

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 to this CAISO Tariff 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) Unless the context otherwise requires, if the provisions of a Protocol and Section 1 through 4 of this CAISO Tariff conflict, the provisions in Sections 1 through 4 of this CAISO Tariff 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) Unless the context otherwise requires, 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 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 mean a day on which the banks in California are open for business.
- (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 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 if scheduled 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 for Direct Access will be determined in accordance with the Direct Access 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 providing Direct Access to that End-Use Customer.

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 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, Control Area Operators (to the extent the agreement between the Control Area Operator and the CAISO so provides), and Metered Subsystem Operators within the CAISO Control 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 a 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 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 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 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.

4.3.1.6 Converted Rights.

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:

(a) The recipient of the transmission service received under an Existing Contract that has converted its rights to CAISO transmission service shall turn over Operational Control of its transmission entitlement to the CAISO for management by the CAISO in accordance with the CAISO Tariff, applicable operating procedures, and Business Practice Manuals;

(b) The recipient of the transmission service under an Existing Contract that has converted its rights to CAISO transmission service shall obtain all future transmission services within, into (starting at the CAISO Controlled Grid), out of, or through the CAISO Controlled Grid using the CAISO's scheduling and operational procedures, the CAISO Tariff, and any applicable TO Tariff, provided that this provision shall not affect the rights, if any, of the contract parties to extend Existing Contracts;

(c) For the capacity represented by its rights, the recipient of firm transmission service under an Existing Contract that has converted its rights to CAISO transmission service shall be entitled to receive all Wheeling revenue credits throughout the term that the capacity is available under the Existing Contract;

(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 of this CAISO Tariff 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, Generator's and Participating TO's 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 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,

Issued by: Charles A. King, PE, Vice President of Market Development and Program Management

Issued on: August 3, 2007

Effective: January 31, 2008

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 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 Weekly Forecasts.

Submitting to the CAISO the forecasted weekly peak Demand on the CAISO Controlled Grid and the forecasted Generation capacity. The forecasts 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 Control 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 Control Areas and intermediary Control Areas each execute with the CAISO an Interconnected Control Area Operating Agreement ("ICAOA"), a Dynamic Scheduling Host Control Area 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 schedule or bid 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.

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 schedule or bid 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 schedule or bid 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, who 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 customers.

(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 to 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.

4.6.3 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 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 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 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 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 Control Area integrity or reliability as provided in Sections 7 and 7.6.1 of the CAISO Tariff.

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 transmission capacity, 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.

4.6.8 Sharing Information on Reliability of CAISO Controlled Grid.

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.

4.6.9 Access Right.

A Participating Generator shall, at the request of the CAISO and upon reasonable notice, provide access to its facilities (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 of this CAISO Tariff, or (iii) to obtain information relative to a Forced Outage.

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 Participating Loads 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 Forecasting 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 to the CAISO to comply with all applicable provisions of the CAISO Tariff as specified in that written 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 written undertaking 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 Control 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 written undertaking to 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 Control 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 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 or under contract to the MSS;

4.9.4.5 be responsible for Black Start requirements for reliability of the MSS, however, if the MSS can self-provide this requirement, the MSS 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 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 takeout 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 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 Submissions to self-provide 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]

[SHEET 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 Control 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 Control 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 Control 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.

4.9.11 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 Generation unit and must provide a set of Generation Distribution Factors. Except as specifically provided in the 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 written undertaking to 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 Section 4.6.1 and Section 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 Section 8.4 and 8.9 before the Scheduling Coordinator representing the MSS may self-provide its Ancillary Service Obligations or Bid into the CAISO's 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 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 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 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 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.

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 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 Control 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 for the CAISO Security Amount, 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 Section 12 and Section 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.

5 **[Not Used]**

6 COMMUNICATIONS.

6.1 Methods of Communications.

6.1.1 Full-Time Communications Facility Requirement.

Each Scheduling Coordinator, Utility Distribution Company, Participating Transmission Owner, Participating Generator, Control Area Operator (to the extent the agreement between the Control Area Operator and the CAISO so provides), and Metered Subsystem 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:

6.1.5.1. A single and an alternative telephone number and a single and an alternative facsimile number by which the CAISO may contact 24 hours a day a representative of the Connected Entity in, or in relation to, a System Emergency;

6.1.5.2 The names or titles of the Connected Entity's representatives who may be contacted at such telephone and facsimile numbers.

6.1.5.3 Each representative specified pursuant to 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.

6.1.5.4 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 of this CAISO Tariff.

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 Load 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 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 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 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 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 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 interconnections with external Control 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 20th 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 27th of each month.

6.5.2.2.2 Day-Ahead Market Bid Submittal.

Seven 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 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 pm the day prior to (two days before the Operating Day) the target Day-Ahead Market, the CAISO will publish the updated the CAISO Forecast of CAISO Demand.

6.5.2.3.2 Network and System Conditions.

By 6:00 pm the day prior to (two days ahead of) 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-Control Area Interfaces, and the available capacity.

6.5.2.3.3 Ancillary Services Requirements.

By 6:00 pm the day prior to (two days ahead of) 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 days in advance of the Trading 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 am, 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 am and the end of the Day-Ahead Inter-SC Trading 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 am and 10:00 am, the CAISO will provide feedback to Scheduling Coordinators about their validated ETC and TOR quantities, and calculated Default Energy Bids.

6.5.3.1.4 After the close of the DAM bidding at 10:00 am, 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 pm, 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 a Dispatch Notice under the RMR Contract.

6.5.3.1.6 After the results of the DAM are published by 1:00 pm, 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 pm 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; and
- (f) Day-Ahead final resource Bid mitigation results.

6.5.3.2 Public Market Information.

6.5.3.2.1 Before 10:00 am (one day before the target Operating Day) the CAISO will publish updated Outage information regarding the transmission system on OASIS.

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

- (a) Total Day-Ahead Schedules (MWh) by Generator, Demand and Scheduling Point for the CAISO Control Area;
- (b) Total Day-Ahead AS Awards by AS Region;
- (c) RUC Prices by bus PNode;
- (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 Operating Day.

6.5.4 HASP Communications.

The HASP opens at 1:00 pm 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 T-135, 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 T-135 and T-45, 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 T-75, the CAISO will send a message to the Scheduling Coordinators regarding the outcome of the Bid validation.

6.5.4.1.4 In between T-270 and the Real-Time, the CAISO will issue RTM Start-Up Instructions for Short Start Units consistent with the resources start-up time.

6.5.4.1.5 No later than T-40, 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 T-30, 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 T-30, 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 T-30, on an hourly basis, the CAISO will publish via the secure communication system the following:

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

6.5.4.2 Public Market Information.

6.5.4.2.1 By T-105 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 T-30, 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;
- (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 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 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 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 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 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 Operating 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 Control 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 230kV 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 PG&E PTO Service Territory.

7.1.2 Maintain Back-up Control Facility.

The CAISO shall maintain back-up control facilities remote from the 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 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 SCE and SDGE 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 of the Tariff;
- (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 Control Area operators 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 Control Area operators 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 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 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 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 the provisions of the TCA.

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 PTOs as listed in the CAISO Register.

7.5.2 Clearing Equipment for Work.

The clearance procedures of the CAISO and the relevant UDC and PTO 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 PTOs 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 PTO and the adjacent Control 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 PTO'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 PTO 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 Section 7 of this CAISO Tariff;

(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 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 Control Area, or events outside of the CAISO Control 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 Generation, initiate full control of manual Load Shedding, 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, 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 Control 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 Control Area informed.

7.7.2.1 Declarations of System Emergencies.

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.

7.7.2.2 Responsibilities of UDCs and MSSs During a System Emergency.

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.

7.7.2.3 Responsibilities of Generating Units, System Units and System Resources during System Emergencies.

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 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 a system Alert Notice 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 Control Area, or if it otherwise appears that there is insufficient Energy and Ancillary Services to meet Real-Time Demand in the CAISO Control Area.

7.7.3.2 System Warning.

The CAISO will give a system warning notice 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, 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) of this tariff. 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 Section 7.7.5 hereof implement the Electrical Emergency Plan in consultation with the UDCs, the MSS Operator, 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 agreement with the CAISO and each 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 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.

7.7.9 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.

7.7.9.1 In compiling its UFLS program, the CAISO, at its discretion, may also coordinate with other entities, review and audit their UFLS programs and systems as described in Sections 7.7.8.1 to 7.7.9.

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 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 UDCs 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 hereof. 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 Control 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's Control 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 Control 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 Control Area annual peak for the previous year) to total Control 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 Scheduling Infrastructure (SI) computer will not be able to communicate with Scheduling Coordinators to receive any type of updated Schedule information;

- (b) the SI computer 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, ETC and TOR Self-Schedules changes from Scheduling Coordinators via voice communications as time and manpower 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 TOC 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 SCE GCC 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.

7.8 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 of the CAISO Tariff 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 Control Area, offer Energy for sale on behalf of Scheduling Coordinators to adjacent Control Area operators 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 Control Area operators.

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 Control 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 Control 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 Control Area over the Interties with interconnected Control Areas, except from Dynamic System Resources certified to provide Ancillary Services or if provided pursuant to ETCs, TORs or Converted Rights. 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 Control 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. 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. 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 Operations Committee, 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 Operations Committee 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 Control Area. At a minimum the CAISO Operations Committee 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 days ahead of the Trading Day to which the adjustment will apply. Periodic reviews by the CAISO Operations Committee 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; (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 Control 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, the HASP, and in each 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 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) 5% of the Demand to be met by Generation from hydroelectric resources (excluding the Demand covered by firm purchases from outside the CAISO Control Area) plus 7% of the Demand to be met by Generation from other resources (excluding the Demand covered by firm purchases from outside the CAISO Control 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 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 Control 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 Control 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 Resource Adequacy obligation to serve CAISO Control Area Load. The specific resource self providing the additional Operating Reserve must have sufficient unloaded capacity available based on Energy and Ancillary 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 Control 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 Units:

- (a) must be located in the CAISO Control Area;

- (b) may be located anywhere in the CAISO Control 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 Control 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;
- (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; and
- (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.

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.

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. In the Day-Ahead Market, the CAISO procures one-hundred (100) percent 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 Control 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 Control 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 Control Area.

The CAISO will procure Spinning Reserves and Non-Spinning Reserves from Generating Units operating within the CAISO Control Area and from imports of System Resources. Scheduling Coordinators are allowed to bid Regulation from resources located outside the CAISO Control 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.

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 Control Area) and the Expanded System Region (*i.e.*, the System Region and intertie Scheduling Points with adjacent Control 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 Control 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 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 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 Control Area. The CAISO may establish a restriction on the amount of Ancillary Services to be procured from outside the CAISO Control Area by establishing a minimum limit for the System Region. The CAISO may also establish a maximum limit for Ancillary Services procured at any single import Scheduling Point.

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 Control Area are dispersed appropriately throughout the CAISO Control 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 Control 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 Capacity, (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 limits for the Ancillary Service Regions and any Sub-Regions by 6:00pm prior to the Day-Ahead Market (two days prior to the Operating Day). After the completion of the DAM for a 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 Control 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 Control 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 Control 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 Capacity, 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 Appendix K. Non-Spinning Reserve may be provided from Curtailable Demand, on-demand rights from other entities or Control 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, and Non-Spinning Reserves 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 40 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.

8.4 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 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 the Business Practice Manual. The requirements in 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 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 minutes to a maximum of thirty minutes, which value shall be specified by the CAISO and published on the CAISO's 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 Control Area dead band for ACE;

- (b) Spinning and Non-Spinning Reserve. Each provider of Spinning Reserve or Non-Spinning Reserve must be capable of receiving a Dispatch Instruction within one 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 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 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 load 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 Tariff must comply with the following capability standards

- (a) Spinning 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 minutes after the issue of the Dispatch Instruction by the CAISO, and of maintaining that output or scheduled interchange for at least two 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 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 12 hours from the time when it first starts delivering Energy.

8.4.4 Ancillary Service Availability Standards.

The providers of Ancillary Services under this Tariff must comply with the following availability standards. Spinning and Non-Spinning Reserve. 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 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 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, has submitted a Bid in 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 to this CAISO Tariff are met in relation to the Generating Units from which Black Start will be offered.

8.4.7 Methodology For Procurement of Ancillary Services

8.4.7.1 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.

8.4.7.2 Bidding and Self-Provision of Ancillary Services.

Scheduling Coordinators may bid or self-provide Ancillary Services from resources located within the CAISO Control Area or Dynamic System Resources certified to provide Ancillary Services, submit Bids for Ancillary Services from resources located outside the CAISO Control Area, or 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 provision for exports with regard to Ancillary Services Bids. The functionality necessary to accept such Bids does not exist in the CAISO scheduling software. To the extent a Scheduling Coordinator has an on-demand obligation to

serve loads outside the CAISO Control Area, it can do so provided that (1) it is using export transmission capacity available in Real-Time, (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.

8.4.7.2.1 Scheduling Coordinators may submit Bids for imports of Spinning Reserve, or Non-Spinning Reserve from System Resources located outside the CAISO Control 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 Control 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).

8.4.7.2.2 Scheduling Coordinators may bid imports of Regulation from System Resources located outside the CAISO Control Area, where technically feasible and consistent with WECC criteria by dynamic scheduling; provided that the operator of the Control Area in which the System Resources are located has entered into an agreement with the CAISO for interconnected Control Area operations; and provided that such Scheduling Coordinator and the operator of the Control 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.

8.4.7.2.3 Scheduling Coordinators' bidding or self-provision of Ancillary Services according to this Section 8.4.7.2 shall be consistent with the CAISO Tariff, Protocols, and Business Practice Manuals.

8.5 The Bidding Process.

The CAISO shall operate a 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.

8.5.1 Provision of System Information to Scheduling Coordinators.

By 6:00 p.m. two days prior to the Trading Day, the CAISO shall make available to Scheduling Coordinators general system information including those items of information set forth in Section 6. This information shall be provided at the same time as the CAISO provides general system information to all Scheduling Coordinators wishing to transmit power on the CAISO Controlled Grid.

8.5.2 Time Frame for Submitting And Evaluating Bids.

8.5.2.1 Day-Ahead Market.

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.

8.5.2.2 HASP.

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.

8.5.3 Information to Be Submitted By Bidders.

8.5.3.1 Information for Use in Day-Ahead Market, HASP and Real-Time Market.

Bids shall be submitted by Scheduling Coordinators acting for Participating Generators, and owners or operators of Loads. Bids must be in the format specified by the CAISO and include the Bid information for each service described in Section 30 and such other information as the CAISO may determine it requires to evaluate Bids as published from time to time in this CAISO Tariff. The CAISO will verify and respond to submitted Bid data in accordance with Appendix E and the CAISO Protocols. Bidders may submit new Bids on a daily basis (or hourly basis for the HASP and RT Market).

8.5.3.2 Information for Use in Real-Time Dispatch of Ancillary Services.

Scheduling Coordinators must submit Energy Bids for resources providing Spinning and Non-Spinning Reserves.

8.5.4 Bid Evaluation Rules.

Bid evaluation Ancillary Services Bids shall be pursuant to Section 30.7. 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 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 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; and
- (f) establish Real-Time Ancillary Service Awards from generation internal to the CAISO Control Area at 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.

8.5.5 Evaluation 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. The Bid information set forth below shall be used in the Day-Ahead, HASP and Real-Time procurement of Regulation Up, Regulation Down Spinning Reserve, and Non- Spinning Reserve.

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 Curtailable Demands constituting the System Unit for which Bids and Submissions to Self-Provide Ancillary Services are submitted into the CAISO's Day-Ahead Market and HASP and Real-Time Market.

8.5.6 Submission of Ancillary Services Bids.

8.5.6.1 Submission of Bids for Regulation Reserves and Operating Reserves.

Scheduling Coordinators must submit Bids for Regulation Up, Regulation Down, Spinning Reserve and Non-Spinning Reserve in accordance with the requirements of Section 30.

8.5.6.2 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.

8.5.6.3 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.

8.6 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 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 the Ancillary Service “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 Ancillary Service can be provided to the CAISO for the same Ancillary Service and for the same hour in the same market.

A Submission to Self-Provide an Ancillary Service is a submission that contains all of the requirements for an Ancillary Service Bid with the exception of capacity price information. 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. A Self Provided Ancillary Service is a Submission to Self Provide an Ancillary Service that has been accepted by the CAISO.

If the total Submissions to Self Provide Ancillary Services exceed the maximum regional requirement for the relevant Ancillary Service in an Ancillary Services 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 Reg-Up, Spin, and Non-Spin, and the total self-provision of these AS in that region exceeds that limit, Self-Provided AS are qualified pro rata from higher to lower quality service in three tiers: Reg-Up first, followed by Spin, and then by Non-Spin. 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 Services 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 Regulation Up and Regulation Down capacity will be rejected if 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 8.5.2.1. 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 8.5.2.2. Failure to submit the required adjusted information within the stated time frame shall lead to the self-provision being declared invalid by the CAISO.

8.6.4.2A 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 Inter-Scheduling Coordinator Ancillary Service Trade, the Scheduling Coordinators who are parties to that trade must comply with requirements in Section 28.2 of the CAISO Tariff.

8.6.4.3 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 Service 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 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 Trading Day of their Ancillary Service Awards and Ancillary Service Schedules for the Day-Ahead Market; no later than one hour prior to the operating hour of their Ancillary Services schedules 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 schedules 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 Tariff and Appendix K;
and
- (b) the CAISO will Dispatch Black Start 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 interchange schedules. 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 of this CAISO Tariff.

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.

- (a) 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.
- (b) 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 switchable 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.

- (a) 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.

- (b) Compliance Testing of Other Reactive Devices. The CAISO may test the Voltage Support capability of other reactive devices (shunt capacitors, static var compensators, 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.

- (a) 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.

- (b) 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 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 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 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 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 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.

- (a) 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.

- (b) 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.

8.9.17 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.

8.9.18 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.

8.9.19 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 8.9.18 or carried out by the CAISO under Section 8.10; or
- (b) the expiration of a period of six 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.

8.9.20 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 (AGC) 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 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 of the CAISO Tariff.

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 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 8.10.8.1.

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. To perform testing, the CAISO will bias the MSS's MSRE to test the responsiveness of the System Unit.

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.

[SHEET NOT USED]

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 ("AGC"), (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 Internet "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 Section 8.10.7 and 8.10.8 of the CAISO Tariff 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.