) calendar days following receipt of the fully executed Interconnection Feasibility Study Agreement. At the request of the Interconnection Customer or at any time the CAISO determines that the study cannot be completed within the required time frame for completing the Interconnection Feasibility Study, the CAISO shall notify the Interconnection Customer as to the schedule status of the Interconnection Feasibility Study. If the Interconnection Feasibility Study cannot be completed within that time period, the CAISO shall notify the Interconnection Customer and provide an estimated completion date with an explanation of the reasons why additional time is required.

Upon request, the CAISO shall provide the Interconnection Customer supporting documentation, workpapers and relevant power flow and short circuit databases for the Interconnection Feasibility Study, subject to confidentiality arrangements consistent with LGIP Sections 2.3 and 13.1.

### **6.3.1 Meeting with the Participating TO(s) and CAISO.**

Within ten (10) Business Days of providing an Interconnection Feasibility Study report to the Interconnection Customer, the CAISO, the applicable Participating TO(s), and the Interconnection Customer shall meet to discuss the results of the Interconnection Feasibility Study.

### **6.4 Re-Study.**

If re-study of the Interconnection Feasibility Study is required due to a higher queued project dropping out of the queue, or a modification of a higher queued project subject to LGIP Section 4.4, or re-designation of the Point of Interconnection pursuant to LGIP Section 6.1, or any other effective change in information which necessitates a re-study, the CAISO shall notify the Interconnection Customer and the applicable Participating TO(s) in writing along with providing a description of the expected results of the re-study. Upon receipt of such notice, the Interconnection Customer shall provide the CAISO within ten (10) Business Days either a written request that the CAISO (i) terminate the study and withdraw the Interconnection Request; or (ii) continue the study. If the Interconnection Customer requests the CAISO to continue the study, the Interconnection Customer shall pay the CAISO an additional \$10,000 deposit for the re-study along with providing written notice for the CAISO to continue.

Such re-study shall take not longer than forty-five (45) calendar days from the date the CAISO receives the Interconnection Customer's written notice to continue the study and payment of the additional \$10,000 deposit. The CAISO shall share applicable study results for review, provide the study results for review and comment to any other potentially-impacted Participating TO(s), incorporate comments, and issue a final study to the Interconnection Customer within sixty (60) calendar days from the date the CAISO receives the Interconnection Customer's written notice to continue the study and payment of the additional \$10,000 deposit. If the Interconnection Feasibility Study cannot be completed within that time period, the CAISO shall notify the Interconnection Customer and provide an estimated completion date with an explanation of the reasons why additional time is required. Any and all costs of the re-study shall be borne by the Interconnection Customer being re-studied.

## **Section 7. Interconnection System Impact Study.**

### **7.1 Interconnection System Impact Study Agreement.**

Simultaneously with the delivery of the Interconnection Feasibility Study to the Interconnection Customer, the CAISO shall provide to the Interconnection Customer an Interconnection System Impact Study Agreement. The Interconnection System Impact Study Agreement shall provide that the Interconnection Customer shall compensate the CAISO for the actual cost of the Interconnection System Impact Study. Within three (3) Business Days following the Interconnection Feasibility Study results meeting, CAISO in coordination with the applicable Participating TO(s) shall provide to the Interconnection Customer a signed Interconnection System Impact Study Agreement which shall include a non-binding good faith estimate of the cost and timeframe for completing the Interconnection System Impact Study.

## **7.2 Execution of Interconnection System Impact Study Agreement.**

The Interconnection Customer shall execute the Interconnection System Impact Study Agreement and deliver the executed Interconnection System Impact Study Agreement to the CAISO no later than thirty (30) calendar days after its receipt along with a \$50,000 deposit.

If the Interconnection Customer does not provide all such valid technical data, such as Attachment A to LGIP Appendix 1, when it delivers the Interconnection System Impact Study Agreement, the CAISO shall notify the Interconnection Customer of the deficiency within five (5) Business Days of the receipt of the executed Interconnection System Impact Study Agreement and the Interconnection Customer shall cure the deficiency within ten (10) Business Days of receipt of the notice, provided, however, such deficiency does not include failure to deliver the executed Interconnection System Impact Study Agreement or deposit.

If the Interconnection System Impact Study uncovers any unexpected result(s) not contemplated during the Scoping Meeting and the Interconnection Feasibility Study, a substitute Point of Interconnection identified by either the Interconnection Customer, the CAISO, or the applicable Participating TO(s), and acceptable to the others, such acceptance not to be unreasonably withheld, will be substituted for the designated Point of Interconnection specified above without loss of Queue Position, and re-studies shall be completed pursuant to LGIP Section 7.6 as applicable. If the CAISO, applicable Participating TO(s) and the Interconnection Customer cannot agree that the results were unexpected, then the CAISO will make a determination that the results were either expected or unexpected. For the purpose of this LGIP Section 7.2, if the applicable Participating TO(s), CAISO and Interconnection Customer cannot agree on the substituted Point of Interconnection, then the Interconnection Customer may direct that the alternative as specified in the Interconnection Feasibility Study Agreement, as specified pursuant to LGIP Section 3.5.4, shall be the substitute.

## **7.3 Scope of Interconnection System Impact Study.**

The Interconnection System Impact Study shall evaluate the impact of the proposed interconnection on the reliability of the CAISO Controlled Grid. The Interconnection System Impact Study will consider Base Cases as well as all generating facilities (and with respect to (iv) below, any identified Network Upgrades associated with such higher queued Interconnection Request) that, on the date the Interconnection System Impact Study is commenced: (i) are directly interconnected to the CAISO Controlled Grid; (ii) are interconnected to Affected Systems and may have an impact on the Interconnection Request; (iii) have a pending request to interconnect to an Affected System; (iv) have a pending higher queued Interconnection Request to interconnect to the CAISO Controlled Grid; and (v) have no Queue Position but have executed an LGIA or requested that an unexecuted LGIA be filed with FERC.



The Interconnection System Impact Study will consist of a short circuit analysis, a stability analysis, a power flow analysis and a Deliverability Assessment as described in LGIP Sections 3.3.2 and 3.3.3. The Interconnection System Impact Study will state the assumptions upon which it is based; state the results of the analyses; and provide the requirements or potential impediments to providing the requested Interconnection Service, including a preliminary indication of the cost and length of time that would be necessary to correct any problems identified in those analyses and implement the interconnection. The Interconnection System Impact Study will provide a list of facilities on the CAISO Controlled Grid that are required as a result of the Interconnection Request and a non-binding good faith estimate of cost and cost responsibility and a non-binding good faith estimated time to construct and estimate of any other financial impacts (i.e., on Local Furnishing Bonds).

#### **7.4 Interconnection System Impact Study Procedures.**

The CAISO shall coordinate the Interconnection System Impact Study with applicable Participating TO(s) and any Affected System that is affected by the Interconnection Request pursuant to LGIP Section 3.7 above. Existing studies shall be used to the extent practicable when conducting the Interconnection System Impact Study. The CAISO will coordinate Base Case development with the applicable Participating TOs to ensure the Base Cases are accurately developed. The CAISO shall use Reasonable Efforts to complete a draft Interconnection System Impact Study within ninety (90) calendar days after the receipt of the executed Interconnection System Impact Study Agreement, study payment, and valid technical data. The CAISO will share applicable study results with the applicable Participating TO(s), for review and comment, and will incorporate comments into the study report. The CAISO will issue a final Interconnection System Impact Study report to the Interconnection Customer within one hundred twenty (120) calendar days after the receipt of the executed Interconnection System Impact Study Agreement, study payment, and valid technical data. If the CAISO uses Clustering, the CAISO shall use Reasonable Efforts to deliver a completed Interconnection System Impact Study within one hundred twenty (120) calendar days after the close of the Queue Cluster Window.

At the request of the Interconnection Customer or at any time the CAISO determines that it will not meet the required time frame for completing the Interconnection System Impact Study, the CAISO shall notify the Interconnection Customer as to the schedule status of the Interconnection System Impact Study. If the Interconnection System Impact Study cannot be completed within the time period, the CAISO shall notify the Interconnection Customer and provide an estimated completion date with an explanation of the reasons why additional time is required.

Upon request, the CAISO shall provide the Interconnection Customer all supporting documentation, workpapers and relevant pre-Interconnection Request and post-Interconnection Request power flow, short circuit and stability databases for the Interconnection System Impact Study, subject to confidentiality arrangements consistent with LGIP Section 13.1.

## **7.5 Meeting with the CAISO and Participating TO(s).**

Within ten (10) Business Days of providing an Interconnection System Impact Study report to the Interconnection Customer, the applicable Participating TO(s), the CAISO and the Interconnection Customer shall meet to discuss the results of the Interconnection System Impact Study.

## **7.6 Re-Study.**

If re-study of the Interconnection System Impact Study is required due to a higher queued project dropping out of the queue, a modification of a higher queued project subject to LGIP Section 4.4, or re-designation of the Point of Interconnection pursuant to LGIP Section 7.2, or any other effective change in information which necessitates a re-study, the CAISO shall notify the Interconnection Customer in writing along with providing a description of the expected results of the re-study. Upon receipt of such notice, the Interconnection Customer shall provide the CAISO within ten (10) Business Days either a written request that the CAISO (i) terminate the study and withdraw the Interconnection Request; or (ii) continue the study. If the Interconnection Customer requests the CAISO to continue the study, the Interconnection Customer shall pay the CAISO an additional \$10,000 deposit for the re-study along with providing written notice for the CAISO to continue.

Such re-study shall take no longer than sixty (60) calendar days from the date the CAISO receives the Interconnection Customer's written notice to continue the study and payment of the additional \$10,000 deposit. The CAISO will share applicable study results with the applicable Participating TO(s) for review and comment, and will incorporate comments into the study report. The CAISO will issue a final study report to the Interconnection Customer within eighty (80) calendar days following receipt of the Interconnection Customer's written notice to continue the study and payment of the additional \$10,000 deposit. If the Interconnection System Impact Study cannot be completed within that time period, the CAISO shall notify the Interconnection Customer and provide an estimated completion date with an explanation of the reasons why additional time is required. Any and all costs of re-study shall be borne by the Interconnection Customer being re-studied.

## **Section 8. Interconnection Facilities Study.**

### **8.1 Interconnection Facilities Study Agreement.**

Simultaneously with the delivery of the Interconnection System Impact Study report to the Interconnection Customer, the CAISO shall provide to the Interconnection Customer a pro forma Interconnection Facilities Study Agreement. The pro forma Interconnection Facilities Study Agreement shall provide that the Interconnection Customer shall compensate the CAISO for the actual cost of the Interconnection Facilities Study. Within ten (10) Business Days following the Interconnection System Impact Study results meeting, the CAISO shall provide to the Interconnection Customer a signed Interconnection Facilities Study Agreement which shall include a non-binding good faith estimate of the cost and timeframe for completing the Interconnection Facilities Study.

The Interconnection Customer shall execute the Interconnection Facilities Study Agreement and deliver the executed Interconnection Facilities Study Agreement to the CAISO within thirty (30) calendar days after its receipt, together with the required technical data and the greater of \$100,000 or the Interconnection Customer's portion of the estimated monthly cost of conducting the Interconnection Facilities Study.

- 8.1.1** For studies where the estimated cost exceeds \$100,000, the CAISO may invoice the Interconnection Customer on a monthly basis for the work to be conducted on the Interconnection Facilities Study for the remaining balance of the estimated Interconnection Facilities Study cost. The Interconnection Customer shall pay invoiced amounts within thirty (30) calendar days of receipt of invoice. The CAISO shall continue to hold the amounts on deposit until settlement of the final invoice.

## **8.2 Scope of Interconnection Facilities Study.**

The Interconnection Facilities Study shall specify and estimate the cost of the equipment, engineering, procurement and construction work, including the financial impacts (i.e., on Local Furnishing Bonds), if any, and schedule for effecting remedial measures that address such financial impacts, needed on the CAISO Controlled Grid to implement the conclusions of the Interconnection System Impact Study in accordance with Good Utility Practice to physically and electrically connect the Interconnection Customer's Interconnection Facilities to the CAISO Controlled Grid. The Interconnection Facilities Study shall also identify the electrical switching configuration of the connection equipment, including, without limitation: the transformer, switchgear, meters, and other station equipment; the nature and estimated cost of any Participating TO's Interconnection Facilities and Network Upgrades necessary to accomplish the interconnection; and an estimate of the time required to complete the construction and installation of such facilities.

## **8.3 Interconnection Facilities Study Procedures.**

The CAISO shall coordinate the Interconnection Facilities Study with the Participating TO(s) and any Affected System pursuant to LGIP Section 3.7 above. Existing studies shall be used to the extent practicable in conducting the Interconnection Facilities Study. The CAISO, in collaboration with the Participating TO(s), shall use Reasonable Efforts to complete the study and issue a draft Interconnection Facilities Study report to the Interconnection Customer. Prior to issuing draft study results to the Interconnection Customer, the CAISO shall share study results with the Participating TO(s) for review and incorporate comments as necessary. Within the following number of days after receipt of an executed Interconnection Facilities Study Agreement, the CAISO shall provide a draft Interconnection Facilities Study report to the Interconnection Customer: one hundred twenty (120) calendar days, with no more than a +/- 20 percent cost estimate contained in the report; or two hundred ten (210) calendar days, if the Interconnection Customer requests a +/- 10 percent cost estimate. At the request of the Interconnection Customer or at any time the CAISO determines that the required time frame for completing the Interconnection Facilities Study will not be met, the CAISO shall notify the Interconnection Customer as to the schedule status of the Interconnection Facilities Study. If the Interconnection Facilities Study cannot be conducted and a draft Interconnection Facilities Study report cannot be issued within the time required, the CAISO shall notify the Interconnection Customer and provide an estimated completion date and an explanation of the reasons why additional time is required.

The Interconnection Customer shall, within thirty (30) calendar days after receipt of the draft report, either (i) provide written comments to the CAISO, which the CAISO, to the extent the comments are applicable, shall include in the final report, or (ii) provide a statement to the Participating TO and CAISO that it will not provide comments. The CAISO shall issue the final Interconnection Facilities Study report within fifteen (15) Business Days of receiving the Interconnection Customer's comments or promptly upon receiving the Interconnection Customer's statement that it will not provide comments. The CAISO may reasonably extend such fifteen (15) Business Day period upon notice to the Interconnection Customer if the Interconnection Customer's comments require the applicable Participating TO(s) and/or CAISO to perform additional analyses or make other significant modifications prior to the issuance of the final Interconnection Facilities Study report. Upon request, the CAISO shall provide the Interconnection Customer supporting documentation, workpapers, and databases or data developed in the preparation of the Interconnection Facilities Study, subject to confidentiality arrangements consistent with LGIP Section 13.1.

#### **8.4 Meeting with the CAISO and Applicable Participating TO(s).**

Within ten (10) Business Days of providing a draft Interconnection Facilities Study report to the Interconnection Customer, the applicable Participating TO(s), the CAISO and the Interconnection Customer shall meet to discuss the results of the Interconnection Facilities Study. Within ten (10) Business Days of this meeting the Interconnection Customer shall make the election of which Delivery Network Upgrades identified in the Interconnection Facilities Study are to be installed. Any operating constraints on the Interconnection Customer's Generating Facility arising out of the Interconnection Customer's election not to install the Delivery Network Upgrades shall be as set forth in Article 9 and Appendix C of the LGIA.

#### **8.5 Re-Study.**

If re-study of the Interconnection Facilities Study is required due to a higher queued project dropping out of the queue or a modification of a higher queued project pursuant to LGIP Section 4.4, or any other effective change in information which necessitates a re-study, the CAISO shall so notify the Interconnection Customer in writing. Upon receipt of such notice, the Interconnection Customer shall provide the CAISO within ten (10) Business Days a written request that the CAISO either (i) terminate the study and withdraw the Interconnection Request; or (ii) continue the study. If the Interconnection Customer requests the CAISO to continue the study, the Interconnection Customer shall pay the CAISO an additional \$10,000 deposit for the re-study along with providing written notice for the CAISO to continue.

Such re-study shall take no longer than sixty (60) calendar days from the date the CAISO receives the Interconnection Customer's written notice to continue the study and payment of the additional \$10,000 deposit. The CAISO shall share applicable study results with the applicable Participating TO(s) for review and comment and incorporate comments, as

appropriate. The CAISO will issue a final Interconnection Facilities Study report to the Interconnection Customer within eighty (80) calendar days following receipt of the Interconnection Customer's written notice to continue the study and payment of the additional \$10,000 deposit. If the Interconnection Facilities Study cannot be completed within that time period, the CAISO shall notify the Interconnection Customer and provide an estimated completion date with an explanation of the reasons why additional time is required. Any and all costs of re-study shall be borne by the Interconnection Customer being re-studied.

## **Section 9. Engineering & Procurement ("E&P") Agreement.**

Prior to executing an LGIA, an Interconnection Customer may, in order to advance the implementation of its interconnection, request and the applicable Participating TO(s) shall offer the Interconnection Customer, an E&P Agreement that authorizes the applicable Participating TO(s) to begin engineering and procurement of long lead-time items necessary for the establishment of the interconnection. However, the applicable Participating TO(s) shall not be obligated to offer an E&P Agreement if the Interconnection Customer is in Dispute Resolution as a result of an allegation that the Interconnection Customer has failed to meet any milestones or comply with any prerequisites specified in other parts of the LGIP. The E&P Agreement is an optional procedure and it will not alter the Interconnection Customer's Queue Position or In-Service Date. The E&P Agreement shall provide for the Interconnection Customer to pay the cost of all activities authorized by the Interconnection Customer and to make advance payments or provide other satisfactory security for such costs.

The Interconnection Customer shall pay the cost of such authorized activities and any cancellation costs for equipment that is already ordered for its interconnection, which cannot be mitigated as hereafter described, whether or not such items or equipment later become unnecessary. If the Interconnection Customer withdraws its application for interconnection or either Party terminates the E&P Agreement, to the extent the equipment ordered can be canceled under reasonable terms, the Interconnection Customer shall be obligated to pay the associated cancellation costs. To the extent that the equipment cannot be reasonably canceled, the applicable Participating TO(s) may elect: (i) to take title to the equipment, in which event the applicable Participating TO(s) shall refund the Interconnection Customer any amounts paid by Interconnection Customer for such equipment and shall pay the cost of delivery of such equipment, or (ii) to transfer title to and deliver such equipment to the Interconnection Customer, in which event the Interconnection Customer shall pay any unpaid balance and cost of delivery of such equipment.

## **Section 10. Optional Interconnection Study.**

### **10.1 Optional Interconnection Study Agreement.**

On or after the date when the Interconnection Customer receives Interconnection System Impact Study results, the Interconnection Customer may request, and the CAISO shall conduct or cause to be conducted, a reasonable number of Optional Interconnection Studies. The request shall describe the assumptions that the Interconnection Customer wishes to be studied within the scope described in LGIP Section 10.2. Within five (5) Business Days after receipt of a request for an Optional Interconnection Study, the CAISO shall provide to the Interconnection Customer an Optional Interconnection Study Agreement.

The Optional Interconnection Study Agreement shall: (i) specify the technical data that the Interconnection Customer must provide for each phase of the Optional Interconnection Study, (ii) specify the Interconnection Customer's assumptions as to which Interconnection Requests with higher Queue Positions will be excluded from the Optional Interconnection Study case and assumptions as to the type of interconnection service for Interconnection Requests remaining in the Optional Interconnection Study case, and (iii) the CAISO's estimate of the cost of the Optional Interconnection Study. To the extent known by the CAISO, such estimate shall include any costs expected to be incurred by any Affected System whose participation is necessary to complete the Optional Interconnection Study. Notwithstanding the above, the CAISO shall not be required as a result of an Optional Interconnection Study request to conduct any additional Interconnection Studies with respect to any other Interconnection Request.

The Interconnection Customer shall execute the Optional Interconnection Study Agreement within ten (10) Business Days of receipt and deliver the Optional Interconnection Study Agreement, the technical data and a \$10,000 deposit to the CAISO as applicable.

## **10.2 Scope of Optional Interconnection Study.**

The Optional Interconnection Study will consist of a sensitivity analysis based on the assumptions specified by the Interconnection Customer in the Optional Interconnection Study Agreement. The Optional Interconnection Study will also identify the Participating TOs' Interconnection Facilities and the Network Upgrades, and the estimated cost thereof, that may be required to provide transmission service or Interconnection Service based upon the results of the Optional Interconnection Study. The Optional Interconnection Study shall be performed solely for informational purposes. The CAISO shall use Reasonable Efforts to coordinate the study with any Affected Systems that may be affected by the types of Interconnection Services that are being studied. The CAISO shall utilize existing studies to the extent practicable in conducting the Optional Interconnection Study.

## **10.3 Optional Interconnection Study Procedures.**

The CAISO shall use Reasonable Efforts to have the Optional Interconnection Study completed within a mutually agreed upon time period specified within the Optional Interconnection Study Agreement. If the Optional Interconnection Study cannot be completed within such time period, the CAISO shall notify the Interconnection Customer and provide an estimated completion date and an explanation of the reasons why additional time is required. Any difference between the study payment and the actual cost of the study shall be paid to the CAISO, as applicable, or refunded to the Interconnection Customer, as appropriate. Upon request, the CAISO with support and cooperation of the applicable Participating TO(s) shall provide the Interconnection Customer supporting documentation and workpapers, and databases or data developed in the preparation of the Optional Interconnection Study, subject to confidentiality arrangements consistent with LGIP Sections 2.3 and 13.1.

## **Section 11. Standard Large Generator Interconnection Agreement (LGIA).**

### **11.1 Tender.**

**11.1.1** Within thirty (30) calendar days after the CAISO receives the Interconnection Customer's written comments, or notification of no comments, to the draft Interconnection Facilities Study report, the applicable Participating TO(s) and the CAISO shall tender a draft LGIA, together with draft appendices. The draft LGIA shall be in the form of the FERC-approved standard form LGIA. The Interconnection Customer shall provide written comments, or notification of no comments, to the draft appendices to the applicable Participating TO(s) and the CAISO within (30) calendar days of receipt.

**11.1.2** Consistent with Sections 3.4.4 and 11.1.1 of this LGIP, when the transmission system of a Participating TO, in which the Point of Interconnection is not located, is affected, such Participating TO shall tender a separate agreement, in the form of the LGIA, as appropriately modified.

### **11.2 Negotiation.**

Notwithstanding LGIP Section 11.1, at the request of the Interconnection Customer, the applicable Participating TO(s) and CAISO shall begin negotiations with the Interconnection Customer concerning the appendices to the LGIA at any time after the Interconnection Customer executes the Interconnection Facilities Study Agreement. The applicable Participating TO(s) and CAISO and the Interconnection Customer shall negotiate concerning any disputed provisions of the appendices to the draft LGIA for not more than sixty (60) calendar days after tender of the final Interconnection Facilities Study report. If the Interconnection Customer determines that negotiations are at an impasse, it may request termination of the negotiations at any time after tender of the draft LGIA pursuant to LGIP Section 11.1 and request submission of the unexecuted LGIA with FERC or initiate Dispute Resolution procedures pursuant to LGIP Section 13.5. If the Interconnection Customer requests termination of the negotiations, but within ninety (90) calendar days after issuance of the final Interconnection Facilities Study report fails to request either the filing of the unexecuted LGIA or initiate Dispute Resolution, it shall be deemed to have withdrawn its Interconnection Request. Unless otherwise agreed by the Parties, if the Interconnection Customer has not executed and returned the LGIA, requested filing of an unexecuted LGIA, or initiated Dispute Resolution procedures pursuant to LGIP Section 13.5 within ninety (90) calendar days after issuance of the final Interconnection Facilities Study report, it shall be deemed to have withdrawn its Interconnection Request. The applicable Participating TO(s) and CAISO shall provide to the Interconnection Customer a final LGIA within fifteen (15) Business Days after the completion of the negotiation process.

### **11.3 Execution and Filing.**

At the time that the Interconnection Customer either returns the executed LGIA or requests the filing of an unexecuted LGIA as specified below, the Interconnection Customer shall provide the applicable Participating TO(s) and CAISO (A) reasonable evidence of continued Site Control or (B) posting to the applicable Participating TO(s) of \$250,000, non-refundable additional security, which shall be applied toward future construction costs. At the same time, the Interconnection Customer also shall provide

reasonable evidence that one or more of the following milestones in the development of the Large Generating Facility, at the Interconnection Customer election, has been achieved: (i) the execution of a contract for the supply or transportation of fuel to the Large Generating Facility; (ii) the execution of a contract for the supply of cooling water to the Large Generating Facility; (iii) execution of a contract for the engineering for, procurement of major equipment for, or construction of, the Large Generating Facility; (iv) execution of a contract for the sale of electric energy or capacity from the Large Generating Facility; or (v) application for an air, water, or land use permit.

The Interconnection Customer shall either: (i) execute four originals of the tendered LGIA and return one to the applicable Participating TO(s) and two to the CAISO; or (ii) request in writing that the applicable Participating TO(s) and CAISO file with FERC an LGIA in unexecuted form. As soon as practicable, but not later than ten (10) Business Days after receiving either the executed originals of the tendered LGIA (if it does not conform with a FERC-approved standard form of interconnection agreement) or the request to file an unexecuted LGIA, the applicable Participating TO(s) and CAISO shall file the LGIA with FERC, as necessary, together with an explanation of any matters as to which the Interconnection Customer and the applicable Participating TO(s) or CAISO disagree and support for the costs that the applicable Participating TO(s) propose to charge to the Interconnection Customer under the LGIA. An unexecuted LGIA should contain terms and conditions deemed appropriate by the applicable Participating TO(s) and CAISO for the Interconnection Request. If the Parties agree to proceed with design, procurement, and construction of facilities and upgrades under the agreed-upon terms of the unexecuted LGIA, they may proceed pending FERC action.

#### **11.4 Commencement of Interconnection Activities.**

If the Interconnection Customer executes the final LGIA, the applicable Participating TO(s), CAISO and the Interconnection Customer shall perform their respective obligations in accordance with the terms of the LGIA, subject to modification by FERC. Upon submission of an unexecuted LGIA, the Interconnection Customer, applicable Participating TO(s) and CAISO may proceed to comply with the unexecuted LGIA, pending FERC action.

#### **11.5 Interconnection Customer to Meet Requirements of the Participating TO's Interconnection Handbook.**

The Interconnection Customer's Interconnection Facilities shall be designed, constructed, operated and maintained in accordance with the applicable Participating TO's Interconnection Handbook.

### **Section 12. Construction of Participating TO's Interconnection Facilities and Network Upgrades.**

#### **12.1 Schedule.**

The applicable Participating TO(s) and the Interconnection Customer shall negotiate in good faith concerning a schedule for the construction of the applicable Participating TO's Interconnection Facilities and the Network Upgrades.



## **12.2 Construction Sequencing.**

### **12.2.1 General.**

In general, the In-Service Date in the LGIA of an Interconnection Customer seeking interconnection to the CAISO Controlled Grid will determine the sequence of construction of Network Upgrades.

### **12.2.2 Advance Construction of Network Upgrades that are an Obligation of an Entity other than the Interconnection Customer.**

An Interconnection Customer with an LGIA, in order to maintain its In-Service Date, may request that the applicable Participating TO(s) advance to the extent necessary the completion of Network Upgrades that: (i) were assumed in the Interconnection Studies for such Interconnection Customer, (ii) are necessary to support such In-Service Date, and (iii) would otherwise not be completed, pursuant to a contractual obligation of an entity other than the Interconnection Customer that is seeking interconnection to the CAISO Controlled Grid, in time to support such In-Service Date. Upon such request, the applicable Participating TO(s) will use Reasonable Efforts to advance the construction of such Network Upgrades to accommodate such request; provided that the Interconnection Customer commits to pay the applicable Participating TO(s): (i) any associated expediting costs and (ii) the cost of such Network Upgrades.

The applicable Participating TO(s) will refund to the Interconnection Customer both the expediting costs and the cost of Network Upgrades, in accordance with Article 11.4 of the LGIA. Consequently, the entity with a contractual obligation to construct such Network Upgrades shall be obligated to pay only that portion of the costs of the Network Upgrades that the applicable Participating TO(s) have not refunded to the Interconnection Customer. Payment by that entity shall be due on the date that it would have been due had there been no request for advance construction. The applicable Participating TO(s) shall forward to the Interconnection Customer the amount paid by the entity with a contractual obligation to construct the Network Upgrades as payment in full for the outstanding balance owed to the Interconnection Customer. The applicable Participating TO(s) then shall refund to that entity the amount that it paid for the Network Upgrades, in accordance with Article 11.4 of the LGIA.

### **12.2.3 Advancing Construction of Network Upgrades that are Part of an Expansion Plan of the Participating TO.**

An Interconnection Customer with an LGIA, in order to maintain its In-Service Date as specified in the LGIA, may request that the applicable Participating TO(s) advance to the extent necessary the completion of Network Upgrades that: (i) are necessary to support such In-Service Date and (ii) would otherwise not be completed, pursuant to an expansion plan of the applicable Participating TO(s), in time to support such In-Service Date. Upon such request, the applicable Participating TO(s) will use Reasonable Efforts to advance the construction of such Network Upgrades to accommodate such request; provided that the Interconnection Customer commits to pay the applicable Participating TO(s) any associated expediting costs. The Interconnection Customer shall be entitled to refunds, if any, in accordance with this LGIP and the LGIA, for any expediting costs paid.

#### **12.2.4 Amended Interconnection Study.**

An Interconnection Study will be amended, as needed, to determine the facilities necessary to support the requested In-Service Date as specified in the LGIA. This amended study will include those transmission facilities, Large Generating Facilities and any other generating facilities that are expected to be in service on or before the requested In-Service Date. If an amendment to an Interconnection Study is required, the CAISO shall notify the Interconnection Customer in writing. Upon receipt of such notice, the Interconnection Customer shall provide the CAISO within ten (10) Business Days a written request that the CAISO either (i) terminate the amended study and withdraw the Interconnection Customer's Interconnection Request or (ii) continue with the amended study. If the Interconnection Customer requests the CAISO to continue with the amended study, the Interconnection Customer shall pay the CAISO an additional \$10,000 deposit for the amended study along with providing written notice for the CAISO to continue. Such amended study shall take no longer than sixty (60) calendar days from the date the CAISO receives the Interconnection Customer's written notice to continue the study and payment of the additional \$10,000 deposit. The CAISO shall share applicable study results with the applicable Participating TO(s) for review and comment, and incorporate comments and issue a final study to the Interconnection Customer within eighty (80) calendar days from the date of the Interconnection Customer's written notice to continue the study and payment of the additional \$10,000 deposit. If the amended Interconnection Study cannot be completed within that time period, the CAISO shall notify the Interconnection Customer and provide an estimated completion date with an explanation of the reasons why additional time is required. Any and all costs of the amended study shall be borne by the Interconnection Customer being re-studied.

### **Section 13. Miscellaneous.**

#### **13.1 Confidentiality.**

Confidential Information shall include, without limitation, all information relating to a Party's technology, research and development, business affairs, and pricing, and any information supplied by any of the Parties to the other Parties prior to the execution of an LGIA.

Information is Confidential Information only if it is clearly designated or marked in writing as confidential on the face of the document, or, if the information is conveyed orally or by inspection, if the Party providing the information orally informs the Parties receiving the information that the information is confidential.

If requested by any Party, the other Parties shall provide in writing, the basis for asserting that the information referred to in this Section warrants confidential treatment, and the requesting Party may disclose such writing to the appropriate Governmental Authority. Each Party shall be responsible for the costs associated with affording confidential treatment to its information.

The confidentiality provisions of this LGIP are limited to information provided pursuant to this LGIP.

### **13.1.1 Scope.**

Confidential Information shall not include information that the receiving Party can demonstrate: (1) is generally available to the public other than as a result of a disclosure by the receiving Party; (2) was in the lawful possession of the receiving Party on a non-confidential basis before receiving it from the disclosing Party; (3) was supplied to the receiving Party without restriction by a third party, who, to the knowledge of the receiving Party after due inquiry, was under no obligation to the disclosing Party to keep such information confidential; (4) was independently developed by the receiving Party without reference to Confidential Information of the disclosing Party; (5) is, or becomes, publicly known, through no wrongful act or omission of the receiving Party or breach of the LGIA; or (6) is required, in accordance with LGIP Section 13.1.6, Order of Disclosure, to be disclosed by any Governmental Authority or is otherwise required to be disclosed by law or subpoena, or is necessary in any legal proceeding establishing rights and obligations under the LGIP. Information designated as Confidential Information will no longer be deemed confidential if the Party that designated the information as confidential notifies the other Parties that it no longer is confidential.

### **13.1.2 Release of Confidential Information.**

No Party shall release or disclose Confidential Information to any other person, except to its employees, consultants, Affiliates (limited by FERC's Standards of Conduct requirements set forth in Part 358 of FERC's Regulations, 18 C.F.R. 358), or to parties who may be or considering providing financing to or equity participation with the Interconnection Customer, or to potential purchasers or assignees of the Interconnection Customer, on a need-to-know basis in connection with these procedures, unless such person has first been advised of the confidentiality provisions of this LGIP Section 13.1 and has agreed to comply with such provisions. Notwithstanding the foregoing, a Party providing Confidential Information to any person shall remain primarily responsible for any release of Confidential Information in contravention of this LGIP Section 13.1.

### **13.1.3 Rights.**

Each Party retains all rights, title, and interest in the Confidential Information that each Party discloses to the other Parties. The disclosure by each Party to the other Parties of Confidential Information shall not be deemed a waiver by a Party or any other person or entity of the right to protect the Confidential Information from public disclosure.

### **13.1.4 No Warranties.**

By providing Confidential Information, no Party makes any warranties or representations as to its accuracy or completeness. In addition, by supplying Confidential Information, no Party obligates itself to provide any particular information or Confidential Information to the other Parties nor to enter into any further agreements or proceed with any other relationship or joint venture.

### **13.1.5 Standard of Care.**

Each Party shall use at least the same standard of care to protect Confidential Information it receives as it uses to protect its own Confidential Information from unauthorized disclosure, publication or dissemination. Each Party may use Confidential Information solely to fulfill its obligations to the other Parties under these procedures or its regulatory requirements.

### **13.1.6 Order of Disclosure.**

If a court or a Government Authority or entity with the right, power, and apparent authority to do so requests or requires any Party, by subpoena, oral deposition, interrogatories, requests for production of documents, administrative order, or otherwise, to disclose Confidential Information, that Party shall provide the other Parties with prompt notice of such request(s) or requirement(s) so that the other Parties may seek an appropriate protective order or waive compliance with the terms of the LGIP. Notwithstanding the absence of a protective order or waiver, the Party may disclose such Confidential Information which, in the opinion of its counsel, the Party is legally compelled to disclose. Each Party will use Reasonable Efforts to obtain reliable assurance that confidential treatment will be accorded any Confidential Information so furnished.

### **13.1.7 Remedies.**

Monetary damages are inadequate to compensate a Party for another Party's breach of its obligations under this LGIP Section 13.1. Each Party accordingly agrees that the other Parties shall be entitled to equitable relief, by way of injunction or otherwise, if the first Party breaches or threatens to breach its obligations under this LGIP Section 13.1, which equitable relief shall be granted without bond or proof of damages, and the receiving Party shall not plead in defense that there would be an adequate remedy at law. Such remedy shall not be deemed an exclusive remedy for the breach of this LGIP Section 13.1, but shall be in addition to all other remedies available at law or in equity. Further, the covenants contained herein are necessary for the protection of legitimate business interests and are reasonable in scope. No Party, however, shall be liable for indirect, incidental, or consequential or punitive damages of any nature or kind resulting from or arising in connection with this LGIP Section 13.1.

### **13.1.8 Disclosure to FERC, its Staff, or a State.**

Notwithstanding anything in this LGIP Section 13.1 to the contrary, and pursuant to 18 C.F.R. section 1b.20, if FERC or its staff, during the course of an investigation or otherwise, requests information from one of the Parties that is otherwise required to be maintained in confidence pursuant to the LGIP, the Party shall provide the requested information to FERC or its staff, within the time provided for in the request for information. In providing the information to FERC or its staff, the Party must, consistent with 18 C.F.R. section 388.112, request that the information be treated as confidential and non-public by FERC and its staff and that the information be withheld from public disclosure. Parties

are prohibited from notifying the other Parties prior to the release of the Confidential Information to FERC or its staff. The Party shall notify the other applicable Parties when it is notified by FERC or its staff that a request to release Confidential Information has been received by FERC, at which time any of the Parties may respond before such information would be made public, pursuant to 18 C.F.R. section 388.112. Requests from a state regulatory body conducting a confidential investigation shall be treated in a similar manner, consistent with applicable state rules and regulations.

**13.1.9** Subject to the exception in LGIP Section 13.1.8, any Confidential Information shall not be disclosed by the other Parties to any person not employed or retained by the other Parties, except to the extent disclosure is (i) required by law; (ii) reasonably deemed by the disclosing Party to be required to be disclosed in connection with a dispute between or among the Parties, or the defense of litigation or dispute; (iii) otherwise permitted by consent of the other Parties, such consent not to be unreasonably withheld; or (iv) necessary to fulfill its obligations under this LGIP or as a transmission service provider or a **Balancing Authority** including disclosing the Confidential Information to an RTO or ISO or to a subregional, regional or national reliability organization or planning group. The Party asserting confidentiality shall notify the other Parties in writing of the information it claims is confidential. Prior to any disclosures of another Party's Confidential Information under this subparagraph, or if any third party or Governmental Authority makes any request or demand for any of the information described in this subparagraph, the disclosing Party agrees to promptly notify the other Party in writing and agrees to assert confidentiality and cooperate with the other Party in seeking to protect the Confidential Information from public disclosure by confidentiality agreement, protective order or other reasonable measures.

**13.1.10** This provision shall not apply to any information that was or is hereafter in the public domain (except as a result of a breach of this provision).

**13.1.11** The Participating TO or CAISO shall, at the Interconnection Customer's election, destroy, in a confidential manner, or return the Confidential Information provided at the time of Confidential Information is no longer needed.

## **13.2 Delegation of Responsibility.**

The CAISO and the Participating TOs may use the services of subcontractors as deemed appropriate to perform their obligations under this LGIP. The applicable Participating TO or CAISO shall remain primarily liable to the Interconnection Customer for the performance of its respective subcontractors and compliance with its obligations of this LGIP. The subcontractor shall keep all information provided confidential and shall use such information solely for the performance of such obligation for which it was provided and no other purpose.

### **13.3 Obligation for Study Costs.**

The CAISO shall charge and the Interconnection Customer shall pay the actual costs of the Interconnection Studies. Any difference between the study deposit and the actual cost of the applicable Interconnection Study shall be paid by or refunded to the Interconnection Customer. Any invoices for Interconnection Studies shall include a detailed and itemized accounting of the cost of each Interconnection Study. The Interconnection Customer shall pay any such undisputed costs within thirty (30) calendar days of receipt of an invoice therefor. The CAISO shall not be obligated to continue to have any studies conducted unless the Interconnection Customer has paid all undisputed amounts in compliance herewith. In the event an Interconnection Study is performed by the CAISO, or is performed by a third party consultant pursuant to LGIP Section 13.4, the Interconnection Customer shall pay only the costs of those activities performed by the Participating TO to adequately review or validate that Interconnection Study.

### **13.4 Third Parties Performing Studies.**

If (i) at the time of the signing of an Interconnection Study agreement there is disagreement as to the estimated time to complete an Interconnection Study, (ii) the Interconnection Customer receives notice pursuant to LGIP Sections 6.3, 7.4 or 8.3 that an Interconnection Study cannot be completed within the applicable timeframe for such Interconnection Study, or (iii) the Interconnection Customer receives neither the Interconnection Study nor a notice under LGIP Sections 6.3, 7.4 or 8.3 within the applicable timeframe for such Interconnection Study, then the Interconnection Customer may request that the CAISO: (1) utilize a third party consultant reasonably acceptable to the Interconnection Customer, the CAISO, and the Participating TO or (2) utilize the applicable Participating TO(s) to perform such Interconnection Study under the direction of the CAISO. At other times, the Participating TO or CAISO may also utilize a third party consultant to perform such Interconnection Study, either in response to a general request of the Interconnection Customer, or on its own volition.

In all cases, use of a third party consultant shall be in accord with Article 26 of the LGIA (Subcontractors) and limited to situations where the CAISO determines that doing so will help maintain or accelerate the study process for the Interconnection Customer's pending Interconnection Request and not interfere with the CAISO's or Participating TO's progress on Interconnection Studies for other pending Interconnection Requests. In cases where the Interconnection Customer requests use of a third party consultant to perform such Interconnection Study, the Interconnection Customer and the Participating TO or CAISO shall negotiate all of the pertinent terms and conditions, including reimbursement arrangements and the estimated study completion date and study review deadline. The applicable Participating TO(s) and the CAISO shall convey all workpapers, data bases, study results and all other supporting documentation prepared to date with respect to the Interconnection Request as soon as practicable upon the Interconnection Customer's request subject to the confidentiality provision in LGIP Section 13.1. In any case, such third party contract may be entered into with the Interconnection Customer, the applicable Participating TO(s), or the CAISO at the Participating TO's or CAISO's

discretion. If the Interconnection Customer enters into a third party Interconnection Study agreement, the Interconnection Customer shall provide the Interconnection Study to the CAISO and the Participating TO for review, and such third party Interconnection Study agreement shall provide for reimbursement by the Interconnection Customer of the CAISO's and Participating TO's actual cost of participating in and reviewing the Interconnection Study. In the case of (iii) the Interconnection Customer maintains its right to submit a claim to Dispute Resolution to recover the costs of such third party study. Such third party consultant shall be required to comply with this LGIP, Article 26 of the LGIA (Subcontractors), the CAISO Tariff, and the relevant Participating TO's TO Tariff as would apply if the Participating TO or CAISO were to conduct the Interconnection Study and shall use the information provided to it solely for purposes of performing such services and for no other purposes. The applicable Participating TO(s) and the CAISO shall cooperate with such third party consultant and the Interconnection Customer to complete and issue the Interconnection Study in the shortest reasonable time.

### **13.5 Disputes.**

All disputes arising out of or in connection with this LGIP whereby relief is sought by or from the CAISO shall be settled in accordance with the CAISO ADR Procedures. Disputes arising out of or in connection with this LGIP not subject to the CAISO ADR Procedures shall be resolved as follows:

#### **13.5.1 Submission.**

In the event either Party has a dispute, or asserts a claim, that arises out of or in connection with the LGIA, the LGIP, or their performance, such Party (the "disputing Party") shall provide the other Party with written notice of the dispute or claim ("Notice of Dispute"). Such dispute or claim shall be referred to a designated senior representative of each Party for resolution on an informal basis as promptly as practicable after receipt of the Notice of Dispute by the other Party. In the event the designated representatives are unable to resolve the claim or dispute through unassisted or assisted negotiations within thirty (30) calendar days of the other Party's receipt of the Notice of Dispute, such claim or dispute may, upon mutual agreement of the Parties, be submitted to arbitration and resolved in accordance with the arbitration procedures set forth below. In the event the Parties do not agree to submit such claim or dispute to arbitration, each Party may exercise whatever rights and remedies it may have in equity or at law consistent with the terms of the LGIA and LGIP.

#### **13.5.2 External Arbitration Procedures.**

Any arbitration initiated under these procedures shall be conducted before a single neutral arbitrator appointed by the Parties. If the Parties fail to agree upon a single arbitrator within ten (10) calendar days of the submission of the dispute to arbitration, each Party shall choose one arbitrator who shall sit on a three-member arbitration panel.

The two arbitrators so chosen shall within twenty (20) calendar days select a third arbitrator to chair the arbitration panel. In either case, the arbitrators shall be knowledgeable in electric utility matters, including electric transmission and bulk power issues, and shall not have any current or past substantial business or financial relationships with any party to the arbitration (except prior arbitration). The arbitrator(s) shall provide each of the Parties an opportunity to be heard and, except as otherwise provided herein, shall conduct the arbitration in accordance with the Commercial Arbitration Rules of the American Arbitration Association ("Arbitration Rules") and any applicable FERC regulations or RTO rules; provided, however, in the event of a conflict between the Arbitration Rules and the terms of this LGIP Section 13, the terms of this LGIP Section 13 shall prevail.

### **13.5.3 Arbitration Decisions.**

Unless otherwise agreed by the Parties, the arbitrator(s) shall render a decision within ninety (90) calendar days of appointment and shall notify the Parties in writing of such decision and the reasons therefor. The arbitrator(s) shall be authorized only to interpret and apply the provisions of the LGIA and LGIP and shall have no power to modify or change any provision of the LGIA and LGIP in any manner. The decision of the arbitrator(s) shall be final and binding upon the Parties, and judgment on the award may be entered in any court having jurisdiction. The decision of the arbitrator(s) may be appealed solely on the grounds that the conduct of the arbitrator(s), or the decision itself, violated the standards set forth in the Federal Arbitration Act or the Administrative Dispute Resolution Act. The final decision of the arbitrator must also be filed with FERC if it affects jurisdictional rates, terms and conditions of service, Interconnection Facilities, or Network Upgrades.

### **13.5.4 Costs.**

Each Party shall be responsible for its own costs incurred during the arbitration process and for the following costs, if applicable: (1) the cost of the arbitrator chosen by the Party to sit on the three member panel and one half of the cost of the third arbitrator chosen; or (2) one half the cost of the single arbitrator jointly chosen by the Parties.

## **13.6 Local Furnishing Bonds.**

### **13.6.1 Participating TOs That Own Facilities Financed by Local Furnishing Bonds.**

This provision is applicable only to a Participating TO that has financed facilities for the local furnishing of electric energy with Local Furnishing Bonds. Notwithstanding any other provisions of this LGIP, the Participating TO and the CAISO shall not be required to provide Interconnection Service to the Interconnection Customer pursuant to this LGIP and the LGIA if the provision of such Interconnection Service would jeopardize the tax-exempt status of any Local Furnishing Bond(s) issued for the benefit of the Participating TO.



**13.6.2 Alternative Procedures for Requesting Interconnection Service.**

If a Participating TO determines that the provision of Interconnection Service requested by the Interconnection Customer would jeopardize the tax-exempt status of any Local Furnishing Bond(s) issued for the benefit of the Participating TO, it shall advise the Interconnection Customer and the CAISO within (30) calendar days of receipt of the Interconnection Request.

The Interconnection Customer thereafter may renew its request for the same interconnection Service by tendering an application under Section 211 of the Federal Power Act, in which case the Participating TO, within ten (10) calendar days of receiving a copy of the Section 211 application, will waive its rights to a request for service under Section 213(a) of the Federal Power Act and to the issuance of a proposed order under Section 212(c) of the Federal Power Act, and the CAISO and Participating TO shall provide the requested Interconnection Service pursuant to the terms and conditions set forth in this LGIP and the LGIA.

**APPENDIX 1 to LGIP  
INTERCONNECTION REQUEST**

Provide three copies of this completed form pursuant to Section 7 of this LGIP Appendix 1 below.

1. The undersigned Interconnection Customer submits this request to interconnect its Large Generating Facility with the CAISO Controlled Grid pursuant to the CAISO Tariff.
2. This Interconnection Request is for (check one):  
☐ A proposed new Large Generating Facility.  
☐ An increase in the generating capacity or a Material Modification of an existing Generating Facility.
3. [NOT USED]
4. The Interconnection Customer provides the following information:
  - a. Address or location, including the county, of the proposed new Large Generating Facility site or, in the case of an existing Generating Facility, the name and specific location, including the county, of the existing Generating Facility;
  - b. Maximum megawatt electrical output of the proposed new Large Generating Facility or the amount of megawatt increase in the generating capacity of an existing Generating Facility;
  - c. Type of project (i.e., gas turbine, hydro, wind, etc.) and general description of the equipment configuration;
  - d. Proposed In-Service Date, Trial Operation date and Commercial Operation Date by day, month, and year and term of service;
  - e. Name, address, telephone number, and e-mail address of the Interconnection Customer's contact person;
  - f. Approximate location of the proposed Point of Interconnection; and
  - g. Interconnection Customer data (set forth in Attachment A)
5. Applicable deposit amount as specified in the LGIP.
6. Evidence of Site Control as specified in the LGIP and name(s), address(es) and contact information of site owner(s) (check one):  
☐ Is attached to this Interconnection Request  
☐ Will be provided at a later date in accordance with this LGIP

7. This Interconnection Request shall be submitted to the representative indicated below:

New Resource Interconnection  
California ISO  
P.O. Box 639014  
Folsom, CA 95763-9014

Overnight address: 151 Blue Ravine Road, Folsom, CA 95630

8. Representative of the Interconnection Customer to contact:

[To be completed by the Interconnection Customer]

9. This Interconnection Request is submitted by:

Name of the Interconnection Customer:

By (signature):

Name (type or print):

Title:

Date:

**Attachment A  
To LGIP Appendix 1  
Interconnection Request**

**LARGE GENERATING FACILITY DATA**

Provide three copies of this completed form pursuant to Section 7 of LGIP Appendix 1.

**1. Provide two original prints and one reproducible copy (no larger than 36" x 24") of the following:**

- A. Site drawing to scale, showing generator location and Point of Interconnection with the CAISO Controlled Grid.
- B. Single-line diagram showing applicable equipment such as generating units, step-up transformers, auxiliary transformers, switches/disconnects of the proposed interconnection, including the required protection devices and circuit breakers. For wind generator farms, the one line diagram should include the distribution lines connecting the various groups of generating units, the generator capacitor banks, the step up transformers, the distribution lines, and the substation transformers and capacitor banks at the Point of Interconnection with the CAISO Controlled Grid.

**2. Generating Facility Information**

- A) Total Generating Facility rated output (kW): \_\_\_\_\_
- B) Generating Facility auxiliary Load (kW): \_\_\_\_\_
- C) Project net capacity (kW): \_\_\_\_\_
- D) Standby Load when Generating Facility is off-line (kW): \_\_\_\_\_
- E) Number of Generating Units: \_\_\_\_\_  
(Please repeat the following items for each generator)
- F) Individual generator rated output (kW for each unit): \_\_\_\_\_
- G) Manufacturer: \_\_\_\_\_
- H) Year Manufactured: \_\_\_\_\_
- I) Nominal Terminal Voltage: \_\_\_\_\_
- J) Rated Power Factor (%): \_\_\_\_\_
- K) Type (Induction, Synchronous, D.C. with Inverter): \_\_\_\_\_
- L) Phase (3 phase or single phase): \_\_\_\_\_
- M) Connection (Delta, Grounded WYE, Ungrounded WYE, impedance grounded): \_\_\_\_\_
- N) Generator Voltage Regulation Range: \_\_\_\_\_
- O) Generator Power Factor Regulation Range: \_\_\_\_\_
- P) For combined cycle plants, specify the plant output for an outage of the steam turbine or an outage of a single combustion turbine: \_\_\_\_\_

**3. Synchronous Generator – General Information:**

(Please repeat the following for each generator)

- A. Rated Generator speed (rpm): \_\_\_\_\_
- B. Rated MVA: \_\_\_\_\_
- C. Rated Generator Power Factor: \_\_\_\_\_
- D. Generator Efficiency at Rated Load (%): \_\_\_\_\_
- E. Moment of Inertia (including prime mover): \_\_\_\_\_
- F. Inertia Time Constant (on machine base) H: \_\_\_\_\_ sec or MJ/MVA
- G. SCR (Short-Circuit Ratio - the ratio of the field current required for rated open-circuit voltage to the field current required for rated short-circuit current): \_\_\_\_\_
- H. Please attach generator reactive capability curves.
- I. Rated Hydrogen Cooling Pressure in psig (Steam Units only): \_\_\_\_\_
- J. Please attach a plot of generator terminal voltage versus field current that shows the air gap line, the open-circuit saturation curve, and the saturation curve at full load and rated power factor.

**4. Excitation System Information**

(Please repeat the following for each generator)

- A. Indicate the Manufacturer \_\_\_\_\_ and Type \_\_\_\_\_ of excitation system used for the generator. For exciter type, please choose from 1 to 8 below or describe the specific excitation system.
  - 1) Rotating DC commutator exciter with continuously acting regulator. The regulator power source is independent of the generator terminal voltage and current.
  - 2) Rotating DC commutator exciter with continuously acting regulator. The regulator power source is bus fed from the generator terminal voltage.
  - 3) Rotating DC commutator exciter with non-continuously acting regulator (i.e., regulator adjustments are made in discrete increments).
  - 4) Rotating AC Alternator Exciter with non-controlled (diode) rectifiers. The regulator power source is independent of the generator terminal voltage and current (not bus-fed).
  - 5) Rotating AC Alternator Exciter with controlled (thyristor) rectifiers. The regulator power source is fed from the exciter output voltage.
  - 6) Rotating AC Alternator Exciter with controlled (thyristor) rectifiers.
  - 7) Static Exciter with controlled (thyristor) rectifiers. The regulator power source is bus-fed from the generator terminal voltage.
  - 8) Static Exciter with controlled (thyristor) rectifiers. The regulator power source is bus-fed from a combination of generator terminal voltage and current (compound-source controlled rectifiers system).

- B. Attach a copy of the block diagram of the excitation system from its instruction manual. The diagram should show the input, output, and all feedback loops of the excitation system.
- C. Excitation system response ratio (ASA): \_\_\_\_\_
- D. Full load rated exciter output voltage: \_\_\_\_\_
- E. Maximum exciter output voltage (ceiling voltage): \_\_\_\_\_
- F. Other comments regarding the excitation system? \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**5. Power System Stabilizer Information.**

(Please repeat the following for each generator. All new generators are required to install PSS unless an exemption has been obtained from WECC. Such an exemption can be obtained for units that do not have suitable excitation systems.)

- A. Manufacturer: \_\_\_\_\_
- B. Is the PSS digital or analog? \_\_\_\_\_
- C. Note the input signal source for the PSS?  
\_\_\_\_\_ Bus frequency \_\_\_\_\_ Shaft speed \_\_\_\_\_ Bus Voltage  
\_\_\_\_\_ Other (specify source)
- D. Please attach a copy of a block diagram of the PSS from the PSS Instruction Manual and the correspondence between dial settings and the time constants or PSS gain.
- E. Other comments regarding the PSS? \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**6. Turbine-Governor Information**

(Please repeat the following for each generator)

Please complete Part A for steam, gas or combined-cycle turbines, Part B for hydro turbines, and Part C for both.

- A. Steam, gas or combined-cycle turbines:
- 1.) List type of unit (Steam, Gas, or Combined-cycle): \_\_\_\_\_
- 2.) If steam or combined-cycle, does the turbine system have a reheat process (i.e., both high and low pressure turbines)? \_\_\_\_\_
- 3.) If steam with reheat process, or if combined-cycle, indicate in the space provided, the percent of full load power produced by each turbine:  
Low pressure turbine or gas turbine: \_\_\_\_\_ %  
High pressure turbine or steam turbine: \_\_\_\_\_ %

B. Hydro turbines:

- 1.) Turbine efficiency at rated load: \_\_\_\_\_ %
- 2.) Length of penstock: \_\_\_\_\_ ft
- 3.) Average cross-sectional area of the penstock: \_\_\_\_\_ ft<sup>2</sup>
- 4.) Typical maximum head (vertical distance from the bottom of the penstock, at the gate, to the water level): \_\_\_\_\_ ft
- 5.) Is the water supply run-of-the-river or reservoir: \_\_\_\_\_
- 6.) Water flow rate at the typical maximum head: \_\_\_\_\_ ft<sup>3</sup>/sec
- 7.) Average energy rate: \_\_\_\_\_ kW-hrs/acre-ft
- 8.) Estimated yearly energy production: \_\_\_\_\_ kW-hrs

C. Complete this section for each machine, independent of the turbine type.

- 1.) Turbine manufacturer: \_\_\_\_\_
- 2.) Maximum turbine power output: \_\_\_\_\_ MW
- 3.) Minimum turbine power output (while on line): \_\_\_\_\_ MW
- 4.) Governor information:
  - a: Droop setting (speed regulation): \_\_\_\_\_
  - b: Is the governor mechanical-hydraulic or electro-hydraulic (Electro-hydraulic governors have an electronic speed sensor and transducer.)? \_\_\_\_\_
  - c: Other comments regarding the turbine governor system?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**7. Synchronous Generator and Associated Equipment – Dynamic Models:**

For each generator, governor, exciter and power system stabilizer, select the appropriate dynamic model from the General Electric PSLF Program Manual and provide the required input data. The manual is available on the GE website at [www.gepower.com](http://www.gepower.com). Select the following links within the website: 1) Our Businesses, 2) GE Power Systems, 3) Energy Consulting, 4) GE PSLF Software, 5) GE PSLF User's Manual.

There are links within the GE PSLF User's Manual to detailed descriptions of specific models, a definition of each parameter, a list of the output channels, explanatory notes, and a control system block diagram. The block diagrams are also available on the CAISO Website.

If you require assistance in developing the models, we suggest you contact General Electric. Accurate models are important to obtain accurate study results. Costs associated with any changes in facility requirements that are due to differences between model data provided by the generation developer and the actual generator test data, may be the responsibility of the generation developer.

**8. Induction Generator Data:**

- A. Rated Generator Power Factor at rated load: \_\_\_\_\_  
B. Moment of Inertia (including prime mover): \_\_\_\_\_  
C. Do you wish reclose blocking? Yes \_\_\_\_, No \_\_\_\_  
Note: Sufficient capacitance may be on the line now, or in the future, and the generator may self-excite unexpectedly.

**9. Generator Short Circuit Data**

For each generator, provide the following reactances expressed in p.u. on the generator base:

- $X''1$  – positive sequence subtransient reactance: \_\_\_\_\_
- $X''2$  – negative sequence subtransient reactance: \_\_\_\_\_
- $X''0$  – zero sequence subtransient reactance: \_\_\_\_\_

Generator Grounding:

- A. \_\_\_\_\_ Solidly grounded  
B. \_\_\_\_\_ Grounded through an impedance

Impedance value in p.u on generator base. R: \_\_\_\_\_ p.u.

X: \_\_\_\_\_ p.u.

- C. \_\_\_\_\_ Ungrounded

**10. Step-Up Transformer Data**

For each step-up transformer, fill out the data form provided in Table 1.

**11. Line Data**

There is no need to provide data for new lines that are to be planned by the Participating TO. However, for transmission lines that are to be planned by the generation developer, please provide the following information:

Nominal Voltage: \_\_\_\_\_

Line Length (miles): \_\_\_\_\_

Line termination Points: \_\_\_\_\_

Conductor Type: \_\_\_\_\_ Size: \_\_\_\_\_

If bundled. Number per phase: \_\_\_\_\_, Bundle spacing: \_\_\_\_\_ in.

Phase Configuration. Vertical: \_\_\_\_\_, Horizontal: \_\_\_\_\_

Phase Spacing (ft): A-B: \_\_\_\_\_, B-C: \_\_\_\_\_, C-A: \_\_\_\_\_

Distance of lowest conductor to Ground: \_\_\_\_\_ ft

Ground Wire Type: \_\_\_\_\_ Size: \_\_\_\_\_ Distance to Ground: \_\_\_\_\_ ft

Attach Tower Configuration Diagram

Summer line ratings in amperes (normal and emergency) \_\_\_\_\_

Resistance ( R ): \_\_\_\_\_ p.u.\*\*

Reactance: ( X ): \_\_\_\_\_ p.u.\*\*

Line Charging (B/2): \_\_\_\_\_ p.u.\*\*

\*\* On 100-MVA and nominal line voltage (kV) Base



**12. Wind Generators**

Number of generators to be interconnected pursuant to this Interconnection Request: \_\_\_\_\_

Elevation: \_\_\_\_\_ Single Phase \_\_\_\_\_ Three Phase

Inverter manufacturer, model name, number, and version:

\_\_\_\_\_

List of adjustable setpoints for the protective equipment or software:

\_\_\_\_\_

Field Volts: \_\_\_\_\_

Field Amperes: \_\_\_\_\_

Motoring Power (kW): \_\_\_\_\_

Neutral Grounding Resistor (If Applicable): \_\_\_\_\_

$I_2^2t$  or K (Heating Time Constant): \_\_\_\_\_

Rotor Resistance: \_\_\_\_\_

Stator Resistance: \_\_\_\_\_

Stator Reactance: \_\_\_\_\_

Rotor Reactance: \_\_\_\_\_

Magnetizing Reactance: \_\_\_\_\_

Short Circuit Reactance: \_\_\_\_\_

Exciting Current: \_\_\_\_\_

Temperature Rise: \_\_\_\_\_

Frame Size: \_\_\_\_\_

Design Letter: \_\_\_\_\_

Reactive Power Required In Vars (No Load): \_\_\_\_\_

Reactive Power Required In Vars (Full Load): \_\_\_\_\_

Total Rotating Inertia, H: \_\_\_\_\_ Per Unit on KVA Base

Note: A completed General Electric Company Power Systems Load Flow (PSLF) data sheet must be supplied with the Interconnection Request. If other data sheets are more appropriate to the proposed device then they shall be provided and discussed at Scoping Meeting.

TABLE 1  
 TRANSFORMER DATA

UNIT _____			
NUMBER OF TRANSFORMERS _____		PHASE _____	
RATED KVA	H Winding	X Winding	Y Winding
Connection (Delta, Wye, Gnd.)	_____	_____	_____
55 C Rise	_____	_____	_____
65 C Rise	_____	_____	_____
RATED VOLTAGE	_____	_____	_____
BIL	_____	_____	_____
AVAILABLE TAPS (planned or existing)	_____	_____	_____
LOAD TAP CHANGER?	_____	_____	_____
TAP SETTINGS	_____	_____	_____
COOLING TYPE : OA _____ OA/FA _____ OA/FA/FA _____ OA/FOA _____			
IMPEDANCE	H-X	H-Y	X-Y
Percent	_____	_____	_____
MVA Base	_____	_____	_____
Tested Taps	_____	_____	_____
WINDING RESISTANCE	H	X	Y
Ohms	_____	_____	_____
CURRENT TRANSFORMER RATIOS			
H _____	X _____	Y _____	N _____
PERCENT EXCITING CURRENT 100 % Voltage; _____ 110% Voltage _____			

Supply copy of nameplate and manufacture's test report when available

**Appendix 2 to LGIP**

**LGIP APPENDIX 2 INTERCONNECTION PROCEDURES FOR A WIND GENERATING PLANT**

**APPENDIX 2 to LGIP  
INTERCONNECTION PROCEDURES FOR A WIND GENERATING PLANT**

LGIP Appendix 2 sets forth procedures specific to a wind generating plant. All other requirements of this LGIP continue to apply to wind generating plant interconnections.

**A. Special Procedures Applicable to Wind Generators**

The wind plant Interconnection Customer, in completing the Interconnection Request required by Section 3.1 of this LGIP, may provide to the CAISO a set of preliminary electrical design specifications depicting the wind plant as a single equivalent generator. Upon satisfying these and other applicable Interconnection Request conditions, the wind plant may enter the queue and receive the Base Case data as provided for in this LGIP.

No later than six (6) months after submitting an Interconnection Request completed in this manner, the wind plant Interconnection Customer must submit completed detailed electrical design specifications and other data (including collector system layout data) needed to allow the CAISO to complete the Interconnection Study.

## INTERCONNECTION FEASIBILITY STUDY AGREEMENT

**THIS AGREEMENT** is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ by and between \_\_\_\_\_, a \_\_\_\_\_ organized and existing under the laws of the State of \_\_\_\_\_, ("Interconnection Customer") and the California Independent System Operator Corporation, a California nonprofit public benefit corporation existing under the laws of the State of California, ("CAISO"). The Interconnection Customer and the CAISO each may be referred to as a "Party," or collectively as the "Parties."

### RECITALS

**WHEREAS**, the Interconnection Customer is proposing to develop a Large Generating Facility or generating capacity addition to an existing Generating Facility consistent with the Interconnection Request submitted by the Interconnection Customer dated \_\_\_\_\_; and

**WHEREAS**, the Interconnection Customer desires to interconnect the Large Generating Facility with the CAISO Controlled Grid; and

**WHEREAS**, the Interconnection Customer has requested the CAISO to conduct or cause to be performed an Interconnection Feasibility Study to assess the feasibility of interconnecting the proposed Large Generating Facility.

**NOW, THEREFORE**, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

- 1.0 When used in this Agreement, with initial capitalization, the terms specified shall have the meanings indicated in the CAISO's FERC-approved Standard Large Generation Interconnection Procedures ("LGIP") or the Master Definitions Supplement, Appendix A to the CAISO Tariff, as applicable.
- 2.0 The Interconnection Customer elects and the CAISO shall conduct or cause to be performed an Interconnection Feasibility Study consistent with the LGIP in accordance with the CAISO Tariff.
- 3.0 The scope of the Interconnection Feasibility Study shall be subject to the assumptions set forth in Attachment A to this Agreement.
- 4.0 The Interconnection Feasibility Study shall be based on the technical information provided by the Interconnection Customer in the Interconnection Request, as may be modified as the result of the Scoping Meeting. The CAISO reserves the right to request additional technical information from the Interconnection Customer as may reasonably become necessary consistent with Good Utility Practice during the course of the Interconnection Feasibility Study and as designated in accordance with Section 3.5.4 of the LGIP. If, after the designation of the Point of Interconnection pursuant to Section 3.5.4 of the LGIP, the Interconnection Customer modifies its Interconnection Request pursuant to Section 4.4 of the LGIP, the time to complete the Interconnection Feasibility Study may be extended.

5.0 The Interconnection Feasibility Study report shall provide the following information:

- preliminary identification of any circuit breaker short circuit capability limits exceeded on the Participating TO's electric system or the CAISO Controlled Grid as a result of the interconnection;
- preliminary identification of any thermal overload or voltage limit violations on the Participating TO's electric system or the CAISO Controlled Grid resulting from the interconnection;
- preliminary description and non-binding good faith estimate of cost and cost responsibility for and time for construction of the Participating TO's facilities required to interconnect the Large Generating Facility to the Participating TO's electric system or the CAISO Controlled Grid and to address the identified short circuit and power flow issues;
- preliminary identification of financial impacts, if any, on Local Furnishing Bonds; and
- expected results in the Interconnection System Impact Study.

6.0 In addition to the deposit(s) paid by the Interconnection Customer pursuant to Section 3.5.1 of the LGIP, the Interconnection Customer shall provide a deposit of \$10,000 for the performance of the Interconnection Feasibility Study.

Following the issuance of the Interconnection Feasibility Study to the Interconnection Customer the CAISO shall charge and the Interconnection Customer shall pay the actual costs of the Interconnection Feasibility Study, inclusive of any re-studies and amendments to the Interconnection Feasibility Study, pursuant to Section 9 of this Agreement.

Any difference between the deposits made toward the Interconnection Feasibility Study, amendments and re-studies to the Interconnection Feasibility Study, and the actual cost of the study shall be paid by or refunded to the Interconnection Customer, as appropriate in accordance with Section 13.3 of the LGIP.

7.0 Pursuant to Section 3.7 of the LGIP, the CAISO will coordinate the conduct of any studies required to determine the impact of the Interconnection Request on Affected Systems. The CAISO may provide a copy of the Interconnection Feasibility Study results to an Affected System Operator and the Western Electricity Coordinating Council. Requests for review and input from Affected System Operators or the Western Electricity Coordinating Council may arrive at any time prior to interconnection, and a revision of the Interconnection Feasibility Study or re-study may be required in such event.

- 8.0 Substantial portions of technical data and assumptions used to perform the Interconnection Feasibility Study, such as system conditions, existing and planned generation, and unit modeling, may change after the CAISO provides the Interconnection Feasibility Study results to the Interconnection Customer.
- Study results will reflect available data at the time the CAISO provides the Interconnection Feasibility Study to the Interconnection Customer. The CAISO shall not be responsible for any additional costs, including, without limitation, costs of new or additional facilities, system upgrades, or schedule changes, that may be incurred by the Interconnection Customer as a result of changes in such data and assumptions.
- 9.0 In the event that a re-study or amendment of the Interconnection Feasibility Study is required, the CAISO shall provide notification of the need for such re-study or amendment, and the Interconnection Customer shall provide direction as to whether to proceed with the re-study or amendment and any associated deposit payment pursuant to Section 6.4 or Section 12.2.4 of the LGIP, as applicable.
- 10.0 The CAISO shall maintain records and accounts of all costs incurred in performing the Interconnection Feasibility Study, inclusive of any re-studies or amendments thereto, in sufficient detail to allow verification of all costs incurred, including associated overheads. The Interconnection Customer shall have the right, upon reasonable notice, within a reasonable time following receipt of the final cost report associated with this Interconnection Feasibility Study at the CAISO's offices and at its own expense, to audit the CAISO's records as necessary and as appropriate in order to verify costs incurred by the CAISO. Any audit requested by the Interconnection Customer shall be completed, and written notice of any audit dispute provided to the CAISO, within one hundred eighty (180) calendar days following receipt by the Interconnection Customer of the CAISO's notification of the final costs of the Interconnection Feasibility Study, inclusive of any re-study or amendment thereto.
- 11.0 In accordance with Section 3.8 of the LGIP, the Interconnection Customer may withdraw its Interconnection Request at any time by written notice to the CAISO. Upon receipt of such notice, this Agreement shall terminate.
- 12.0 Pursuant to Section 6.1 of the LGIP, this Agreement shall become effective upon the date the fully executed Agreement and deposit specified in Section 6 of this Agreement are received by the CAISO. If the CAISO does not receive the fully executed Agreement and payment pursuant to Section 6.1 of the LGIP, then the Interconnection Request will be deemed withdrawn upon the Interconnection Customer's receipt of written notice by the CAISO pursuant to Section 3.8 of the LGIP.
- 13.0 Miscellaneous.
- 13.1 Dispute Resolution. Any dispute, or assertion of a claim, arising out of or in connection with this Interconnection Feasibility Study Agreement, shall be resolved in accordance with Section 13.5 of the LGIP

- 13.2 Confidentiality. Confidential Information shall be treated in accordance with Section 13.1 of the LGIP.
- 13.3 Binding Effect. This Interconnection Feasibility Study Agreement and the rights and obligations hereof, shall be binding upon and shall inure to the benefit of the successors and assigns of the Parties hereto.
- 13.4 Conflicts. In the event of a conflict between the body of this Interconnection Feasibility Study Agreement and any attachment, appendices or exhibits hereto, the terms and provisions of the body of this Interconnection Feasibility Study Agreement shall prevail and be deemed the final intent of the Parties.
- 13.5 Rules of Interpretation. This Interconnection Feasibility Study Agreement, unless a clear contrary intention appears, shall be construed and interpreted as follows: (1) the singular number includes the plural number and vice versa; (2) reference to any person includes such person's successors and assigns but, in the case of a Party, only if such successors and assigns are permitted by this Interconnection Feasibility Study Agreement, and reference to a person in a particular capacity excludes such person in any other capacity or individually; (3) reference to any agreement (including this Interconnection Feasibility Study Agreement), document, instrument or tariff means such agreement, document, instrument, or tariff as amended or modified and in effect from time to time in accordance with the terms thereof and, if applicable, the terms hereof; (4) reference to any applicable laws and regulations means such applicable laws and regulations as amended, modified, codified, or reenacted, in whole or in part, and in effect from time to time, including, if applicable, rules and regulations promulgated thereunder; (5) unless expressly stated otherwise, reference to any Article, Section or Appendix means such Article or Section of this Interconnection Feasibility Study Agreement or such Appendix to this Interconnection Feasibility Study Agreement, or such Section to the LGIP or such Appendix to the LGIP, as the case may be; (6) "hereunder", "hereof", "herein", "hereto" and words of similar import shall be deemed references to this Interconnection Feasibility Study Agreement as a whole and not to any particular Article; (7) "including" (and with correlative meaning "include") means including without limiting the generality of any description preceding such term; and (8) relative to the determination of any period of time, "from" means "from and including", "to" means "to but excluding" and "through" means "through and including".
- 13.6 Entire Agreement. This Interconnection Feasibility Study Agreement, including all Appendices and Schedules attached hereto, constitutes the entire agreement between the Parties with reference to the subject matter hereof, and supersedes all prior and contemporaneous understandings or agreements, oral or written, between the Parties with respect to the subject matter of this Interconnection Feasibility Study Agreement. There are no other agreements, representations, warranties, or covenants which constitute any part of the consideration for, or any condition to, any Party's compliance with its obligations under this Interconnection Feasibility Study Agreement.

13.7 No Third Party Beneficiaries. This Interconnection Feasibility Study Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and, where permitted, their assigns.

13.8 Waiver. The failure of a Party to this Interconnection Feasibility Study Agreement to insist, on any occasion, upon strict performance of any provision of this Interconnection Feasibility Study Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.

Any waiver at any time by either Party of its rights with respect to this Interconnection Feasibility Study Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Interconnection Feasibility Study Agreement. Termination or default of this Interconnection Feasibility Study Agreement for any reason by the Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the Participating TO or CAISO. Any waiver of this Interconnection Feasibility Study Agreement shall, if requested, be provided in writing.

Any waivers at any time by any Party of its rights with respect to any default under this Interconnection Feasibility Study Agreement, or with respect to any other matter arising in connection with this Interconnection Feasibility Study Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Interconnection Feasibility Study Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Interconnection Feasibility Study Agreement shall not constitute or be deemed a waiver of such right.

13.9 Headings. The descriptive headings of the various Articles and Sections of this Interconnection Feasibility Study Agreement have been inserted for convenience of reference only and are of no significance in the interpretation or construction of this Interconnection Feasibility Study Agreement.

13.10 Multiple Counterparts. This Interconnection Feasibility Study Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

13.11 Amendment. The Parties may by mutual agreement amend this Interconnection Feasibility Study Agreement by a written instrument duly executed by both of the Parties.

13.12 Modification by the Parties. The Parties may by mutual agreement amend the Appendices to this Interconnection Feasibility Study Agreement by a written instrument duly executed by both of the Parties. Such amendment shall become effective and a part of this Interconnection Feasibility Study Agreement upon satisfaction of all applicable laws and regulations.



- 13.13 Reservation of Rights. The CAISO shall have the right to make a unilateral filing with FERC to modify this Interconnection Feasibility Study Agreement with respect to any rates, terms and conditions, charges, classifications of service, rule or regulation under section 205 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder, and Interconnection Customer shall have the right to make a unilateral filing with FERC to modify this Interconnection Feasibility Study Agreement pursuant to section 206 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by another Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Interconnection Feasibility Study Agreement shall limit the rights of the Parties or of FERC under sections 205 or 206 of the Federal Power Act and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.
- 13.14 No Partnership. This Interconnection Feasibility Study Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon any Party. No Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, another Party.
- 13.15 Assignment. This Interconnection Feasibility Study Agreement may be assigned by a Party only with the written consent of the other Party; provided that a Party may assign this Interconnection Feasibility Study Agreement without the consent of the other Party to any Affiliate of the assigning Party with an equal or greater credit rating and with the legal authority and operational ability to satisfy the obligations of the assigning Party under this Interconnection Feasibility Study Agreement; and provided further that the Interconnection Customer shall have the right to assign this Interconnection Feasibility Study Agreement, without the consent of the other Party, for collateral security purposes to aid in providing financing for the Large Generating Unit, provided that the Interconnection Customer will require any secured party, trustee or mortgagee to notify the other Party of any such assignment. Any financing arrangement entered into by the Interconnection Customer pursuant to this Article will provide that prior to or upon the exercise of the secured party's, trustee's or mortgagee's assignment rights pursuant to said arrangement, the secured creditor, the trustee or mortgagee will notify the other Party of the date and particulars of any such exercise of assignment right(s). Any attempted assignment that violates this Article is void and ineffective. Any assignment under this Interconnection Feasibility Study Agreement shall not relieve a Party of its obligations, nor shall a Party's obligations be enlarged, in whole or in part, by reason thereof. Where required, consent to assignment will not be unreasonably withheld, conditioned or delayed.

**IN WITNESS WHEREOF**, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

**California Independent System Operator Corporation**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**[Insert name of the Interconnection Customer]**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**Attachment A to  
Interconnection Feasibility  
Study Agreement**

**ASSUMPTIONS USED IN CONDUCTING THE  
INTERCONNECTION FEASIBILITY STUDY**

The Interconnection Feasibility Study will be based upon the information set forth in the Interconnection Request and agreed upon in the Scoping Meeting held on \_\_\_\_\_:

Designation of Point of Interconnection and configuration to be studied.

Designation of alternative Point(s) of Interconnection and configuration.

[Above assumptions to be completed by the Interconnection Customer and other assumptions to be provided by the Interconnection Customer and the CAISO

## INTERCONNECTION SYSTEM IMPACT STUDY AGREEMENT

**THIS AGREEMENT** is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_ by and between \_\_\_\_\_, a \_\_\_\_\_ organized and existing under the laws of the State of \_\_\_\_\_, ("Interconnection Customer") and the California Independent System Operator Corporation, a California nonprofit public benefit corporation existing under the laws of the State of California, ("CAISO"). The Interconnection Customer and the CAISO each may be referred to as a "Party," or collectively as the "Parties."

### RECITALS

**WHEREAS**, the Interconnection Customer is proposing to develop a Large Generating Facility or generating capacity addition to an existing Generating Facility consistent with the Interconnection Request submitted by the Interconnection Customer dated \_\_\_\_\_; and

**WHEREAS**, the Interconnection Customer desires to interconnect the Large Generating Facility with the CAISO Controlled Grid; and

**WHEREAS**, the CAISO has completed an Interconnection Feasibility Study (the "Feasibility Study") and provided the results of said study to the Interconnection Customer<sup>1</sup>; and

**WHEREAS**, the Interconnection Customer has requested the CAISO to conduct or cause to be performed an Interconnection System Impact Study to assess the impact of interconnecting the Large Generating Facility;

**NOW, THEREFORE**, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

- 1.0 When used in this Agreement, with initial capitalization, the terms specified shall have the meanings indicated in the CAISO's FERC-approved Standard Large Generation Interconnection Procedures ("LGIP") or the Master Definitions Supplement, Appendix A to the CAISO Tariff, as applicable.
- 2.0 The Interconnection Customer elects and the CAISO shall conduct or cause to be performed an Interconnection System Impact Study consistent with the LGIP in accordance with the CAISO Tariff.
- 3.0 The scope of the Interconnection System Impact Study shall be subject to the assumptions set forth in Attachment A to this Agreement.

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<sup>1</sup> This recital to be omitted if the Interconnection Customer has elected to forego the Interconnection Feasibility Study.

- 4.0 The Interconnection System Impact Study will be based upon the results of the Interconnection Feasibility Study and the technical information provided by the Interconnection Customer in the Interconnection Request, subject to any modifications in accordance with Section 4.4 of the LGIP. The CAISO reserves the right to request additional technical information from the Interconnection Customer as may reasonably become necessary consistent with Good Utility Practice during the course of the Interconnection System Impact Study. If the Interconnection Customer modifies its designated Point of Interconnection, Interconnection Request, or the technical information provided therein is modified, the time to complete the Interconnection System Impact Study may be extended.
- 5.0 The Interconnection System Impact Study report shall provide the following information:
- identification of any circuit breaker short circuit capability limits exceeded on the Participating TO's electric system or the CAISO Controlled Grid as a result of the interconnection;
  - identification of any thermal overload or voltage limit violations on the Participating TO's electric system or the CAISO Controlled Grid resulting from the interconnection;
  - identification of any instability or inadequately damped response to system disturbances on the Participating TO's electric system or the CAISO Controlled Grid resulting from the interconnection;
  - a description and non-binding, good faith estimate of cost and cost responsibility for and time for construction of facilities on the Participating TO's electric system required to interconnect the Large Generating Facility to the CAISO Controlled Grid and to address the identified short circuit, instability, and power flow issues on the CAISO Controlled Grid;
  - a Deliverability Assessment on the CAISO Controlled Grid pursuant to Section 3.3 of the LGIP; and
  - assessment of the potential magnitude of financial impacts, if any, on Local Furnishing Bonds and a proposed resolution.
- 6.0 The Interconnection Customer shall provide a deposit of \$50,000 for the performance of the Interconnection System Impact Study. The good faith estimate for the time of completion of the Interconnection System Impact Study is \_\_\_\_\_[insert date].

Following the issuance of the Interconnection System Impact Study, the CAISO shall charge and the Interconnection Customer shall pay the actual costs of the Interconnection System Impact Study, inclusive of any re-studies and amendments to the Interconnection System Impact Study, pursuant to Section 9 of this Agreement.

Any difference between the deposit made toward the Interconnection System Impact Study, amendments and re-studies to the Interconnection System Impact Study, and the actual cost of the study shall be paid by or refunded to the Interconnection Customer, as appropriate in accordance with Section 13.3 of the LGIP.

- 7.0 Pursuant to Section 3.7 of the LGIP, the CAISO will coordinate the conduct of any studies required to determine the impact of the Interconnection Request on Affected Systems. The CAISO may provide a copy of the Interconnection System Impact Study results to an Affected System Operator and the Western Electricity Coordinating Council. Requests for review and input from Affected System Operators or the Western Electricity Coordinating Council may arrive at any time prior to interconnection, and a revision of the Interconnection System Impact Study or re-study may be required in such event.
- 8.0 Substantial portions of technical data and assumptions used to perform the Interconnection System Impact Study, such as system conditions, existing and planned generation, and unit modeling, may change after the CAISO provides the Interconnection System Impact Study results to the Interconnection Customer. Study results will reflect available data at the time the CAISO provides the Interconnection System Impact Study to the Interconnection Customer. The CAISO shall not be responsible for any additional costs, including, without limitation, costs of new or additional facilities, system upgrades, or schedule changes, that may be incurred by the Interconnection Customer as a result of changes in such data and assumptions.
- 9.0 In the event that a re-study or amendment of the Interconnection System Impact Study is required, the CAISO shall provide notification of the need for such re-study or amendment, and the Interconnection Customer shall provide direction as to whether to proceed with the re-study or amendment and any associated deposit payment pursuant to Section 7.6 or Section 12.2.4 of the LGIP, as applicable.
- 10.0 The CAISO shall maintain records and accounts of all costs incurred in performing the Interconnection System Impact Study, inclusive of any re-studies or amendments thereto, in sufficient detail to allow verification of all costs incurred, including associated overheads. The Interconnection Customer shall have the right, upon reasonable notice, within a reasonable time at the CAISO's offices and at its own expense, to audit the CAISO's records as necessary and as appropriate in order to verify costs incurred by the CAISO. Any audit requested by the Interconnection Customer shall be completed, and written notice of any audit dispute provided to the CAISO representative, within one hundred eighty (180) calendar days following receipt by the Interconnection Customer of the CAISO's notification of the final costs of the Interconnection System Impact Study, inclusive of any re-study or amendment thereto.
- 11.0 In accordance with Section 3.8 of the LGIP, the Interconnection Customer may withdraw its Interconnection Request at any time by written notice to the CAISO. Upon receipt of such notice, this Agreement shall terminate.
- 12.0 Pursuant to Section 7.2 of the LGIP, this Agreement shall become effective upon the date the fully executed Agreement and deposit specified in Section 6 of this Agreement are received by the CAISO. If the CAISO does not receive the fully executed Agreement and payment pursuant to Section 7.2 of the LGIP, then the Interconnection Request will be deemed withdrawn upon the Interconnection Customer's receipt of written notice by the CAISO pursuant to Section 3.8 of the LGIP.

- 13.0 Miscellaneous.
- 13.1 Dispute Resolution. Any dispute, or assertion of a claim, arising out of or in connection with this Interconnection System Impact Study Agreement, shall be resolved in accordance with Section 13.5 of the LGIP.
- 13.2 Confidentiality. Confidential Information shall be treated in accordance with Section 13.1 of the LGIP.
- 13.3 Binding Effect. This Interconnection System Impact Study Agreement and the rights and obligations hereof, shall be binding upon and shall inure to the benefit of the successors and assigns of the Parties hereto.
- 13.4 Conflicts. In the event of a conflict between the body of this Interconnection System Impact Study Agreement and any attachment, appendices or exhibits hereto, the terms and provisions of the body of this Interconnection System Impact Study Agreement shall prevail and be deemed the final intent of the Parties.
- 13.5 Rules of Interpretation. This Interconnection System Impact Study Agreement, unless a clear contrary intention appears, shall be construed and interpreted as follows: (1) the singular number includes the plural number and vice versa; (2) reference to any person includes such person's successors and assigns but, in the case of a Party, only if such successors and assigns are permitted by this Interconnection System Impact Study Agreement, and reference to a person in a particular capacity excludes such person in any other capacity or individually; (3) reference to any agreement (including this Interconnection System Impact Study Agreement), document, instrument or tariff means such agreement, document, instrument, or tariff as amended or modified and in effect from time to time in accordance with the terms thereof and, if applicable, the terms hereof; (4) reference to any applicable laws and regulations means such applicable laws and regulations as amended, modified, codified, or reenacted, in whole or in part, and in effect from time to time, including, if applicable, rules and regulations promulgated thereunder; (5) unless expressly stated otherwise, reference to any Article, Section or Appendix means such Article or Section of this Interconnection System Impact Study Agreement or such Appendix to this Interconnection System Impact Study Agreement, or such Section to the LGIP or such Appendix to the LGIP, as the case may be; (6) "hereunder", "hereof", "herein", "hereto" and words of similar import shall be deemed references to this Interconnection System Impact Study Agreement as a whole and not to any particular Article, Section, or other provision hereof or thereof; (7) "including" (and with correlative meaning "include") means including without limiting the generality of any description preceding such term; and (8) relative to the determination of any period of time, "from" means "from and including", "to" means "to but excluding" and "through" means "through and including".

- 13.6 Entire Agreement. This Interconnection System Impact Study Agreement, including all Appendices and Schedules attached hereto, constitutes the entire agreement between the Parties with reference to the subject matter hereof, and supersedes all prior and contemporaneous understandings or agreements, oral or written, between the Parties with respect to the subject matter of this Interconnection System Impact Study Agreement. There are no other agreements, representations, warranties, or covenants which constitute any part of the consideration for, or any condition to, any Party's compliance with its obligations under this Interconnection System Impact Study Agreement.
- 13.7 No Third Party Beneficiaries. This Interconnection System Impact Study Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and, where permitted, their assigns.
- 13.8 Waiver. The failure of a Party to this Interconnection System Impact Study Agreement to insist, on any occasion, upon strict performance of any provision of this Interconnection System Impact Study Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.
- Any waiver at any time by either Party of its rights with respect to this Interconnection System Impact Study Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Interconnection System Impact Study Agreement. Termination or default of this Interconnection System Impact Study Agreement for any reason by the Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the Participating TO or CAISO. Any waiver of this Interconnection System Impact Study Agreement shall, if requested, be provided in writing.
- Any waivers at any time by any Party of its rights with respect to any default under this Interconnection System Impact Study Agreement, or with respect to any other matter arising in connection with this Interconnection System Impact Study Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Interconnection System Impact Study Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Interconnection System Impact Study Agreement shall not constitute or be deemed a waiver of such right.
- 13.9 Headings. The descriptive headings of the various Articles and Sections of this Interconnection System Impact Study Agreement have been inserted for convenience of reference only and are of no significance in the interpretation or construction of this Interconnection System Impact Study Agreement.



- 13.10 Multiple Counterparts. This Interconnection System Impact Study Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.
- 13.11 Amendment. The Parties may by mutual agreement amend this Interconnection System Impact Study Agreement by a written instrument duly executed by both of the Parties.
- 13.12 Modification by the Parties. The Parties may by mutual agreement amend the Appendices to this Interconnection System Impact Study Agreement by a written instrument duly executed by both of the Parties. Such amendment shall become effective and a part of this Interconnection System Impact Study Agreement upon satisfaction of all applicable laws and regulations.
- 13.13 Reservation of Rights. The CAISO shall have the right to make a unilateral filing with FERC to modify this Interconnection System Impact Study Agreement with respect to any rates, terms and conditions, charges, classifications of service, rule or regulation under section 205 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder, and Interconnection Customer shall have the right to make a unilateral filing with FERC to modify this Interconnection System Impact Study Agreement pursuant to section 206 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by another Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Interconnection System Impact Study Agreement shall limit the rights of the Parties or of FERC under sections 205 or 206 of the Federal Power Act and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.
- 13.14 No Partnership. This Interconnection System Impact Study Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon any Party. No Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, another Party.
- 13.15 Assignment. This Interconnection System Impact Study Agreement may be assigned by a Party only with the written consent of the other Party; provided that a Party may assign this Interconnection System Impact Study Agreement without the consent of the other Party to any Affiliate of the assigning Party with an equal or greater credit rating and with the legal authority and operational ability to satisfy the obligations of the assigning Party under this Interconnection System Impact Study Agreement; and provided further that the Interconnection Customer shall have the right to assign this Interconnection System Impact Study Agreement, without the consent of the other Party, for collateral security purposes to aid in providing financing for the Large Generating Unit, provided that the Interconnection Customer will require any secured party, trustee or mortgagee to notify the other Party of any such assignment. Any financing arrangement entered into by the Interconnection Customer pursuant to this Article will provide that prior to or upon the exercise of the secured party's, trustee's or mortgagee's assignment rights pursuant to said arrangement, the secured creditor, the trustee or mortgagee will notify the other Party of the date and particulars of any such exercise of assignment right(s). Any

attempted assignment that violates this Article is void and ineffective. Any assignment under this Interconnection System Impact Study Agreement shall not relieve a Party of its obligations, nor shall a Party's obligations be enlarged, in whole or in part, by reason thereof. Where required, consent to assignment will not be unreasonably withheld, conditioned or delayed.

**IN WITNESS THEREOF**, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

**California Independent System Operator Corporation**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**[Insert name of the Interconnection Customer]**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**Attachment A**

**Interconnection System Impact  
Study Agreement**

**ASSUMPTIONS USED IN CONDUCTING THE  
INTERCONNECTION SYSTEM IMPACT STUDY**

The Interconnection System Impact Study will be based upon the results of the Interconnection Feasibility Study, subject to any modifications in accordance with Section 4.4 of the LGIP, and the following assumptions:

Designation of Point of Interconnection and configuration to be studied.

Designation of alternative Point(s) of Interconnection and configuration.

[Above assumptions to be completed by the Interconnection Customer and other assumptions to be provided by the Interconnection Customer and the CAISO

## INTERCONNECTION FACILITIES STUDY AGREEMENT

**THIS AGREEMENT** is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_ by and between \_\_\_\_\_, a \_\_\_\_\_ organized and existing under the laws of the State of \_\_\_\_\_, ("Interconnection Customer") and the California Independent System Operator Corporation, a California nonprofit public benefit corporation existing under the laws of the State of California, ("CAISO"). The Interconnection Customer and the CAISO each may be referred to as a "Party," or collectively as the "Parties."

### RECITALS

**WHEREAS**, the Interconnection Customer is proposing to develop a Large Generating Facility or generating capacity addition to an existing Generating Facility consistent with the Interconnection Request submitted by the Interconnection Customer dated \_\_\_\_\_; and

**WHEREAS**, the Interconnection Customer desires to interconnect the Large Generating Facility with the CAISO Controlled Grid;

**WHEREAS**, the CAISO has completed an Interconnection System Impact Study (the "System Impact Study") and provided the results of said study to the Interconnection Customer; and

**WHEREAS**, the Interconnection Customer has requested the CAISO to conduct or cause to be performed an Interconnection Facilities Study to specify and estimate the cost of the equipment, engineering, procurement and construction work needed on the Participating TO's electric system to implement the conclusions of the Interconnection System Impact Study in accordance with Good Utility Practice to physically and electrically connect the Large Generating Facility to the CAISO Controlled Grid.

**NOW, THEREFORE**, in consideration of and subject to the mutual covenants contained herein the Parties agreed as follows:

- 1.0 When used in this Agreement, with initial capitalization, the terms specified shall have the meanings indicated in the CAISO's FERC-approved Standard Large Generation Interconnection Procedures ("LGIP") or the Master Definitions Supplement, Appendix A to the CAISO Tariff, as applicable.
- 2.0 The Interconnection Customer elects and the CAISO shall conduct or cause to be performed an Interconnection Facilities Study consistent with the LGIP in accordance with the CAISO Tariff.
- 3.0 The scope of the Interconnection Facilities Study shall be subject to the assumptions set forth in Attachment A and the data provided in Attachment B to this Agreement.

- 4.0 The Interconnection Facilities Study report (i) shall provide a description, estimated cost, including, if applicable, the cost of remedial measures that address the financial impacts, if any, on Local Furnishing Bonds, of (consistent with Attachment A), and schedule for required facilities or for effecting remedial measures that address the financial impacts, if any, on Local Furnishing Bonds within each Participating TO's electric system to interconnect the Large Generating Facility to the CAISO Controlled Grid and (ii) shall address the short circuit, instability, and power flow issues identified in the Interconnection System Impact Study.
- 5.0 The Interconnection Customer shall provide a deposit of the greater of \$100,000 or the Interconnection Customer's portion of the estimated monthly cost for the performance of the Interconnection Facilities Study. The time for completion of the Interconnection Facilities Study is specified in Attachment A.

For studies where the estimated cost exceeds \$100,000, the CAISO may invoice Interconnection Customer on a monthly basis for the work to be conducted on the Interconnection Facilities Study for the remaining balance of the estimated Interconnection Facilities Study cost. The Interconnection Customer shall pay invoiced amounts within thirty (30) calendar days of receipt of invoice. The CAISO shall continue to hold the amounts on deposit until settlement of the final invoice.

Following the issuance of the Interconnection Facilities Study, the CAISO shall charge and the Interconnection Customer shall pay the actual costs of the Interconnection Facilities Study, inclusive of any re-studies and amendments to the Interconnection Facilities Study, pursuant to Section 9 of this Agreement.

Any difference between the deposit made toward the Interconnection Facilities Study and the actual cost of the study, inclusive of any re-studies and amendments thereto, shall be paid by or refunded to the Interconnection Customer, as appropriate in accordance with Section 13.3 of the LGIP.

- 6.0 The Interconnection Facilities Study will be based upon the results of the Interconnection System Impact Study and the technical information provided by the Interconnection Customer in the Interconnection Request, subject to any modifications in accordance with Section 4.4 of the LGIP. The CAISO reserves the right to request additional technical information from the Interconnection Customer as may reasonably become necessary consistent with Good Utility Practice during the course of the Interconnection Facilities Study.

If the Interconnection Customer modifies its Interconnection Request or the technical information provided therein is modified, the time to complete the Interconnection Facilities Study may be extended.

- 7.0 Pursuant to Section 3.7 of the LGIP, the CAISO will coordinate the conduct of any studies required to determine the impact of the Interconnection Request on Affected Systems. The CAISO may provide a copy of the Interconnection Facilities Study results to an Affected System Operator and the Western Electricity Coordinating Council. Requests for review and input from Affected System Operators or the Western Electricity Coordinating Council may arrive at any time prior to interconnection, and a revision of the Interconnection Facilities Study or re-study may be required in such event.

- 8.0 Substantial portions of technical data and assumptions used to perform the Interconnection Facilities Study, such as system conditions, existing and planned generation, and unit modeling, may change after the CAISO provides the Interconnection Facilities Study results to the Interconnection Customer. Study results will reflect available data at the time the CAISO provides the Interconnection Facilities Study to the Interconnection Customer. The CAISO shall not be responsible for any additional costs, including, without limitation, costs of new or additional facilities, system upgrades, or schedule changes, that may be incurred by the Interconnection Customer as a result of changes in such data and assumptions.
- 9.0 In the event that a re-study or amendment of the Interconnection Facilities Study is required, the CAISO shall provide notification of the need for such re-study or amendment, and the Interconnection Customer shall provide direction as to whether to proceed with the re-study or amendment and any associated deposit payment pursuant to Section 8.5 or Section 12.2.4 of the LGIP, as applicable.
- 10.0 The CAISO shall maintain records and accounts of all costs incurred in performing the Interconnection Facilities Study, inclusive of any re-studies or amendments thereto, in sufficient detail to allow verification of all costs incurred, including associated overhead. The Interconnection Customer shall have the right, upon reasonable notice, within a reasonable time at the CAISO's offices and at its own expense, to audit the CAISO's records as necessary and as appropriate in order to verify costs incurred by the CAISO. Any audit requested by the Interconnection Customer shall be completed, and written notice of any audit dispute provided to the CAISO within one hundred eighty (180) calendar days following receipt by the Interconnection Customer of the CAISO's notification of the final costs of the Interconnection Facilities Study, inclusive of any re-study or amendment thereto.
- 11.0 In accordance with Section 3.8 of the LGIP, the Interconnection Customer may withdraw its Interconnection Request at any time by written notice to the CAISO. Upon receipt of such notice, this Agreement shall terminate.
- 12.0 Pursuant to Section 8.1 of the LGIP, this Agreement shall become effective upon the date the fully executed Agreement and deposit specified in Section 6 of this Agreement are received by the CAISO. If the CAISO does not receive the fully executed Agreement and payment pursuant to Section 8.1 of the LGIP, then the Interconnection Request will be deemed withdrawn upon the Interconnection Customer's receipt of written notice by the CAISO pursuant to Section 3.8 of the LGIP.
- 13.0 Miscellaneous.
- 13.1 Dispute Resolution. Any dispute, or assertion of a claim, arising out of or in connection with this Interconnection Facilities Study Agreement, shall be resolved in accordance with Section 13.5 of the LGIP.

- 13.2 Confidentiality. Confidential Information shall be treated in accordance with Section 13.1 of the LGIP.
- 13.3 Binding Effect. This Interconnection Facilities Study Agreement and the rights and obligations hereof, shall be binding upon and shall inure to the benefit of the successors and assigns of the Parties hereto.
- 13.4 Conflicts. In the event of a conflict between the body of this Interconnection Facilities Study Agreement and any attachment, appendices or exhibits hereto, the terms and provisions of the body of this Interconnection Facilities Study Agreement shall prevail and be deemed the final intent of the Parties.
- 13.5 Rules of Interpretation. This Interconnection Facilities Study Agreement, unless a clear contrary intention appears, shall be construed and interpreted as follows: (1) the singular number includes the plural number and vice versa; (2) reference to any person includes such person's successors and assigns but, in the case of a Party, only if such successors and assigns are permitted by this Interconnection Facilities Study Agreement, and reference to a person in a particular capacity excludes such person in any other capacity or individually; (3) reference to any agreement (including this Interconnection Facilities Study Agreement), document, instrument or tariff means such agreement, document, instrument, or tariff as amended or modified and in effect from time to time in accordance with the terms thereof and, if applicable, the terms hereof; (4) reference to any applicable laws and regulations means such applicable laws and regulations as amended, modified, codified, or reenacted, in whole or in part, and in effect from time to time, including, if applicable, rules and regulations promulgated thereunder; (5) unless expressly stated otherwise, reference to any Article, Section or Appendix means such Article or Section of this Interconnection Facilities Study Agreement or such Appendix to this Interconnection Facilities Study Agreement, or such Section to the LGIP or such Appendix to the LGIP, as the case may be; (6) "hereunder", "hereof", "herein", "hereto" and words of similar import shall be deemed references to this Interconnection Facilities Study Agreement as a whole and not to any particular Article, Section, or other provision hereof or thereof; (7) "including" (and with correlative meaning "include") means including without limiting the generality of any description preceding such term; and (8) relative to the determination of any period of time, "from" means "from and including", "to" means "to but excluding" and "through" means "through and including".
- 13.6 Entire Agreement. This Interconnection Facilities Study Agreement, including all Appendices and Schedules attached hereto, constitutes the entire agreement between the Parties with reference to the subject matter hereof, and supersedes all prior and contemporaneous understandings or agreements, oral or written, between the Parties with respect to the subject matter of this Interconnection Facilities Study Agreement. There are no other agreements, representations, warranties, or covenants which constitute any part of the consideration for, or any condition to, any Party's compliance with its obligations under this Interconnection Facilities Study Agreement.

13.7 No Third Party Beneficiaries. This Interconnection Facilities Study Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and, where permitted, their assigns.

13.8 Waiver. The failure of a Party to this Interconnection Facilities Study Agreement to insist, on any occasion, upon strict performance of any provision of this Interconnection Facilities Study Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.

Any waiver at any time by either Party of its rights with respect to this Interconnection Facilities Study Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Interconnection Facilities Study Agreement. Termination or default of this Interconnection Facilities Study Agreement for any reason by the Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the Participating TO or CAISO. Any waiver of this Interconnection Facilities Study Agreement shall, if requested, be provided in writing.

Any waivers at any time by any Party of its rights with respect to any default under this Interconnection Facilities Study Agreement, or with respect to any other matter arising in connection with this Interconnection Facilities Study Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Interconnection Facilities Study Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Interconnection Facilities Study Agreement shall not constitute or be deemed a waiver of such right.

13.9 Headings. The descriptive headings of the various Articles and Sections of this Interconnection Facilities Study Agreement have been inserted for convenience of reference only and are of no significance in the interpretation or construction of this Interconnection Facilities Study Agreement.

13.10 Multiple Counterparts. This Interconnection Facilities Study Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

13.11 Amendment. The Parties may by mutual agreement amend this Interconnection Facilities Study Agreement by a written instrument duly executed by both of the Parties.

13.12 Modification by the Parties. The Parties may by mutual agreement amend the Appendices to this Interconnection Facilities Study Agreement by a written instrument duly executed by both of the Parties. Such amendment shall become effective and a part of this Interconnection Facilities Study Agreement upon satisfaction of all applicable laws and regulations.



- 13.13 Reservation of Rights. The CAISO shall have the right to make a unilateral filing with FERC to modify this Interconnection Facilities Study Agreement with respect to any rates, terms and conditions, charges, classifications of service, rule or regulation under section 205 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder, and Interconnection Customer shall have the right to make a unilateral filing with FERC to modify this Interconnection Facilities Study Agreement pursuant to section 206 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by another Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Interconnection Facilities Study Agreement shall limit the rights of the Parties or of FERC under sections 205 or 206 of the Federal Power Act and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.
- 13.14 No Partnership. This Interconnection Facilities Study Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon any Party. No Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, another Party.
- 13.15 Assignment. This Interconnection Facilities Study Agreement may be assigned by a Party only with the written consent of the other Party; provided that a Party may assign this Interconnection Facilities Study Agreement without the consent of the other Party to any Affiliate of the assigning Party with an equal or greater credit rating and with the legal authority and operational ability to satisfy the obligations of the assigning Party under this Interconnection Facilities Study Agreement; and provided further that the Interconnection Customer shall have the right to assign this Interconnection Facilities Study Agreement, without the consent of the other Party, for collateral security purposes to aid in providing financing for the Large Generating Unit, provided that the Interconnection Customer will require any secured party, trustee or mortgagee to notify the other Party of any such assignment. Any financing arrangement entered into by the Interconnection Customer pursuant to this Article will provide that prior to or upon the exercise of the secured party's, trustee's or mortgagee's assignment rights pursuant to said arrangement, the secured creditor, the trustee or mortgagee will notify the other Party of the date and particulars of any such exercise of assignment right(s). Any attempted assignment that violates this Article is void and ineffective. Any assignment under this Interconnection Facilities Study Agreement shall not relieve a Party of its obligations, nor shall a Party's obligations be enlarged, in whole or in part, by reason thereof. Where required, consent to assignment will not be unreasonably withheld, conditioned or delayed.

**IN WITNESS WHEREOF**, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

**California Independent System Operator Corporation**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**[Insert name of the Interconnection Customer]**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date:

**Attachment A**

**Interconnection Facilities  
Study Agreement**

**INTERCONNECTION CUSTOMER SCHEDULE ELECTION FOR CONDUCTING THE  
INTERCONNECTION FACILITIES STUDY**

The CAISO shall use Reasonable Efforts to complete the study and issue a draft Interconnection Facilities Study report to the Interconnection Customer. Prior to issuing draft study results to the Interconnection Customer, the Participating TO and CAISO shall share results for review and incorporate comments within the following number of days after receipt of an executed copy of this Interconnection Facilities Study Agreement:

- one hundred twenty (120) calendar days with no more than a +/- 20 percent cost estimate contained in the report, or
- two hundred ten (210) calendar days with no more than a +/- 10 percent cost estimate contained in the report.

**Attachment B**

**Interconnection Facilities  
Study Agreement**

**DATA FORM TO BE PROVIDED BY THE INTERCONNECTION CUSTOMER  
WITH THE INTERCONNECTION FACILITIES STUDY AGREEMENT**

Provide two copies of this completed form and other required plans and diagrams in accordance with Section 8.1 of the LGIP.

Provide location plan and one-line diagram of the plant and station facilities. For staged projects, please indicate future generation, transmission circuits, etc.

One set of metering is required for each generation connection to the new bus or existing CAISO Controlled Grid station. Number of generation connections: \_\_\_\_\_

On the one line indicate the generation capacity attached at each metering location. (Maximum load on CT/PT)

On the one line indicate the location of auxiliary power. (Minimum load on CT/PT)

Will an alternate source of auxiliary power be available during CT/PT maintenance? \_\_\_\_\_ Yes  
\_\_\_\_\_ No

Will a transfer bus on the generation side of the metering require that each meter set be designed for the total plant generation? \_\_\_\_\_ Yes \_\_\_\_\_ No  
(Please indicate on one line).

What type of control system or PLC will be located at the Interconnection Customer's Large Generating Facility?

\_\_\_\_\_  
\_\_\_\_\_

What protocol does the control system or PLC use?

\_\_\_\_\_  
\_\_\_\_\_

Please provide a 7.5-minute quadrangle of the site. Sketch the plant, station, transmission line, and property line.

Physical dimensions of the proposed interconnection station:

Bus length from generation to interconnection station:

Line length from interconnection station to the Participating TO's transmission line.

Tower number observed in the field. (Painted on tower leg)\*

Number of third party easements required for transmission lines\*:

\* To be completed in coordination with the Participating TO or CAISO.

Is the Large Generating Facility in the Participating TO's service area?

\_\_\_\_\_Yes      \_\_\_\_\_No

Local service provider for auxiliary and other power:\_\_\_\_\_

Please provide proposed schedule dates:

Begin Construction      Date:\_\_\_\_\_

Generator step-up transformer  
receives back feed power      Date:\_\_\_\_\_

Generation Testing      Date:\_\_\_\_\_

Commercial Operation Date:\_\_\_\_\_

Level of Deliverability: Choose one of the following:

\_\_\_\_\_ Deliverability with no Network Upgrades

\_\_\_\_\_ 100% Deliverability

## OPTIONAL INTERCONNECTION STUDY AGREEMENT

**THIS AGREEMENT** is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_ by and between \_\_\_\_\_, a \_\_\_\_\_ organized and existing under the laws of the State of \_\_\_\_\_, ("Interconnection Customer") and the California Independent System Operator Corporation, a California nonprofit public benefit corporation existing under the laws of the State of California, ("CAISO"). The Interconnection Customer and the CAISO each may be referred to as a "Party," or collectively as the "Parties."

### RECITALS

**WHEREAS**, the Interconnection Customer is proposing to develop a Large Generating Facility or generating capacity addition to an existing Generating Facility consistent with the Interconnection Request submitted by the Interconnection Customer dated \_\_\_\_\_;

**WHEREAS**, the Interconnection Customer is proposing to establish an interconnection with the CAISO Controlled Grid; and

**WHEREAS**, the Interconnection Customer has submitted to the CAISO an Interconnection Request; and

**WHEREAS**, on or after the date when the Interconnection Customer receives the Interconnection System Impact Study results, the Interconnection Customer has further requested that the CAISO conduct or cause to be performed an Optional Interconnection Study;

**NOW, THEREFORE**, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

- 1.0 When used in this Agreement, with initial capitalization, the terms specified shall have the meanings indicated in the CAISO's FERC-approved Standard Large Generation Interconnection Procedures ("LGIP") or the Master Definitions Supplement, Appendix A to the CAISO Tariff, as applicable.
- 2.0 The Interconnection Customer elects and the CAISO shall conduct or cause to be performed an Optional Interconnection Study consistent with the LGIP in accordance with the CAISO Tariff.
- 3.0 The scope of the Optional Interconnection Study shall be subject to the assumptions set forth in Attachment A to this Agreement.
- 4.0 The Optional Interconnection Study shall be performed solely for informational purposes.

- 5.0 The Optional Interconnection Study report shall provide a sensitivity analysis based on the assumptions specified by the Interconnection Customer in Attachment A to this Agreement. The Optional Interconnection Study will identify the Participating TO's Interconnection Facilities and the Network Upgrades, and the estimated cost thereof, including, if applicable, the cost of remedial measures that address the financial impacts, if any, on Local Furnishing Bonds, that may be required to provide transmission service or interconnection service based upon the assumptions specified by the Interconnection Customer in Attachment A.
- 6.0 The Interconnection Customer shall provide a deposit of \$10,000 for the performance of the Optional Interconnection Study. The CAISO's good faith estimate for the time of completion of the Optional Interconnection Study is \_\_\_\_\_ [insert date]. Following the issuance of the Optional Interconnection Study, the CAISO shall charge and the Interconnection Customer shall pay the actual costs of the Optional Interconnection Study.
- Any difference between the initial payment and the actual cost of the study shall be paid by or refunded to the Interconnection Customer, as appropriate.
- 7.0 Substantial portions of technical data and assumptions used to perform the Optional Interconnection Study, such as system conditions, existing and planned generation, and unit modeling, may change after the CAISO provides the Optional Interconnection Study results to the Interconnection Customer. Study results will reflect available data at the time the CAISO provides the Optional Interconnection Study to the Interconnection Customer. The CAISO shall not be responsible for any additional costs, including without limitation, costs of new or additional facilities, system upgrades, or schedule changes, that may be incurred by the Interconnection Customer as a result of changes in such data and assumptions.
- 8.0 The CAISO shall maintain records and accounts of all costs incurred in performing the Optional Interconnection Study in sufficient detail to allow verification of all costs incurred, including associated overheads. The Interconnection Customer shall have the right, upon reasonable notice, within a reasonable time at the CAISO's offices and at its own expense, to audit the CAISO's records as necessary and as appropriate in order to verify costs incurred by the CAISO. Any audit requested by the Interconnection Customer shall be completed, and written notice of any audit dispute provided to the CAISO representative, within one hundred eighty (180) calendar days following receipt by the Interconnection Customer of the CAISO's notification of the final costs of the Optional Interconnection Study.
- 9.0 Pursuant to Section 10.1 of the LGIP, this Agreement shall become effective upon the date the fully executed Agreement and deposit specified in Section 6 of this Agreement are received by the CAISO. If the CAISO does not receive the fully executed Agreement and payment pursuant to Section 10.1 of the LGIP, then the offer reflected in this Agreement will expire and this Agreement will be of no effect.

- 10.0 Miscellaneous.
- 10.1 Dispute Resolution. Any dispute, or assertion of a claim, arising out of or in connection with this Optional Interconnection Study Agreement, shall be resolved in accordance with Section 13.5 of the LGIP.
- 10.2 Confidentiality. Confidential Information shall be treated in accordance with Section 13.1 of the LGIP.
- 10.3 Binding Effect. This Optional Interconnection Study Agreement and the rights and obligations hereof, shall be binding upon and shall inure to the benefit of the successors and assigns of the Parties hereto.
- 10.4 Conflicts. In the event of a conflict between the body of this Optional Interconnection Study Agreement and any attachment, appendices or exhibits hereto, the terms and provisions of the body of this Optional Interconnection Study Agreement shall prevail and be deemed the final intent of the Parties.
- 10.5 Rules of Interpretation. This Optional Interconnection Study Agreement, unless a clear contrary intention appears, shall be construed and interpreted as follows: (1) the singular number includes the plural number and vice versa; (2) reference to any person includes such person's successors and assigns but, in the case of a Party, only if such successors and assigns are permitted by this Optional Interconnection Study Agreement, and reference to a person in a particular capacity excludes such person in any other capacity or individually; (3) reference to any agreement (including this Optional Interconnection Study Agreement), document, instrument or tariff means such agreement, document, instrument, or tariff as amended or modified and in effect from time to time in accordance with the terms thereof and, if applicable, the terms hereof; (4) reference to any applicable laws and regulations means such applicable laws and regulations as amended, modified, codified, or reenacted, in whole or in part, and in effect from time to time, including, if applicable, rules and regulations promulgated thereunder; (5) unless expressly stated otherwise, reference to any Article, Section or Appendix means such Article or Section of this Optional Interconnection Study Agreement or such Appendix to this Optional Interconnection Study Agreement, or such Section to the LGIP or such Appendix to the LGIP, as the case may be; (6) "hereunder", "hereof", "herein", "hereto" and words of similar import shall be deemed references to this Optional Interconnection Study Agreement as a whole and not to any particular Article, Section, or other provision hereof or thereof; (7) "including" (and with correlative meaning "include") means including without limiting the generality of any description preceding such term; and (8) relative to the determination of any period of time, "from" means "from and including", "to" means "to but excluding" and "through" means "through and including".
- 10.6 Entire Agreement. This Optional Interconnection Study Agreement, including all Appendices and Schedules attached hereto, constitutes the entire agreement between the Parties with reference to the subject matter hereof, and supersedes all prior and contemporaneous understandings or agreements, oral or written, between the Parties with respect to the subject matter of this Optional Interconnection Study Agreement. There are no other agreements, representations, warranties, or covenants which constitute any part of the consideration for, or any condition to, any Party's compliance with its obligations under this Optional Interconnection Study Agreement.



10.7 No Third Party Beneficiaries. This Optional Interconnection Study Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and, where permitted, their assigns.

10.8 Waiver. The failure of a Party to this Optional Interconnection Study Agreement to insist, on any occasion, upon strict performance of any provision of this Optional Interconnection Study Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.

Any waiver at any time by either Party of its rights with respect to this Optional Interconnection Study Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Optional Interconnection Study Agreement. Termination or default of this Optional Interconnection Study Agreement for any reason by the Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the other Party. Any waiver of this Optional Interconnection Study Agreement shall, if requested, be provided in writing.

Any waivers at any time by any Party of its rights with respect to any default under this Optional Interconnection Study Agreement, or with respect to any other matter arising in connection with this Optional Interconnection Study Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Optional Interconnection Study Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Optional Interconnection Study Agreement shall not constitute or be deemed a waiver of such right.

10.9 Headings. The descriptive headings of the various Articles and Sections of this Optional Interconnection Study Agreement have been inserted for convenience of reference only and are of no significance in the interpretation or construction of this Optional Interconnection Study Agreement.

10.10 Multiple Counterparts. This Optional Interconnection Study Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

10.11 Amendment. The Parties may by mutual agreement amend this Optional Interconnection Study Agreement by a written instrument duly executed by both of the Parties.

10.12 Modification by the Parties. The Parties may by mutual agreement amend the Appendices to this Optional Interconnection Study Agreement by a written instrument duly executed by both of the Parties. Such amendment shall become effective and a part of this Optional Interconnection Study Agreement upon satisfaction of all applicable laws and regulations.

- 10.13 Reservation of Rights. The CAISO shall have the right to make a unilateral filing with FERC to modify this Optional Interconnection Study Agreement with respect to any rates, terms and conditions, charges, classifications of service, rule or regulation under section 205 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder, and Interconnection Customer shall have the right to make a unilateral filing with FERC to modify this Optional Interconnection Study Agreement pursuant to section 206 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by another Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Optional Interconnection Study Agreement shall limit the rights of the Parties or of FERC under sections 205 or 206 of the Federal Power Act and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.
- 10.14 No Partnership. This Optional Interconnection Study Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon any Party. No Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, another Party.
- 10.15 Assignment. This Optional Interconnection Study Agreement may be assigned by a Party only with the written consent of the other Party; provided that a Party may assign this Optional Interconnection Study Agreement without the consent of the other Party to any Affiliate of the assigning Party with an equal or greater credit rating and with the legal authority and operational ability to satisfy the obligations of the assigning Party under this Optional Interconnection Study Agreement; and provided further that the Interconnection Customer shall have the right to assign this Optional Interconnection Study Agreement, without the consent of the other Party, for collateral security purposes to aid in providing financing for the Large Generating Unit, provided that the Interconnection Customer will require any secured party, trustee or mortgagee to notify the other Party of any such assignment. Any financing arrangement entered into by the Interconnection Customer pursuant to this Article will provide that prior to or upon the exercise of the secured party's, trustee's or mortgagee's assignment rights pursuant to said arrangement, the secured creditor, the trustee or mortgagee will notify the other Party of the date and particulars of any such exercise of assignment right(s). Any attempted assignment that violates this Article is void and ineffective. Any assignment under this Optional Interconnection Study Agreement shall not relieve a Party of its obligations, nor shall a Party's obligations be enlarged, in whole or in part, by reason thereof. Where required, consent to assignment will not be unreasonably withheld, conditioned or delayed.

**IN WITNESS WHEREOF**, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

**California Independent System Operator Corporation**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**[Insert name of the Interconnection Customer]**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**Attachment A**  
**Optional Interconnection**  
**Study Agreement**

**ASSUMPTIONS USED IN CONDUCTING**  
**THE OPTIONAL INTERCONNECTION STUDY**

[To be completed by the Interconnection Customer consistent with Section 10 of the LGIP.]

**AGREEMENT FOR THE ALLOCATION OF RESPONSIBILITIES WITH REGARD TO  
LARGE GENERATOR INTERCONNECTION PROCEDURES AND INTERCONNECTION STUDY  
AGREEMENTS**

This Agreement for the Allocation of Responsibilities With Regard to Large Generator Interconnection Procedures and Interconnection Study Agreements ("Agreement"), dated November 1, 2005, is entered into between the California Independent System Operator Corporation ("CAISO") and **[NAME OF PTO]** ("PTO"). The CAISO and PTO are jointly referred to as the "Parties" and individually, as a "Party."

WHEREAS, this Agreement will ensure an independent assessment of new Large Generating Facility impacts on the CAISO Controlled Grid and take advantage of the respective expertise of the Parties to facilitate efficient and cost effective Interconnection Study procedures in a manner consistent with the Federal Energy Regulatory Commission's ("FERC") July 1, 2005 Order (112 FERC ¶ 61,009), FERC's August 26, 2005 Order (112 FERC ¶ 61,231), and prior FERC Orders recognizing that Order No. 2003 did not allocate responsibilities between transmission owners and transmission providers for the provision of Interconnection Service and suggesting those parties enter into an agreement to allocate those responsibilities. Southwest Power Pool, Inc., 106 FERC ¶ 61,254 (2004).

NOW THEREFORE, in view of the respective responsibilities assigned to the Parties and the foregoing FERC orders, the CAISO and PTO agree to the following allocation of responsibilities for a centralized Interconnection Study process under the direction and oversight of the CAISO:

**1. DEFINITIONS.**

Unless otherwise defined herein, all capitalized terms shall have the meaning set forth in the CAISO Tariff.

**2. TERM OF AGREEMENT.**

This Agreement shall become effective upon the date the provisions of the CAISO Tariff implementing the centralized Interconnection Study process required by the July 1 Order and the August 26 Order are accepted and made effective by FERC, and shall remain in effect until (1) terminated by all Parties in writing, or (2) with respect to the PTO, upon the termination of that entity's status as a PTO pursuant to the Transmission Control Agreement, as amended from time to time.

**3. PROVISIONS FOR ALLOCATION OF RESPONSIBILITIES BETWEEN CAISO AND PTO.**

- 3.1 Interconnection Service:** The Parties acknowledge that, as the transmission provider, the CAISO is responsible for reliably operating the transmission grid. The Parties also recognize that while the CAISO is a transmission provider under the CAISO Tariff, the CAISO does not own any transmission facilities, and the PTO owns, constructs, and maintains the facilities to which Large Generating Facilities are to be interconnected, and that the PTO may construct or modify facilities to allow the interconnection. While the Parties recognize that the CAISO will be responsible for conducting or causing to be performed Interconnection Studies and similar studies, the PTO will participate in these studies and conduct certain portions of studies, under the direction and oversight of, and approval by, the CAISO, as provided in this Agreement. The CAISO shall not enter into any Interconnection Study agreement with an Interconnection Customer that is contrary to these rights.

**3.2 [INTENTIONALLY LEFT BLANK]**

**3.3 Transmission Owners' Right to Participation in Studies, Committees and Meetings:**

**3.3.1** In the event that an Interconnection Customer proposes to interconnect a Large Generating Facility with the PTO's facilities, or the PTO is an owner of an affected system, the PTO shall have the right to participate in any Interconnection Feasibility Study, Interconnection System Impact Study, Interconnection Facilities Study, or any other study conducted in connection with such request for Interconnection Service. "Participate" in this Section 3.3.1 means physically perform any study or portion thereof in connection with an Interconnection Request, under the direction and oversight of, and approval by, the CAISO pursuant to Section 3.4 of this Agreement; provide or receive input, data or other information regarding any study or portion thereof consistent with Section 3.4 of this Agreement; and, when any study or portion thereof in connection with an Interconnection Request is physically performed by an entity other than the PTO, perform activities necessary to adequately review or validate, as appropriate, any results of the study or portions thereof and provide recommendations.

**3.3.2** In the event that an Interconnection Customer proposes to interconnect a Large Generating Facility with the PTO's facilities, or the PTO is an owner of an affected system, the PTO shall have the right to participate in all meetings expressly established pursuant to the CAISO LGIP. As appropriate, the PTO may participate in all other material or substantive communications in connection with an Interconnection Request.

**3.4 Interconnection Study Responsibility Allocation:** In complying with its responsibility for conducting or causing to be performed Interconnection Studies, the CAISO will assign responsibility for performance of portions of the Interconnection Studies to the PTO, under the direction and oversight of, and approval by, the CAISO, as set forth in Attachment A, except as specifically qualified as follows:

**3.4.1** Unless an Interconnection Customer specifically requests that a third party perform an Interconnection Study pursuant to LGIP Section 13.4, for any tasks specifically assigned to the PTO pursuant to Attachment A or otherwise mutually agreed upon by the CAISO and the PTO, the CAISO reserves the right, on a case-by-case basis, to perform or reassign to a mutually agreed upon and pre-qualified contractor such task only where: (a) the quality and accuracy of prior PTO Interconnection Study work product resulting from assigned tasks has been deemed deficient by the CAISO, the CAISO has notified the PTO pursuant to the notice provision of Section 4.16 of this Agreement in writing of the deficiency, and the deficiency has not been cured pursuant to Section 3.4.2 of this Agreement; (b) the timeliness of PTO Interconnection Study work product has been deemed deficient, and either (i) the CAISO has not been notified of the reasons and actions taken to address the timeliness of the work, or (ii) if notified, the stated reasons and actions taken are insufficient or unjustifiable and the PTO has not cured the deficiency pursuant to Section 3.4.2 of this Agreement; (c) the PTO

has failed, in a mutually agreed upon timeframe, to provide the CAISO with information or data related to an Interconnection Request despite a written request by the CAISO, pursuant to Section 3.5 hereof, to do so, and such data is the responsibility of the PTO to provide to the CAISO, subject to Section 4.3 of this Agreement; (d) the PTO advises the CAISO in writing that it does not have the resources to adequately or timely perform the task according to the applicable timelines set forth in Attachment A; or (e) the estimated cost of the PTO performing the task has been determined in writing by the CAISO to significantly exceed the cost of the CAISO or mutually agreed upon contractor performing the task, inclusive of the costs that will be incurred by the PTO in exercising its review rights of the results of any such tasks performed by such third party(ies). If the CAISO deviates from the assignments set forth in Attachment A based on the foregoing factors, the CAISO will provide the PTO with a written explanation for the deviation and any associated reassignments of work. The PTO may contest the deviation pursuant to the Dispute Resolution procedures set forth in Section 4.1 of this Agreement.

Task(s) may only be reassigned in accordance with this Section 3.4.1 where the PTO has been deemed to be deficient in relation to that (those) particular task(s).

**3.4.2 Cure for re-assigned Interconnection Study work**

The CAISO shall not reassign task(s) without the opportunity to cure, as specified in Section 3.4.1 of this Agreement. The following actions will serve to cure the deficiencies and result in restoring the assignment(s) as provided in Attachment A:

- a) The CAISO and PTO shall negotiate in good faith and agree to a corrective action plan proposed by the PTO, including a reasonably adequate cure period, and the corrective action plan is satisfactorily implemented.
- b) The CAISO determines the deficiency is cured without an action plan.

**3.4.3** Assessment of prior PTO Interconnection Study work shall only be based on work conducted under the process that becomes effective concurrent with the effective date of this Agreement. Further, assessment of prior PTO Interconnection Study work shall be based on work conducted no earlier than the eighteen (18) month period prior to the date of the CAISO notice of deviation from assignments set forth in Attachment A to this Agreement.

**3.5 Information Exchange:** The PTO shall provide the CAISO, subject to confidentiality requirements in Section 4.3 of this Agreement, with any documentation or data requested by the CAISO reasonably necessary to permit the CAISO to perform, review, validate and approve any Interconnection Study, or portion thereof, performed by the PTO. The CAISO shall provide the PTO with any documentation or data requested by the PTO, subject to confidentiality requirements in Section 4.3 of this Agreement, reasonably necessary to perform, review, and validate any Interconnection Study, or portion thereof.

- 3.6 Consistency with Provisions for Centralized Interconnection Study Process:** The CAISO and PTO have determined that the processes and allocation of responsibilities in Section 3.4 of this Agreement ensure that impacts to the CAISO Controlled Grid are independently assessed and that the assignment of responsibilities minimizes handoffs, takes advantage of non-transferable skills, and promotes the efficiency and cost-effectiveness of the centralized Interconnection Study processes, consistent with LGIP Section 3.2.
- 3.7 Re-Studies:** If any re-studies are required, the CAISO will confer with the PTO as to the need for a re-study. The CAISO will make the final determination regarding the need for a re-study, subject to dispute resolution procedures.
- 3.8 Use of Contractors:** Nothing in this Agreement shall prevent either the CAISO or the PTO from using qualified, mutually agreed upon third party contractors to meet that Party's rights or obligations under this Agreement or the LGIP. To promote the efficiency of the process, the CAISO and PTO will collaborate to identify a list of the mutually agreed to qualified contractors available to the Parties.
- 3.9 Performance Standards:** Each Party shall perform all of its obligations under the LGIP, this Agreement, and any FERC approved Interconnection Study procedures that may be adopted by the CAISO to implement the LGIP or this Agreement in accordance with Applicable Laws and Regulations, Applicable Reliability Standards, and Good Utility Practice.
- 3.10 Recovery of Costs:** In accordance with Section 13.3 of the LGIP, the PTOs shall recover all actual costs from the CAISO incurred in performing Interconnection Studies or portions thereof assigned to it by the CAISO, including all costs incurred in exercising its right to review, and make recommendations on, Interconnection Studies or portions thereof performed by the CAISO and/or contractors under Section 3.8 of this Agreement.

#### **4 GENERAL TERMS AND CONDITIONS.**

- 4.1 Dispute Resolution:** In the event any dispute regarding the terms, conditions, and performance of this Agreement is not settled informally, the Parties shall follow the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff.
- 4.2 Liability:** No Party to this Agreement shall be liable to any other Party for any direct, indirect, special, incidental or consequential losses, damages, claims, liabilities, costs or expenses (including attorneys fees and court costs) arising from the performance or non-performance of its obligations under this Agreement regardless of the cause (including intentional action, willful action, gross or ordinary negligence, or force majeure); provided, however, that a Party may seek equitable or other non-monetary relief as may be necessary to enforce this Agreement and that damages for which a Party may be liable to another Party under another agreement will not be considered damages under this Agreement.



- 4.3 Confidentiality:** Confidential Information shall be treated in accordance with Section 13.1 of the LGIP.
- 4.4 Binding Effect:** This Agreement and the rights and obligations hereof, shall be binding upon and shall inure to the benefit of the successors and assigns of the Parties hereto.
- 4.5 Conflicts:** In the event of a conflict between the body of this Agreement and any attachment, appendices or exhibits hereto, the terms and provisions of the body of this Agreement shall prevail and be deemed the final intent of the Parties.
- 4.6 Rules of Interpretation:** This Agreement, unless a clear contrary intention appears, shall be construed and interpreted as follows: (1) the singular number includes the plural number and vice versa; (2) reference to any person includes such person's successors and assigns but, in the case of a Party, only if such successors and assigns are permitted by this Agreement, and reference to a person in a particular capacity excludes such person in any other capacity or individually; (3) reference to any agreement (including this Agreement), document, instrument or tariff means such agreement, document, instrument, or tariff as amended or modified and in effect from time to time in accordance with the terms thereof and, if applicable, the terms hereof; (4) reference to any applicable laws and regulations means such applicable laws and regulations as amended, modified, codified, or reenacted, in whole or in part, and in effect from time to time, including, if applicable, rules and regulations promulgated thereunder; (5) unless expressly stated otherwise, reference to any Article, Section or Appendix means such Article or Section of this Agreement or such Appendix to this Agreement, or such Section of the LGIP or such Appendix to the LGIP, as the case may be; (6) "hereunder", "hereof", "herein", "hereto" and words of similar import shall be deemed references to this Agreement as a whole and not to any particular Article; (7) "including" (and with correlative meaning "include") means including without limiting the generality of any description preceding such term; and (8) relative to the determination of any period of time, "from" means "from and including", "to" means "to but excluding" and "through" means "through and including".
- 4.7 Entire Agreement:** This Agreement, including all Attachments hereto, constitutes the entire agreement among the Parties with reference to the subject matter hereof, and supersedes all prior and contemporaneous understandings or agreements, oral or written, among the Parties with respect to the subject matter of this Agreement. There are no other agreements, representations, warranties, or covenants, which constitute any part of the consideration for, or any condition to, any Party's compliance with its obligations under this Agreement.
- 4.8 No Third Party Beneficiaries:** This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and, where permitted, their assigns.

- 4.9 Waiver:** The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party. Any waiver at any time by a Party of its rights with respect to this Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Agreement. Any waiver of this Agreement shall, if requested, be provided in writing. Any waivers at any time by any Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.
- 4.10 Headings:** The descriptive headings of the various Articles and Sections of this Agreement have been inserted for convenience of reference only and are of no significance in the interpretation or construction of this Agreement.
- 4.11 Multiple Counterparts:** This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.
- 4.12 Modification by the Parties:** The Parties may amend this Agreement and any Appendices to this Agreement only (1) by mutual agreement of the Parties by a written instrument duly executed by the Parties, subject to FERC approval or (2) upon the issuance of a FERC order, pursuant to Section 206 of the Federal Power Act. It is the Parties' intent that FERC's right to change any provision of this Agreement shall be limited to the maximum extent permissible by law and that any such change, if permissible, shall be in accordance with the Mobile-Sierra public interest standard applicable to fixed rate agreements. *United Gas Pipe Line Co. v. Mobile Gas Service Corp.*, 350 U.S. 332 (1956). Such amendment shall become effective and a part of this Agreement upon satisfaction of all applicable laws and regulations. Notwithstanding the foregoing, Attachment B (Notices) may be modified as set forth in Section 4.15 of this Agreement, and the CAISO and the PTO may from time to time mutually agree to deviate from Attachment A in accordance with the provisions of this Agreement, however, such deviation shall be subject to Section 4.9 of this Agreement and not considered a course of dealing.
- 4.13 No Partnership:** This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon any Party. No Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, another Party.
- 4.14 Assignment:** This Agreement may be assigned by a Party only with the written consent of the other Parties; provided that a Party may assign this Agreement without the consent of the other Parties to any Affiliate of the assigning Party with an equal or greater creditrating and with the legal authority and operational ability to satisfy the obligations of the assigning Party under this Agreement. Any attempted assignment that violates this Article is void and ineffective. Any assignment under this Agreement shall not relieve a Party of its obligations, nor shall a Party's obligations be enlarged, in whole or in part, by reason thereof. Where required, consent to assignment will not be unreasonably withheld, conditioned or delayed.

**4.15 Notices:** Any notice, demand, or request provided in this Agreement, or served, given, or made in connection with it, will be in writing and deemed properly served, given, or made if delivered in person, transmitted by facsimile, or sent by United States mail, postage prepaid, to the persons specified in Attachment B hereto unless otherwise provided in this Agreement. Any Party may at any time, by notice to all other Parties, change the designation or address of the person specified in Attachment B as the person who receives notices pursuant to this Agreement.

IN WITNESS WHEREOF, the Parties have executed this Agreement in multiple originals, each of which shall constitute and be an original effective agreement among the Parties.

**California Independent System Operator Corporation**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**[NAME OF PTO]**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

## ATTACHMENT A

### INTERCONNECTION STUDY RESPONSIBILITY ALLOCATION

Description of Large Generator Interconnection Process: Roles and Responsibilities of CAISO and PTOs.

**Purpose:** This Attachment A to the "AGREEMENT FOR THE ALLOCATION OF RESPONSIBILITIES WITH REGARD TO LARGE GENERATOR INTERCONNECTION PROCEDURES AND INTERCONNECTION STUDY AGREEMENTS" serves as further clarification of the roles and responsibilities of the parties to this Agreement. The CAISO will assign responsibility for performance of portions of the Interconnection Studies to the relevant PTOs, under the direction and oversight of, and approval by, the CAISO, as set forth in this Attachment A. This document serves as a general overview of only the roles and responsibilities as between the CAISO and PTOs. This Agreement does not include the process steps, involvement or obligations of the Interconnection Customer (IC). This Agreement is not inclusive of all procedures necessary to comply with all provisions of the LGIA, LGIP and Interconnection Study agreements.

#### Interconnection Request (IR) Process

1. CAISO forwards the IR to the PTO within one (1) Business Day (BD) of receipt of IR from Interconnection Customer (IC)
2. PTO(s) provides any feed back regarding IR to CAISO within 3 BD
3. PTO(s) provides draft study plan at Scoping Meeting.
4. CAISO distributes draft Scoping Meeting minutes for review within 3 BD of Scoping Meeting.
5. PTO(s) provide any comments to the Scoping Meeting minutes within 2 BD of receipt of draft Scoping Meeting minutes.
6. CAISO issues the final Scoping Meeting minutes within 3 BD of receipt of comments.

#### Interconnection Feasibility Study Process:

1. CAISO forwards IC Point of Interconnection and any LGIP Appendix 1, Attachment A data to the PTO(s) within 1 BD of CAISO receipt.
2. PTO(s) develop updated draft study plan based on technical data collected by CAISO from IC within 7 BD.
3. CAISO and PTO(s) coordinate to finalize study plan within 2 BD. CAISO approves the study plan.
4. CAISO tenders a signed IFSA to IC, with final study plan included in Attachment A, within 5 BD (for a total of 15 BD from CAISO receipt of Point of Interconnection from IC in accordance with LGIP Section 6.1).
5. After CAISO receives executed study agreement, CAISO forwards any additional LGIP Appendix 1, Attachment A data to PTO(s) within 1 BD.
6. If during the course of the assigned portions of the study the PTO(s) determines the data is not sufficient to complete the study, PTO(s) informs CAISO and CAISO notices IC in accordance with LGIP Section 3.8.
7. PTO(s) must participate in study review meeting; date to be agreeable to PTO(s) and within 10 BD of CAISO providing study report to IC (LGIP Section 6.3.1).
8. CAISO and PTO collaborate on any re-study issues. CAISO will direct any necessary re-studies.

**Interconnection Feasibility Study Timeline**

	<b>Typical Calendar Days</b>	<b>Typical Cumulative Days</b>
Load Flow		
CAISO directs PTO(s) to Develop draft Base Cases (Milestone)	0	0
PTO(s) develop draft Base Cases and deliver to CAISO	7	7
CAISO reviews Base Cases and provides direction to PTO(s) At the direction of the CAISO, PTO(s) develops contingency lists and provide to CAISO.	7	14
PTO incorporates CAISO directions into Base Cases; CAISO approves Base Cases; CAISO reviews and approves contingency lists. If there is disagreement on the contingency list, the CAISO and PTO(s) must coordinate to revise the contingency list. CAISO approves the contingency list.	7	21
CAISO performs Load Flow & prepares summary results of impacted systems (other PTO(s) or Affected Systems) and submits results to impacted systems. Such results may include CAISO proposed solutions for mitigation to any violations uncovered in the Load Flow study.	7	28
Impacted PTO(s) review CAISO results and recommend mitigation solutions as appropriate.	5	33
<b>Short Circuit Duty (concurrent with Load Flow Activity)</b>		
At the CAISO's direction, PTO(s) develop Base Case, and run short circuit analyses.	10	10
PTO(s) to perform facilities review	18	28
PTO(s) prepare draft study results and submit to the CAISO for review, recommendations and direction.	5	33
<b>Facility cost estimates</b>		
At the CAISO's direction, PTO(s) to prepare non-binding cost estimates and schedule for the direct assignment facilities and network upgrades identified in the power flow and short circuit duty analyses.	7	40
<b>Finalizing Report</b>		
At the CAISO's direction, PTO(s) to prepare draft report for impacts in their service territory.	5	45
CAISO compiles all results into a draft report that covers grid impacts.	5	50
PTO(s) reviews CAISO integrated report and provides comments to CAISO.	4	54
CAISO incorporates PTO(s) comments. If PTO(s') comments conflict with CAISO conclusions, then CAISO and PTO must coordinate to resolve conflicts. Any remaining conflicts must be noted in final report.	6	60
CAISO provides final CAISO approved report to IC, impacted PTOs, and any applicable Affected Systems. (Milestone)	0	0

### Interconnection System Impact Study Process

1. Prior to beginning the ISIS process as outlined in this Attachment A, the CAISO will notify the PTOs of potential seams issues and discuss the nature of the concerns with the PTOs. Where the CAISO determines that there is a reasonable expectation that the new Large Generating Facility to be interconnected in one PTO area may impact system performance in other PTO areas within the CAISO Controlled Grid that does not comply with the applicable planning standards, the CAISO will conduct or cause to be performed the ISIS Load Flow, Post Transient and Stability analyses, as appropriate, to assess the extent of the impact on the grid and evaluate mitigation solutions. Applicable planning standards include FERC approved CAISO Planning Standards, as may be amended from time to time, and the NERC/WECC Planning Standards, as may be amended from time to time. Further, there may be circumstances where information, including available studies, is not sufficient for the CAISO to make a reasonable engineering determination whether the new Large Generating Facility to be interconnected in one PTO area could cause system performance in other PTO areas (i.e. within the CAISO Controlled Grid) that does not comply with the applicable planning standards and, in such circumstances, the CAISO may nonetheless conduct or cause to be performed the ISIS Load Flow, Post Transient and Stability analyses to make such a determination.
2. At the CAISO's direction, the PTO develops a draft ISIS study plan and determines if available technical data is sufficient to complete ISIS.
3. PTO submits draft study plan to CAISO for review, direction and approval within seven (7) BD of CAISO tendering Interconnection Feasibility Study report to IC.
4. CAISO and PTO coordinate to finalize study plan within three (3) BD. CAISO approves the study plan.
5. CAISO tenders a signed ISISA to IC with final study plan included in Attachment A, within three (3) BD.
6. Upon receipt of executed study agreement, CAISO forwards any additional Attachment A, LGIP Appendix 1 data to PTO(s) within one (1) BD.
7. If the data provided by IC is insufficient to perform the study, PTO notifies CAISO within two (2) BD of CAISO receipt of the executed study agreement, and the CAISO notifies the IC within two (2) BD (total of five (5) BD per LGIP Section 7.2) to correct any deficiencies within ten (10) BD or the IR will be deemed withdrawn, triggering LGIP Section 3.8.
8. PTO must participate in study review meeting; date to be agreeable to PTO and within ten (10) BD of CAISO providing study report to IC (LGIP Section 7.5).
9. CAISO to confer with PTO as to the need for a re-study. CAISO makes the final determination subject to dispute resolution procedures.

### Interconnection System Impact Study Timeline

Standard System Impact Study Load Flow/Post Transient/Stability Process	Typical Calendar Days	Typical Cumulative Days
At the CAISO's direction, PTO(s) develop draft Base Case(s)	0	0
PTO(s) develop(s) draft Base Case(s) and deliver(s) to CAISO	14	14
CAISO reviews Base Case(s) and provides direction to PTO	7	21
At the CAISO's direction, PTO develops contingency lists		
PTO incorporates CAISO's directions into Base Cases CAISO approves Base Case(s) CAISO reviews and approves contingency lists	7	28
At the CAISO's direction, the PTO may perform the ISIS Load Flow, Post Transient and Stability analyses & prepare mitigation solutions, as appropriate and submits draft study results to CAISO for review and direction*.	21	49
<p>*Pursuant to the terms of item 1 above: where the CAISO performs the ISIS Load Flow, Post Transient and Stability analyses to determine grid impacts and evaluate mitigation solutions, the potentially impacted PTOs may, as part of the review process, perform activities to adequately review or validate Load Flow, Post Transient and Stability Analysis to assess CAISO results and recommend alternative solutions. (In the case of this election, "PTOs" should be substituted for "PTO" for remainder of ISIS process.)</p>		
PTO develops or supplements CAISO proposed mitigation plans and/or develops alternative mitigation plans for consideration, as appropriate, and submits to CAISO for review and direction	14	63
<b>Short Circuit Duty (concurrent with the LF/PT/S)</b>		
CAISO to coordinate with other potentially affected facility owners <sup>2</sup>	n/a	n/a
CAISO directs PTO to develop Base Case and run short circuit analysis	21	21
PTO to perform facilities review	35	56
PTO to prepare draft study results and submits to the CAISO for review and direction	7	63
<b>Facility cost estimates and schedules</b>		
At the CAISO direction, PTO(s) to prepare cost estimates and schedules for the direct assignment facilities and network upgrades identified in the ISIS power flow, short circuit duty, post transient, and stability studies.	20	83
<b>Final Report</b>		
At the CAISO's direction, PTO(s) prepares draft report for impacts in their service territory.	7	90

<sup>2</sup> In accordance with the WECC Short Circuit Duty Procedure

CAISO compiles all results into a draft report that covers grid impacts, as appropriate. CAISO reviews integrated draft report and submits comments, recommendations and direction to the PTO	9	99
PTO incorporates CAISO's directions, conclusions and recommendations. If CAISO conclusions and recommendations conflict with PTO conclusions then CAISO and PTO must coordinate to resolve conflicts. Any remaining conflicts must be noted in the final report.	14	113
PTO submits final draft report less the deliverability results to the CAISO. The CAISO will finalize the report and tender the CAISO approved report to the IC after incorporating Deliverability Assessment results.		
CAISO Deliverability Assessment (concurrent with other studies) As part of the Deliverability Assessment process pursuant to LGIP Section 3.3.3, the CAISO may also perform studies pursuant to LGIP Section 3.3.2 to determine potential operating limitations on the generator due to constraints under a variety of system conditions.		
PTO provides GE PSLF compatible change files for all project changes since last Deliverability Assessment, including subject LGIP project.	14	14
CAISO incorporates project changes into Deliverability Assessment Base Case.	7	21
CAISO provides Deliverability Assessment & prepares results summary.	14	35
CAISO provides initial Deliverability Assessment results with no upgrades and upgrades necessary for full deliverability	14	49
CAISO reviews Load Flow, post transient, and stability analysis mitigation options. (The timing of this action should be in sync with completion of Load Flow study results)	11	60
CAISO has the opportunity to revise Delivery Network Upgrades necessary for full deliverability, based on optimization with LF results.	7	67
At the CAISO's direction, PTO to provide deliverability related upgrade costs and schedules, as appropriate. (This action should occur when PTO is performing cost analysis for Load Flow and Short Circuit Duty upgrades)	16	83
CAISO drafts Deliverability Assessment results.	7	90
PTO reviews/comments on Deliverability Assessment results.	12	102
CAISO incorporates PTO comments on the Deliverability Assessment results, as appropriate. Any remaining conflicts must be noted in final report.	11	113
Final Study Report		
CAISO provides final approved report to IC, PTO, and any applicable affected systems.	7	120



**Interconnection Facilities Study Process\*\***

\*\*All Interconnection Facilities Studies will be under the direction and oversight of, and approval by, the CAISO and may involve more than one PTO.

1. Within five (5) BD of the ISIS study review meeting, the PTO develops draft Interconnection Facilities Study plan and submits to CAISO for review and approval.
2. CAISO submits executed Interconnection Facilities Study Agreement to IC within five (5) BD.
3. Upon receipt of executed Interconnection Facilities Study Agreement from IC, CAISO submits to PTO technical data provided by IC within one (1) BD.
4. If the data provided by IC is insufficient to perform the study, PTO notifies CAISO within three (3) BD and the CAISO notifies the IC within two (2) BD (total of five (5) BD per LGIP) that IR is deemed withdrawn and the reason for the withdrawal. IC has fifteen (15) BD to cure withdrawal notice (LGIP goes directly to withdrawal pursuant to LGIP Section 3.8).
5. PTO conducts Interconnection Facilities Study and submits draft report to CAISO.
6. CAISO forwards draft report to IC for comments.
7. CAISO forwards IC comments or notice of no comments to PTO within one (1) BD of receipt.
8. PTO incorporates IC comments within five (5) BDs and submits updated draft to CAISO for review and comment.
9. CAISO reviews and comments, provides recommendations and direction on PTO draft Interconnection Facilities Study report within two (2) BD.
10. PTO reviews/incorporates CAISO directions within five (5) BD and sends revised report to CAISO.
11. CAISO issues final report to IC within two (2) BD (total of fifteen (15) BD). If PTO comments conflict with CAISO recommendations and conclusions, CAISO and PTO must coordinate to resolve conflicts. Any remaining conflicts must be noted in the final report.
12. CAISO, PTO(s), and IC meet within ten (10) BDs from issuance of draft report.
13. CAISO and PTO collaborate on any re-study issues. CAISO will direct any necessary re-studies and/or progress to LGIA process.

**ATTACHMENT B**  
**CONTACTS FOR NOTICES**

**[Section 4.15]**

**California ISO**

Manager, Transmission Engineering  
151 Blue Ravine Road  
Folsom, CA 95630  
Phone: 916.351.2104  
Fax: 916.351.2264

**[NAME OF PTO]**

[Address of PTO]

**CAISO TARIFF APPENDIX V**

**Standard Large Generator Interconnection Agreement**

**STANDARD LARGE GENERATOR INTERCONNECTION AGREEMENT (LGIA)**

**[INTERCONNECTION CUSTOMER]**

**[PARTICIPATING TO]**

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**

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**STANDARD LARGE GENERATOR INTERCONNECTION AGREEMENT**

**[INTERCONNECTION CUSTOMER]**

**[PARTICIPATING TO]**

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**

**THIS STANDARD LARGE GENERATOR INTERCONNECTION AGREEMENT** ("LGIA") is made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and among \_\_\_\_\_, a \_\_\_\_\_ organized and existing under the laws of the State/Commonwealth of \_\_\_\_\_ ("Interconnection Customer" with a Large Generating Facility), \_\_\_\_\_, a corporation organized and existing under the laws of the State of California ("**Participating TO**"), and **California Independent System Operator Corporation**, a California nonprofit public benefit corporation organized and existing under the laws of the State of California ("CAISO"). Interconnection Customer, Participating TO, and CAISO each may be referred to as a "Party" or collectively as the "Parties."

**RECITALS**

**WHEREAS**, CAISO exercises Operational Control over the CAISO Controlled Grid; and

**WHEREAS**, the Participating TO owns, operates, and maintains the Participating TO's Transmission System; and

**WHEREAS**, Interconnection Customer intends to own, lease and/or control and operate the Generating Facility identified as a Large Generating Facility in **Appendix C** to this LGIA; and

**WHEREAS**, Interconnection Customer, Participating TO, and CAISO have agreed to enter into this LGIA for the purpose of interconnecting the Large Generating Facility with the Participating TO's Transmission System;

**NOW, THEREFORE**, in consideration of and subject to the mutual covenants contained herein, it is agreed:

When used in this LGIA, terms with initial capitalization that are not defined in Article 1 shall have the meanings specified in the Article in which they are used.

**ARTICLE 1. DEFINITIONS**

**Adverse System Impact** shall mean the negative effects due to technical or operational limits on conductors or equipment being exceeded that may compromise the safety and reliability of the electric system.

**Affected System** shall mean an electric system other than the CAISO Controlled Grid that may be affected by the proposed interconnection, including the Participating TO's electric system that is not part of the CAISO Controlled Grid.

**Affiliate** shall mean, with respect to a corporation, partnership or other entity, each such other corporation, partnership or other entity that directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, such corporation, partnership or other entity.

**Applicable Laws and Regulations** shall mean all duly promulgated applicable federal, state and local laws, regulations, rules, ordinances, codes, decrees, judgments, directives, or judicial or administrative orders, permits and other duly authorized actions of any Governmental Authority.

**Applicable Reliability Council** shall mean the Western Electricity Coordinating Council or its successor.

**Applicable Reliability Standards** shall mean the requirements and guidelines of NERC, the Applicable Reliability Council, and the **Balancing Authority** Area of the Participating TO's Transmission System to which the Generating Facility is directly interconnected.

**Balancing Authority** shall mean the responsible entity that integrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports Interconnection frequency in real time.

**Balancing Authority Area** shall mean the collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.

**Base Case** shall mean the base case power flow, short circuit, and stability data bases used for the Interconnection Studies.

**Breach** shall mean the failure of a Party to perform or observe any material term or condition of this LGIA.

**Breaching Party** shall mean a Party that is in Breach of this LGIA.

**Business Day** shall mean Monday through Friday, excluding federal holidays and the day after Thanksgiving Day.

**Calendar Day** shall mean any day including Saturday, Sunday or a federal holiday.

**Commercial Operation** shall mean the status of an Electric Generating Unit at a Generating Facility that has commenced generating electricity for sale, excluding electricity generated during Trial Operation.

**Commercial Operation Date** of an Electric Generating Unit shall mean the date on which the Electric Generating Unit at the Generating Facility commences Commercial Operation as agreed to by the applicable Participating TO and the Interconnection Customer pursuant to **Appendix E** to this LGIA.

**Confidential Information** shall mean any confidential, proprietary or trade secret information of a plan, specification, pattern, procedure, design, device, list, concept, policy or compilation relating to the present or planned business of a Party, which is designated as confidential by the Party supplying the information, whether conveyed orally, electronically, in writing, through inspection, or otherwise, subject to Article 22.1.2.

**Default** shall mean the failure of a Breaching Party to cure its Breach in accordance with Article 17 of this LGIA.

**Distribution System** shall mean those non-CAISO-controlled transmission and distribution facilities owned by the Participating TO.

**Distribution Upgrades** shall mean the additions, modifications, and upgrades to the Participating TO's Distribution System. Distribution Upgrades do not include Interconnection Facilities.

**Effective Date** shall mean the date on which this LGIA becomes effective upon execution by the Parties subject to acceptance by FERC, or if filed unexecuted, upon the date specified by FERC.

**Electric Generating Unit** shall mean an individual electric generator and its associated plant and apparatus whose electrical output is capable of being separately identified and metered.

**Emergency Condition** shall mean a condition or situation: (1) that in the judgment of the Party making the claim is imminently likely to endanger life or property; or (2) that, in the case of the CAISO, is imminently likely (as determined in a non-discriminatory manner) to cause a material adverse effect on the security of, or damage to, the CAISO Controlled Grid or the electric systems of others to which the CAISO Controlled Grid is directly connected; (3) that, in the case of the Participating TO, is imminently likely (as determined in a non-discriminatory manner) to cause a material adverse effect on the security of, or damage to, the Participating TO's Transmission System, Participating TO's Interconnection Facilities, Distribution System, or the electric systems of others to which the Participating TO's electric system is directly connected; or (4) that, in the case of the Interconnection Customer, is imminently likely (as determined in a non-discriminatory manner) to cause a material adverse effect on the security of, or damage to, the Generating Facility or Interconnection Customer's Interconnection Facilities. System restoration and black start shall be considered Emergency Conditions; provided, that Interconnection Customer is not obligated by this LGIA to possess black start capability.

**Environmental Law** shall mean Applicable Laws or Regulations relating to pollution or protection of the environment or natural resources.

**Federal Power Act** shall mean the Federal Power Act, as amended, 16 U.S.C. §§ 791a *et seq.*

**FERC** shall mean the Federal Energy Regulatory Commission or its successor.

**Force Majeure** shall mean any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm or flood, explosion, breakage or accident to machinery or equipment, any order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities, or any other cause beyond a Party's control. A Force Majeure event does not include acts of negligence or intentional wrongdoing by the Party claiming Force Majeure.

**Generating Facility** shall mean the Interconnection Customer's Electric Generating Unit(s) used for the production of electricity identified in the Interconnection Customer's Interconnection Request, but shall not include the Interconnection Customer's Interconnection Facilities.

**Generating Facility Capacity** shall mean the net capacity of the Generating Facility and the aggregate net capacity of the Generating Facility where it includes multiple energy production devices.

**Good Utility Practice** shall mean any of the practices, methods and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not intended to be any one of a number of the optimum practices, methods, or acts to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region.

**Governmental Authority** shall mean any federal, state, local or other governmental, regulatory or administrative agency, court, commission, department, board, or other governmental subdivision, legislature, rulemaking board, tribunal, or other governmental authority having jurisdiction over the Parties, their respective facilities, or the respective services they provide, and exercising or entitled to exercise any administrative, executive, police, or taxing authority or power; provided, however, that such term does not include the Interconnection Customer, CAISO, Participating TO, or any Affiliate thereof.

**Hazardous Substances** shall mean any chemicals, materials or substances defined as or included in the definition of "hazardous substances," "hazardous wastes," "hazardous materials," "hazardous constituents," "restricted hazardous materials," "extremely hazardous substances," "toxic substances," "radioactive substances," "contaminants," "pollutants," "toxic pollutants" or words of similar meaning and regulatory effect under any applicable Environmental Law, or any other chemical, material or substance, exposure to which is prohibited, limited or regulated by any applicable Environmental Law.

**Initial Synchronization Date** shall mean the date upon which an Electric Generating Unit is initially synchronized and upon which Trial Operation begins.

**In-Service Date** shall mean the date upon which the Interconnection Customer reasonably expects it will be ready to begin use of the Participating TO's Interconnection Facilities to obtain back feed power.

**Interconnection Customer's Interconnection Facilities** shall mean all facilities and equipment, as identified in Appendix A of this LGIA, that are located between the Generating Facility and the Point of Change of Ownership, including any modification, addition, or upgrades to such facilities and equipment necessary to physically and electrically interconnect the Generating Facility to the Participating TO's Transmission System. Interconnection Customer's Interconnection Facilities are sole use facilities.

**Interconnection Facilities** shall mean the Participating TO's Interconnection Facilities and the Interconnection Customer's Interconnection Facilities. Collectively, Interconnection Facilities include all facilities and equipment between the Generating Facility and the Point of Interconnection, including any modification, additions or upgrades that are necessary to physically and electrically interconnect the Generating Facility to the Participating TO's Transmission System. Interconnection Facilities are sole use facilities and shall not include Distribution Upgrades, Stand Alone Network Upgrades or Network Upgrades.

**Interconnection Facilities Study** shall mean the study conducted or caused to be performed by the CAISO, in coordination with the applicable Participating TO(s), or a third party consultant for the Interconnection Customer to determine a list of facilities (including the Participating TO's Interconnection Facilities, Network Upgrades, and Distribution Upgrades), the cost of those facilities, and the time required to interconnect the Generating Facility with the Participating TO's Transmission System.

**Interconnection Facilities Study Agreement** shall mean the agreement between the Interconnection Customer and the CAISO for conducting the Interconnection Facilities Study.

**Interconnection Feasibility Study** shall mean the preliminary evaluation conducted or caused to be performed by the CAISO, in coordination with the applicable Participating TO(s), or a third party consultant for the Interconnection Customer of the system impact and cost of interconnecting the Generating Facility to the Participating TO's Transmission System.

**Interconnection Handbook** shall mean a handbook, developed by the Participating TO and posted on the Participating TO's web site or otherwise made available by the Participating TO, describing technical and operational requirements for wholesale generators and loads connected to the Participating TO's portion of the CAISO Controlled Grid, as such handbook may be modified or superseded from time to time. Participating TO's standards contained in the Interconnection Handbook shall be deemed consistent with Good Utility Practice and Applicable Reliability Standards. In the event of a conflict between the terms of this LGIA and the terms of the Participating TO's Interconnection Handbook, the terms in this LGIA shall apply.

**Interconnection Request** shall mean a request, in the form of Appendix 1 to the Standard Large Generator Interconnection Procedures, in accordance with the CAISO Tariff.

**Interconnection Service** shall mean the service provided by the Participating TO and CAISO associated with interconnecting the Interconnection Customer's Generating Facility to the Participating TO's Transmission System and enabling the CAISO Controlled Grid to receive electric energy and capacity from the Generating Facility at the Point of Interconnection, pursuant to the terms of this LGIA, the Participating TO's Transmission Owner Tariff, and the CAISO Tariff.

**Interconnection Study** shall mean any of the following studies: the Interconnection Feasibility Study, the Interconnection System Impact Study, and the Interconnection Facilities Study conducted or caused to be performed by the CAISO, in coordination with the applicable Participating TO(s), or a third party consultant for the Interconnection Customer pursuant to the Standard Large Generator Interconnection Procedures.

**Interconnection System Impact Study** shall mean the engineering study conducted or caused to be performed by the CAISO, in coordination with the applicable Participating TO(s), or a third party consultant for the Interconnection Customer that evaluates the impact of the proposed interconnection on the safety and reliability of the Participating TO's Transmission System and, if applicable, an Affected System. The study shall identify and detail the system impacts that would result if the Generating Facility were interconnected without project modifications or system modifications, focusing on the Adverse System Impacts identified in the Interconnection Feasibility Study, or to study potential impacts, including but not limited to those identified in the Scoping Meeting as described in the Standard Large Generator Interconnection Procedures.



**IRS** shall mean the Internal Revenue Service.

**CAISO Controlled Grid** shall mean the system of transmission lines and associated facilities of the parties to the Transmission Control Agreement that have been placed under the CAISO's Operational Control.

**CAISO Tariff** shall mean the CAISO's tariff, as filed with FERC, and as amended or supplemented from time to time, or any successor tariff.

**Large Generating Facility** shall mean a Generating Facility having a Generating Facility Capacity of more than 20 MW.

**Loss** shall mean any and all damages, losses, and claims, including claims and actions relating to injury to or death of any person or damage to property, demand, suits, recoveries, costs and expenses, court costs, attorney fees, and all other obligations by or to third parties.

**Material Modification** shall mean those modifications that have a material impact on the cost or timing of any Interconnection Request or any other valid interconnection request with a later queue priority date.

**Metering Equipment** shall mean all metering equipment installed or to be installed for measuring the output of the Generating Facility pursuant to this LGIA at the metering points, including but not limited to instrument transformers, MWh-meters, data acquisition equipment, transducers, remote terminal unit, communications equipment, phone lines, and fiber optics.

**NERC** shall mean the North American Electric Reliability Council or its successor organization.

**Network Upgrades** shall be Participating TO's Delivery Network Upgrades and Participating TO's Reliability Network Upgrades.

**Operational Control** shall mean the rights of the CAISO under the Transmission Control Agreement and the CAISO Tariff to direct the parties to the Transmission Control Agreement how to operate their transmission lines and facilities and other electric plant affecting the reliability of those lines and facilities for the purpose of affording comparable non-discriminatory transmission access and meeting applicable reliability criteria.

**Participating TO's Delivery Network Upgrades** shall mean the additions, modifications, and upgrades to the Participating TO's Transmission System at or beyond the Point of Interconnection, other than Reliability Network Upgrades, identified in the Interconnection Studies, as identified in **Appendix A**, to relieve constraints on the CAISO Controlled Grid.

**Participating TO's Interconnection Facilities** shall mean all facilities and equipment owned, controlled or operated by the Participating TO from the Point of Change of Ownership to the Point of Interconnection as identified in **Appendix A** to this LGIA, including any modifications, additions or upgrades to such facilities and equipment. Participating TO's Interconnection Facilities are sole use facilities and shall not include Distribution Upgrades, Stand Alone Network Upgrades or Network Upgrades.

**Participating TO's Reliability Network Upgrades** shall mean the additions, modifications, and upgrades to the Participating TO's Transmission System at or beyond the Point of Interconnection, identified in the Interconnection Studies, as identified in **Appendix A**, necessary to interconnect the Large Generating Facility safely and reliably to the Participating TO's Transmission System, which would not have been necessary but for the interconnection of the Large Generating Facility, including additions, modifications, and upgrades necessary to remedy short circuit or stability problems resulting from the interconnection of the Large Generating Facility to the Participating TO's Transmission System. Participating TO's Reliability Network Upgrades also include, consistent with Applicable Reliability Council practice, the Participating TO's facilities necessary to mitigate any adverse impact the Large Generating Facility's interconnection may have on a path's Applicable Reliability Council rating.

**Participating TO's Transmission System** shall mean the facilities owned and operated by the Participating TO and that have been placed under the CAISO's Operational Control, which facilities form part of the CAISO Controlled Grid.

**Party or Parties** shall mean the Participating TO, CAISO, Interconnection Customer or the applicable combination of the above.

**Point of Change of Ownership** shall mean the point, as set forth in **Appendix A** to this LGIA, where the Interconnection Customer's Interconnection Facilities connect to the Participating TO's Interconnection Facilities.

**Point of Interconnection** shall mean the point, as set forth in **Appendix A** to this LGIA, where the Interconnection Facilities connect to the Participating TO's Transmission System.

**Qualifying Facility** shall mean a qualifying cogeneration facility or qualifying small power production facility, as defined in the Code of Federal Regulations, Title 18, Part 292 (18 C.F.R. §292).

**QF PGA** shall mean a Qualifying Facility Participating Generator Agreement specifying the special provisions for the operating relationship between a Qualifying Facility and the CAISO, a pro forma version of which is set forth in **Appendix B.3** of the CAISO Tariff.

**Reasonable Efforts** shall mean, with respect to an action required to be attempted or taken by a Party under this LGIA, efforts that are timely and consistent with Good Utility Practice and are otherwise substantially equivalent to those a Party would use to protect its own interests.

**Scoping Meeting** shall mean the meeting among representatives of the Interconnection Customer, the Participating TO(s), other Affected Systems, and the CAISO conducted for the purpose of discussing alternative interconnection options, to exchange information including any transmission data and earlier study evaluations that would be reasonably expected to impact such interconnection options, to analyze such information, and to determine the potential feasible Points of Interconnection.

**Stand Alone Network Upgrades** shall mean Network Upgrades that the Interconnection Customer may construct without affecting day-to-day operations of the CAISO Controlled Grid or Affected Systems during their construction. The Participating TO, the CAISO, and the Interconnection Customer must agree as to what constitutes Stand Alone Network Upgrades and identify them in **Appendix A** to this LGIA.

**Standard Large Generator Interconnection Procedures (LGIP)** shall mean the CAISO protocol that sets forth the interconnection procedures applicable to an Interconnection Request pertaining to a Large Generating Facility that is included in the CAISO Tariff.

**System Protection Facilities** shall mean the equipment, including necessary protection signal communications equipment, that protects (1) the Participating TO's Transmission System, Participating TO's Interconnection Facilities, CAISO Controlled Grid, and Affected Systems from faults or other electrical disturbances occurring at the Generating Facility and (2) the Generating Facility from faults or other electrical system disturbances occurring on the CAISO Controlled Grid, Participating TO's Interconnection Facilities, and Affected Systems or on other delivery systems or other generating systems to which the CAISO Controlled Grid is directly connected.

**Transmission Control Agreement** shall mean CAISO FERC Electric Tariff No. 7.

**Trial Operation** shall mean the period during which the Interconnection Customer is engaged in on-site test operations and commissioning of an Electric Generating Unit prior to Commercial Operation.

## **ARTICLE 2. EFFECTIVE DATE, TERM AND TERMINATION**

- 2.1 Effective Date.** This LGIA shall become effective upon execution by the Parties subject to acceptance by FERC (if applicable), or if filed unexecuted, upon the date specified by FERC. The CAISO and Participating TO shall promptly file this LGIA with FERC upon execution in accordance with Article 3.1, if required.
- 2.2 Term of Agreement.** Subject to the provisions of Article 2.3, this LGIA shall remain in effect for a period of \_\_\_\_ years from the Effective Date (Term Specified in Individual Agreements to be ten (10) years or such other longer period as the Interconnection Customer may request) and shall be automatically renewed for each successive one-year period thereafter.
- 2.3 Termination Procedures.**
- 2.3.1 Written Notice.** This LGIA may be terminated by the Interconnection Customer after giving the CAISO and the Participating TO ninety (90) Calendar Days advance written notice, or by the CAISO and the Participating TO notifying FERC after the Generating Facility permanently ceases Commercial Operation.
- 2.3.2 Default.** A Party may terminate this LGIA in accordance with Article 17.
- 2.3.3 Suspension of Work.** This LGIA may be deemed terminated in accordance with Article 5.16.
- 2.3.4** Notwithstanding Articles 2.3.1, 2.3.2, and 2.3.3, no termination shall become effective until the Parties have complied with all Applicable Laws and Regulations applicable to such termination, including the filing with FERC of a notice of termination of this LGIA, which notice has been accepted for filing by FERC.

- 2.4 Termination Costs.** If this LGIA terminates pursuant to Article 2.3 above, the Interconnection Customer shall pay all costs incurred or irrevocably committed to be incurred in association with the Interconnection Customer's interconnection (including any cancellation costs relating to orders or contracts for Interconnection Facilities and equipment) and other expenses, including any Network Upgrades and Distribution Upgrades for which the Participating TO or CAISO has incurred expenses or has irrevocably committed to incur expenses and has not been reimbursed by the Interconnection Customer, as of the date of the other Parties' receipt of the notice of termination, subject to the limitations set forth in this Article 2.4. Nothing in this Article 2.4 shall limit the Parties' rights under Article 17.
- 2.4.1** Notwithstanding the foregoing, in the event of termination by a Party, all Parties shall use commercially Reasonable Efforts to mitigate the costs, damages and charges arising as a consequence of termination. With respect to any portion of the Participating TO's Interconnection Facilities that have not yet been constructed or installed, the Participating TO shall to the extent possible and with the Interconnection Customer's authorization cancel any pending orders of, or return, any materials or equipment for, or contracts for construction of, such facilities; provided that in the event the Interconnection Customer elects not to authorize such cancellation, the Interconnection Customer shall assume all payment obligations with respect to such materials, equipment, and contracts, and the Participating TO shall deliver such material and equipment, and, if necessary, assign such contracts, to the Interconnection Customer as soon as practicable, at the Interconnection Customer's expense. To the extent that the Interconnection Customer has already paid the Participating TO for any or all such costs of materials or equipment not taken by the Interconnection Customer, the Participating TO shall promptly refund such amounts to the Interconnection Customer, less any costs, including penalties, incurred by the Participating TO to cancel any pending orders of or return such materials, equipment, or contracts.
- 2.4.2** The Participating TO may, at its option, retain any portion of such materials, equipment, or facilities that the Interconnection Customer chooses not to accept delivery of, in which case the Participating TO shall be responsible for all costs associated with procuring such materials, equipment, or facilities.
- 2.4.3** With respect to any portion of the Interconnection Facilities, and any other facilities already installed or constructed pursuant to the terms of this LGIA, Interconnection Customer shall be responsible for all costs associated with the removal, relocation or other disposition or retirement of such materials, equipment, or facilities.
- 2.5 Disconnection.** Upon termination of this LGIA, the Parties will take all appropriate steps to disconnect the Large Generating Facility from the Participating TO's Transmission System. All costs required to effectuate such disconnection shall be borne by the terminating Party, unless such termination resulted from the non-terminating Party's Default of this LGIA or such non-terminating Party otherwise is responsible for these costs under this LGIA.
- 2.6 Survival.** This LGIA shall continue in effect after termination to the extent necessary to provide for final billings and payments and for costs incurred hereunder, including billings and payments pursuant to this LGIA; to permit the determination and enforcement of liability and indemnification obligations arising from acts or events that occurred while this LGIA was in effect; and to permit each Party to have access to the lands of the other Parties pursuant to this LGIA or other applicable agreements, to disconnect, remove or salvage its own facilities and equipment.

### ARTICLE 3. REGULATORY FILINGS AND CAISO TARIFF COMPLIANCE

- 3.1 Filing.** The Participating TO and the CAISO shall file this LGIA (and any amendment hereto) with the appropriate Governmental Authority(ies), if required. The Interconnection Customer may request that any information so provided be subject to the confidentiality provisions of Article 22. If the Interconnection Customer has executed this LGIA, or any amendment thereto, the Interconnection Customer shall reasonably cooperate with the Participating TO and CAISO with respect to such filing and to provide any information reasonably requested by the Participating TO or CAISO needed to comply with applicable regulatory requirements.
- 3.2 Agreement Subject to CAISO Tariff.** The Interconnection Customer will comply with all applicable provisions of the CAISO Tariff, including the LGIP.
- 3.3 Relationship Between this LGIA and the CAISO Tariff.** With regard to rights and obligations between the Participating TO and the Interconnection Customer, if and to the extent a matter is specifically addressed by a provision of this LGIA (including any appendices, schedules or other attachments to this LGIA), the provisions of this LGIA shall govern. If and to the extent a provision of this LGIA is inconsistent with the CAISO Tariff and dictates rights and obligations between the CAISO and the Participating TO or the CAISO and the Interconnection Customer, the CAISO Tariff shall govern.
- 3.4 Relationship Between this LGIA and the QF PGA.** With regard to the rights and obligations of a Qualifying Facility that has entered into a QF PGA with the CAISO and has entered into this LGIA, if and to the extent a matter is specifically addressed by a provision of the QF PGA that is inconsistent with this LGIA, the terms of the QF PGA shall govern.

### ARTICLE 4. SCOPE OF SERVICE

- 4.1 Interconnection Service.** Interconnection Service allows the Interconnection Customer to connect the Large Generating Facility to the Participating TO's Transmission System and be eligible to deliver the Large Generating Facility's output using the available capacity of the CAISO Controlled Grid. To the extent the Interconnection Customer wants to receive Interconnection Service, the Participating TO shall construct facilities identified in Appendices A and C that the Participating TO is responsible to construct.

Interconnection Service does not necessarily provide the Interconnection Customer with the capability to physically deliver the output of its Large Generating Facility to any particular load on the CAISO Controlled Grid without incurring congestion costs. In the event of transmission constraints on the CAISO Controlled Grid, the Interconnection Customer's Large Generating Facility shall be subject to the applicable congestion management procedures in the CAISO Tariff in the same manner as all other resources.

- 4.2 Provision of Service.** The Participating TO and the CAISO shall provide Interconnection Service for the Large Generating Facility.

- 4.3 Performance Standards.** Each Party shall perform all of its obligations under this LGIA in accordance with Applicable Laws and Regulations, Applicable Reliability Standards, and Good Utility Practice, and to the extent a Party is required or prevented or limited in taking any action by such regulations and standards, such Party shall not be deemed to be in Breach of this LGIA for its compliance therewith. If such Party is the CAISO or Participating TO, then that Party shall amend the LGIA and submit the amendment to FERC for approval.
- 4.4 No Transmission Service.** The execution of this LGIA does not constitute a request for, nor the provision of, any transmission service under the CAISO Tariff, and does not convey any right to deliver electricity to any specific customer or point of delivery.
- 4.5 Interconnection Customer Provided Services.** The services provided by Interconnection Customer under this LGIA are set forth in Article 9.6 and Article 13.5.1. Interconnection Customer shall be paid for such services in accordance with Article 11.6.

## **ARTICLE 5. INTERCONNECTION FACILITIES ENGINEERING, PROCUREMENT, AND CONSTRUCTION**

Interconnection Facilities, Network Upgrades, and Distribution Upgrades shall be studied, designed, and constructed pursuant to Good Utility Practice. Such studies, design and construction shall be based on the assumed accuracy and completeness of all technical information received by the Participating TO and the CAISO from the Interconnection Customer associated with interconnecting the Large Generating Facility.

- 5.1 Options.** Unless otherwise mutually agreed among the Parties, the Interconnection Customer shall select the In-Service Date, Initial Synchronization Date, and Commercial Operation Date; and either Standard Option or Alternate Option set forth below for completion of the Participating TO's Interconnection Facilities and Network Upgrades as set forth in **Appendix A**, Interconnection Facilities, Network Upgrades, and Distribution Upgrades, and such dates and selected option shall be set forth in **Appendix B**, Milestones.
- 5.1.1 Standard Option.** The Participating TO shall design, procure, and construct the Participating TO's Interconnection Facilities, Network Upgrades, and Distribution Upgrades, using Reasonable Efforts to complete the Participating TO's Interconnection Facilities, Network Upgrades, and Distribution Upgrades by the dates set forth in **Appendix B**, Milestones. The Participating TO shall not be required to undertake any action which is inconsistent with its standard safety practices, its material and equipment specifications, its design criteria and construction procedures, its labor agreements, and Applicable Laws and Regulations. In the event the Participating TO reasonably expects that it will not be able to complete the Participating TO's Interconnection Facilities, Network Upgrades, and Distribution Upgrades by the specified dates, the Participating TO shall promptly provide written notice to the Interconnection Customer and the CAISO and shall undertake Reasonable Efforts to meet the earliest dates thereafter.
- 5.1.2 Alternate Option.** If the dates designated by the Interconnection Customer are acceptable to the Participating TO, the Participating TO shall so notify the Interconnection Customer within thirty (30) Calendar Days, and shall assume responsibility for the design, procurement and construction of the Participating TO's Interconnection Facilities by the designated dates.

If the Participating TO subsequently fails to complete the Participating TO's Interconnection Facilities by the In-Service Date, to the extent necessary to provide back feed power; or fails to complete Network Upgrades by the Initial Synchronization Date to the extent necessary to allow for Trial Operation at full power output, unless other arrangements are made by the Parties for such Trial Operation; or fails to complete the Network Upgrades by the Commercial Operation Date, as such dates are reflected in Appendix B, Milestones; the Participating TO shall pay the Interconnection Customer liquidated damages in accordance with Article 5.3, Liquidated Damages, provided, however, the dates designated by the Interconnection Customer shall be extended day for day for each day that the CAISO refuses to grant clearances to install equipment.

**5.1.3 Option to Build.** If the dates designated by the Interconnection Customer are not acceptable to the Participating TO, the Participating TO shall so notify the Interconnection Customer within thirty (30) Calendar Days, and unless the Parties agree otherwise, the Interconnection Customer shall have the option to assume responsibility for the design, procurement and construction of the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades. If the Interconnection Customer elects to exercise its option to assume responsibility for the design, procurement and construction of the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades, it shall so notify the Participating TO within thirty (30) Calendar Days of receipt of the Participating TO's notification that the designated dates are not acceptable to the Participating TO. The Participating TO, CAISO, and Interconnection Customer must agree as to what constitutes Stand Alone Network Upgrades and identify such Stand Alone Network Upgrades in Appendix A to this LGIA. Except for Stand Alone Network Upgrades, the Interconnection Customer shall have no right to construct Network Upgrades under this option.

**5.1.4 Negotiated Option.** If the Interconnection Customer elects not to exercise its option under Article 5.1.3, Option to Build, the Interconnection Customer shall so notify the Participating TO within thirty (30) Calendar Days of receipt of the Participating TO's notification that the designated dates are not acceptable to the Participating TO, and the Parties shall in good faith attempt to negotiate terms and conditions (including revision of the specified dates and liquidated damages, the provision of incentives or the procurement and construction of a portion of the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades by the Interconnection Customer) pursuant to which the Participating TO is responsible for the design, procurement and construction of the Participating TO's Interconnection Facilities and Network Upgrades. If the Parties are unable to reach agreement on such terms and conditions, the Participating TO shall assume responsibility for the design, procurement and construction of the Participating TO's Interconnection Facilities and Network Upgrades pursuant to Article 5.1.1, Standard Option.

**5.2 General Conditions Applicable to Option to Build.** If the Interconnection Customer assumes responsibility for the design, procurement and construction of the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades,

- (1) the Interconnection Customer shall engineer, procure equipment, and construct the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades (or portions thereof) using Good Utility Practice and using standards and specifications provided in advance by the Participating TO;
- (2) The Interconnection Customer's engineering, procurement and construction of the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades shall comply with all requirements of law to which the Participating TO would be subject in the engineering, procurement or construction of the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades;
- (3) the Participating TO shall review, and the Interconnection Customer shall obtain the Participating TO's approval of, the engineering design, equipment acceptance tests, and the construction of the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades, which approval shall not be unreasonably withheld, and the CAISO may, at its option, review the engineering design, equipment acceptance tests, and the construction of the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades;
- (4) prior to commencement of construction, the Interconnection Customer shall provide to the Participating TO, with a copy to the CAISO for informational purposes, a schedule for construction of the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades, and shall promptly respond to requests for information from the Participating TO;
- (5) at any time during construction, the Participating TO shall have the right to gain unrestricted access to the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades and to conduct inspections of the same;
- (6) at any time during construction, should any phase of the engineering, equipment procurement, or construction of the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades not meet the standards and specifications provided by the Participating TO, the Interconnection Customer shall be obligated to remedy deficiencies in that portion of the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades;
- (7) the Interconnection Customer shall indemnify the CAISO and Participating TO for claims arising from the Interconnection Customer's construction of the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades under the terms and procedures applicable to Article 18.1 Indemnity;
- (8) The Interconnection Customer shall transfer control of the Participating TO's Interconnection Facilities to the Participating TO and shall transfer Operational Control of Stand Alone Network Upgrades to the CAISO;
- (9) Unless the Parties otherwise agree, the Interconnection Customer shall transfer ownership of the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades to the Participating TO. As soon as reasonably practicable, but within twelve months after completion of the construction of the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades, the Interconnection Customer shall provide an invoice of the final cost of the construction of the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades to the Participating TO,



which invoice shall set forth such costs in sufficient detail to enable the Participating TO to reflect the proper costs of such facilities in its transmission rate base and to identify the investment upon which refunds will be provided;

(10) the Participating TO shall accept for operation and maintenance the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades to the extent engineered, procured, and constructed in accordance with this Article 5.2; and

(11) The Interconnection Customer's engineering, procurement and construction of the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades shall comply with all requirements of the "Option to Build" conditions set forth in **Appendix C**. Interconnection Customer shall deliver to the Participating TO "as-built" drawings, information, and any other documents that are reasonably required by the Participating TO to assure that the Interconnection Facilities and Stand-Alone Network Upgrades are built to the standards and specifications required by the Participating TO.

**5.3 Liquidated Damages.** The actual damages to the Interconnection Customer, in the event the Participating TO's Interconnection Facilities or Network Upgrades are not completed by the dates designated by the Interconnection Customer and accepted by the Participating TO pursuant to subparagraphs 5.1.2 or 5.1.4, above, may include Interconnection Customer's fixed operation and maintenance costs and lost opportunity costs. Such actual damages are uncertain and impossible to determine at this time. Because of such uncertainty, any liquidated damages paid by the Participating TO to the Interconnection Customer in the event that the Participating TO does not complete any portion of the Participating TO's Interconnection Facilities or Network Upgrades by the applicable dates, shall be an amount equal to  $\frac{1}{2}$  of 1 percent per day of the actual cost of the Participating TO's Interconnection Facilities and Network Upgrades, in the aggregate, for which the Participating TO has assumed responsibility to design, procure and construct.

However, in no event shall the total liquidated damages exceed 20 percent of the actual cost of the Participating TO's Interconnection Facilities and Network Upgrades for which the Participating TO has assumed responsibility to design, procure, and construct. The foregoing payments will be made by the Participating TO to the Interconnection Customer as just compensation for the damages caused to the Interconnection Customer, which actual damages are uncertain and impossible to determine at this time, and as reasonable liquidated damages, but not as a penalty or a method to secure performance of this LGIA. Liquidated damages, when the Parties agree to them, are the exclusive remedy for the Participating TO's failure to meet its schedule.

No liquidated damages shall be paid to the Interconnection Customer if: (1) the Interconnection Customer is not ready to commence use of the Participating TO's Interconnection Facilities or Network Upgrades to take the delivery of power for the Electric Generating Unit's Trial Operation or to export power from the Electric Generating Unit on the specified dates, unless the Interconnection Customer would have been able to commence use of the Participating TO's Interconnection Facilities or Network Upgrades to take the delivery of power for Electric Generating Unit's Trial Operation or to export power from the Electric Generating Unit, but for the Participating TO's delay; (2) the Participating TO's failure to meet the specified dates is the result of the action or inaction of the Interconnection Customer or any other interconnection customer who has entered into an interconnection agreement with the CAISO and/or Participating TO, action or inaction by the CAISO, or any cause beyond the Participating TO's reasonable control or reasonable ability to cure; (3) the Interconnection Customer has assumed responsibility for the design, procurement and construction of the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades; or (4) the Parties have otherwise agreed.

In no event shall the CAISO have any responsibility or liability to the Interconnection Customer for liquidated damages pursuant to the provisions of this Article 5.3.

**5.4 Power System Stabilizers.** The Interconnection Customer shall procure, install, maintain and operate Power System Stabilizers in accordance with the guidelines and procedures established by the Applicable Reliability Council and in accordance with the provisions of Section 4.6.5.1 of the CAISO Tariff. The CAISO reserves the right to establish reasonable minimum acceptable settings for any installed Power System Stabilizers, subject to the design and operating limitations of the Large Generating Facility. If the Large Generating Facility's Power System Stabilizers are removed from service or not capable of automatic operation, the Interconnection Customer shall immediately notify the CAISO and the Participating TO and restore the Power System Stabilizers to operation as soon as possible and in accordance with the Reliability Management System Agreement in [Appendix G](#). The CAISO shall have the right to order the reduction in output or disconnection of the Large Generating Facility if the reliability of the CAISO Controlled Grid would be adversely affected as a result of improperly tuned Power System Stabilizers. The requirements of this Article 5.4 shall not apply to wind generators of the induction type.

**5.5 Equipment Procurement.** If responsibility for construction of the Participating TO's Interconnection Facilities or Network Upgrades is to be borne by the Participating TO, then the Participating TO shall commence design of the Participating TO's Interconnection Facilities or Network Upgrades and procure necessary equipment as soon as practicable after all of the following conditions are satisfied, unless the Parties otherwise agree in writing:

**5.5.1** The [CAISO](#), in coordination with the applicable Participating TO(s), has completed the Interconnection Facilities Study pursuant to the Interconnection Facilities Study Agreement;

**5.5.2** The Participating TO has received written authorization to proceed with design and procurement from the Interconnection Customer by the date specified in [Appendix B](#), Milestones; and

**5.5.3** The Interconnection Customer has provided security to the Participating TO in accordance with Article 11.5 by the dates specified in [Appendix B](#), Milestones.

**5.6 Construction Commencement.** The Participating TO shall commence construction of the Participating TO's Interconnection Facilities and Network Upgrades for which it is responsible as soon as practicable after the following additional conditions are satisfied:

**5.6.1** Approval of the appropriate Governmental Authority has been obtained for any facilities requiring regulatory approval;

**5.6.2** Necessary real property rights and rights-of-way have been obtained, to the extent required for the construction of a discrete aspect of the Participating TO's Interconnection Facilities and Network Upgrades;

**5.6.3** The Participating TO has received written authorization to proceed with construction from the Interconnection Customer by the date specified in [Appendix B](#), Milestones; and

- 5.6.4** The Interconnection Customer has provided payment and security to the Participating TO in accordance with Article 11.5 by the dates specified in **Appendix B**, Milestones.
- 5.7 Work Progress.** The Parties will keep each other advised periodically as to the progress of their respective design, procurement and construction efforts. Any Party may, at any time, request a progress report from another Party. If, at any time, the Interconnection Customer determines that the completion of the Participating TO's Interconnection Facilities will not be required until after the specified **In-Service Date**, the Interconnection Customer will provide written notice to the Participating TO and CAISO of such later date upon which the completion of the Participating TO's Interconnection Facilities will be required.
- 5.8 Information Exchange.** As soon as reasonably practicable after the Effective Date, the Parties shall exchange information regarding the design and compatibility of the Interconnection Customer's Interconnection Facilities and Participating TO's Interconnection Facilities and compatibility of the Interconnection Facilities with the Participating TO's Transmission System, and shall work diligently and in good faith to make any necessary design changes.
- 5.9 Limited Operation.** If any of the Participating TO's Interconnection Facilities or Network Upgrades are not reasonably expected to be completed prior to the Commercial Operation Date of the Electric Generating Unit, the Participating TO and/or CAISO, as applicable, shall, upon the request and at the expense of the Interconnection Customer, perform operating studies on a timely basis to determine the extent to which the Electric Generating Unit and the Interconnection Customer's Interconnection Facilities may operate prior to the completion of the Participating TO's Interconnection Facilities or Network Upgrades consistent with Applicable Laws and Regulations, Applicable Reliability Standards, Good Utility Practice, and this LGIA. The Participating TO and CAISO shall permit Interconnection Customer to operate the Electric Generating Unit and the Interconnection Customer's Interconnection Facilities in accordance with the results of such studies.
- 5.10 Interconnection Customer's Interconnection Facilities.** The Interconnection Customer shall, at its expense, design, procure, construct, own and install the Interconnection Customer's Interconnection Facilities, as set forth in **Appendix A**.
- 5.10.1 Large Generating Facility and Interconnection Customer's Interconnection Facilities Specifications.** The Interconnection Customer shall submit initial specifications for the Interconnection Customer's Interconnection Facilities and Large Generating Facility, including System Protection Facilities, to the Participating TO and the CAISO at least one hundred eighty (180) Calendar Days prior to the Initial Synchronization Date; and final specifications for review and comment at least ninety (90) Calendar Days prior to the Initial Synchronization Date. The Participating TO and the CAISO shall review such specifications pursuant to this LGIA and the LGIP to ensure that the Interconnection Customer's Interconnection Facilities and Large Generating Facility are compatible with the technical specifications, operational control, safety requirements, and any other applicable requirements of the Participating TO and the CAISO and comment on such specifications within thirty (30) Calendar Days of the Interconnection Customer's submission. All specifications provided hereunder shall be deemed confidential.

**5.10.2 Participating TO's and CAISO's Review.** The Participating TO's and the CAISO's review of the Interconnection Customer's final specifications shall not be construed as confirming, endorsing, or providing a warranty as to the design, fitness, safety, durability or reliability of the Large Generating Facility, or the Interconnection Customer's Interconnection Facilities. Interconnection Customer shall make such changes to the Interconnection Customer's Interconnection Facilities as may reasonably be required by the Participating TO or the CAISO, in accordance with Good Utility Practice, to ensure that the Interconnection Customer's Interconnection Facilities are compatible with the technical specifications, Operational Control, and safety requirements of the Participating TO or the CAISO.

**5.10.3 Interconnection Customer's Interconnection Facilities Construction.** The Interconnection Customer's Interconnection Facilities shall be designed and constructed in accordance with Good Utility Practice. Within one hundred twenty (120) Calendar Days after the Commercial Operation Date, unless the Participating TO and Interconnection Customer agree on another mutually acceptable deadline, the Interconnection Customer shall deliver to the Participating TO and CAISO "as-built" drawings, information and documents for the Interconnection Customer's Interconnection Facilities and the Electric Generating Unit(s), such as: a one-line diagram, a site plan showing the Large Generating Facility and the Interconnection Customer's Interconnection Facilities, plan and elevation drawings showing the layout of the Interconnection Customer's Interconnection Facilities, a relay functional diagram, relaying AC and DC schematic wiring diagrams and relay settings for all facilities associated with the Interconnection Customer's step-up transformers, the facilities connecting the Large Generating Facility to the step-up transformers and the Interconnection Customer's Interconnection Facilities, and the impedances (determined by factory tests) for the associated step-up transformers and the Electric Generating Units. The Interconnection Customer shall provide the Participating TO and the CAISO specifications for the excitation system, automatic voltage regulator, Large Generating Facility control and protection settings, transformer tap settings, and communications, if applicable. Any deviations from the relay settings, machine specifications, and other specifications originally submitted by the Interconnection Customer shall be assessed by the Participating TO and the CAISO pursuant to the appropriate provisions of this LGIA and the LGIP.

**5.10.4 Interconnection Customer to Meet Requirements of the Participating TO's Interconnection Handbook.** The Interconnection Customer shall comply with the Participating TO's Interconnection Handbook.

**5.11 Participating TO's Interconnection Facilities Construction.** The Participating TO's Interconnection Facilities shall be designed and constructed in accordance with Good Utility Practice. Upon request, within one hundred twenty (120) Calendar Days after the Commercial Operation Date, unless the Participating TO and Interconnection Customer agree on another mutually acceptable deadline, the Participating TO shall deliver to the Interconnection Customer and the CAISO the following "as-built" drawings, information and documents for the Participating TO's Interconnection Facilities [include appropriate drawings and relay diagrams].

The Participating TO will obtain control for operating and maintenance purposes of the Participating TO's Interconnection Facilities and Stand Alone Network Upgrades upon completion of such facilities. Pursuant to Article 5.2, the CAISO will obtain Operational Control of the Stand Alone Network Upgrades prior to the Commercial Operation Date.

- 5.12 Access Rights.** Upon reasonable notice and supervision by a Party, and subject to any required or necessary regulatory approvals, a Party ("Granting Party") shall furnish at no cost to the other Party ("Access Party") any rights of use, licenses, rights of way and easements with respect to lands owned or controlled by the Granting Party, its agents (if allowed under the applicable agency agreement), or any Affiliate, that are necessary to enable the Access Party to obtain ingress and egress to construct, operate, maintain, repair, test (or witness testing), inspect, replace or remove facilities and equipment to: (i) interconnect the Large Generating Facility with the Participating TO's Transmission System; (ii) operate and maintain the Large Generating Facility, the Interconnection Facilities and the Participating TO's Transmission System; and (iii) disconnect or remove the Access Party's facilities and equipment upon termination of this LGIA. In exercising such licenses, rights of way and easements, the Access Party shall not unreasonably disrupt or interfere with normal operation of the Granting Party's business and shall adhere to the safety rules and procedures established in advance, as may be changed from time to time, by the Granting Party and provided to the Access Party.
- 5.13 Lands of Other Property Owners.** If any part of the Participating TO's Interconnection Facilities and/or Network Upgrades are to be installed on property owned by persons other than the Interconnection Customer or Participating TO, the Participating TO shall at the Interconnection Customer's expense use efforts, similar in nature and extent to those that it typically undertakes on its own behalf or on behalf of its Affiliates, including use of its eminent domain authority, and to the extent consistent with state law, to procure from such persons any rights of use, licenses, rights of way and easements that are necessary to construct, operate, maintain, test, inspect, replace or remove the Participating TO's Interconnection Facilities and/or Network Upgrades upon such property.
- 5.14 Permits.** Participating TO and Interconnection Customer shall cooperate with each other in good faith in obtaining all permits, licenses and authorization that are necessary to accomplish the interconnection in compliance with Applicable Laws and Regulations. With respect to this paragraph, the Participating TO shall provide permitting assistance to the Interconnection Customer comparable to that provided to the Participating TO's own, or an Affiliate's generation.
- 5.15 Early Construction of Base Case Facilities.** The Interconnection Customer may request the Participating TO to construct, and the Participating TO shall construct, using Reasonable Efforts to accommodate Interconnection Customer's In-Service Date, all or any portion of any Network Upgrades required for Interconnection Customer to be interconnected to the Participating TO's Transmission System which are included in the Base Case of the Interconnection Studies for the Interconnection Customer, and which also are required to be constructed for another interconnection customer, but where such construction is not scheduled to be completed in time to achieve Interconnection Customer's In-Service Date.
- 5.16 Suspension.** The Interconnection Customer reserves the right, upon written notice to the Participating TO and the CAISO, to suspend at any time all work associated with the construction and installation of the Participating TO's Interconnection Facilities, Network Upgrades, and/or Distribution Upgrades required under this LGIA with the condition that the Participating TO's electrical system and the CAISO Controlled Grid shall be left in a safe and reliable condition in accordance with Good Utility Practice and the Participating TO's safety and reliability criteria and the CAISO's Applicable Reliability Standards. In such event, the Interconnection Customer shall

be responsible for all reasonable and necessary costs which the Participating TO (i) has incurred pursuant to this LGIA prior to the suspension and (ii) incurs in suspending such work, including any costs incurred to perform such work as may be necessary to ensure the safety of persons and property and the integrity of the Participating TO's electric system during such suspension and, if applicable, any costs incurred in connection with the cancellation or suspension of material, equipment and labor contracts which the Participating TO cannot reasonably avoid; provided, however, that prior to canceling or suspending any such material, equipment or labor contract, the Participating TO shall obtain Interconnection Customer's authorization to do so. The Participating TO shall invoice the Interconnection Customer for such costs pursuant to Article 12 and shall use due diligence to minimize its costs. In the event Interconnection Customer suspends work required under this LGIA pursuant to this Article 5.16, and has not requested the Participating TO to recommence the work or has not itself recommenced work required under this LGIA on or before the expiration of three (3) years following commencement of such suspension, this LGIA shall be deemed terminated. The three-year period shall begin on the date the suspension is requested, or the date of the written notice to the Participating TO and the CAISO, if no effective date is specified.

## **5.17 Taxes.**

**5.17.1 Interconnection Customer Payments Not Taxable.** The Parties intend that all payments or property transfers made by the Interconnection Customer to the Participating TO for the installation of the Participating TO's Interconnection Facilities and the Network Upgrades shall be non-taxable, either as contributions to capital, or as a refundable advance, in accordance with the Internal Revenue Code and any applicable state income tax laws and shall not be taxable as contributions in aid of construction or otherwise under the Internal Revenue Code and any applicable state income tax laws.

**5.17.2 Representations And Covenants.** In accordance with IRS Notice 2001-82 and IRS Notice 88-129, the Interconnection Customer represents and covenants that (i) ownership of the electricity generated at the Large Generating Facility will pass to another party prior to the transmission of the electricity on the CAISO Controlled Grid, (ii) for income tax purposes, the amount of any payments and the cost of any property transferred to the Participating TO for the Participating TO's Interconnection Facilities will be capitalized by the Interconnection Customer as an intangible asset and recovered using the straight-line method over a useful life of twenty (20) years, and (iii) any portion of the Participating TO's Interconnection Facilities that is a "dual-use intangible," within the meaning of IRS Notice 88-129, is reasonably expected to carry only a de minimis amount of electricity in the direction of the Large Generating Facility. For this purpose, "de minimis amount" means no more than 5 percent of the total power flows in both directions, calculated in accordance with the "5 percent test" set forth in IRS Notice 88-129. This is not intended to be an exclusive list of the relevant conditions that must be met to conform to IRS requirements for non-taxable treatment.

At the Participating TO's request, the Interconnection Customer shall provide the Participating TO with a report from an independent engineer confirming its representation in clause (iii), above. The Participating TO represents and covenants that the cost of the Participating TO's Interconnection Facilities paid for by the Interconnection Customer without the possibility of refund or credit will have no net effect on the base upon which rates are determined.

**5.17.3 Indemnification for the Cost Consequence of Current Tax Liability Imposed Upon the Participating TO.** Notwithstanding Article 5.17.1, the Interconnection Customer shall protect, indemnify and hold harmless the Participating TO from the cost consequences of any current tax liability imposed against the Participating TO as the result of payments or property transfers made by the Interconnection Customer to the Participating TO under this LGIA for Interconnection Facilities, as well as any interest and penalties, other than interest and penalties attributable to any delay caused by the Participating TO.

The Participating TO shall not include a gross-up for the cost consequences of any current tax liability in the amounts it charges the Interconnection Customer under this LGIA unless (i) the Participating TO has determined, in good faith, that the payments or property transfers made by the Interconnection Customer to the Participating TO should be reported as income subject to taxation or (ii) any Governmental Authority directs the Participating TO to report payments or property as income subject to taxation; provided, however, that the Participating TO may require the Interconnection Customer to provide security for Interconnection Facilities, in a form reasonably acceptable to the Participating TO (such as a parental guarantee or a letter of credit), in an amount equal to the cost consequences of any current tax liability under this Article 5.17. The Interconnection Customer shall reimburse the Participating TO for such costs on a fully grossed-up basis, in accordance with Article 5.17.4, within thirty (30) Calendar Days of receiving written notification from the Participating TO of the amount due, including detail about how the amount was calculated.

The indemnification obligation shall terminate at the earlier of (1) the expiration of the ten year testing period and the applicable statute of limitation, as it may be extended by the Participating TO upon request of the IRS, to keep these years open for audit or adjustment, or (2) the occurrence of a subsequent taxable event and the payment of any related indemnification obligations as contemplated by this Article 5.17.

**5.17.4 Tax Gross-Up Amount.** The Interconnection Customer's liability for the cost consequences of any current tax liability under this Article 5.17 shall be calculated on a fully grossed-up basis. Except as may otherwise be agreed to by the parties, this means that the Interconnection Customer will pay the Participating TO, in addition to the amount paid for the Interconnection Facilities and Network Upgrades, an amount equal to (1) the current taxes imposed on the Participating TO ("Current Taxes") on the excess of (a) the gross income realized by the Participating TO as a result of payments or property transfers made by the Interconnection Customer to the Participating TO under this LGIA (without regard to any payments under this Article 5.17) (the "Gross Income Amount") over (b) the present value of future tax deductions for depreciation that will be available as a result of such payments or property transfers (the "Present Value Depreciation Amount"), plus (2) an additional amount sufficient to permit the Participating TO to receive and retain, after the payment of all Current Taxes, an amount equal to the net amount described in clause (1).

For this purpose, (i) Current Taxes shall be computed based on the Participating TO's composite federal and state tax rates at the time the payments or property transfers are received and the Participating TO will be treated as being subject to tax at the highest marginal rates in effect at that time (the "Current Tax Rate"), and (ii) the Present Value Depreciation Amount shall be computed by discounting the Participating TO's anticipated tax depreciation deductions as a result of such payments or property transfers by the Participating TO's current weighted average cost of capital. Thus, the formula for

calculating the Interconnection Customer's liability to the Participating TO pursuant to this Article 5.17.4 can be expressed as follows:  $(\text{Current Tax Rate} \times (\text{Gross Income Amount} - \text{Present Value of Tax Depreciation})) / (1 - \text{Current Tax Rate})$ . Interconnection Customer's estimated tax liability in the event taxes are imposed shall be stated in Appendix A, Interconnection Facilities, Network Upgrades and Distribution Upgrades.

**5.17.5 Private Letter Ruling or Change or Clarification of Law.** At the Interconnection Customer's request and expense, the Participating TO shall file with the IRS a request for a private letter ruling as to whether any property transferred or sums paid, or to be paid, by the Interconnection Customer to the Participating TO under this LGIA are subject to federal income taxation. The Interconnection Customer will prepare the initial draft of the request for a private letter ruling, and will certify under penalties of perjury that all facts represented in such request are true and accurate to the best of the Interconnection Customer's knowledge. The Participating TO and Interconnection Customer shall cooperate in good faith with respect to the submission of such request, provided, however, the Interconnection Customer and the Participating TO explicitly acknowledge (and nothing herein is intended to alter) Participating TO's obligation under law to certify that the facts presented in the ruling request are true, correct and complete.

The Participating TO shall keep the Interconnection Customer fully informed of the status of such request for a private letter ruling and shall execute either a privacy act waiver or a limited power of attorney, in a form acceptable to the IRS, that authorizes the Interconnection Customer to participate in all discussions with the IRS regarding such request for a private letter ruling. The Participating TO shall allow the Interconnection Customer to attend all meetings with IRS officials about the request and shall permit the Interconnection Customer to prepare the initial drafts of any follow-up letters in connection with the request.

**5.17.6 Subsequent Taxable Events.** If, within 10 years from the date on which the relevant Participating TO's Interconnection Facilities are placed in service, (i) the Interconnection Customer Breaches the covenants contained in Article 5.17.2, (ii) a "disqualification event" occurs within the meaning of IRS Notice 88-129, or (iii) this LGIA terminates and the Participating TO retains ownership of the Interconnection Facilities and Network Upgrades, the Interconnection Customer shall pay a tax gross-up for the cost consequences of any current tax liability imposed on the Participating TO, calculated using the methodology described in Article 5.17.4 and in accordance with IRS Notice 90-60.

**5.17.7 Contests.** In the event any Governmental Authority determines that the Participating TO's receipt of payments or property constitutes income that is subject to taxation, the Participating TO shall notify the Interconnection Customer, in writing, within thirty (30) Calendar Days of receiving notification of such determination by a Governmental Authority. Upon the timely written request by the Interconnection Customer and at the Interconnection Customer's sole expense, the Participating TO may appeal, protest, seek abatement of, or otherwise oppose such determination. Upon the Interconnection Customer's written request and sole expense, the Participating TO may file a claim for refund with respect to any taxes paid under this Article 5.17, whether or not it has received such a determination. The Participating TO reserve the right to make all



decisions with regard to the prosecution of such appeal, protest, abatement or other contest, including the selection of counsel and compromise or settlement of the claim, but the Participating TO shall keep the Interconnection Customer informed, shall consider in good faith suggestions from the Interconnection Customer about the conduct of the contest, and shall reasonably permit the Interconnection Customer or an Interconnection Customer representative to attend contest proceedings.

The Interconnection Customer shall pay to the Participating TO on a periodic basis, as invoiced by the Participating TO, the Participating TO's documented reasonable costs of prosecuting such appeal, protest, abatement or other contest, including any costs associated with obtaining the opinion of independent tax counsel described in this Article 5.17.7. The Participating TO may abandon any contest if the Interconnection Customer fails to provide payment to the Participating TO within thirty (30) Calendar Days of receiving such invoice.

At any time during the contest, the Participating TO may agree to a settlement either with the Interconnection Customer's consent or, if such consent is refused, after obtaining written advice from independent nationally-recognized tax counsel, selected by the Participating TO, but reasonably acceptable to the Interconnection Customer, that the proposed settlement represents a reasonable settlement given the hazards of litigation. The Interconnection Customer's obligation shall be based on the amount of the settlement agreed to by the Interconnection Customer, or if a higher amount, so much of the settlement that is supported by the written advice from nationally-recognized tax counsel selected under the terms of the preceding paragraph. The settlement amount shall be calculated on a fully grossed-up basis to cover any related cost consequences of the current tax liability. The Participating TO may also settle any tax controversy without receiving the Interconnection Customer's consent or any such written advice; however, any such settlement will relieve the Interconnection Customer from any obligation to indemnify the Participating TO for the tax at issue in the contest (unless the failure to obtain written advice is attributable to the Interconnection Customer's unreasonable refusal to the appointment of independent tax counsel).

**5.17.8 Refund.** In the event that (a) a private letter ruling is issued to the Participating TO which holds that any amount paid or the value of any property transferred by the Interconnection Customer to the Participating TO under the terms of this LGIA is not subject to federal income taxation, (b) any legislative change or administrative announcement, notice, ruling or other determination makes it reasonably clear to the Participating TO in good faith that any amount paid or the value of any property transferred by the Interconnection Customer to the Participating TO under the terms of this LGIA is not taxable to the Participating TO, (c) any abatement, appeal, protest, or other contest results in a determination that any payments or transfers made by the Interconnection Customer to the Participating TO are not subject to federal income tax, or (d) if the Participating TO receives a refund from any taxing authority for any overpayment of tax attributable to any payment or property transfer made by the Interconnection Customer to the Participating TO pursuant to this LGIA, the Participating TO shall promptly refund to the Interconnection Customer the following:

(i) any payment made by Interconnection Customer under this Article 5.17 for taxes that is attributable to the amount determined to be non-taxable, together with interest thereon,

(ii) interest on any amounts paid by the Interconnection Customer to the Participating TO for such taxes which the Participating TO did not submit to the taxing authority, calculated in accordance with the methodology set forth in FERC's regulations at 18 C.F.R. §35.19a(a)(2)(iii) from the date payment was made by the Interconnection Customer to the date the Participating TO refunds such payment to the Interconnection Customer, and

(iii) with respect to any such taxes paid by the Participating TO, any refund or credit the Participating TO receives or to which it may be entitled from any Governmental Authority, interest (or that portion thereof attributable to the payment described in clause (i), above) owed to the Participating TO for such overpayment of taxes (including any reduction in interest otherwise payable by the Participating TO to any Governmental Authority resulting from an offset or credit); provided, however, that the Participating TO will remit such amount promptly to the Interconnection Customer only after and to the extent that the Participating TO has received a tax refund, credit or offset from any Governmental Authority for any applicable overpayment of income tax related to the Participating TO's Interconnection Facilities.

The intent of this provision is to leave the Parties, to the extent practicable, in the event that no taxes are due with respect to any payment for Interconnection Facilities and Network Upgrades hereunder, in the same position they would have been in had no such tax payments been made.

**5.17.9 Taxes Other Than Income Taxes.** Upon the timely request by the Interconnection Customer, and at the Interconnection Customer's sole expense, the CAISO or Participating TO may appeal, protest, seek abatement of, or otherwise contest any tax (other than federal or state income tax) asserted or assessed against the CAISO or Participating TO for which the Interconnection Customer may be required to reimburse the CAISO or Participating TO under the terms of this LGIA. The Interconnection Customer shall pay to the Participating TO on a periodic basis, as invoiced by the Participating TO, the Participating TO's documented reasonable costs of prosecuting such appeal, protest, abatement, or other contest. The Interconnection Customer, the CAISO, and the Participating TO shall cooperate in good faith with respect to any such contest. Unless the payment of such taxes is a prerequisite to an appeal or abatement or cannot be deferred, no amount shall be payable by the Interconnection Customer to the CAISO or Participating TO for such taxes until they are assessed by a final, non-appealable order by any court or agency of competent jurisdiction. In the event that a tax payment is withheld and ultimately due and payable after appeal, the Interconnection Customer will be responsible for all taxes, interest and penalties, other than penalties attributable to any delay caused by the Participating TO.

**5.18 Tax Status.** Each Party shall cooperate with the others to maintain the other Parties' tax status. Nothing in this LGIA is intended to adversely affect the CAISO's or any Participating TO's tax exempt status with respect to the issuance of bonds including, but not limited to, Local Furnishing Bonds.

**5.19 Modification.**

**5.19.1 General.** The Interconnection Customer or the Participating TO may undertake modifications to its facilities, subject to the provisions of this LGIA and the CAISO Tariff. If a Party plans to undertake a modification that reasonably may be expected to affect the other Parties' facilities, that Party shall provide to the other Parties sufficient information regarding such modification so that the other Parties may evaluate the potential impact of such modification prior to commencement of the work. Such information shall be deemed to be confidential hereunder and shall include information concerning the timing of such modifications and whether such modifications are expected to interrupt the flow of electricity from the Large Generating Facility. The Party desiring to perform such work shall provide the relevant drawings, plans, and specifications to the other Parties at least ninety (90) Calendar Days in advance of the commencement of the work or such shorter period upon which the Parties may agree, which agreement shall not unreasonably be withheld, conditioned or delayed.

In the case of Large Generating Facility modifications that do not require the Interconnection Customer to submit an Interconnection Request, the CAISO or Participating TO shall provide, within thirty (30) Calendar Days (or such other time as the Parties may agree), an estimate of any additional modifications to the CAISO Controlled Grid, Participating TO's Interconnection Facilities, Network Upgrades or Distribution Upgrades necessitated by such Interconnection Customer modification and a good faith estimate of the costs thereof. The Participating TO and the CAISO shall determine if a Large Generating Facility modification is a Material Modification in accordance with the LGIP.

**5.19.2 Standards.** Any additions, modifications, or replacements made to a Party's facilities shall be designed, constructed and operated in accordance with this LGIA and Good Utility Practice.

**5.19.3 Modification Costs.** The Interconnection Customer shall not be directly assigned the costs of any additions, modifications, or replacements that the Participating TO makes to the Participating TO's Interconnection Facilities or the Participating TO's Transmission System to facilitate the interconnection of a third party to the Participating TO's Interconnection Facilities or the Participating TO's Transmission System, or to provide transmission service to a third party under the CAISO Tariff. The Interconnection Customer shall be responsible for the costs of any additions, modifications, or replacements to the Interconnection Facilities that may be necessary to maintain or upgrade such Interconnection Facilities consistent with Applicable Laws and Regulations, Applicable Reliability Standards or Good Utility Practice.

**ARTICLE 6. TESTING AND INSPECTION**

**6.1 Pre-Commercial Operation Date Testing and Modifications.** Prior to the Commercial Operation Date, the Participating TO shall test the Participating TO's Interconnection Facilities, Network Upgrades, and Distribution Upgrades and the Interconnection Customer shall test the Large Generating Facility and the Interconnection Customer's Interconnection Facilities to ensure their safe and reliable operation. Similar testing may be required after initial operation. Each

Party shall make any modifications to its facilities that are found to be necessary as a result of such testing. The Interconnection Customer shall bear the cost of all such testing and modifications. The Interconnection Customer shall not commence initial parallel operation of an Electric Generating Unit with the Participating TO's Transmission System until the Participating TO provides prior written approval, which approval shall not be unreasonably withheld, for operation of such Electric Generating Unit. The Interconnection Customer shall generate test energy at the Large Generating Facility only if it has arranged for the delivery of such test energy.

**6.2 Post-Commercial Operation Date Testing and Modifications.** Each Party shall at its own expense perform routine inspection and testing of its facilities and equipment in accordance with Good Utility Practice as may be necessary to ensure the continued interconnection of the Large Generating Facility with the Participating TO's Transmission System in a safe and reliable manner. Each Party shall have the right, upon advance written notice, to require reasonable additional testing of the other Party's facilities, at the requesting Party's expense, as may be in accordance with Good Utility Practice.

**6.3 Right to Observe Testing.** Each Party shall notify the other Parties at least fourteen (14) days in advance of its performance of tests of its Interconnection Facilities or Generating Facility. The other Parties have the right, at their own expense, to observe such testing.

**6.4 Right to Inspect.** Each Party shall have the right, but shall have no obligation to: (i) observe another Party's tests and/or inspection of any of its System Protection Facilities and other protective equipment, including Power System Stabilizers; (ii) review the settings of another Party's System Protection Facilities and other protective equipment; and (iii) review another Party's maintenance records relative to the Interconnection Facilities, the System Protection Facilities and other protective equipment. A Party may exercise these rights from time to time as it deems necessary upon reasonable notice to the other Party. The exercise or non-exercise by a Party of any such rights shall not be construed as an endorsement or confirmation of any element or condition of the Interconnection Facilities or the System Protection Facilities or other protective equipment or the operation thereof, or as a warranty as to the fitness, safety, desirability, or reliability of same. Any information that a Party obtains through the exercise of any of its rights under this Article 6.4 shall be deemed to be Confidential Information and treated pursuant to Article 22 of this LGIA.

## ARTICLE 7. METERING

**7.1 General.** Each Party shall comply with the Applicable Reliability Council requirements. The Interconnection Customer and CAISO shall comply with the provisions of the CAISO Tariff regarding metering, including Section 10 of the CAISO Tariff. Unless otherwise agreed by the Participating TO and the Interconnection Customer, the Participating TO may install additional Metering Equipment at the Point of Interconnection prior to any operation of any Electric Generating Unit and shall own, operate, test and maintain such Metering Equipment. Power flows to and from the Large Generating Facility shall be measured at or, at the CAISO's or Participating TO's option for its respective Metering Equipment, compensated to, the Point of Interconnection. The CAISO shall provide metering quantities to the Interconnection Customer upon request in accordance with the CAISO Tariff by directly polling the CAISO's meter data acquisition system. The Interconnection Customer shall bear all reasonable documented costs associated with the purchase, installation, operation, testing and maintenance of the Metering Equipment.

- 7.2 Check Meters.** The Interconnection Customer, at its option and expense, may install and operate, on its premises and on its side of the Point of Interconnection, one or more check meters to check the CAISO-pollled meters or the Participating TO's meters. Such check meters shall be for check purposes only and shall not be used for the measurement of power flows for purposes of this LGIA, except in the case that no other means are available on a temporary basis at the option of the CAISO or the Participating TO. The check meters shall be subject at all reasonable times to inspection and examination by the CAISO or Participating TO or their designees. The installation, operation and maintenance thereof shall be performed entirely by the Interconnection Customer in accordance with Good Utility Practice.
- 7.3 Participating TO Retail Metering.** The Participating TO may install retail revenue quality meters and associated equipment, pursuant to the Participating TO's applicable retail tariffs.

## ARTICLE 8. COMMUNICATIONS

- 8.1 Interconnection Customer Obligations.** The Interconnection Customer shall maintain satisfactory operating communications with the CAISO in accordance with the provisions of the CAISO Tariff and with the Participating TO's dispatcher or representative designated by the Participating TO. The Interconnection Customer shall provide standard voice line, dedicated voice line and facsimile communications at its Large Generating Facility control room or central dispatch facility through use of either the public telephone system, or a voice communications system that does not rely on the public telephone system. The Interconnection Customer shall also provide the dedicated data circuit(s) necessary to provide Interconnection Customer data to the CAISO and Participating TO as set forth in Appendix D, Security Arrangements Details. The data circuit(s) shall extend from the Large Generating Facility to the location(s) specified by the CAISO and Participating TO. Any required maintenance of such communications equipment shall be performed by the Interconnection Customer. Operational communications shall be activated and maintained under, but not be limited to, the following events: system paralleling or separation, scheduled and unscheduled shutdowns, equipment clearances, and hourly and daily load data.
- 8.2 Remote Terminal Unit.** Prior to the Initial Synchronization Date of each Electric Generating Unit, a Remote Terminal Unit, or equivalent data collection and transfer equipment acceptable to the Parties, shall be installed by the Interconnection Customer, or by the Participating TO at the Interconnection Customer's expense, to gather accumulated and instantaneous data to be telemetered to the location(s) designated by the CAISO and by the Participating TO through use of a dedicated point-to-point data circuit(s) as indicated in Article 8.1.

Telemetry to the CAISO shall be provided in accordance with the CAISO's technical standards for direct telemetry. For telemetry to the Participating TO, the communication protocol for the data circuit(s) shall be specified by the Participating TO. Instantaneous bi-directional real power and reactive power flow and any other required information must be telemetered directly to the location(s) specified by the Participating TO.

Each Party will promptly advise the other Parties if it detects or otherwise learns of any metering, telemetry or communications equipment errors or malfunctions that require the attention and/or correction by another Party. The Party owning such equipment shall correct such error or malfunction as soon as reasonably feasible.

- 8.3 No Annexation.** Any and all equipment placed on the premises of a Party shall be and remain the property of the Party providing such equipment regardless of the mode and manner of annexation or attachment to real property, unless otherwise mutually agreed by the Parties.

## ARTICLE 9. OPERATIONS

- 9.1 General.** Each Party shall comply with the Applicable Reliability Council requirements, and the Interconnection Customer shall execute the Reliability Management System Agreement of the Applicable Reliability Council attached hereto as **Appendix G**. Each Party shall provide to the other Party all information that may reasonably be required by the other Party to comply with Applicable Laws and Regulations and Applicable Reliability Standards.
- 9.2 **Balancing Authority Area Notification.**** At least three months before Initial Synchronization Date, the Interconnection Customer shall notify the CAISO and Participating TO in writing of the **Balancing Authority** Area in which the Large Generating Facility intends to be located. If the Interconnection Customer intends to locate the Large Generating Facility in a **Balancing Authority** Area other than the **Balancing Authority** Area within whose electrically metered boundaries the Large Generating Facility is located, and if permitted to do so by the relevant transmission tariffs, all necessary arrangements, including but not limited to those set forth in Article 7 and Article 8 of this LGIA, and remote **Balancing Authority** Area generator interchange agreements, if applicable, and the appropriate measures under such agreements, shall be executed and implemented prior to the placement of the Large Generating Facility in the other **Balancing Authority** Area.
- 9.3 CAISO and Participating TO Obligations.** The CAISO and Participating TO shall cause the Participating TO's Transmission System to be operated and controlled in a safe and reliable manner and in accordance with this LGIA. The Participating TO at the Interconnection Customer's expense shall cause the Participating TO's Interconnection Facilities to be operated, maintained and controlled in a safe and reliable manner and in accordance with this LGIA. The CAISO and Participating TO may provide operating instructions to the Interconnection Customer consistent with this LGIA and Participating TO and CAISO operating protocols and procedures as they may change from time to time. The Participating TO and CAISO will consider changes to their operating protocols and procedures proposed by the Interconnection Customer.
- 9.4 Interconnection Customer Obligations.** The Interconnection Customer shall at its own expense operate, maintain and control the Large Generating Facility and the Interconnection Customer's Interconnection Facilities in a safe and reliable manner and in accordance with this LGIA. The Interconnection Customer shall operate the Large Generating Facility and the Interconnection Customer's Interconnection Facilities in accordance with all applicable requirements of the **Balancing Authority** Area of which it is part, including such requirements as set forth in **Appendix C**, Interconnection Details, of this LGIA. **Appendix C**, Interconnection Details, will be modified to reflect changes to the requirements as they may change from time to time. A Party may request that another Party provide copies of the requirements set forth in **Appendix C**, Interconnection Details, of this LGIA. The Interconnection Customer shall not commence Commercial Operation of an Electric Generating Unit with the Participating TO's Transmission System until the Participating TO provides prior written approval, which approval shall not be unreasonably withheld, for operation of such Electric Generating Unit.

**9.5 Start-Up and Synchronization.** Consistent with the Parties' mutually acceptable procedures, the Interconnection Customer is responsible for the proper synchronization of each Electric Generating Unit to the CAISO Controlled Grid.

**9.6 Reactive Power.**

**9.6.1 Power Factor Design Criteria.** The Interconnection Customer shall design the Large Generating Facility to maintain a composite power delivery at continuous rated power output at the terminals of the Electric Generating Unit at a power factor within the range of 0.95 leading to 0.90 lagging, unless the CAISO has established different requirements that apply to all generators in the **Balancing Authority** Area on a comparable basis. Power factor design criteria for wind generators are provided in **Appendix H** of this LGIA.

**9.6.2 Voltage Schedules.** Once the Interconnection Customer has synchronized an Electric Generating Unit with the CAISO Controlled Grid, the CAISO or Participating TO shall require the Interconnection Customer to maintain a voltage schedule by operating the Electric Generating Unit to produce or absorb reactive power within the design limitations of the Electric Generating Unit set forth in Article 9.6.1 (Power Factor Design Criteria). CAISO's voltage schedules shall treat all sources of reactive power in the **Balancing Authority** Area in an equitable and not unduly discriminatory manner. The Participating TO shall exercise Reasonable Efforts to provide the Interconnection Customer with such schedules at least one (1) day in advance, and the CAISO or Participating TO may make changes to such schedules as necessary to maintain the reliability of the CAISO Controlled Grid or the Participating TO's electric system. The Interconnection Customer shall operate the Electric Generating Unit to maintain the specified output voltage or power factor within the design limitations of the Electric Generating Unit set forth in Article 9.6.1 (Power Factor Design Criteria), and as may be required by the CAISO to operate the Electric Generating Unit at a specific voltage schedule within the design limitations set forth in Article 9.6.1. If the Interconnection Customer is unable to maintain the specified voltage or power factor, it shall promptly notify the CAISO and the Participating TO.

**9.6.2.1 Governors and Regulators.** Whenever an Electric Generating Unit is operated in parallel with the CAISO Controlled Grid and the speed governors (if installed on the Electric Generating Unit pursuant to Good Utility Practice) and voltage regulators are capable of operation, the Interconnection Customer shall operate the Electric Generating Unit with its speed governors and voltage regulators in automatic operation. If the Electric Generating Unit's speed governors and voltage regulators are not capable of such automatic operation, the Interconnection Customer shall immediately notify the CAISO and the Participating TO and ensure that the Electric Generating Unit operates as specified in Article 9.6.2 through manual operation and that such Electric Generating Unit's reactive power production or absorption (measured in MVARs) are within the design capability of the Electric Generating Unit(s) and steady state stability limits. The Interconnection Customer shall restore the speed governors and voltage regulators to automatic operation as soon as possible and in accordance with the Reliability Management System Agreement in **Appendix G**. If the Large Generating Facility's speed governors and voltage regulators are improperly tuned or malfunctioning, the CAISO shall have the right to order the reduction in output or disconnection of the Large Generating Facility if the reliability of the CAISO Controlled Grid would be adversely affected. The

Interconnection Customer shall not cause its Large Generating Facility to disconnect automatically or instantaneously from the CAISO Controlled Grid or trip any Electric Generating Unit comprising the Large Generating Facility for an under or over frequency condition unless the abnormal frequency condition persists for a time period beyond the limits set forth in ANSI/IEEE Standard C37.106, or such other standard as applied to other generators in the **Balancing Authority** Area on a comparable basis.

**9.6.3 Payment for Reactive Power.** CAISO is required to pay the Interconnection Customer for reactive power that Interconnection Customer provides or absorbs from an Electric Generating Unit when the CAISO requests the Interconnection Customer to operate its Electric Generating Unit outside the range specified in Article 9.6.1, provided that if the CAISO pays other generators for reactive power service within the specified range, it must also pay the Interconnection Customer. Payments shall be pursuant to Article 11.6 or such other agreement to which the CAISO and Interconnection Customer have otherwise agreed.

## **9.7 Outages and Interruptions.**

### **9.7.1 Outages.**

**9.7.1.1 Outage Authority and Coordination.** Each Party may in accordance with Good Utility Practice in coordination with the other Parties remove from service any of its respective Interconnection Facilities or Network Upgrades that may impact another Party's facilities as necessary to perform maintenance or testing or to install or replace equipment. Absent an Emergency Condition, the Party scheduling a removal of such facility(ies) from service will use Reasonable Efforts to schedule such removal on a date and time mutually acceptable to all Parties. In all circumstances any Party planning to remove such facility(ies) from service shall use Reasonable Efforts to minimize the effect on the other Parties of such removal.

**9.7.1.2 Outage Schedules.** The CAISO shall post scheduled outages of CAISO Controlled Grid facilities in accordance with the provisions of the CAISO Tariff. The Interconnection Customer shall submit its planned maintenance schedules for the Large Generating Facility to the CAISO in accordance with the CAISO Tariff. The Interconnection Customer shall update its planned maintenance schedules in accordance with the CAISO Tariff. The CAISO may request the Interconnection Customer to reschedule its maintenance as necessary to maintain the reliability of the CAISO Controlled Grid in accordance with the CAISO Tariff. Such planned maintenance schedules and updates and changes to such schedules shall be provided by the Interconnection Customer to the Participating TO concurrently with their submittal to the CAISO. The CAISO shall compensate the Interconnection Customer for any additional direct costs that the Interconnection Customer incurs as a result of having to reschedule maintenance in accordance with the CAISO Tariff. The Interconnection Customer will not be eligible to receive compensation, if during the twelve (12) months prior to the date of the scheduled maintenance, the Interconnection Customer had modified its schedule of maintenance activities.



**9.7.1.3 Outage Restoration.** If an outage on a Party's Interconnection Facilities or Network Upgrades adversely affects another Party's operations or facilities, the Party that owns or controls the facility that is out of service shall use Reasonable Efforts to promptly restore such facility(ies) to a normal operating condition consistent with the nature of the outage. The Party that owns or controls the facility that is out of service shall provide the other Parties, to the extent such information is known, information on the nature of the Emergency Condition, if the outage is caused by an Emergency Condition, an estimated time of restoration, and any corrective actions required. Initial verbal notice shall be followed up as soon as practicable with written notice explaining the nature of the outage, if requested by a Party, which may be provided by e-mail or facsimile.

**9.7.2 Interruption of Service.** If required by Good Utility Practice to do so, the CAISO or the Participating TO may require the Interconnection Customer to interrupt or reduce deliveries of electricity if such delivery of electricity could adversely affect the CAISO's or the Participating TO's ability to perform such activities as are necessary to safely and reliably operate and maintain the Participating TO's electric system or the CAISO Controlled Grid. The following provisions shall apply to any interruption or reduction permitted under this Article 9.7.2:

**9.7.2.1** The interruption or reduction shall continue only for so long as reasonably necessary under Good Utility Practice;

**9.7.2.2** Any such interruption or reduction shall be made on an equitable, non-discriminatory basis with respect to all generating facilities directly connected to the CAISO Controlled Grid, subject to any conditions specified in this LGIA;

**9.7.2.3** When the interruption or reduction must be made under circumstances which do not allow for advance notice, the CAISO or Participating TO, as applicable, shall notify the Interconnection Customer by telephone as soon as practicable of the reasons for the curtailment, interruption, or reduction, and, if known, its expected duration. Telephone notification shall be followed by written notification, if requested by the Interconnection Customer, as soon as practicable;

**9.7.2.4** Except during the existence of an Emergency Condition, the CAISO or Participating TO shall notify the Interconnection Customer in advance regarding the timing of such interruption or reduction and further notify the Interconnection Customer of the expected duration. The CAISO or Participating TO shall coordinate with the Interconnection Customer using Good Utility Practice to schedule the interruption or reduction during periods of least impact to the Interconnection Customer, the CAISO, and the Participating TO;

**9.7.2.5** The Parties shall cooperate and coordinate with each other to the extent necessary in order to restore the Large Generating Facility, Interconnection Facilities, the Participating TO's Transmission System, and the CAISO Controlled Grid to their normal operating state, consistent with system conditions and Good Utility Practice.

**9.7.3 Under-Frequency and Over Frequency Conditions.** The CAISO Controlled Grid is designed to automatically activate a load-shed program as required by the Applicable Reliability Council in the event of an under-frequency system disturbance. The Interconnection Customer shall implement under-frequency and over-frequency protection set points for the Large Generating Facility as required by the Applicable Reliability Council to ensure "ride through" capability. Large Generating Facility response to frequency deviations of pre-determined magnitudes, both under-frequency and over-frequency deviations, shall be studied and coordinated with the Participating TO and CAISO in accordance with Good Utility Practice. The term "ride through" as used herein shall mean the ability of a Generating Facility to stay connected to and synchronized with the CAISO Controlled Grid during system disturbances within a range of under-frequency and over-frequency conditions, in accordance with Good Utility Practice.

**9.7.4 System Protection and Other Control Requirements.**

**9.7.4.1 System Protection Facilities.** The Interconnection Customer shall, at its expense, install, operate and maintain System Protection Facilities as a part of the Large Generating Facility or the Interconnection Customer's Interconnection Facilities. The Participating TO shall install at the Interconnection Customer's expense any System Protection Facilities that may be required on the Participating TO's Interconnection Facilities or the Participating TO's Transmission System as a result of the interconnection of the Large Generating Facility and the Interconnection Customer's Interconnection Facilities.

**9.7.4.2** The Participating TO's and Interconnection Customer's protection facilities shall be designed and coordinated with other systems in accordance with Applicable Reliability Council criteria and Good Utility Practice.

**9.7.4.3** The Participating TO and Interconnection Customer shall each be responsible for protection of its facilities consistent with Good Utility Practice.

**9.7.4.4** The Participating TO's and Interconnection Customer's protective relay design shall incorporate the necessary test switches to perform the tests required in Article 6. The required test switches will be placed such that they allow operation of lockout relays while preventing breaker failure schemes from operating and causing unnecessary breaker operations and/or the tripping of the Interconnection Customer's Electric Generating Units.

**9.7.4.5** The Participating TO and Interconnection Customer will test, operate and maintain System Protection Facilities in accordance with Good Utility Practice and, if applicable, the requirements of the Participating TO's Interconnection Handbook.

**9.7.4.6** Prior to the in-service date, and again prior to the Commercial Operation Date, the Participating TO and Interconnection Customer or their agents shall perform a complete calibration test and functional trip test of the System Protection Facilities. At intervals suggested by Good Utility Practice, the standards and procedures of the Participating TO, including, if applicable, the requirements of the Participating TO's Interconnection Handbook, and following any apparent malfunction of the System Protection Facilities, each Party shall perform both

calibration and functional trip tests of its System Protection Facilities. These tests do not require the tripping of any in-service generation unit. These tests do, however, require that all protective relays and lockout contacts be activated.

- 9.7.5 Requirements for Protection.** In compliance with Good Utility Practice and, if applicable, the requirements of the Participating TO's Interconnection Handbook, the Interconnection Customer shall provide, install, own, and maintain relays, circuit breakers and all other devices necessary to remove any fault contribution of the Large Generating Facility to any short circuit occurring on the Participating TO's Transmission System not otherwise isolated by the Participating TO's equipment, such that the removal of the fault contribution shall be coordinated with the protective requirements of the Participating TO's Transmission System. Such protective equipment shall include, without limitation, a disconnecting device with fault current-interrupting capability located between the Large Generating Facility and the Participating TO's Transmission System at a site selected upon mutual agreement (not to be unreasonably withheld, conditioned or delayed) of the Parties. The Interconnection Customer shall be responsible for protection of the Large Generating Facility and the Interconnection Customer's other equipment from such conditions as negative sequence currents, over- or under-frequency, sudden load rejection, over- or under-voltage, and generator loss-of-field. The Interconnection Customer shall be solely responsible to disconnect the Large Generating Facility and the Interconnection Customer's other equipment if conditions on the CAISO Controlled Grid could adversely affect the Large Generating Facility.
- 9.7.6 Power Quality.** Neither the Participating TO's nor the Interconnection Customer's facilities shall cause excessive voltage flicker nor introduce excessive distortion to the sinusoidal voltage or current waves as defined by ANSI Standard C84.1-1989, in accordance with IEEE Standard 519, any applicable superseding electric industry standard, or any alternative Applicable Reliability Council standard. In the event of a conflict between ANSI Standard C84.1-1989, any applicable superseding electric industry standard, or any alternative Applicable Reliability Council standard, the alternative Applicable Reliability Council standard shall control.
- 9.8 Switching and Tagging Rules.** Each Party shall provide the other Parties a copy of its switching and tagging rules that are applicable to the other Parties' activities. Such switching and tagging rules shall be developed on a non-discriminatory basis. The Parties shall comply with applicable switching and tagging rules, as amended from time to time, in obtaining clearances for work or for switching operations on equipment.
- 9.9 Use of Interconnection Facilities by Third Parties.**
- 9.9.1 Purpose of Interconnection Facilities.** Except as may be required by Applicable Laws and Regulations, or as otherwise agreed to among the Parties, the Interconnection Facilities shall be constructed for the sole purpose of interconnecting the Large Generating Facility to the Participating TO's Transmission System and shall be used for no other purpose.

- 9.9.2 Third Party Users.** If required by Applicable Laws and Regulations or if the Parties mutually agree, such agreement not to be unreasonably withheld, to allow one or more third parties to use the Participating TO's Interconnection Facilities, or any part thereof, the Interconnection Customer will be entitled to compensation for the capital expenses it incurred in connection with the Interconnection Facilities based upon the pro rata use of the Interconnection Facilities by the Participating TO, all third party users, and the Interconnection Customer, in accordance with Applicable Laws and Regulations or upon some other mutually-agreed upon methodology. In addition, cost responsibility for ongoing costs, including operation and maintenance costs associated with the Interconnection Facilities, will be allocated between the Interconnection Customer and any third party users based upon the pro rata use of the Interconnection Facilities by the Participating TO, all third party users, and the Interconnection Customer, in accordance with Applicable Laws and Regulations or upon some other mutually agreed upon methodology. If the issue of such compensation or allocation cannot be resolved through such negotiations, it shall be submitted to FERC for resolution.
- 9.10 Disturbance Analysis Data Exchange.** The Parties will cooperate with one another in the analysis of disturbances to either the Large Generating Facility or the CAISO Controlled Grid by gathering and providing access to any information relating to any disturbance, including information from oscillography, protective relay targets, breaker operations and sequence of events records, and any disturbance information required by Good Utility Practice.

## **ARTICLE 10. MAINTENANCE**

- 10.1 Participating TO Obligations.** The Participating TO shall maintain the Participating TO's Transmission System and the Participating TO's Interconnection Facilities in a safe and reliable manner and in accordance with this LGIA.
- 10.2 Interconnection Customer Obligations.** The Interconnection Customer shall maintain the Large Generating Facility and the Interconnection Customer's Interconnection Facilities in a safe and reliable manner and in accordance with this LGIA.
- 10.3 Coordination.** The Parties shall confer regularly to coordinate the planning, scheduling and performance of preventive and corrective maintenance on the Large Generating Facility and the Interconnection Facilities.
- 10.4 Secondary Systems.** The Participating TO and Interconnection Customer shall cooperate with the other Parties in the inspection, maintenance, and testing of control or power circuits that operate below 600 volts, AC or DC, including, but not limited to, any hardware, control or protective devices, cables, conductors, electric raceways, secondary equipment panels, transducers, batteries, chargers, and voltage and current transformers that directly affect the operation of a Party's facilities and equipment which may reasonably be expected to impact the other Parties. Each Party shall provide advance notice to the other Parties before undertaking any work on such circuits, especially on electrical circuits involving circuit breaker trip and close contacts, current transformers, or potential transformers.

- 10.5 Operating and Maintenance Expenses.** Subject to the provisions herein addressing the use of facilities by others, and except for operations and maintenance expenses associated with modifications made for providing interconnection or transmission service to a third party and such third party pays for such expenses, the Interconnection Customer shall be responsible for all reasonable expenses including overheads, associated with: (1) owning, operating, maintaining, repairing, and replacing the Interconnection Customer's Interconnection Facilities; and (2) operation, maintenance, repair and replacement of the Participating TO's Interconnection Facilities.

## **ARTICLE 11. PERFORMANCE OBLIGATION**

- 11.1 Interconnection Customer's Interconnection Facilities.** The Interconnection Customer shall design, procure, construct, install, own and/or control the Interconnection Customer's Interconnection Facilities described in Appendix A at its sole expense.
- 11.2 Participating TO's Interconnection Facilities.** The Participating TO shall design, procure, construct, install, own and/or control the Participating TO's Interconnection Facilities described in Appendix A at the sole expense of the Interconnection Customer. Unless the Participating TO elects to fund the capital for the Participating TO's Interconnection Facilities, they shall be solely funded by the Interconnection Customer.
- 11.3 Network Upgrades and Distribution Upgrades.** The Participating TO shall design, procure, construct, install, and own the Network Upgrades and Distribution Upgrades described in Appendix A. The Interconnection Customer shall be responsible for all costs related to Distribution Upgrades. Unless the Participating TO elects to fund the capital for the Distribution Upgrades and Network Upgrades, they shall be solely funded by the Interconnection Customer.
- 11.4 Transmission Credits.** No later than thirty (30) days prior to the Commercial Operation Date, the Interconnection Customer may make a one-time election by written notice to the CAISO and the Participating TO to receive Congestion Revenue Rights as defined in and as available under the CAISO Tariff at the time of the election in accordance with the CAISO Tariff, in lieu of a refund of the cost of Network Upgrades in accordance with Article 11.4.1.
- 11.4.1 Repayment of Amounts Advanced for Network Upgrades.** Upon the Commercial Operation Date, the Interconnection Customer shall be entitled to a repayment, equal to the total amount paid to the Participating TO for the cost of Network Upgrades. Such amount shall include any tax gross-up or other tax-related payments associated with Network Upgrades not refunded to the Interconnection Customer pursuant to Article 5.17.8 or otherwise, and shall be paid to the Interconnection Customer by the Participating TO on a dollar-for-dollar basis either through (1) direct payments made on a levelized basis over the five-year period commencing on the Commercial Operation Date; or (2) any alternative payment schedule that is mutually agreeable to the Interconnection Customer and Participating TO, provided that such amount is paid within five (5) years from the Commercial Operation Date. Notwithstanding the foregoing, if this LGIA terminates within five (5) years from the Commercial Operation Date, the Participating TO's obligation to pay refunds to the Interconnection Customer shall cease as of the date of termination. Any repayment shall include interest calculated in accordance with the methodology set forth in FERC's regulations at 18 C.F.R. §35.19a(a)(2)(iii) from the date of any payment for Network Upgrades through the date on which the Interconnection Customer receives a repayment of such payment. Interest shall continue to accrue on the repayment obligation so long as this LGIA is in effect. The Interconnection Customer may assign such repayment rights to any person.

If the Large Generating Facility fails to achieve commercial operation, but it or another Generating Facility is later constructed and makes use of the Network Upgrades, the Participating TO shall at that time reimburse Interconnection Customer for the amounts advanced for the Network Upgrades. Before any such reimbursement can occur, the Interconnection Customer, or the entity that ultimately constructs the Generating Facility, if different, is responsible for identifying the entity to which reimbursement must be made.

**11.4.2 Special Provisions for Affected Systems.** The Interconnection Customer shall enter into an agreement with the owner of the Affected System and/or other affected owners of portions of the CAISO Controlled Grid, as applicable, in accordance with the LGIP. Such agreement shall specify the terms governing payments to be made by the Interconnection Customer to the owner of the Affected System and/or other affected owners of portions of the CAISO Controlled Grid as well as the repayment by the owner of the Affected System and/or other affected owners of portions of the CAISO Controlled Grid. In no event shall the Participating TO be responsible for the repayment for any facilities that are not part of the Participating TO's Transmission System.

**11.4.3** Notwithstanding any other provision of this LGIA, nothing herein shall be construed as relinquishing or foreclosing any rights, including but not limited to firm transmission rights, capacity rights, Congestion Revenue Rights, or transmission credits, that the Interconnection Customer shall be entitled to, now or in the future under any other agreement or tariff as a result of, or otherwise associated with, the transmission capacity, if any, created by the Network Upgrades, including the right to obtain cash reimbursements or transmission credits for transmission service that is not associated with the Large Generating Facility.

**11.5 Provision of Security.** At least thirty (30) Calendar Days prior to the commencement of the procurement, installation, or construction of a discrete portion of a Participating TO's Interconnection Facilities, Network Upgrades, or Distribution Upgrades, the Interconnection Customer shall provide the Participating TO, at the Interconnection Customer's option, a guarantee, a surety bond, letter of credit or other form of security that is reasonably acceptable to the Participating TO and is consistent with the Uniform Commercial Code of the jurisdiction identified in Article 14.2.1. Such security for payment shall be in an amount sufficient to cover the costs for constructing, procuring and installing the applicable portion of the Participating TO's Interconnection Facilities, Network Upgrades, or Distribution Upgrades. Such security shall be reduced on a dollar-for-dollar basis for payments made to the Participating TO for these purposes.

In addition:

**11.5.1** The guarantee must be made by an entity that meets the creditworthiness requirements of the Participating TO, and contain terms and conditions that guarantee payment of any amount that may be due from the Interconnection Customer, up to an agreed-to maximum amount.

**11.5.2** The letter of credit must be issued by a financial institution reasonably acceptable to the Participating TO and must specify a reasonable expiration date.

**11.5.3** The surety bond must be issued by an insurer reasonably acceptable to the Participating TO and must specify a reasonable expiration date.

**11.6 Interconnection Customer Compensation.** If the CAISO requests or directs the Interconnection Customer to provide a service pursuant to Articles 9.6.3 (Payment for Reactive Power) or 13.5.1 of this LGIA, the CAISO shall compensate the Interconnection Customer in accordance with the CAISO Tariff.

**11.6.1 Interconnection Customer Compensation for Actions During Emergency Condition.** The CAISO shall compensate the Interconnection Customer in accordance with the CAISO Tariff for its provision of real and reactive power and other Emergency Condition services that the Interconnection Customer provides to support the CAISO Controlled Grid during an Emergency Condition in accordance with Article 11.6.

## ARTICLE 12. INVOICE

**12.1 General.** The Participating TO shall submit to the Interconnection Customer, on a monthly basis, invoices of amounts due pursuant to this LGIA for the preceding month. Each invoice shall state the month to which the invoice applies and fully describe the services and equipment provided. The Parties may discharge mutual debts and payment obligations due and owing to each other on the same date through netting, in which case all amounts a Party owes to the other Party under this LGIA, including interest payments or credits, shall be netted so that only the net amount remaining due shall be paid by the owing Party. Notwithstanding the foregoing, any invoices between the CAISO and another Party shall be submitted and paid in accordance with the CAISO Tariff.

**12.2 Final Invoice.** As soon as reasonably practicable, but within twelve months after completion of the construction of the Participating TO's Interconnection Facilities, Network Upgrades, and Distribution Upgrades, the Participating TO shall provide an invoice of the final cost of the construction of the Participating TO's Interconnection Facilities, Network Upgrades, and Distribution Upgrades, and shall set forth such costs in sufficient detail to enable the Interconnection Customer to compare the actual costs with the estimates and to ascertain deviations, if any, from the cost estimates. The Participating TO shall refund to the Interconnection Customer any amount by which the actual payment by the Interconnection Customer for estimated costs exceeds the actual costs of construction within thirty (30) Calendar Days of the issuance of such final construction invoice; or, in the event the actual costs of construction exceed the Interconnection Customer's actual payment for estimated costs, then the Interconnection Customer shall pay to the Participating TO any amount by which the actual costs of construction exceed the actual payment by the Interconnection Customer for estimated costs within thirty (30) Calendar Days of the issuance of such final construction invoice.

**12.3 Payment.** Invoices shall be rendered to the Interconnection Customer at the address specified in Appendix F. The Interconnection Customer shall pay, or Participating TO shall refund, the amounts due within thirty (30) Calendar Days of the Interconnection Customer's receipt of the invoice. All payments shall be made in immediately available funds payable to the Interconnection Customer or Participating TO, or by wire transfer to a bank named and account designated by the invoicing Interconnection Customer or Participating TO. Payment of invoices by any Party will not constitute a waiver of any rights or claims any Party may have under this LGIA.

- 12.4 Disputes.** In the event of a billing dispute between the Interconnection Customer and the Participating TO, the Participating TO and the CAISO shall continue to provide Interconnection Service under this LGIA as long as the Interconnection Customer: (i) continues to make all payments not in dispute; and (ii) pays to the Participating TO or into an independent escrow account the portion of the invoice in dispute, pending resolution of such dispute. If the Interconnection Customer fails to meet these two requirements for continuation of service, then the Participating TO may provide notice to the Interconnection Customer of a Default pursuant to Article 17. Within thirty (30) Calendar Days after the resolution of the dispute, the Party that owes money to the other Party shall pay the amount due with interest calculated in accordance with the methodology set forth in FERC's Regulations at 18 C.F.R. § 35.19a(a)(2)(iii). Notwithstanding the foregoing, any billing dispute between the CAISO and another Party shall be resolved in accordance with the provisions of Article 27 of this LGIA.

### ARTICLE 13. EMERGENCIES

**13.1 [Reserved]**

- 13.2 Obligations.** Each Party shall comply with the Emergency Condition procedures of the CAISO, NERC, the Applicable Reliability Council, Applicable Laws and Regulations, and any emergency procedures set forth in this LGIA.

- 13.3 Notice.** The Participating TO or the CAISO shall notify the Interconnection Customer promptly when it becomes aware of an Emergency Condition that affects the Participating TO's Interconnection Facilities or Distribution System or the CAISO Controlled Grid, respectively, that may reasonably be expected to affect the Interconnection Customer's operation of the Large Generating Facility or the Interconnection Customer's Interconnection Facilities. The Interconnection Customer shall notify the Participating TO and the CAISO promptly when it becomes aware of an Emergency Condition that affects the Large Generating Facility or the Interconnection Customer's Interconnection Facilities that may reasonably be expected to affect the CAISO Controlled Grid or the Participating TO's Interconnection Facilities. To the extent information is known, the notification shall describe the Emergency Condition, the extent of the damage or deficiency, the expected effect on the operation of the Interconnection Customer's or Participating TO's facilities and operations, its anticipated duration and the corrective action taken and/or to be taken. The initial notice shall be followed as soon as practicable with written notice, if requested by a Party, which may be provided by electronic mail or facsimile, or in the case of the CAISO may be publicly posted on the CAISO's internet web site.

- 13.4 Immediate Action.** Unless, in the Interconnection Customer's reasonable judgment, immediate action is required, the Interconnection Customer shall obtain the consent of the CAISO and the Participating TO, such consent to not be unreasonably withheld, prior to performing any manual switching operations at the Large Generating Facility or the Interconnection Customer's Interconnection Facilities in response to an Emergency Condition declared by the Participating TO or CAISO or in response to any other emergency condition.



### **13.5 CAISO and Participating TO Authority.**

**13.5.1 General.** The CAISO and Participating TO may take whatever actions or inactions, including issuance of dispatch instructions, with regard to the CAISO Controlled Grid or the Participating TO's Interconnection Facilities or Distribution System they deem necessary during an Emergency Condition in order to (i) preserve public health and safety, (ii) preserve the reliability of the CAISO Controlled Grid or the Participating TO's Interconnection Facilities or Distribution System, and (iii) limit or prevent damage, and (iv) expedite restoration of service.

The Participating TO and the CAISO shall use Reasonable Efforts to minimize the effect of such actions or inactions on the Large Generating Facility or the Interconnection Customer's Interconnection Facilities. The Participating TO or the CAISO may, on the basis of technical considerations, require the Large Generating Facility to mitigate an Emergency Condition by taking actions necessary and limited in scope to remedy the Emergency Condition, including, but not limited to, directing the Interconnection Customer to shut-down, start-up, increase or decrease the real or reactive power output of the Large Generating Facility; implementing a reduction or disconnection pursuant to Article 13.5.2; directing the Interconnection Customer to assist with black start (if available) or restoration efforts; or altering the outage schedules of the Large Generating Facility and the Interconnection Customer's Interconnection Facilities. Interconnection Customer shall comply with all of the CAISO's and Participating TO's operating instructions concerning Large Generating Facility real power and reactive power output within the manufacturer's design limitations of the Large Generating Facility's equipment that is in service and physically available for operation at the time, in compliance with Applicable Laws and Regulations.

**13.5.2 Reduction and Disconnection.** The Participating TO or the CAISO may reduce Interconnection Service or disconnect the Large Generating Facility or the Interconnection Customer's Interconnection Facilities when such reduction or disconnection is necessary under Good Utility Practice due to Emergency Conditions. These rights are separate and distinct from any right of curtailment of the CAISO pursuant to the CAISO Tariff. When the CAISO or Participating TO can schedule the reduction or disconnection in advance, the CAISO or Participating TO shall notify the Interconnection Customer of the reasons, timing and expected duration of the reduction or disconnection. The CAISO or Participating TO shall coordinate with the Interconnection Customer using Good Utility Practice to schedule the reduction or disconnection during periods of least impact to the Interconnection Customer and the CAISO and Participating TO. Any reduction or disconnection shall continue only for so long as reasonably necessary under Good Utility Practice. The Parties shall cooperate with each other to restore the Large Generating Facility, the Interconnection Facilities, and the CAISO Controlled Grid to their normal operating state as soon as practicable consistent with Good Utility Practice.

**13.6 Interconnection Customer Authority.** Consistent with Good Utility Practice, this LGIA, and the CAISO Tariff, the Interconnection Customer may take actions or inactions with regard to the Large Generating Facility or the Interconnection Customer's Interconnection Facilities during an Emergency Condition in order to (i) preserve public health and safety, (ii) preserve the reliability of the Large Generating Facility or the Interconnection Customer's Interconnection Facilities, (iii) limit or prevent damage, and (iv) expedite restoration of service. Interconnection Customer

shall use Reasonable Efforts to minimize the effect of such actions or inactions on the CAISO Controlled Grid and the Participating TO's Interconnection Facilities. The CAISO and Participating TO shall use Reasonable Efforts to assist Interconnection Customer in such actions.

- 13.7 Limited Liability.** Except as otherwise provided in Article 11.6.1 of this LGIA, no Party shall be liable to any other Party for any action it takes in responding to an Emergency Condition so long as such action is made in good faith and is consistent with Good Utility Practice.

#### **ARTICLE 14. REGULATORY REQUIREMENTS AND GOVERNING LAW**

- 14.1 Regulatory Requirements.** Each Party's obligations under this LGIA shall be subject to its receipt of any required approval or certificate from one or more Governmental Authorities in the form and substance satisfactory to the applying Party, or the Party making any required filings with, or providing notice to, such Governmental Authorities, and the expiration of any time period associated therewith. Each Party shall in good faith seek and use its Reasonable Efforts to obtain such other approvals. Nothing in this LGIA shall require the Interconnection Customer to take any action that could result in its inability to obtain, or its loss of, status or exemption under the Federal Power Act or the Public Utility Holding Company Act of 1935, as amended, or the Public Utility Regulatory Policies Act of 1978, or the Energy Policy Act of 2005.

**14.2 Governing Law.**

**14.2.1** The validity, interpretation and performance of this LGIA and each of its provisions shall be governed by the laws of the state where the Point of Interconnection is located, without regard to its conflicts of law principles.

**14.2.2** This LGIA is subject to all Applicable Laws and Regulations.

**14.2.3** Each Party expressly reserves the right to seek changes in, appeal, or otherwise contest any laws, orders, rules, or regulations of a Governmental Authority.

#### **ARTICLE 15. NOTICES**

- 15.1 General.** Unless otherwise provided in this LGIA, any notice, demand or request required or permitted to be given by a Party to another and any instrument required or permitted to be tendered or delivered by a Party in writing to another shall be effective when delivered and may be so given, tendered or delivered, by recognized national courier, or by depositing the same with the United States Postal Service with postage prepaid, for delivery by certified or registered mail, addressed to the Party, or personally delivered to the Party, at the address set out in **Appendix F**, Addresses for Delivery of Notices and Billings.

A Party must update the information in **Appendix F** as information changes. A Party may change the notice information in this LGIA by giving five (5) Business Days written notice prior to the effective date of the change. Such changes shall not constitute an amendment to this LGIA.

- 15.2 Billings and Payments.** Billings and payments shall be sent to the addresses set out in **Appendix F**.

- 15.3 Alternative Forms of Notice.** Any notice or request required or permitted to be given by a Party to another and not required by this LGIA to be given in writing may be so given by telephone, facsimile or e-mail to the telephone numbers and e-mail addresses set out in **Appendix F**.
- 15.4 Operations and Maintenance Notice.** Each Party shall notify the other Parties in writing of the identity of the person(s) that it designates as the point(s) of contact with respect to the implementation of Articles 9 and 10.

## **ARTICLE 16. FORCE MAJEURE**

### **16.1 Force Majeure.**

- 16.1.1** Economic hardship is not considered a Force Majeure event.
- 16.1.2** No Party shall be considered to be in Default with respect to any obligation hereunder, (including obligations under Article 4), other than the obligation to pay money when due, if prevented from fulfilling such obligation by Force Majeure. A Party unable to fulfill any obligation hereunder (other than an obligation to pay money when due) by reason of Force Majeure shall give notice and the full particulars of such Force Majeure to the other Party in writing or by telephone as soon as reasonably possible after the occurrence of the cause relied upon. Telephone notices given pursuant to this Article shall be confirmed in writing as soon as reasonably possible and shall specifically state full particulars of the Force Majeure, the time and date when the Force Majeure occurred and when the Force Majeure is reasonably expected to cease. The Party affected shall exercise due diligence to remove such disability with reasonable dispatch, but shall not be required to accede or agree to any provision not satisfactory to it in order to settle and terminate a strike or other labor disturbance.

## **ARTICLE 17. DEFAULT**

### **17.1 Default**

- 17.1.1 General.** No Default shall exist where such failure to discharge an obligation (other than the payment of money) is the result of Force Majeure as defined in this LGIA or the result of an act or omission of the other Party. Upon a Breach, the affected non-Breaching Party(ies) shall give written notice of such Breach to the Breaching Party. Except as provided in Article 17.1.2, the Breaching Party shall have thirty (30) Calendar Days from receipt of the Default notice within which to cure such Breach; provided however, if such Breach is not capable of cure within thirty (30) Calendar Days, the Breaching Party shall commence such cure within thirty (30) Calendar Days after notice and continuously and diligently complete such cure within ninety (90) Calendar Days from receipt of the Default notice; and, if cured within such time, the Breach specified in such notice shall cease to exist.

**17.1.2 Right to Terminate.** If a Breach is not cured as provided in this Article, or if a Breach is not capable of being cured within the period provided for herein, the affected non-Breaching Party(ies) shall have the right to declare a Default and terminate this LGIA by written notice at any time until cure occurs, and be relieved of any further obligation hereunder and, whether or not such Party(ies) terminates this LGIA, to recover from the Breaching Party all amounts due hereunder, plus all other damages and remedies to which it is entitled at law or in equity. The provisions of this Article will survive termination of this LGIA.

## **ARTICLE 18. INDEMNITY, CONSEQUENTIAL DAMAGES AND INSURANCE**

**18.1 Indemnity.** Each Party shall at all times indemnify, defend, and hold the other Parties harmless from, any and all Losses arising out of or resulting from another Party's action or inactions of its obligations under this LGIA on behalf of the indemnifying Party, except in cases of gross negligence or intentional wrongdoing by the Indemnified Party.

**18.1.1 Indemnified Party.** If an Indemnified Party is entitled to indemnification under this Article 18 as a result of a claim by a third party, and the Indemnifying Party fails, after notice and reasonable opportunity to proceed under Article 18.1, to assume the defense of such claim, such Indemnified Party may at the expense of the Indemnifying Party contest, settle or consent to the entry of any judgment with respect to, or pay in full, such claim.

**18.1.2 Indemnifying Party.** If an Indemnifying Party is obligated to indemnify and hold any Indemnified Party harmless under this Article 18, the amount owing to the Indemnified Party shall be the amount of such Indemnified Party's actual Loss, net of any insurance or other recovery.

**18.1.3 Indemnity Procedures.** Promptly after receipt by an Indemnified Party of any claim or notice of the commencement of any action or administrative or legal proceeding or investigation as to which the indemnity provided for in Article 18.1 may apply, the Indemnified Party shall notify the Indemnifying Party of such fact. Any failure of or delay in such notification shall not affect a Party's indemnification obligation unless such failure or delay is materially prejudicial to the indemnifying Party.

The Indemnifying Party shall have the right to assume the defense thereof with counsel designated by such Indemnifying Party and reasonably satisfactory to the Indemnified Party. If the defendants in any such action include one or more Indemnified Parties and the Indemnifying Party and if the Indemnified Party reasonably concludes that there may be legal defenses available to it and/or other Indemnified Parties which are different from or additional to those available to the Indemnifying Party, the Indemnified Party shall have the right to select separate counsel to assert such legal defenses and to otherwise participate in the defense of such action on its own behalf. In such instances, the Indemnifying Party shall only be required to pay the fees and expenses of one additional attorney to represent an Indemnified Party or Indemnified Parties having such differing or additional legal defenses.

The Indemnified Party shall be entitled, at its expense, to participate in any such action, suit or proceeding, the defense of which has been assumed by the Indemnifying Party. Notwithstanding the foregoing, the Indemnifying Party (i) shall not be entitled to assume and control the defense of any such action, suit or proceedings if and to the extent that, in the opinion of the Indemnified Party and its counsel, such action, suit or proceeding involves the potential imposition of criminal liability on the Indemnified Party, or there exists a conflict or adversity of interest between the Indemnified Party and the Indemnifying Party, in such event the Indemnifying Party shall pay the reasonable expenses of the Indemnified Party, and (ii) shall not settle or consent to the entry of any judgment in any action, suit or proceeding without the consent of the Indemnified Party, which shall not be unreasonably withheld, conditioned or delayed.

**18.2 Consequential Damages.** Other than the liquidated damages heretofore described in Article 5.3, in no event shall any Party be liable under any provision of this LGIA for any losses, damages, costs or expenses for any special, indirect, incidental, consequential, or punitive damages, including but not limited to loss of profit or revenue, loss of the use of equipment, cost of capital, cost of temporary equipment or services, whether based in whole or in part in contract, in tort, including negligence, strict liability, or any other theory of liability; provided, however, that damages for which a Party may be liable to another Party under another agreement will not be considered to be special, indirect, incidental, or consequential damages hereunder.

**18.3 Insurance.** Each Party shall, at its own expense, maintain in force throughout the period of this LGIA, and until released by the other Parties, the following minimum insurance coverages, with insurers rated no less than A- (with a minimum size rating of VII) by Bests' Insurance Guide and Key Ratings and authorized to do business in the state where the Point of Interconnection is located, except in the case of the CAISO, the State of California:

**18.3.1** Employer's Liability and Workers' Compensation Insurance providing statutory benefits in accordance with the laws and regulations of the state in which the Point of Interconnection is located, except in the case of the CAISO, the State of California.

**18.3.2** Commercial General Liability Insurance including premises and operations, personal injury, broad form property damage, broad form blanket contractual liability coverage (including coverage for the contractual indemnification) products and completed operations coverage, coverage for explosion, collapse and underground hazards, independent contractors coverage, coverage for pollution to the extent normally available and punitive damages to the extent normally available and a cross liability endorsement, with minimum limits of One Million Dollars (\$1,000,000) per occurrence/One Million Dollars (\$1,000,000) aggregate combined single limit for personal injury, bodily injury, including death and property damage.

**18.3.3** Business Automobile Liability Insurance for coverage of owned and non-owned and hired vehicles, trailers or semi-trailers designed for travel on public roads, with a minimum, combined single limit of One Million Dollars (\$1,000,000) per occurrence for bodily injury, including death, and property damage.

**18.3.4** Excess Public Liability Insurance over and above the Employer's Liability Commercial General Liability and Business Automobile Liability Insurance coverage, with a minimum combined single limit of Twenty Million Dollars (\$20,000,000) per occurrence/Twenty Million Dollars (\$20,000,000) aggregate.

- 18.3.5** The Commercial General Liability Insurance, Business Automobile Insurance and Excess Public Liability Insurance policies shall name the other Parties, their parents, associated and Affiliate companies and their respective directors, officers, agents, servants and employees ("Other Party Group") as additional insured. All policies shall contain provisions whereby the insurers waive all rights of subrogation in accordance with the provisions of this LGIA against the Other Party Group and provide thirty (30) Calendar Days advance written notice to the Other Party Group prior to anniversary date of cancellation or any material change in coverage or condition.
- 18.3.6** The Commercial General Liability Insurance, Business Automobile Liability Insurance and Excess Public Liability Insurance policies shall contain provisions that specify that the policies are primary and shall apply to such extent without consideration for other policies separately carried and shall state that each insured is provided coverage as though a separate policy had been issued to each, except the insurer's liability shall not be increased beyond the amount for which the insurer would have been liable had only one insured been covered. Each Party shall be responsible for its respective deductibles or retentions.
- 18.3.7** The Commercial General Liability Insurance, Business Automobile Liability Insurance and Excess Public Liability Insurance policies, if written on a Claims First Made Basis, shall be maintained in full force and effect for two (2) years after termination of this LGIA, which coverage may be in the form of tail coverage or extended reporting period coverage if agreed by the Parties.
- 18.3.8** The requirements contained herein as to the types and limits of all insurance to be maintained by the Parties are not intended to and shall not in any manner, limit or qualify the liabilities and obligations assumed by the Parties under this LGIA.
- 18.3.9** Within ten (10) Calendar Days following execution of this LGIA, and as soon as practicable after the end of each fiscal year or at the renewal of the insurance policy and in any event within ninety (90) Calendar Days thereafter, each Party shall provide certification of all insurance required in this LGIA, executed by each insurer or by an authorized representative of each insurer.
- 18.3.10** Notwithstanding the foregoing, each Party may self-insure to meet the minimum insurance requirements of Articles 18.3.2 through 18.3.8 to the extent it maintains a self-insurance program; provided that, such Party's senior unsecured debt or issuer rating is BBB-, or better, as rated by Standard & Poor's and that its self-insurance program meets the minimum insurance requirements of Articles 18.3.2 through 18.3.8. For any period of time that a Party's senior unsecured debt rating and issuer rating are both unrated by Standard & Poor's or are both rated at less than BBB- by Standard & Poor's, such Party shall comply with the insurance requirements applicable to it under Articles 18.3.2 through 18.3.9. In the event that a Party is permitted to self-insure pursuant to this Article 18.3.10, it shall notify the other Parties that it meets the requirements to self-insure and that its self-insurance program meets the minimum insurance requirements in a manner consistent with that specified in Article 18.3.9.

- 18.3.11** The Parties agree to report to each other in writing as soon as practical all accidents or occurrences resulting in injuries to any person, including death, and any property damage arising out of this LGIA.

## **ARTICLE 19. ASSIGNMENT**

- 19.1 Assignment.** This LGIA may be assigned by a Party only with the written consent of the other Parties; provided that a Party may assign this LGIA without the consent of the other Parties to any Affiliate of the assigning Party with an equal or greater credit rating and with the legal authority and operational ability to satisfy the obligations of the assigning Party under this LGIA; and provided further that the Interconnection Customer shall have the right to assign this LGIA, without the consent of the CAISO or Participating TO, for collateral security purposes to aid in providing financing for the Large Generating Facility, provided that the Interconnection Customer will promptly notify the CAISO and Participating TO of any such assignment. Any financing arrangement entered into by the Interconnection Customer pursuant to this Article will provide that prior to or upon the exercise of the secured party's, trustee's or mortgagee's assignment rights pursuant to said arrangement, the secured creditor, the trustee or mortgagee will notify the CAISO and Participating TO of the date and particulars of any such exercise of assignment right(s), including providing the CAISO and Participating TO with proof that it meets the requirements of Articles 11.5 and 18.3. Any attempted assignment that violates this Article is void and ineffective. Any assignment under this LGIA shall not relieve a Party of its obligations, nor shall a Party's obligations be enlarged, in whole or in part, by reason thereof. Where required, consent to assignment will not be unreasonably withheld, conditioned or delayed.

## **ARTICLE 20. SEVERABILITY**

- 20.1 Severability.** If any provision in this LGIA is finally determined to be invalid, void or unenforceable by any court or other Governmental Authority having jurisdiction, such determination shall not invalidate, void or make unenforceable any other provision, agreement or covenant of this LGIA; provided that if the Interconnection Customer (or any third party, but only if such third party is not acting at the direction of the Participating TO or CAISO) seeks and obtains such a final determination with respect to any provision of the Alternate Option (Article 5.1.2), or the Negotiated Option (Article 5.1.4), then none of the provisions of Article 5.1.2 or 5.1.4 shall thereafter have any force or effect and the Parties' rights and obligations shall be governed solely by the Standard Option (Article 5.1.1).

## **ARTICLE 21. COMPARABILITY**

- 21.1 Comparability.** The Parties will comply with all applicable comparability and code of conduct laws, rules and regulations, as amended from time to time.

## **ARTICLE 22. CONFIDENTIALITY**

- 22.1 Confidentiality.** Confidential Information shall include, without limitation, all information relating to a Party's technology, research and development, business affairs, and pricing, and any information supplied by any of the Parties to the other Parties prior to the execution of this LGIA.

Information is Confidential Information only if it is clearly designated or marked in writing as confidential on the face of the document, or, if the information is conveyed orally or by inspection, if the Party providing the information orally informs the Parties receiving the information that the information is confidential.

If requested by any Party, the other Parties shall provide in writing, the basis for asserting that the information referred to in this Article 22 warrants confidential treatment, and the requesting Party may disclose such writing to the appropriate Governmental Authority. Each Party shall be responsible for the costs associated with affording confidential treatment to its information.

**22.1.1 Term.** During the term of this LGIA, and for a period of three (3) years after the expiration or termination of this LGIA, except as otherwise provided in this Article 22, each Party shall hold in confidence and shall not disclose to any person Confidential Information.

**22.1.2 Scope.** Confidential Information shall not include information that the receiving Party can demonstrate: (1) is generally available to the public other than as a result of a disclosure by the receiving Party; (2) was in the lawful possession of the receiving Party on a non-confidential basis before receiving it from the disclosing Party; (3) was supplied to the receiving Party without restriction by a third party, who, to the knowledge of the receiving Party after due inquiry, was under no obligation to the disclosing Party to keep such information confidential; (4) was independently developed by the receiving Party without reference to Confidential Information of the disclosing Party; (5) is, or becomes, publicly known, through no wrongful act or omission of the receiving Party or Breach of this LGIA; or (6) is required, in accordance with Article 22.1.7 of this LGIA, Order of Disclosure, to be disclosed by any Governmental Authority or is otherwise required to be disclosed by law or subpoena, or is necessary in any legal proceeding establishing rights and obligations under this LGIA. Information designated as Confidential Information will no longer be deemed confidential if the Party that designated the information as confidential notifies the other Parties that it no longer is confidential.

**22.1.3 Release of Confidential Information.** No Party shall release or disclose Confidential Information to any other person, except to its employees, consultants, Affiliates (limited by the Standards of Conduct requirements set forth in Part 358 of FERC's Regulations, 18 C.F.R. 358), subcontractors, or to parties who may be or considering providing financing to or equity participation with the Interconnection Customer, or to potential purchasers or assignees of the Interconnection Customer, on a need-to-know basis in connection with this LGIA, unless such person has first been advised of the confidentiality provisions of this Article 22 and has agreed to comply with such provisions. Notwithstanding the foregoing, a Party providing Confidential Information to any person shall remain primarily responsible for any release of Confidential Information in contravention of this Article 22.

**22.1.4 Rights.** Each Party retains all rights, title, and interest in the Confidential Information that each Party discloses to the other Parties. The disclosure by each Party to the other Parties of Confidential Information shall not be deemed a waiver by a Party or any other person or entity of the right to protect the Confidential Information from public disclosure.



- 22.1.5 No Warranties.** The mere fact that a Party has provided Confidential Information does not constitute a warranty or representation as to its accuracy or completeness. In addition, by supplying Confidential Information, no Party obligates itself to provide any particular information or Confidential Information to the other Parties nor to enter into any further agreements or proceed with any other relationship or joint venture.
- 22.1.6 Standard of Care.** Each Party shall use at least the same standard of care to protect Confidential Information it receives as it uses to protect its own Confidential Information from unauthorized disclosure, publication or dissemination. Each Party may use Confidential Information solely to fulfill its obligations to the other Parties under this LGIA or its regulatory requirements.
- 22.1.7 Order of Disclosure.** If a court or a Government Authority or entity with the right, power, and apparent authority to do so requests or requires any Party, by subpoena, oral deposition, interrogatories, requests for production of documents, administrative order, or otherwise, to disclose Confidential Information, that Party shall provide the other Parties with prompt notice of such request(s) or requirement(s) so that the other Parties may seek an appropriate protective order or waive compliance with the terms of this LGIA. Notwithstanding the absence of a protective order or waiver, the Party may disclose such Confidential Information which, in the opinion of its counsel, the Party is legally compelled to disclose. Each Party will use Reasonable Efforts to obtain reliable assurance that confidential treatment will be accorded any Confidential Information so furnished.
- 22.1.8 Termination of Agreement.** Upon termination of this LGIA for any reason, each Party shall, within ten (10) Calendar Days of receipt of a written request from another Party, use Reasonable Efforts to destroy, erase, or delete (with such destruction, erasure, and deletion certified in writing to the other Party) or return to the other Party, without retaining copies thereof, any and all written or electronic Confidential Information received from the other Party.
- 22.1.9 Remedies.** The Parties agree that monetary damages would be inadequate to compensate a Party for another Party's Breach of its obligations under this Article 22. Each Party accordingly agrees that the other Parties shall be entitled to equitable relief, by way of injunction or otherwise, if the first Party Breaches or threatens to Breach its obligations under this Article 22, which equitable relief shall be granted without bond or proof of damages, and the receiving Party shall not plead in defense that there would be an adequate remedy at law. Such remedy shall not be deemed an exclusive remedy for the Breach of this Article 22, but shall be in addition to all other remedies available at law or in equity. The Parties further acknowledge and agree that the covenants contained herein are necessary for the protection of legitimate business interests and are reasonable in scope. No Party, however, shall be liable for indirect, incidental, or consequential or punitive damages of any nature or kind resulting from or arising in connection with this Article 22.
- 22.1.10 Disclosure to FERC, its Staff, or a State.** Notwithstanding anything in this Article 22 to the contrary, and pursuant to 18 C.F.R. section 1b.20, if FERC or its staff, during the course of an investigation or otherwise, requests information from one of the Parties that is otherwise required to be maintained in confidence pursuant to this LGIA, the Party shall provide the requested information to FERC or its staff, within the time provided for in the request for information. In providing the information to FERC or its staff, the Party must, consistent with 18 C.F.R. section 388.112, request that the information be treated as confidential and non-public by FERC and its staff and that the information be withheld

from public disclosure. Parties are prohibited from notifying the other Parties to this LGIA prior to the release of the Confidential Information to FERC or its staff. The Party shall notify the other Parties to the LGIA when it is notified by FERC or its staff that a request to release Confidential Information has been received by FERC, at which time any of the Parties may respond before such information would be made public, pursuant to 18 C.F.R. section 388.112. Requests from a state regulatory body conducting a confidential investigation shall be treated in a similar manner if consistent with the applicable state rules and regulations.

- 22.1.11** Subject to the exception in Article 22.1.10, Confidential Information shall not be disclosed by the other Parties to any person not employed or retained by the other Parties, except to the extent disclosure is (i) required by law; (ii) reasonably deemed by the disclosing Party to be required to be disclosed in connection with a dispute between or among the Parties, or the defense of litigation or dispute; (iii) otherwise permitted by consent of the other Parties, such consent not to be unreasonably withheld; or (iv) necessary to fulfill its obligations under this LGIA or as a transmission service provider or a **Balancing Authority** including disclosing the Confidential Information to an RTO or ISO or to a regional or national reliability organization. The Party asserting confidentiality shall notify the other Parties in writing of the information it claims is confidential. Prior to any disclosures of another Party's Confidential Information under this subparagraph, or if any third party or Governmental Authority makes any request or demand for any of the information described in this subparagraph, the disclosing Party agrees to promptly notify the other Party in writing and agrees to assert confidentiality and cooperate with the other Party in seeking to protect the Confidential Information from public disclosure by confidentiality agreement, protective order or other reasonable measures.

## **ARTICLE 23. ENVIRONMENTAL RELEASES**

- 23.1** Each Party shall notify the other Parties, first orally and then in writing, of the release of any Hazardous Substances, any asbestos or lead abatement activities, or any type of remediation activities related to the Large Generating Facility or the Interconnection Facilities, each of which may reasonably be expected to affect the other Parties. The notifying Party shall: (i) provide the notice as soon as practicable, provided such Party makes a good faith effort to provide the notice no later than twenty-four hours after such Party becomes aware of the occurrence; and (ii) promptly furnish to the other Parties copies of any publicly available reports filed with any Governmental Authorities addressing such events.

## **ARTICLE 24. INFORMATION REQUIREMENTS**

- 24.1 Information Acquisition.** The Participating TO and the Interconnection Customer shall submit specific information regarding the electrical characteristics of their respective facilities to each other as described below and in accordance with Applicable Reliability Standards.
- 24.2 Information Submission by Participating TO.** The initial information submission by the Participating TO shall occur no later than one hundred eighty (180) Calendar Days prior to Trial Operation and shall include the Participating TO's Transmission System information necessary to allow the Interconnection Customer to select equipment and meet any system protection and stability requirements, unless otherwise agreed to by the Participating TO and the Interconnection Customer. On a monthly basis the Participating TO shall provide the Interconnection Customer

and the CAISO a status report on the construction and installation of the Participating TO's Interconnection Facilities and Network Upgrades, including, but not limited to, the following information: (1) progress to date; (2) a description of the activities since the last report; (3) a description of the action items for the next period; and (4) the delivery status of equipment ordered.

**24.3 Updated Information Submission by Interconnection Customer.** The updated information submission by the Interconnection Customer, including manufacturer information, shall occur no later than one hundred eighty (180) Calendar Days prior to the Trial Operation. The Interconnection Customer shall submit a completed copy of the Electric Generating Unit data requirements contained in Appendix 1 to the LGIP. It shall also include any additional information provided to the Participating TO and the CAISO for the Interconnection Studies. Information in this submission shall be the most current Electric Generating Unit design or expected performance data. Information submitted for stability models shall be compatible with the Participating TO and CAISO standard models. If there is no compatible model, the Interconnection Customer will work with a consultant mutually agreed to by the Parties to develop and supply a standard model and associated information.

If the Interconnection Customer's data is materially different from what was originally provided to the Participating TO and the CAISO for the Interconnection Studies, then the Participating TO and the CAISO will conduct appropriate studies pursuant to the LGIP to determine the impact on the Participating TO's Transmission System and affected portions of the CAISO Controlled Grid based on the actual data submitted pursuant to this Article 24.3. The Interconnection Customer shall not begin Trial Operation until such studies are completed and all other requirements of this LGIA are satisfied.

**24.4 Information Supplementation.** Prior to the Trial Operation date, the Parties shall supplement their information submissions described above in this Article 24 with any and all "as-built" Electric Generating Unit information or "as-tested" performance information that differs from the initial submissions or, alternatively, written confirmation that no such differences exist. The Interconnection Customer shall conduct tests on the Electric Generating Unit as required by Good Utility Practice such as an open circuit "step voltage" test on the Electric Generating Unit to verify proper operation of the Electric Generating Unit's automatic voltage regulator.

Unless otherwise agreed, the test conditions shall include: (1) Electric Generating Unit at synchronous speed; (2) automatic voltage regulator on and in voltage control mode; and (3) a five percent (5 percent) change in Electric Generating Unit terminal voltage initiated by a change in the voltage regulators reference voltage. The Interconnection Customer shall provide validated test recordings showing the responses of Electric Generating Unit terminal and field voltages. In the event that direct recordings of these voltages is impractical, recordings of other voltages or currents that mirror the response of the Electric Generating Unit's terminal or field voltage are acceptable if information necessary to translate these alternate quantities to actual Electric Generating Unit terminal or field voltages is provided. Electric Generating Unit testing shall be conducted and results provided to the Participating TO and the CAISO for each individual Electric Generating Unit in a station.

Subsequent to the Commercial Operation Date, the Interconnection Customer shall provide the Participating TO and the CAISO any information changes due to equipment replacement, repair, or adjustment. The Participating TO shall provide the Interconnection Customer any information changes due to equipment replacement, repair or adjustment in the directly connected substation or any adjacent Participating TO-owned substation that may affect the Interconnection Customer's Interconnection Facilities equipment ratings, protection or operating requirements. The Parties shall provide such information pursuant to Article 5.19.

## **ARTICLE 25. INFORMATION ACCESS AND AUDIT RIGHTS**

- 25.1 Information Access.** Each Party (the "disclosing Party") shall make available to the other Party information that is in the possession of the disclosing Party and is necessary in order for the other Party to: (i) verify the costs incurred by the disclosing Party for which the other Party is responsible under this LGIA; and (ii) carry out its obligations and responsibilities under this LGIA. The Parties shall not use such information for purposes other than those set forth in this Article 25.1 and to enforce their rights under this LGIA. Nothing in this Article 25 shall obligate the CAISO to make available to a Party any third party information in its possession or control if making such third party information available would violate a CAISO Tariff restriction on the use or disclosure of such third party information.
- 25.2 Reporting of Non-Force Majeure Events.** Each Party (the "notifying Party") shall notify the other Parties when the notifying Party becomes aware of its inability to comply with the provisions of this LGIA for a reason other than a Force Majeure event. The Parties agree to cooperate with each other and provide necessary information regarding such inability to comply, including the date, duration, reason for the inability to comply, and corrective actions taken or planned to be taken with respect to such inability to comply. Notwithstanding the foregoing, notification, cooperation or information provided under this Article shall not entitle the Party receiving such notification to allege a cause for anticipatory breach of this LGIA.
- 25.3 Audit Rights.** Subject to the requirements of confidentiality under Article 22 of this LGIA, the Parties' audit rights shall include audits of a Party's costs pertaining to such Party's performance or satisfaction of obligations owed to the other Party under this LGIA, calculation of invoiced amounts, the CAISO's efforts to allocate responsibility for the provision of reactive support to the CAISO Controlled Grid, the CAISO's efforts to allocate responsibility for interruption or reduction of generation on the CAISO Controlled Grid, and each such Party's actions in an Emergency Condition.
- 25.3.1** The Interconnection Customer and the Participating TO shall each have the right, during normal business hours, and upon prior reasonable notice to the other Party, to audit at its own expense the other Party's accounts and records pertaining to either such Party's performance or either such Party's satisfaction of obligations owed to the other Party under this LGIA. Subject to Article 25.3.2, any audit authorized by this Article shall be performed at the offices where such accounts and records are maintained and shall be limited to those portions of such accounts and records that relate to each such Party's performance and satisfaction of obligations under this LGIA. Each such Party shall keep such accounts and records for a period equivalent to the audit rights periods described in Article 25.4.

**25.3.2** Notwithstanding anything to the contrary in Article 25.3, each Party's rights to audit the CAISO's accounts and records shall be as set forth in **Section 22.1** of the CAISO Tariff.

**25.4 Audit Rights Periods.**

**25.4.1 Audit Rights Period for Construction-Related Accounts and Records.** Accounts and records related to the design, engineering, procurement, and construction of Participating TO's Interconnection Facilities, Network Upgrades, and Distribution Upgrades constructed by the Participating TO shall be subject to audit for a period of twenty-four months following the Participating TO's issuance of a final invoice in accordance with Article 12.2. Accounts and records related to the design, engineering, procurement, and construction of Participating TO's Interconnection Facilities and/or Stand Alone Network Upgrades constructed by the Interconnection Customer shall be subject to audit and verification by the Participating TO and the CAISO for a period of twenty-four months following the Interconnection Customer's issuance of a final invoice in accordance with Article 5.2(8).

**25.4.2 Audit Rights Period for All Other Accounts and Records.** Accounts and records related to a Party's performance or satisfaction of all obligations under this LGIA other than those described in Article 25.4.1 shall be subject to audit as follows: (i) for an audit relating to cost obligations, the applicable audit rights period shall be twenty-four months after the auditing Party's receipt of an invoice giving rise to such cost obligations; and (ii) for an audit relating to all other obligations, the applicable audit rights period shall be twenty-four months after the event for which the audit is sought; provided that each Party's rights to audit the CAISO's accounts and records shall be as set forth in **Section 22.1** of the CAISO Tariff.

**25.5 Audit Results.** If an audit by the Interconnection Customer or the Participating TO determines that an overpayment or an underpayment has occurred with respect to the other Party, a notice of such overpayment or underpayment shall be given to the other Party together with those records from the audit which supports such determination. The Party that is owed payment shall render an invoice to the other Party and such invoice shall be paid pursuant to Article 12 hereof.

**25.5.1** Notwithstanding anything to the contrary in Article 25.5, the Interconnection Customer's and Participating TO's rights to audit the CAISO's accounts and records shall be as set forth in **Section 22.1** of the CAISO Tariff, and the CAISO's process for remedying an overpayment or underpayment shall be as set forth in the CAISO Tariff.

**ARTICLE 26. SUBCONTRACTORS**

**26.1 General.** Nothing in this LGIA shall prevent a Party from utilizing the services of any subcontractor as it deems appropriate to perform its obligations under this LGIA; provided, however, that each Party shall require its subcontractors to comply with all applicable terms and conditions of this LGIA in providing such services and each Party shall remain primarily liable to the other Party for the performance of such subcontractor.

- 26.2 Responsibility of Principal.** The creation of any subcontract relationship shall not relieve the hiring Party of any of its obligations under this LGIA. The hiring Party shall be fully responsible to the other Parties for the acts or omissions of any subcontractor the hiring Party hires as if no subcontract had been made; provided, however, that in no event shall the CAISO or Participating TO be liable for the actions or inactions of the Interconnection Customer or its subcontractors with respect to obligations of the Interconnection Customer under Article 5 of this LGIA. Any applicable obligation imposed by this LGIA upon the hiring Party shall be equally binding upon, and shall be construed as having application to, any subcontractor of such Party.
- 26.3 No Limitation by Insurance.** The obligations under this Article 26 will not be limited in any way by any limitation of subcontractor's insurance.

## ARTICLE 27. DISPUTES

All disputes arising out of or in connection with this LGIA whereby relief is sought by or from the CAISO shall be settled in accordance with the provisions of Article 13 of the CAISO Tariff, except that references to the CAISO Tariff in such Article 13 of the CAISO Tariff shall be read as references to this LGIA. Disputes arising out of or in connection with this LGIA not subject to provisions of Article 13 of the CAISO Tariff shall be resolved as follows:

- 27.1 Submission.** In the event either Party has a dispute, or asserts a claim, that arises out of or in connection with this LGIA or its performance, such Party (the "disputing Party") shall provide the other Party with written notice of the dispute or claim ("Notice of Dispute"). Such dispute or claim shall be referred to a designated senior representative of each Party for resolution on an informal basis as promptly as practicable after receipt of the Notice of Dispute by the other Party. In the event the designated representatives are unable to resolve the claim or dispute through unassisted or assisted negotiations within thirty (30) Calendar Days of the other Party's receipt of the Notice of Dispute, such claim or dispute may, upon mutual agreement of the Parties, be submitted to arbitration and resolved in accordance with the arbitration procedures set forth below. In the event the Parties do not agree to submit such claim or dispute to arbitration, each Party may exercise whatever rights and remedies it may have in equity or at law consistent with the terms of this LGIA.
- 27.2 External Arbitration Procedures.** Any arbitration initiated under this LGIA shall be conducted before a single neutral arbitrator appointed by the Parties. If the Parties fail to agree upon a single arbitrator within ten (10) Calendar Days of the submission of the dispute to arbitration, each Party shall choose one arbitrator who shall sit on a three-member arbitration panel. The two arbitrators so chosen shall within twenty (20) Calendar Days select a third arbitrator to chair the arbitration panel. In either case, the arbitrators shall be knowledgeable in electric utility matters, including electric transmission and bulk power issues, and shall not have any current or past substantial business or financial relationships with any party to the arbitration (except prior arbitration). The arbitrator(s) shall provide each of the Parties an opportunity to be heard and, except as otherwise provided herein, shall conduct the arbitration in accordance with the Commercial Arbitration Rules of the American Arbitration Association ("Arbitration Rules") and any applicable FERC regulations; provided, however, in the event of a conflict between the Arbitration Rules and the terms of this Article 27, the terms of this Article 27 shall prevail.

**27.3 Arbitration Decisions.** Unless otherwise agreed by the Parties, the arbitrator(s) shall render a decision within ninety (90) Calendar Days of appointment and shall notify the Parties in writing of such decision and the reasons therefor. The arbitrator(s) shall be authorized only to interpret and apply the provisions of this LGIA and shall have no power to modify or change any provision of this Agreement in any manner. The decision of the arbitrator(s) shall be final and binding upon the Parties, and judgment on the award may be entered in any court having jurisdiction. The decision of the arbitrator(s) may be appealed solely on the grounds that the conduct of the arbitrator(s), or the decision itself, violated the standards set forth in the Federal Arbitration Act or the Administrative Dispute Resolution Act. The final decision of the arbitrator must also be filed with FERC if it affects jurisdictional rates, terms and conditions of service, Interconnection Facilities, or Network Upgrades.

**27.4 Costs.** Each Party shall be responsible for its own costs incurred during the arbitration process and for the following costs, if applicable: (1) the cost of the arbitrator chosen by the Party to sit on the three member panel and one half of the cost of the third arbitrator chosen; or (2) one half the cost of the single arbitrator jointly chosen by the Parties.

## **ARTICLE 28. REPRESENTATIONS, WARRANTIES AND COVENANTS**

**28.1 General.** Each Party makes the following representations, warranties and covenants:

**28.1.1 Good Standing.** Such Party is duly organized, validly existing and in good standing under the laws of the state in which it is organized, formed, or incorporated, as applicable; that it is qualified to do business in the state or states in which the Large Generating Facility, Interconnection Facilities and Network Upgrades owned by such Party, as applicable, are located; and that it has the corporate power and authority to own its properties, to carry on its business as now being conducted and to enter into this LGIA and carry out the transactions contemplated hereby and perform and carry out all covenants and obligations on its part to be performed under and pursuant to this LGIA.

**28.1.2 Authority.** Such Party has the right, power and authority to enter into this LGIA, to become a Party hereto and to perform its obligations hereunder. This LGIA is a legal, valid and binding obligation of such Party, enforceable against such Party in accordance with its terms, except as the enforceability thereof may be limited by applicable bankruptcy, insolvency, reorganization or other similar laws affecting creditors' rights generally and by general equitable principles (regardless of whether enforceability is sought in a proceeding in equity or at law).

**28.1.3 No Conflict.** The execution, delivery and performance of this LGIA does not violate or conflict with the organizational or formation documents, or bylaws or operating agreement, of such Party, or any judgment, license, permit, order, material agreement or instrument applicable to or binding upon such Party or any of its assets.

**28.1.4 Consent and Approval.** Such Party has sought or obtained, or, in accordance with this LGIA will seek or obtain, each consent, approval, authorization, order, or acceptance by any Governmental Authority in connection with the execution, delivery and performance of this LGIA, and it will provide to any Governmental Authority notice of any actions under this LGIA that are required by Applicable Laws and Regulations.

**ARTICLE 29. [RESERVED]**

**ARTICLE 30. MISCELLANEOUS**

- 30.1 Binding Effect.** This LGIA and the rights and obligations hereof, shall be binding upon and shall inure to the benefit of the successors and assigns of the Parties hereto.
- 30.2 Conflicts.** In the event of a conflict between the body of this LGIA and any attachment, appendices or exhibits hereto, the terms and provisions of the body of this LGIA shall prevail and be deemed the final intent of the Parties.
- 30.3 Rules of Interpretation.** This LGIA, unless a clear contrary intention appears, shall be construed and interpreted as follows: (1) the singular number includes the plural number and vice versa; (2) reference to any person includes such person's successors and assigns but, in the case of a Party, only if such successors and assigns are permitted by this LGIA, and reference to a person in a particular capacity excludes such person in any other capacity or individually; (3) reference to any agreement (including this LGIA), document, instrument or tariff means such agreement, document, instrument, or tariff as amended or modified and in effect from time to time in accordance with the terms thereof and, if applicable, the terms hereof; (4) reference to any Applicable Laws and Regulations means such Applicable Laws and Regulations as amended, modified, codified, or reenacted, in whole or in part, and in effect from time to time, including, if applicable, rules and regulations promulgated thereunder; (5) unless expressly stated otherwise, reference to any Article, Section or Appendix means such Article of this LGIA or such Appendix to this LGIA, or such Section to the LGIP or such Appendix to the LGIP, as the case may be; (6) "hereunder", "hereof", "herein", "hereto" and words of similar import shall be deemed references to this LGIA as a whole and not to any particular Article or other provision hereof or thereof; (7) "including" (and with correlative meaning "include") means including without limiting the generality of any description preceding such term; and (8) relative to the determination of any period of time, "from" means "from and including", "to" means "to but excluding" and "through" means "through and including".
- 30.4 Entire Agreement.** This LGIA, including all Appendices and Schedules attached hereto, constitutes the entire agreement among the Parties with reference to the subject matter hereof, and supersedes all prior and contemporaneous understandings or agreements, oral or written, between or among the Parties with respect to the subject matter of this LGIA. There are no other agreements, representations, warranties, or covenants which constitute any part of the consideration for, or any condition to, any Party's compliance with its obligations under this LGIA.
- 30.5 No Third Party Beneficiaries.** This LGIA is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and, where permitted, their assigns.
- 30.6 Waiver.** The failure of a Party to this LGIA to insist, on any occasion, upon strict performance of any provision of this LGIA will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.



Any waiver at any time by either Party of its rights with respect to this LGIA shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this LGIA. Termination or Default of this LGIA for any reason by the Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the Participating TO. Any waiver of this LGIA shall, if requested, be provided in writing.

- 30.7 Headings.** The descriptive headings of the various Articles of this LGIA have been inserted for convenience of reference only and are of no significance in the interpretation or construction of this LGIA.
- 30.8 Multiple Counterparts.** This LGIA may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.
- 30.9 Amendment.** The Parties may by mutual agreement amend this LGIA by a written instrument duly executed by all of the Parties. Such amendment shall become effective and a part of this LGIA upon satisfaction of all Applicable Laws and Regulations.
- 30.10 Modification by the Parties.** The Parties may by mutual agreement amend the Appendices to this LGIA by a written instrument duly executed by all of the Parties. Such amendment shall become effective and a part of this LGIA upon satisfaction of all Applicable Laws and Regulations.
- 30.11 Reservation of Rights.** The CAISO and Participating TO shall each have the right to make a unilateral filing with FERC to modify this LGIA pursuant to section 205 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder with respect to the following Articles of this LGIA and with respect to any rates, terms and conditions, charges, classifications of service, rule or regulation covered by these Articles:

Recitals, 1, 2.1, 2.2, 2.3, 2.4, 2.6, 3.1, 3.3, 4.1, 4.2, 4.3, 4.4, 5 preamble, 5.4, 5.7, 5.8, 5.9, 5.12, 5.13, 5.18, 5.19.1, 7.1, 7.2, 8, 9.1, 9.2, 9.3, 9.5, 9.6, 9.7, 9.8, 9.10, 10.3, 11.4, 12.1, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24.3, 24.4, 25.1, 25.2, 25.3 (excluding subparts), 25.4.2, 26, 28, 29, 30, Appendix D, Appendix F, Appendix G, and any other Article not reserved exclusively to the Participating TO or the CAISO below.

The Participating TO shall have the exclusive right to make a unilateral filing with FERC to modify this LGIA pursuant to section 205 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder with respect to the following Articles of this LGIA and with respect to any rates, terms and conditions, charges, classifications of service, rule or regulation covered by these Articles:

2.5, 5.1, 5.2, 5.3, 5.5, 5.6, 5.10, 5.11, 5.14, 5.15, 5.16, 5.17, 5.19 (excluding 5.19.1), 6, 7.3, 9.4, 9.9, 10.1, 10.2, 10.4, 10.5, 11.1, 11.2, 11.3, 11.5, 12.2, 12.3, 12.4, 24.1, 24.2, 25.3.1, 25.4.1, 25.5 (excluding 25.5.1), 27 (excluding preamble), Appendix A, Appendix B, Appendix C, and Appendix E.

The CAISO shall have the exclusive right to make a unilateral filing with FERC to modify this LGIA pursuant to section 205 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder with respect to the following Articles of this LGIA and with respect to any rates, terms and conditions, charges, classifications of service, rule or regulation covered by these Articles:

3.2, 4.5, 11.6, 25.3.2, 25.5.1, and 27 preamble.

The Interconnection Customer, the CAISO, and the Participating TO shall have the right to make a unilateral filing with FERC to modify this LGIA pursuant to section 206 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by another Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this LGIA shall limit the rights of the Parties or of FERC under sections 205 or 206 of the Federal Power Act and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.

**30.12 No Partnership.** This LGIA shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership among the Parties or to impose any partnership obligation or partnership liability upon any Party. No Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, another Party.

**30.13 Joint and Several Obligations.** Except as otherwise provided in this LGIA, the obligations of the CAISO, the Participating TO, and the Interconnection Customer are several, and are neither joint nor joint and several.

**IN WITNESS WHEREOF**, the Parties have executed this LGIA in multiple originals, each of which shall constitute and be an original effective agreement among the Parties.

**[Insert name of Participating TO]**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date:

**California Independent System Operator Corporation**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date:

**[Insert name of Interconnection Customer]**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date:

**Appendices to LGIA**

Appendix A Interconnection Facilities, Network Upgrades and Distribution Upgrades

Appendix B Milestones

Appendix C Interconnection Details

Appendix D Security Arrangements Details

Appendix E Commercial Operation Date

Appendix F Addresses for Delivery of Notices and Billings

Appendix G Reliability Management System Agreement

Appendix H Interconnection Requirements for a Wind Generating Plant

**Appendix A  
To LGIA**

**Interconnection Facilities, Network Upgrades and Distribution Upgrades**

**1. Interconnection Facilities:**

**(a) [insert Interconnection Customer's Interconnection Facilities]:**

**(b) [insert Participating TO's Interconnection Facilities]:**

**2. Network Upgrades:**

**(a) [insert Stand Alone Network Upgrades]:**

**(b) [insert Other Network Upgrades]:**

**(i) [insert Participating TO's Reliability Network Upgrades]**

**(ii) [insert Participating TO's Delivery Network Upgrades]**

**3. Distribution Upgrades:**

**Appendix B  
To LGIA**

**Milestones**

**Appendix C  
To LGIA**

**Interconnection Details**

**Appendix D  
To LGIA**

**Security Arrangements Details**

Infrastructure security of CAISO Controlled Grid equipment and operations and control hardware and software is essential to ensure day-to-day CAISO Controlled Grid reliability and operational security. FERC will expect the CAISO, all Participating TOs, market participants, and Interconnection Customers interconnected to the CAISO Controlled Grid to comply with the recommendations offered by the President's Critical Infrastructure Protection Board and, eventually, best practice recommendations from the electric reliability authority. All public utilities will be expected to meet basic standards for system infrastructure and operational security, including physical, operational, and cyber-security practices.

The Interconnection Customer shall meet the requirements for security implemented pursuant to the CAISO Tariff, including the CAISO's standards for information security posted on the CAISO's internet web site at the following internet address: <http://www.caiso.com/pubinfo/info-security/index.html>.



**Appendix E  
To LGIA**

**Commercial Operation Date**

This Appendix E is a part of the LGIA.

**[Date]**

**[CAISO Address]**

**[Participating TO Address]**

Re: \_\_\_\_\_ Electric Generating Unit

Dear \_\_\_\_\_:

On **[Date]** **[Interconnection Customer]** has completed Trial Operation of Unit No. \_\_\_\_\_. This letter confirms that **[Interconnection Customer]** commenced Commercial Operation of Unit No. \_\_\_\_\_ at the Electric Generating Unit, effective as of **[Date plus one day]**.

Thank you.

**[Signature]**

**[Interconnection Customer Representative]**

**Appendix F  
To LGIA**

**Addresses for Delivery of Notices and Billings**

**Notices:**

CAISO:

[To be supplied.]

Participating TO:

[To be supplied.]

Interconnection Customer:

[To be supplied.]

**Billings and Payments:**

Participating TO:

[To be supplied.]

Interconnection Customer:

[To be supplied.]

CAISO:

[To be supplied.]

**Alternative Forms of Delivery of Notices (telephone, facsimile or e-mail):**

CAISO:

[To be supplied.]

Participating TO:

[To be supplied.]

Interconnection Customer:

[To be supplied.]

**Appendix G  
To LGIA**

**Reliability Management System Agreement**

**RELIABILITY MANAGEMENT SYSTEM AGREEMENT  
by and between  
[TRANSMISSION OPERATOR]  
and  
[GENERATOR]**

**THIS RELIABILITY MANAGEMENT SYSTEM AGREEMENT** (the "Agreement"), is entered into this \_\_\_\_ day of \_\_\_\_\_, 2002, by and between \_\_\_\_\_ (the "Transmission Operator") and \_\_\_\_\_ (the "Generator").

**WHEREAS**, there is a need to maintain the reliability of the interconnected electric systems encompassed by the WSCC in a restructured and competitive electric utility industry;

**WHEREAS**, with the transition of the electric industry to a more competitive structure, it is desirable to have a uniform set of electric system operating rules within the Western Interconnection, applicable in a fair, comparable and non-discriminatory manner, with which all market participants comply; and

**WHEREAS**, the members of the WSCC, including the Transmission Operator, have determined that a contractual Reliability Management System provides a reasonable, currently available means of maintaining such reliability.

**NOW, THEREFORE**, in consideration of the mutual agreements contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Transmission Operator and the Generator agree as follows:

**1. PURPOSE OF AGREEMENT**

The purpose of this Agreement is to maintain the reliable operation of the Western Interconnection through the Generator's commitment to comply with certain reliability standards.

**2. DEFINITIONS**

In addition to terms defined in the beginning of this Agreement and in the Recitals hereto, for purposes of this Agreement the following terms shall have the meanings set forth beside them below.

**Control Area** means an electric system or systems, bounded by interconnection metering and telemetry, capable of controlling generation to maintain its interchange schedule with other Control Areas and contributing to frequency regulation of the Western Interconnection.

**FERC** means the Federal Energy Regulatory Commission or a successor agency.

**Member** means any party to the WSCC Agreement.

**Party** means either the Generator or the Transmission Operator and

**Parties** means both of the Generator and the Transmission Operator.

**Reliability Management System** or **RMS** means the contractual reliability management program implemented through the WSCC Reliability Criteria Agreement, the WSCC RMS Agreement, this Agreement, and any similar contractual arrangement.

**Western Interconnection** means the area comprising those states and provinces, or portions thereof, in Western Canada, Northern Mexico and the Western United States in which Members of the WSCC operate synchronously connected transmission systems.

**Working Day** means Monday through Friday except for recognized legal holidays in the state in which any notice is received pursuant to Section 8.

**WSCC** means the Western Systems Coordinating Council or a successor entity.

**WSCC Agreement** means the Western Systems Coordinating Council Agreement dated March 20, 1967, as such may be amended from time to time.

**WSCC Reliability Criteria Agreement** means the Western Systems Coordinating Council Reliability Criteria Agreement dated June 18, 1999 among the WSCC and certain of its member transmission operators, as such may be amended from time to time.

**WSCC RMS Agreement** means an agreement between the WSCC and the Transmission Operator requiring the Transmission Operator to comply with the reliability criteria contained in the WSCC Reliability Criteria Agreement.

**WSCC Staff** means those employees of the WSCC, including personnel hired by the WSCC on a contract basis, designated as responsible for the administration of the RMS.

### **3. TERM AND TERMINATION**

**3.1 Term.** This Agreement shall become effective [thirty (30) days after the date of issuance of a final FERC order accepting this Agreement for filing without requiring any changes to this Agreement unacceptable to either Party. Required changes to this Agreement shall be deemed unacceptable to a Party only if that Party provides notice to the other Party within fifteen (15) days of issuance of the applicable FERC order that such order is unacceptable].

[Note: if the interconnection agreement is not FERC jurisdictional, replace bracketed language with: [on the later of: (a) the date of execution; or (b) the effective date of the WSCC RMS Agreement.]]

**3.2 Notice of Termination of WSCC RMS Agreement.** The Transmission Operator shall give the Generator notice of any notice of termination of the WSCC RMS Agreement by the WSCC or by the Transmission Operator within fifteen (15) days of receipt by the WSCC or the Transmission Operator of such notice of termination.

**3.3 Termination by the Generator.** The Generator may terminate this Agreement as follows:

- (a) following the termination of the WSCC RMS Agreement for any reason by the WSCC or by the Transmission Operator, provided such notice is provided within forty-five (45) days of the termination of the WSCC RMS Agreement;
- (b) following the effective date of an amendment to the requirements of the WSCC Reliability Criteria Agreement that adversely affects the Generator, provided notice of such termination is given within forty-five (45) days of the date of issuance of a FERC order accepting such amendment for filing, provided further that the forty-five (45) day period within which notice of termination is required may be extended by the Generator for an additional forty-five (45) days if the Generator gives written notice to the Transmission Operator of such requested extension within the initial forty-five (45) day period; or
- (c) for any reason on one year's written notice to the Transmission Operator and the WSCC.

**3.4 Termination by the Transmission Operator.** The Transmission Operator may terminate this Agreement on thirty (30) days' written notice following the termination of the WSCC RMS Agreement for any reason by the WSCC or by the Transmission Operator, provided such notice is provided within thirty (30) days of the termination of the WSCC RMS Agreement.

**3.5 Mutual Agreement.** This Agreement may be terminated at any time by the mutual agreement of the Transmission Operator and the Generator.

#### **4. COMPLIANCE WITH AND AMENDMENT OF WSCC RELIABILITY CRITERIA**

**4.1 Compliance with Reliability Criteria.** The Generator agrees to comply with the requirements of the WSCC Reliability Criteria Agreement, including the applicable WSCC reliability criteria contained in Section IV of Annex A thereof, and, in the event of failure to comply, agrees to be subject to the sanctions applicable to such failure. Each and all of the provisions of the WSCC Reliability Criteria Agreement are hereby incorporated by reference into this Agreement as though set forth fully herein, and the Generator shall for all purposes be considered a Participant, and shall be entitled to all of the rights and privileges and be subject to all of the obligations of a Participant, under and in connection with the WSCC Reliability Criteria Agreement, including but not limited to the rights, privileges and obligations set forth in Sections 5, 6 and 10 of the WSCC Reliability Criteria Agreement.

**4.2 Modifications to WSCC Reliability Criteria Agreement.** The Transmission Operator shall notify the Generator within fifteen (15) days of the receipt of notice from the WSCC of the initiation of any WSCC process to modify the WSCC Reliability Criteria Agreement. The WSCC RMS Agreement specifies that such process shall comply with the procedures, rules, and regulations then applicable to the WSCC for modifications to reliability criteria.

**4.3 Notice of Modifications to WSCC Reliability Criteria Agreement.** If, following the process specified in Section 4.2, any modification to the WSCC Reliability Criteria Agreement is to take effect, the Transmission Operator shall provide notice to the Generator at least forty-five (45) days before such modification is scheduled to take effect.

**4.4 Effective Date.** Any modification to the WSCC Reliability Criteria Agreement shall take effect on the date specified by FERC in an order accepting such modification for filing.

**4.5 Transfer of Control or Sale of Generation Facilities.** In any sale or transfer of control of any generation facilities subject to this Agreement, the Generator shall as a condition of such sale or transfer require the acquiring party or transferee with respect to the transferred facilities either to assume the obligations of the Generator with respect to this Agreement or to enter into an agreement with the Control Area Operator in substantially the form of this Agreement.

## **5. SANCTIONS**

**5.1 Payment of Monetary Sanctions.** The Generator shall be responsible for payment directly to the WSCC of any monetary sanction assessed against the Generator pursuant to this Agreement and the WSCC Reliability Criteria Agreement. Any such payment shall be made pursuant to the procedures specified in the WSCC Reliability Criteria Agreement.

**5.2 Publication.** The Generator consents to the release by the WSCC of information related to the Generator's compliance with this Agreement only in accordance with the WSCC Reliability Criteria Agreement.

**5.3 Reserved Rights.** Nothing in the RMS or the WSCC Reliability Criteria Agreement shall affect the right of the Transmission Operator, subject to any necessary regulatory approval, to take such other measures to maintain reliability, including disconnection, which the Transmission Operator may otherwise be entitled to take.

## **6. THIRD PARTIES**

Except for the rights and obligations between the WSCC and Generator specified in Sections 4 and 5, this Agreement creates contractual rights and obligations solely between the Parties. Nothing in this Agreement shall create, as between the Parties or with respect to the WSCC: (1) any obligation or liability whatsoever (other than as expressly provided in this Agreement), or (2) any duty or standard of care whatsoever. In addition, nothing in this Agreement shall create any duty, liability, or standard of care whatsoever as to any other party. Except for the rights, as a third-party beneficiary with respect to Sections 4 and 5, of the WSCC against Generator, no third party shall have any rights whatsoever with respect to enforcement of any provision of this Agreement. Transmission Operator and Generator expressly intend that the WSCC is a third-party beneficiary to this Agreement, and the WSCC shall have the right to seek to enforce against Generator any provisions of Sections 4 and 5, provided that specific performance shall be the sole remedy available to the WSCC pursuant to this Agreement, and Generator shall not be liable to the WSCC pursuant to this Agreement for damages of any kind whatsoever (other than the payment of sanctions to the WSCC, if so construed), whether direct, compensatory, special, indirect, consequential, or punitive.

## **7. REGULATORY APPROVALS**

This Agreement shall be filed with FERC by the Transmission Operator under Section 205 of the Federal Power Act. In such filing, the Transmission Operator shall request that FERC accept this Agreement for filing without modification to become effective on the day after the date of a FERC order accepting this Agreement for filing. [This section shall be omitted for agreements not subject to FERC jurisdiction.]

## 8. NOTICES

Any notice, demand or request required or authorized by this Agreement to be given in writing to a Party shall be delivered by hand, courier or overnight delivery service, mailed by certified mail (return receipt requested) postage prepaid, faxed, or delivered by mutually agreed electronic means to such Party at the following address:

\_\_\_\_\_: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Fax: \_\_\_\_\_  
\_\_\_\_\_: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Fax: \_\_\_\_\_

The designation of such person and/or address may be changed at any time by either Party upon receipt by the other of written notice. Such a notice served by mail shall be effective upon receipt. Notice transmitted by facsimile shall be effective upon receipt if received prior to 5:00 p.m. on a Working Day, and if not received prior to 5:00 p.m. on a Working Day, receipt shall be effective on the next Working Day.

## 9. APPLICABILITY

This Agreement (including all appendices hereto and, by reference, the WSCC Reliability Criteria Agreement) constitutes the entire understanding between the Parties hereto with respect to the subject matter hereof, supersedes any and all previous understandings between the Parties with respect to the subject matter hereof, and binds and inures to the benefit of the Parties and their successors.

## 10. AMENDMENT

No amendment of all or any part of this Agreement shall be valid unless it is reduced to writing and signed by both Parties hereto. The terms and conditions herein specified shall remain in effect throughout the term and shall not be subject to change through application to the FERC or other governmental body or authority, absent the agreement of the Parties.

## 11. INTERPRETATION

Interpretation and performance of this Agreement shall be in accordance with, and shall be controlled by, the laws of the State of \_\_\_\_\_ but without giving effect to the provisions thereof relating to conflicts of law. Article and section headings are for convenience only and shall not affect the interpretation of this Agreement. References to articles, sections and appendices are, unless the context otherwise requires, references to articles, sections and appendices of this Agreement.



**12. PROHIBITION ON ASSIGNMENT**

This Agreement may not be assigned by either Party without the consent of the other Party, which consent shall not be unreasonably withheld; provided that the Generator may without the consent of the WSCC assign the obligations of the Generator pursuant to this Agreement to a transferee with respect to any obligations assumed by the transferee by virtue of Section 4.5 of this Agreement.

**13. SEVERABILITY**

If one or more provisions herein shall be invalid, illegal or unenforceable in any respect, it shall be given effect to the extent permitted by applicable law, and such invalidity, illegality or unenforceability shall not affect the validity of the other provisions of this Agreement.

**14. COUNTERPARTS**

This Agreement may be executed in counterparts and each shall have the same force and effect as an original.

**IN WITNESS WHEREOF**, the Transmission Operator and the Generator have each caused this Reliability Management System Agreement to be executed by their respective duly authorized officers as of the date first above written.

\_\_\_\_\_  
By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

\_\_\_\_\_  
By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

## **Appendix H To LGIA**

### **INTERCONNECTION REQUIREMENTS FOR A WIND GENERATING PLANT**

Appendix H sets forth requirements and provisions specific to a wind generating plant. All other requirements of this LGIA continue to apply to wind generating plant interconnections.

#### **A. Technical Standards Applicable to a Wind Generating Plant**

##### **i. Low Voltage Ride-Through (LVRT) Capability**

A wind generating plant shall be able to remain online during voltage disturbances up to the time periods and associated voltage levels set forth in the standard below. The LVRT standard provides for a transition period standard and a post-transition period standard.

##### **Transition Period LVRT Standard**

The transition period standard applies to wind generating plants subject to FERC Order 661 that have either: (i) interconnection agreements signed and filed with FERC, filed with FERC in unexecuted form, or filed with FERC as non-conforming agreements between January 1, 2006 and December 31, 2006, with a scheduled In-Service Date no later than December 31, 2007, or (ii) wind generating turbines subject to a wind turbine procurement contract executed prior to December 31, 2005, for delivery through 2007.

1. Wind generating plants are required to remain in-service during three-phase faults with normal clearing (which is a time period of approximately 4 – 9 cycles) and single line to ground faults with delayed clearing, and subsequent post-fault voltage recovery to prefault voltage unless clearing the fault effectively disconnects the generator from the system. The clearing time requirement for a three-phase fault will be specific to the wind generating plant substation location, as determined by and documented by the Participating TO. The maximum clearing time the wind generating plant shall be required to withstand for a three-phase fault shall be 9 cycles at a voltage as low as 0.15 p.u., as measured at the high side of the wind generating plant step-up transformer (i.e. the transformer that steps the voltage up to the transmission interconnection voltage or “GSU”), after which, if the fault remains following the location-specific normal clearing time for three-phase faults, the wind generating plant may disconnect from the transmission system.
2. This requirement does not apply to faults that would occur between the wind generator terminals and the high side of the GSU or to faults that would result in a voltage lower than 0.15 per unit on the high side of the GSU serving the facility.
3. Wind generating plants may be tripped after the fault period if this action is intended as part of a special protection system.
4. Wind generating plants may meet the LVRT requirements of this standard by the performance of the generators or by installing additional equipment (e.g., Static VAr Compensator, etc.) within the wind generating plant or by a combination of generator performance and additional equipment.
5. Existing individual generator units that are, or have been, interconnected to the network at the same location at the effective date of the Appendix H LVRT Standard are exempt from meeting the Appendix H LVRT Standard for the remaining life of the existing generation equipment. Existing individual generator units that are replaced are required to meet the Appendix H LVRT Standard.

### **Post-transition Period LVRT Standard**

All wind generating plants subject to FERC Order No. 661 and not covered by the transition period described above must meet the following requirements:

1. Wind generating plants are required to remain in-service during three-phase faults with normal clearing (which is a time period of approximately 4 – 9 cycles) and single line to ground faults with delayed clearing, and subsequent post-fault voltage recovery to prefault voltage unless clearing the fault effectively disconnects the generator from the system. The clearing time requirement for a three-phase fault will be specific to the wind generating plant substation location, as determined by and documented by the Participating TO. The maximum clearing time the wind generating plant shall be required to withstand for a three-phase fault shall be 9 cycles after which, if the fault remains following the location-specific normal clearing time for three-phase faults, the wind generating plant may disconnect from the CAISO Controlled Grid. A wind generating plant shall remain interconnected during such a fault on the CAISO Controlled Grid for a voltage level as low as zero volts, as measured at the high voltage side of the wind GSU.
2. This requirement does not apply to faults that would occur between the wind generator terminals and the high side of the GSU.
3. Wind generating plants may be tripped after the fault period if this action is intended as part of a special protection system.
4. Wind generating plants may meet the LVRT requirements of this standard by the performance of the generators or by installing additional equipment (e.g., Static VAr Compensator) within the wind generating plant or by a combination of generator performance and additional equipment.
5. Existing individual generator units that are, or have been, interconnected to the CAISO Controlled Grid at the same location at the effective date of the Appendix H LVRT Standard are exempt from meeting the Appendix H LVRT Standard for the remaining life of the existing generation equipment. Existing individual generator units that are replaced are required to meet the Appendix H LVRT Standard.

### **ii. Power Factor Design Criteria (Reactive Power)**

A wind generating plant shall operate within a power factor within the range of 0.95 leading to 0.95 lagging, measured at the Point of Interconnection as defined in this LGIA in order to maintain a specified voltage schedule, if the Interconnection System Impact Study shows that such a requirement is necessary to ensure safety or reliability. The power factor range standard can be met by using, for example, power electronics designed to supply this level of reactive capability (taking into account any limitations due to voltage level, real power output, etc.) or fixed and switched capacitors, or a combination of the two, if agreed to by the Participating TO and CAISO. The Interconnection Customer shall not disable power factor equipment while the wind plant is in operation. Wind plants shall also be able to provide sufficient dynamic voltage support in lieu of the power system stabilizer and automatic voltage regulation at the generator excitation system if the Interconnection System Impact Study shows this to be required for system safety or reliability.

### **iii. Supervisory Control and Data Acquisition (SCADA) Capability**

The wind plant shall provide SCADA capability to transmit data and receive instructions from the Participating TO and CAISO to protect system reliability. The Participating TO and CAISO and the wind plant Interconnection Customer shall determine what SCADA information is essential for the proposed wind plant, taking into account the size of the plant and its characteristics, location, and importance in maintaining generation resource adequacy and transmission system reliability in its area.

**CAISO TARIFF APPENDIX W**

**Interconnection Procedures in Effect Prior to July 1, 2005 ("Amendment 39 Procedures")**

**Interconnection Procedures in Effect Prior to July 1, 2005 ("Amendment 39 Procedures")**

**1 Applicability.**

These Amendment 39 Procedures are applicable to Small Generating Facilities interconnecting to the CAISO Controlled Grid in accordance with Section 1.3 of the SGIP in Appendix S and to Large Generating Facilities in accordance with Section 5.1 of the LGIP in Appendix U. The owner of a planned New Facility, or its designee, is referred to for purposes of this Appendix as a New Facility Operator.

**2 Definitions.**

**2.1 Master Definitions Supplement.**

Unless the context otherwise requires, any word or expression defined in the Master Definitions Supplement to the CAISO Tariff shall have the same meaning where used in this Appendix.

**2.2 Special Definitions for this Appendix.**

In this Appendix, the following words and expressions shall have the meanings set opposite them:

**Completed Application  
Date**

For purposes of this Appendix, the date on which a New Facility Operator submits an Interconnection Application to the CAISO that satisfies the requirements of the CAISO Tariff and the TO Tariff of the Interconnecting PTO.

**Completed Interconnection  
Application**

An Interconnection Application that meets the information requirements as specified by the CAISO and posted on the CAISO Website.

**Data Adequacy  
Requirement**

Any applicable minimum data requirements of the state agency responsible for generation siting or of any Local Regulatory Authority.

**Delivery Upgrade**

The transmission facilities, other than Direct Assignment Facilities and Reliability Upgrades, necessary to relieve constraints on the CAISO Controlled Grid and to ensure the delivery of energy from a New Facility to Load.

**Designated Contact Person**

The person designated by each Participating TO to coordinate with the CAISO on the processing and completion of all Interconnection Applications.

**Direct Assignment Facility**

The transmission facilities necessary to physically and electrically interconnect a New Facility Operator to the CAISO Controlled Grid at the point of interconnection.

**Expedited Interconnection Agreement**

A contract between a party which has submitted a Request for Expedited Interconnection Procedures and an Interconnection PTO under which the CAISO and an Interconnecting PTO agree to process, on an expedited basis, the Interconnection Application of a New Facility Operator and which sets forth the terms, conditions, and cost responsibilities for such interconnection.

**Good Faith Deposit**

The deposit paid to the CAISO by a New Facility Operator with submission of its Interconnection Application in accordance with Section 3.2 of this Appendix, in an amount equal to \$10,000, including any interest that accrues on the original amount, less any bank fees or other charges assessed on the escrow account. A New Facility Operator may satisfy its deposit obligation through any commercially available financial instrument determined to be satisfactory by the CAISO.

**Interconnecting PTO**

For purposes of this Appendix, the Participating TO that will supply the connection to the New Facility.

**Interconnection Application**

An application that requests interconnection of a New Facility to the CAISO Controlled Grid and that meets the information requirements as specified by the CAISO and posted on the CAISO Website.

**New Facility**

A planned or Existing Generating Unit that requests, pursuant to this Appendix, to interconnect or modify its interconnection to the CAISO Controlled Grid.

**New Facility License**

A license issued by a federal, state or Local Regulatory Authority that enables an entity to build and operate a Generating Unit.

**New Facility Operator**

The owner of a planned New Facility, or its designee.

**Planning Procedures**

Procedures governing the planning, expansion and reliable interconnection to the CAISO Controlled Grid that the CAISO may, from time to time, develop.

**Reliability Upgrade**

The transmission facilities, other than Direct Assignment Facilities, beyond the first point of interconnection necessary to interconnect a New Facility safely and reliably to the CAISO Controlled Grid, which would not have been necessary but for the interconnection of a New Facility, including network upgrades necessary to remedy short circuit or stability problems resulting from the interconnection of a New Facility to the CAISO Controlled Grid. Reliability Upgrades also include, consistent with WSCC practice, the facilities necessary to mitigate any adverse impact a New Facility's interconnection may have on a path's WSCC path rating.

**Request for Expedited**

**Interconnection Procedures** A written request, submitted pursuant to Section 3.1.1 of this Appendix, by which a New Facility Operator can request expedited processing of its Interconnection Application.

**System Impact Study**

An engineering study conducted to determine whether a New Facility Operator's request for interconnection to the CAISO Controlled Grid would require new transmission additions, upgrades or other mitigation measures.

**3 Interconnection Application.**

Unless the New Facility Operator has submitted a Completed Interconnection Application to the CAISO prior to July 1, 2005, any New Facility Operators shall submit two (2) copies of a Completed Interconnection Application to the CAISO in the form specified by the CAISO. The CAISO will date stamp all copies of the Interconnection Application, retain one executed copy, and, within one (1) Business Day, send the other copy to the Designated Contact Person of the Interconnecting PTO. Within ten (10) Business Days after the Interconnecting PTO receives an Interconnection Application, the CAISO and the Interconnecting PTO shall determine whether the application is complete and the CAISO will notify the New Facility Operator that its Interconnection Application is complete; or, in the event that the CAISO, in consultation with the Interconnecting PTO, determines that the Interconnection Application is incomplete, the CAISO will notify the New Facility Operator of the deficiencies or omissions in its application.

**3.1 Expedited Procedures For New Facilities.**

A New Facility Operator may submit a Request for Expedited Interconnection Procedures in accordance with Section 3.1.1 of this Appendix. The CAISO will develop and post on the CAISO Website the Planning Procedures applicable to such expedited processing of Interconnection Applications.

**3.1.1 Request for Expedited Interconnection Procedures.**

- (a) If it elects to expedite processing of its Completed Interconnection Application, a New Facility Operator shall submit a Request for Expedited Interconnection Procedures within 10 Business Days after receiving a copy of the System Impact Study for the proposed interconnection. The request should be submitted in writing to the CAISO and the Interconnecting PTO.
- (b) Within ~~ten~~ (10) Business Days after receiving a Request for Expedited Interconnection Procedures, the CAISO and Interconnecting PTO shall provide to applicant the results of any studies required in addition to the System Impact Study, and shall tender an Expedited Interconnection Agreement that requires the applicant to compensate the Interconnecting PTO for all costs reasonably incurred pursuant to the terms of the CAISO Tariff and the Interconnecting PTO's applicable TO Tariff for processing the Completed Interconnection Application and providing the requested interconnection.

- (c) Concurrent with the provision, by the CAISO and the Interconnecting PTO, of the studies referenced in subsection b, above, the Interconnecting PTO and the CAISO shall provide to applicant their best estimate of the cost of any needed Direct Assignment Facilities and Reliability Upgrades, Delivery Upgrades, if requested by the New Facility Operator, and other costs that may be incurred in processing the Interconnection Application and providing the requested interconnection, however, unless otherwise agreed by the CAISO, and the Interconnecting PTO, and the applicant, such cost estimate shall not be binding and the New Facility Operator shall compensate the CAISO and the Interconnecting PTO for all actual interconnection costs reasonably incurred pursuant to the provisions of this Appendix and the Interconnecting PTO's TO Tariff.
- (d) The New Facility Operator shall execute and return to the Interconnecting PTO, with a copy to the CAISO, such Expedited Interconnection Agreement within ~~ten (10)~~ Business Days of its receipt or the New Facility Operator's Interconnection Application will be deemed withdrawn. In that event, the New Facility Operator shall reimburse the CAISO and the Interconnecting PTO for all costs reasonably incurred in the processing of the Interconnection Application, including the Request for Expedited Interconnection.

### **3.2 Good Faith Deposit.**

- (a) Each New Facility Operator that submits an Interconnection Application will on the date of submission also provide a Good Faith Deposit to the CAISO. The CAISO shall hold the Good Faith Deposit in trust for each applicant in a separate, interest-bearing account.
- (b) The CAISO shall refund the Good Faith Deposit, with accrued Interest, in the event that:
  - (i) The CAISO determines that the New Facility is not responsible for any interconnection costs, other than study costs; or
  - (ii) The applicant withdraws its Interconnection Application or its Interconnection Application is deemed withdrawn.

### **3.3 Posting of Interconnection Applications and Non-disclosure.**

The CAISO will maintain on its OASIS site an updated list of all pending Interconnection Applications. As soon as practicable after the CAISO receives a Completed Interconnection Application, the CAISO will post the nearest substation, the capacity (MW) of the New Facility and the year the New Facility is proposed to begin operations. At the time it submits its Interconnection Application, a New Facility Operator may request in writing that the CAISO and Interconnecting PTO not publicly disclose the identity of such New Facility Operator. Upon such request, the CAISO and Interconnecting PTO will not disclose the identity of the applicant while its Interconnection Application is pending, unless disclosure is permitted under Section 20.1 of the CAISO Tariff or in the event that an applicant's identity becomes otherwise publicly known.



## **4 Interconnection.**

### **4.1 Detailed Planning Procedures.**

The provisions set forth in this Appendix shall govern the interconnection of New Facilities to the CAISO Controlled Grid, including the costs of such interconnection. The CAISO shall also maintain on the CAISO Website detailed Planning Procedures and interconnection standards for all such interconnections.

### **4.2 Studies.**

- (a) Except as provided in Section 4.2(d) of this Appendix, for each Completed Interconnection Application, the CAISO will direct the Interconnecting PTO to perform the required System Impact Study and Facility Study, and any additional studies the CAISO determines to be reasonably necessary.
- (b) The Interconnecting PTO will complete or cause to be completed all studies directed by the CAISO within the timelines provided in this section. Any studies performed by the CAISO or by a third party at the direction of the CAISO shall also be completed within the timelines provided in this section.
- (c) Each New Facility Operator shall pay the reasonable costs of all System Impact and Facility Studies performed by or at the direction of the CAISO or the Interconnecting PTO, and any additional studies the CAISO determines to be reasonably necessary in response to the Interconnection Application, including any iterative study costs required for other New Facility Operator's that have established a new queue position due to the New Facility Operator either withdrawing its Interconnection Application or because its queue position has been modified pursuant to the procedures in Section 4.4 of this Appendix. A New Facility Operator shall also pay the reasonable cost of Interconnecting PTO review of any System Impact Study or Facility Study that is performed by a New Facility Operator or its designee pursuant to subsection (d).
- (d) A New Facility Operator may perform its own System Impact Study and Facility Study, or contract with a third party to perform the System Impact Study and Facility Study, and shall so notify the CAISO and the Interconnecting PTO of this election at the time it submits its Interconnection Application. Any such study or studies performed by a New Facility Operator or third party must be completed within the timelines identified in Sections 4.2.1 and 4.2.2 of this Appendix. To the extent that the CAISO and Interconnecting PTO disagree on the adequacy of the New Facility Operator or third party-sponsored study, the CAISO will determine the adequacy of the study, subject to the CAISO's ADR Procedures. The CAISO and Interconnecting PTO shall complete their review of the New Facility Operator's study within ~~thirty (30)~~ calendar days of receipt of the completed study. The results of any study or studies performed by a New Facility Operator or third party must be approved by both the CAISO and the Interconnecting PTO.

#### **4.2.1 System Impact Study Procedures.**

Within ~~ten~~ (10) Business Days after receiving a Completed Interconnection Application by the Interconnecting PTO, the CAISO and the Interconnecting PTO will determine, on a non-discriminatory basis, whether a System Impact Study is required. The CAISO and the Interconnecting PTO will make such determination based on the CAISO Grid Planning Criteria and the transmission assessment practices outlined in the CAISO Planning Procedures posted on the CAISO Website. The CAISO and Interconnecting PTO will utilize, to the extent possible, existing transmission studies. The System Impact Study will identify whether any Direct Assignment Facilities and Reliability Upgrades are needed, as well as, if requested by the New Facility Operator, any Delivery Upgrades necessary to deliver a New Facility's full output over the CAISO Controlled Grid. The System Impact Study will also identify any adverse impact on Encumbrances existing as of the Completed Application Date.

If the CAISO and the Interconnecting PTO determine that a System Impact Study is necessary, the Interconnecting PTO shall within ~~twenty~~ (20) Business Days of receipt of Completed Interconnection Application, tender a System Impact Study Agreement that defines the scope, content, assumptions and terms of reference for such study, the estimated time required to complete it, and pursuant to which the applicant shall agree to reimburse the Interconnecting PTO for the reasonable actual costs of performing the required study. The New Facility Operator shall execute the System Impact Study Agreement and return it to the Interconnecting PTO within ~~ten~~ (10) Business Days, together with payment for the reasonable estimated cost, as provided by the Interconnecting PTO, of the System Impact Study. Alternatively, a New Facility Operator can request that the Interconnecting PTO proceed with the System Impact Study and abide by the terms, conditions, and cost assignment of the System Impact Study Agreement as determined through the CAISO ADR Procedures, provided that such request is accompanied by payment for the reasonable estimated cost, as provided by the Interconnecting PTO, of the System Impact Study. If a New Facility Operator elects neither to execute the System Impact Study Agreement nor to rely upon the CAISO ADR Procedures, such New Facility Operator's Completed Application will be deemed withdrawn. If the New Facility Operator's application is deemed withdrawn, the New Facility Operator will compensate the Interconnecting PTO for all reasonable costs incurred to that date in processing the Completed Interconnection Application.

The Interconnecting PTO will use due diligence to complete the System Impact Study within ~~sixty~~ (60) calendar days of receipt of payment and the System Impact Study Agreement or initiation of the CAISO ADR Procedures. If the Interconnecting PTO cannot complete the System Impact Study within ~~sixty~~ (60) calendar days, the Interconnecting PTO will notify the New Facility Operator, in writing, of the reason why additional time is required to complete the required study and the estimated completion date.

#### **4.2.2 Facility Study Procedures.**

If a System Impact Study indicates that additions or upgrades to the CAISO Controlled Grid are needed to satisfy a New Facility Operator's request for interconnection, the Interconnecting PTO shall, within ~~fifteen~~ (15) Business Days of the completion of the System Impact Study, tender to a New Facility Operator a Facility Study Agreement that defines the scope, content, assumptions and terms of reference for such study, the estimated time to complete the required study, and pursuant to which the applicant agrees to reimburse the Interconnecting PTO for the actual costs of performing the required Facility Study. The New Facility Operator shall execute the Facility Study Agreement and return it to the Interconnecting PTO within ~~ten~~ (10) Business Days, together with payment for the reasonable estimated cost, as provided by the Interconnecting PTO, of the Facility Study. Alternatively, a New Facility Operator may request that the Interconnecting PTO proceed with the Facility Study and abide by the terms, conditions, and cost assignment of the Facility Study Agreement ultimately determined through the

CAISO ADR Procedures, provided that such request is accompanied by payment for the reasonable estimated cost, as provided by the Interconnecting PTO, of the Facility Study. If a New Facility Operator elects either to not execute the Facility Study Agreement or to rely upon the CAISO ADR Procedures, such New Facility Operator's Completed Application will be deemed withdrawn. If the New Facility Operator's application is deemed withdrawn, the New Facility Operator will compensate the Interconnecting PTO for all reasonable costs incurred to that date in processing the Completed Application.

The Interconnecting PTO will use due diligence to complete the Facility Study within ~~sixty (60)~~ calendar days of receipt of payment and the Facility Study Agreement or initiation of the CAISO ADR Procedures. If the Interconnecting PTO cannot complete the Facility Study within ~~sixty (60)~~ calendar days, the Interconnecting PTO will notify the New Facility Operator, in writing, of the reason why additional time is required to complete the required study and the estimated completion date.

A New Facility Operator shall be entitled to amend its Completed Interconnection Application once without losing its queue position. Such amendment shall occur on or before ~~ten (10)~~ Business Days following the Date the Interconnecting PTO tenders a Facility Study Agreement. Specifically, as an alternative to executing and returning a Facility Study Agreement, a New Facility Operator may submit an amendment to its Completed Interconnection Application to reflect a revised configuration for its New Facility. The amended Completed Interconnection Application shall be treated in accordance with Section 4.2.1 of this Appendix and the New Facility Operator's Completed Interconnection Application shall not be deemed withdrawn, and it shall maintain its exiting queue position, if (a) the amended Completed Interconnection Application is received by the Interconnecting PTO within ~~ten (10)~~ Business Days of the Interconnecting PTO's tender of a Facility Study Agreement; and (b) the New Facility Operator has not submitted a previous amendment to the Completed Interconnection Application. In the event a New Facility Operator amends its Completed Interconnection Application, it will be responsible for any additional study costs that result from that amendment, including costs associated with revisions to studies for other applicants holding later queue positions.

#### **4.3 Execution of Interconnection Agreement.**

Following completion of the Facility Study, a New Facility Operator proposing to interconnect a Large Generating Facility shall continue the interconnection process in accordance with Section 11.2 of the LGIP. Within ~~ten (10)~~ Business Days of receipt of a completed Facility Study, a New Facility Operator proposing to interconnect a Small Generating Facility shall request the Interconnecting PTO to provide to such applicant an Interconnection Agreement. The Interconnecting PTO shall provide an Interconnection Agreement to an applicant within ~~thirty (30)~~ Business Days of receipt of the request for an Interconnection Agreement. If the CAISO and Interconnecting PTO determine, pursuant to Sections 4.2.1 and 4.2.2 of this Appendix, that either:

- (a) a New Facility Operator's Interconnection Application can be accommodated and that such New Facility Operator will not incur costs for Reliability Upgrades, the New Facility Operator shall execute the Interconnection Agreement within ~~ten (10)~~ Business Days of receipt of the Interconnection Agreement; or

- (b) a New Facility Operator's Interconnection Application will necessitate Reliability Upgrades, the New Facility Operator shall execute the Interconnection Agreement within ~~thirty (30)~~ Business Days of receipt of the Interconnection Agreement or, if a New Facility Operator and the Interconnecting PTO are unable to agree on the rates, terms and conditions of the Interconnection Agreement, the New Facility Operator may request that the Interconnecting PTO file an unexecuted Interconnection Agreement at FERC. If a New Facility Operator does request that the Interconnecting PTO file an unexecuted Interconnection Agreement at FERC, the New Facility Operator shall agree to abide by the rates, terms and conditions of such Interconnection Agreement ultimately determined by FERC to be just and reasonable.

#### **4.4 Queuing.**

- (a) The CAISO and Interconnecting PTO will process all Interconnection Applications based on the New Facility's Completed Application Date.
- (b) The queue position for each New Facility that has submitted an Interconnection Application will be established according to the Completed Application Date and the New Facility's compliance with the milestones set forth in Section 4.4.1 of this Appendix.
- (c) For any New Facility Operator that submitted a request to interconnect to a Interconnecting PTO prior to June 1, 2002 (the effective date of the Amendment 39 Procedures), such New Facility Operator's position in the queue will be based on its Completed Application Date as that term was defined in the Interconnecting PTOs TO Tariff in effect at the time the New Facility Operator submitted a request to interconnect to the Interconnecting PTO.

##### **4.4.1 Queuing Milestones.**

- (a) To maintain its queue position, each New Facility Operator must timely comply with the requirements of the CAISO Tariff and the TO Tariff of the Interconnecting PTO and must, within ~~six (6)~~ months of its Completed Application Date, satisfy all applicable Data Adequacy Requirements of state and local siting and other regulatory authorities. Any New Facility Operator not subject to state siting requirements must satisfy the information requirements set forth in 18 C.F.R. § 2.20. The CAISO will permit a New Facility Operator to retain its queue position if such New Facility Operator requests an extension of the ~~six (6)~~-month period at least ~~five (5)~~ Business Days prior to the expiration of such period. Such extension will be limited to one period of ~~thirty (30)~~ Business Days and additional extensions shall not be granted. A New Facility Operator that does not maintain its queue position, but later satisfies the Data Adequacy Requirements, or the requirements of 18 C.F.R. § 2.20 if applicable, will be placed in a queue position comparable to that of other New Facility Operators that have satisfied the Data Adequacy Requirements, or the requirements of 18 C.F.R. § 2.20, as of the same date. At that time, the CAISO and the Interconnecting PTO will determine whether a new System Impact Study must be performed based on the revised queue position of such New Facility Operator.

- (b) Upon satisfaction of the Data Adequacy Requirements, or the requirements of 18 C.F.R. § 2.20 if applicable, each New Facility Operator, in order to maintain its queue position, must obtain a New Facility License within **fifteen (15)** months after satisfying the Data Adequacy Requirements. A New Facility Operator that does not obtain a New Facility License within the allowed time and does not maintain its queue position, but later obtains a New Facility License, will be placed in a queue position comparable to other New Facility Operators that have satisfied comparable milestones as of that date.
- (c) Any New Facility whose New Facility License or building permit expires or is rescinded will not maintain its queue position.
- (d) A New Facility Operator that has submitted a dispute under Article 13 of the CAISO Tariff regarding any part of this Appendix may request that the presiding judge, arbitrator, or mediator of the dispute suspend its obligation to meet milestones in order to maintain its queue position. In the event such a suspension is granted, the New Facility Operator must satisfy the missed milestones specified in this Section 4.4.1 of this Appendix within **thirty (30)** calendar days of the date the decision on the dispute becomes final.

#### **4.5 Coordination of Critical Protective Systems.**

New Facility Operators shall coordinate with the CAISO, Participating TOs and UDCs to ensure that a New Facility Operator's Critical Protective Systems, including relay systems, are installed and maintained in order to function on a coordinated and complementary basis with CAISO Controlled Grid Critical Protective Systems and the protective systems of the Participating TOs and UDCs. The CAISO and Participating TOs will make available all information necessary for a New Facility Operator to determine whether its Critical Protective Systems are compatible with those of the CAISO, Participating TOs and UDCs. The CAISO and New Facility Operators shall also coordinate with entities that own, operate or control facilities outside of the CAISO Controlled Grid to ensure that a New Facility's Critical Protective Systems function on a coordinated and complementary basis with such entities Critical Protective Systems.

#### **5 Cost Responsibility of New Facility Operators.**

- (a) Each New Facility Operator shall pay the costs of required studies in accordance with Section 4.2 of this Appendix and the costs identified in this Section 5. The CAISO and Interconnecting PTO will provide each New Facility Operator an estimate of its total cost responsibility under this Section. A New Facility Operator shall be responsible for the actual costs of all Direct Assignment Facilities and Reliability Upgrades necessitated by its Completed Interconnection Application. The Interconnecting PTO will provide each New Facility Operator a detailed record of the actual costs assessed to it under this Section. A New Facility Operator may request the Interconnecting PTO to provide any additional information reasonably necessary to audit the actual costs the New Facility Operator is assessed.
- (b) The CAISO and Interconnecting PTO will process all Interconnection Applications, and determine the cost responsibility of each New Facility Operator based on the New Facility Operator's Completed Application Date or, if applicable, based on the queue position determined by the procedure described in Section 4.4.1(b) of this Appendix. The CAISO and Interconnecting PTO will process simultaneously all interconnection requests with the same Completed Application Date.

- (c) Each New Facility Operator shall pay the costs of planning, installing, operating and maintaining the following facilities: (i) Direct Assignment Facilities, and, if applicable, (ii) Reliability Upgrades. In addition, each New Facility Operator shall implement all existing operating procedures necessary to safely and reliably connect the New Facility to the facilities of the Interconnecting PTO and to ensure the CAISO Controlled Grid's conformance with the CAISO Grid Planning Criteria, and shall bear all costs of implementing such operating procedures. The New Facility Operator shall be responsible for the costs of Reliability Upgrades only if the necessary facilities are not included in the CAISO Controlled Grid Transmission Expansion Plan approved as of the New Facility Operator's Completed Application Date, or the date for the installation of a facility is advanced by the interconnection of the New Facility, in which case the New Facility Operator shall be responsible only for the incremental costs associated with the earlier installation of the facility.
- (d) Each New Facility Operator may, at its own discretion, sponsor, pursuant to Section 24 of the CAISO Tariff, any Delivery Upgrades.

### **5.1 Maintenance of Encumbrances.**

No New Facility shall adversely affect the ability of the Interconnecting PTO to honor its Encumbrances existing as of the time a New Facility submits its Interconnection Application to the CAISO. The Interconnecting PTO, in consultation with the CAISO, shall identify any such adverse effect on its Encumbrances in the System Impact Study performed under Section 4.2.1 of this Appendix. To the extent the Interconnecting PTO determines that the connection of the New Facility will have an adverse effect on Encumbrances, the New Facility Operator shall mitigate such adverse effect.

### **5.2 Settlement of Interconnection Costs.**

Payment for Direct Assignment Facilities and Reliability Upgrades shall be made by the New Facility Operator to the Interconnecting PTO pursuant to the terms of payment set forth in the Interconnection Agreement between the parties.

## **6 Energization.**

Neither the CAISO nor the Interconnecting PTO shall be obligated to energize, nor shall the New Facility Operator be entitled to have its interconnection to the CAISO Controlled Grid energized, unless and until an Interconnection Agreement has been executed, or filed at FERC pursuant to Section 4.3 of this Appendix, and becomes effective and such New Facility Operator has demonstrated to the CAISO's reasonable satisfaction that it has complied with all of the requirements of this Appendix.

**CAISO TARIFF APPENDIX X**  
**Dynamic Scheduling Protocol (DSP)**

## CAISO TARIFF APPENDIX X

### Dynamic Scheduling Protocol (DSP)

#### **1 [NOT USED]**

#### **2 CONSISTENCY WITH NERC/WECC POLICIES AND REQUIREMENTS**

- 2.1** Scheduling and operation of Dynamic Schedule functionalities must comply with all applicable NERC and WECC policies and requirements regarding inter-Balancing Authority Area scheduling, in accordance with Section 4.5.4.3 of the CAISO Tariff.
- 2.2** Scheduling and operation of Dynamic Schedule functionalities must be consistent with the NERC Dynamic Transfer White Paper and all NERC standards or policies.
- 2.3** All new dynamic functionality implementations may be subject to NERC-specified peer review.

#### **3 CONTRACTUAL RELATIONSHIPS**

- 3.1** The Host Balancing Authority and all Intermediary Balancing Authorities must each execute an Interconnected Balancing Authority Area Operating Agreement ("IBAAOA") with the CAISO, with accompanying service schedule, a Dynamic Scheduling Host Balancing Authority Operating Agreement, or a special agreement particular to the operation of the functionality supporting dynamic imports of Energy, and/or Energy associated with non-Regulation Ancillary Services to the CAISO Balancing Authority Area.
- 3.2** The Scheduling Coordinator for the System Resource must execute a Dynamic Scheduling Agreement for Scheduling Coordinators with the CAISO governing the operation of the Dynamic Schedule functionality, which agreement will include a provision for its termination based on failure to comply with these standards.
- 3.3** The Scheduling Coordinator for the System Resource must have the necessary operational and contractual arrangements in place with the Host Balancing Authority (see Section 5 of this Appendix X below). Such arrangements must include the Host Balancing Authority's ability to receive telemetry from the System Resource and to issue a Dynamic Schedule signal pertinent to that System Resource to the CAISO. Proof of such arrangements must be provided to the CAISO.

#### **4 COMMUNICATIONS, TELEMETRY, AND OTHER TECHNICAL REQUIREMENTS**

- 4.1** The communication and telemetry requirements set forth in the CAISO's Standards for Imports of Regulation will apply to all Dynamic Schedules, except for (a) those dynamic functionalities established prior to the CAISO Operations Date, (b) the requirements that are specific solely to Regulation, and (c) the requirements set forth below.



- 4.2** Dedicated dual redundant communications links between the CAISO's EMS and the Host **Balancing Authority** Area EMS are required.
- 4.3** The primary circuit will be T1-class, or equivalent, utilizing the inter-control center communications protocol ("ICCP"). The backup circuit will be diversely routed between the Host **Balancing Authority** Area EMS and the CAISO **Balancing Authority** Area EMS on separate physical paths and devices.
- 4.4** Dedicated dual redundant communications links between the Host **Balancing Authority** Area EMS and every Intermediary **Balancing Authority** Area EMS are required.
- 4.5** The **Balancing Authority** Area hosting a Dynamic System Resource must have a mechanism implemented to override the associated dynamic signal.
- 4.6** The dynamic signal must be properly incorporated into all involved **Balancing Authority** Areas' ACE equations.
- 4.7** The System Resource must have communications links with the Host **Balancing Authority** Area consistent with **this Appendix X**.

## **5 LIMITS ON DYNAMIC IMPORTS**

- 5.1** The CAISO reserves the right to establish limits applicable to the amount of any Ancillary Services and/or Energy imported into the CAISO **Balancing Authority** Area, whether delivered dynamically or statically. Such limits may be established based on any one, or a combination, of the following considerations: a percentage of, or a specific import limit applicable to, total CAISO **Balancing Authority** Area requirements; a percentage at, or a specific import limit applicable to, a particular Scheduling Point or a **Transmission Interface**; a percentage of, or a specific import limit applicable to, total requirements in a specific **Ancillary Service Region**; or operating factors which may include, but are not limited to, operating **Nomograms**, Remedial Action Schemes, protection schemes, scheduling and curtailment procedures, or any potential single points of failure associated with the actual delivery process.
- 5.2** The CAISO may, at its discretion, either limit or forego procuring Ancillary Services at particular **Balancing Authority** Area Scheduling Points to ensure that Operating Reserves are adequately dispersed throughout the CAISO **Balancing Authority** Area as required by WECC Minimum Operating Reliability Criteria (MORC).
- 5.3** A Dynamic System Resource and its **Dynamic Schedules** must be permanently associated with a particular CAISO Scheduling Point (the CAISO may, from time to time and at its discretion, allow for a change in such pre-established association of the Dynamic System Resource with a particular CAISO Scheduling Point).

## **6 OPERATING AND SCHEDULING REQUIREMENTS**

- 6.1** For any Operating Hour for which Energy and/or Ancillary Services (and associated Energy) is scheduled dynamically to the CAISO from the System Resource, a firm (or non-interruptible for that hour) matching transmission service must be reserved across the entire Dynamic Schedule transmission path external to the CAISO Balancing Authority Area.
- 6.2** All Dynamic Schedules associated with newly implemented Dynamic System Resources must be electronically tagged (by use of an E-Tag).
- 6.3** Formal inter-Balancing Authority Area Dynamic Schedules may be issued only by the Dynamic System Resource's Host Balancing Authority Area and must be routed through the EMSs of all Intermediary Balancing Authority Areas (such schedules would be considered "wheel-through" schedules by Intermediary Balancing Authority Areas).
- 6.4** The CAISO will treat dynamically scheduled Energy as a resource contingent firm import. The CAISO will procure (or allow for self-provision of) WECC MORC-required Operating Reserves for Loads served by Dynamic System Resources.
- 6.5** All Energy Interchange Schedules associated with dynamically scheduled imports of Spinning Reserve and Non-Spinning Reserve will be afforded similar treatment (i.e., resource contingent firm).
- 6.6** The dynamic signal must be integrated over time by the Host Balancing Authority Area for every Operating Hour.
- 6.7** Notwithstanding any Dispatches of the System Resource in accordance with the CAISO Tariff, the CAISO shall have the right to issue operating orders to the System Resource either directly or through the Host Balancing Authority Area for emergency or contingency reasons, or to ensure the CAISO's compliance with operating requirements based on WECC or NERC requirements and policies (e.g., WECC's Unscheduled Flow Reduction Procedure). However, such operating orders may be issued only within the range of the CAISO-accepted Energy and Ancillary Services, Bids for a given Operating Hour (or the applicable "sub-hour" interval).
- 6.8** If there is no Dynamic Schedule in the CAISO's Day-Ahead Market, or HASP/RTM the dynamic signal must be at "zero" ("0") except when in response to CAISO's Dispatch Instructions associated with accepted Ancillary Services Bids.
- 6.9** The Scheduling Coordinator of the Dynamic System Resource must have the ability to override the associated Dynamic Schedule in order to respond to the operating orders of the CAISO or the Host Balancing Authority.
- 6.10** Unless the Dynamic System Resource (1) is implemented as a directly-telemetered Load following functionality, (2) is base-loaded Regulatory Must-Take Generation, or (3) responds to a CAISO intra-hour Dispatch Instruction, the Dynamic Schedule representing such resource must follow WECC-approved practice of 20-minute ramps centered at the top of the hour. The CAISO does not provide any special Settlements treatment nor offer any CAISO Tariff exemptions for dynamic Load following functionalities.

**6.11** In Real-Time the Dynamic Schedule may not exceed the maximum value established by the sum of the Day-Ahead Market and HASP/RTM accepted Energy and Ancillary Services Bids plus any response to the CAISO's Real-Time Dispatch Instructions. The composite value of the Dynamic Schedule derived from the Day-Ahead and HASP/RTM accepted Bids plus any Dispatch Instruction response represents not only the estimated Dynamic System Resource's Energy but also the transmission reservation on the associated CAISO Scheduling Point.

**6.12** Only one Dynamic System Resource may be associated with any one physical generating resource.

**6.13** If the Scheduling Coordinator for the Dynamic System Resource desires to participate in CAISO's Regulation market, all provisions of the CAISO's Standards for Imports of Regulation shall apply.

## **7 CERTIFICATION, TESTING, AND PERFORMANCE MONITORING OF DYNAMIC IMPORTS OF ANCILLARY SERVICES**

Scheduling Coordinators and Host Balancing Authorities that are already certified under the CAISO's Standards for Imports of Regulation will be deemed to have fulfilled the technical implementation requirements of this Appendix X; however, such Scheduling Coordinators and Balancing Authorities must still be certified separately for each non-Regulation Ancillary Service (all presently implemented Regulation import functionalities may be subject to review to ensure consistency between such functionalities and the requirements of this Appendix X). Scheduling Coordinators and Host Balancing Authorities that wish to be certified for imports of Regulation shall be subject to certification under the Standards for Imports of Regulation, subject to verification of consistency with the requirements of this Appendix X.

**7.1** The Scheduling Coordinator and Host Balancing Authority must jointly request the certification of a System Resource to provide Ancillary Services for the CAISO Balancing Authority Area and cooperate in the testing of such System Resource (see the certification request form attached as Attachment A to this Appendix X).

**7.2** Only CAISO tested and certified System Resources will be allowed to bid and/or self-provide Ancillary Services into the CAISO Balancing Authority Area.

**7.3** Dynamic Ancillary Services imports will be certified through testing, in accordance with the relevant sections of the CAISO's Operating Procedure G-213. All requests for certification of dynamic Ancillary Services imports will be reviewed and approved by the CAISO with respect to any technical limitations imposed by existing operational considerations, such as Remedial Action Schemes, operating Nomograms, and scheduling procedures. These reviews may impose certain Ancillary Services import limits in addition to those outlined in Section 4.1 of this Appendix X. Therefore, interested parties are advised and encouraged to contact the CAISO before they begin the process of the necessary systems design, preparation, and implementation for import of Ancillary Services to the CAISO Balancing Authority Area.

**7.4** The CAISO will measure the performance of the Dynamic Schedule of Energy associated with an accepted Ancillary Services Bid against (1) the awarded range of Ancillary Service capacity; (2) the certified limits; and (3) the bid Ramp Rate, which shall be validated by the CAISO against the certified Ramp Rate.

**7.5** The Scheduling Coordinator for the System Resource and the Host **Balancing Authority** must notify the CAISO should any changes, modifications, or upgrades affecting control and/or performance of the System Resource be made. Upon such notification, the CAISO, at its discretion, may require that the System Resource and Host **Balancing Authority** be re-certified to import Ancillary Services into the CAISO **Balancing Authority** Area.

**8 COMPLIANCE, LOSSES, AND FINANCIAL SETTLEMENTS**

**8.1** Energy delivered in association with Dynamic System Resources will be subject to all provisions of the CAISO's Imbalance Energy markets, including Uninstructed Deviation Penalties (UDP) (just as is the case with CAISO intra- **Balancing Authority** Area Generating Units of Participating Generators).

**8.2** Dynamically scheduled and delivered Ancillary Services will be subject to the CAISO's compliance monitoring and remedies, just as any CAISO intra- **Balancing Authority** Area Generating Units of Participating Generators.

**8.3** All Day-Ahead Market and HASP/RTM submitted Dynamic Schedules shall be subject to CAISO Congestion Management and as such may not exceed their transmission reservations in Real-Time (with the exception of intra-hour Dispatch Instructions of the Energy associated with accepted Ancillary Services Bids).

**8.4** All Dynamic Scheduling and delivered Energy shall be subject to the standard CAISO Transmission Loss calculation associated with the particular Scheduling Point.

**8.5** Any transmission losses attributed to the Dynamic Schedule on transmission system(s) external to the CAISO **Balancing Authority** Area will be the responsibility of the owner(s)/operator(s) of the Dynamic System Resource.

**8.6** A predetermined, mutually agreed, and achievable "PMax-like" fixed MW value will be established for every Dynamic System Resource to be used as the basis for the UDP calculation. Responsible Scheduling Coordinators will be able to report de-rates affecting the Dynamic System Resource via the CAISO's SLIC Outage reporting system.

**8.7** Should there be any need or requirement, whether operational or procedural, for the CAISO to make Real-Time adjustments to the CAISO's inter- **Balancing Authority** Area Interchange Schedules (to include curtailments), Dynamic Schedules shall be treated in the same manner as similarly situated and/or effective static CAISO Interchange Schedules.

**DSP ATTACHMENT A**

**Scheduling Coordinator & Host *Balancing Authority***

**Request for Certification of**

**Imports of Spinning and Non-Spinning Reserves for which the associated Energy is delivered  
dynamically from a System Resource**

In accordance with the CAISO Tariff, CAISO Protocols, and the CAISO's Business Practice Manuals and Operating Procedures, \_\_\_\_\_, as Scheduling Coordinator, and \_\_\_\_\_, as Host *Balancing Authority* (as such term is referred to in the CAISO Dynamic Scheduling Protocol), collectively referred to as "Parties," or individually as "Party," hereby request the certification of the Parties and the System Resource(s) identified in the table below as a provider of Ancillary Services and associated Energy to the CAISO *Balancing Authority* Area subject to the Dynamic Scheduling Protocol, Appendix X of the CAISO Tariff. Further, the Parties acknowledge that their ability to import Ancillary Services and associated Energy will be tested for certification in accordance with CAISO Operating Procedure G-213.

With this request for certification, the Parties recognize that the CAISO Tariff, CAISO Protocols, and applicable agreements require the Host *Balancing Authority* to issue Dynamic Schedules of Energy to the CAISO based on the Scheduling Coordinator's self-provided or bid external imports of non-Regulation Ancillary Services from the System Resource(s) at any time during the Operating Hour.

With this request for certification, the Host *Balancing Authority* represents and warrants that it has in place the required communications links with the CAISO *Balancing Authority* Area in order to facilitate the delivery of Ancillary Services and associated Energy from the System Resource.

With this request for certification, the Scheduling Coordinator represents and warrants that it has made the appropriate arrangements for and has put in place the equipment and services necessary for the delivery of Ancillary Services and associated Energy from the System Resource to the point of Interchange ("Scheduling Point") with the CAISO *Balancing Authority* Area in accordance with the Dynamic Scheduling Protocol.

The Scheduling Coordinator further certifies that any and all dynamic imports of Energy associated with self-provided or bid imports of non-Regulation Ancillary Services will be deliverable over non-interruptible, non-recallable transmission rights, from the source of the associated Energy to the Scheduling Point with the CAISO *Balancing Authority* Area.

System Resource	External Host <b>Balancing Authority</b> Area in which System Resource is Located	Scheduling Point (CAISO Interchange ID)	Maximum Amount of Ancillary Services Capacity to be Certified (MW)	Maximum Ramp Rate to be Certified (MW/minute)
1				
2				
3				
4				
5				

Subsequent to the initial filing of this request for certification with the CAISO, any prospective changes jointly made by the Parties may be filed with the Scheduling Coordinator's CAISO **customer service** representative, who will acknowledge the receipt of such requested changes and indicate the date on which such changes may be tested and become effective if CAISO testing proves successful. Such changes will be made by the CAISO as soon as practicable, with reasonable efforts made to implement them within sixty (60) days of receipt of the requested changes.

This document \_\_\_\_\_ (does) \_\_\_\_\_ (does not) contain requested changes to previously effective certification.

Certification Requested By:

\_\_\_\_\_, as the Scheduling Coordinator

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

\_\_\_\_\_, as the Host **Balancing Authority**

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

CERTIFICATION REQUEST ACKNOWLEDGED by:

\_\_\_\_\_

California Independent System Operator Corporation

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**CAISO TARIFF APPENDIX Y**

**[NOT USED]**

**[Ten Sheet Numbers Reserved for Export Priority Filing.]**