

California Independent System Operator Corporation  
Fifth Replacement FERC Electric Tariff

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#### **4. Roles and Responsibilities**

##### **4.1 [Not Used]**

#### **4.2 Market Participant Responsibilities**

##### **4.2.1 Comply with Dispatch Instructions and Operating Instructions**

With respect to this Section 4.2, all Market Participants, including Scheduling Coordinators, Utility Distribution Companies, Participating Transmission Owners, Participating Generators, Participating Loads, Demand Response Providers, Distributed Energy Resource Providers, Balancing Authorities (to the extent the agreement between the Balancing Authority and the CAISO so provides), and MSS Operators within the CAISO Balancing Authority Area and all System Resources shall comply fully and promptly with the Dispatch Instructions and Operating Instructions, unless such compliance (1) would impair public health or safety; (2) is otherwise exempted pursuant to Section 34.13.1; or (3) it is physically impossible for the Market Participant to perform in compliance with the Dispatch Instruction or Operating Instruction. 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 Instruction.

##### **4.2.2 Implementation of Instructions**

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

#### **4.3 Relationship between CAISO and Participating TOs**

##### **4.3.1 Nature of Relationship**

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

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notify Market Participants that a New Participating TO has executed the Transmission Control Agreement and the date on which the CAISO will have Operational Control of the transmission facilities.

**4.3.1.1** In any year, a Participating TO applicant must declare its intent in writing to the CAISO to become a New Participating TO by January 1 or July 1, and provide the CAISO with an application within fifteen (15) days of such notice of intent. Neither the written declaration of intent nor the application requirement applies to Approved Project Sponsors. 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 or, for Participating TOs that are Approved Project Sponsors, upon energization of the transmission facilities that are subject to an Approved Project Sponsor Agreement made effective in accordance with its terms.

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

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

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

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

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Instructions together.

**4.3.1.2.2** Subscriber Participating TOs must complete TRTC Instructions for their Subscriber Rights as provided in Section 16.4.5.

**4.3.1.3 CAISO Relationship with Specific Participating TOs**

- (a) **Western Path 15.** 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 24.14.3.1.
- (b) **New Participating TOs After April 1, 2014.** An Approved Project Sponsor that was not a Participating TO as of April 1, 2014, shall be required to turn over to CAISO Operational Control only its rights and interests in the Regional Transmission Facilities it has been selected to finance, construct and own under section 24.5. Such a Participating Transmission Owner will be subject to all obligations of a Participating TO with regard to the facilities placed under CAISO Operational Control, except the obligation in Section 4.3.1.1 to declare its intent and submit an application to become a Participating TO and the obligation in Section 2.2 of the Transmission Control Agreement to apply to become a Participating TO.
- (c) **Subscriber Participating TOs.** A Subscriber Participating TO will be subject to all obligations of a Participating TO with regard to facilities placed under CAISO Operational Control. The Subscriber Participating TO is subject to the obligations under Section 4.3.1.1 to declare its intent and submit an application to become a Participating TO and the obligation in Section 2.2 of the Transmission Control Agreement to apply to become a Participating TO.

**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

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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 bidding, 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

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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.

#### **4.3.1.7 Transmission Maintenance Coordination Committee**

In accordance with the Transmission Control Agreement, the CAISO shall convene a Transmission Maintenance Coordination Committee to perform the functions described in Appendix C of the Transmission Control Agreement. The Transmission Maintenance Coordination Committee will function as an advisory body to CAISO management and the CAISO will provide all necessary administrative support and sufficient resources to ensure that the Transmission Maintenance Coordination Committee can fulfill the obligations specified in the Transmission Control Agreement.

### **4.3A Relationship Between the CAISO and Subscriber Participating TOs**

#### **4.3A.1 Nature of Relationship**

A transmission owner or developer of a transmission project may apply to join the CAISO Balancing Authority Area as a Subscriber Participating TO with planned or existing transmission assets and Entitlements subject to Encumbrances, pursuant to Subscription Agreements, that will ultimately be administered pursuant to a Subscriber Participating TO Tariff, the Transmission Control Agreement and the CAISO Tariff. The Subscriber Participating TO's initial project will consist of transmission components and any associated generation components located outside of the then-existing CAISO Balancing Authority Area, with the transmission component being funded solely by the Subscriber Participating TO based on the Subscribers' commitments used to provide Subscriber Rights. The Subscriber Participating TO may, as provided for under relevant provisions of the CAISO tariff, subsequently construct additions or upgrades to the initial transmission project that are funded solely by FERC-approved Transmission Revenue Requirements and not used to provide Subscriber Rights to the extent authorized under Section

24 or Section 25 of the CAISO Tariff.

#### **4.3A.2 Application and Approval Processes**

An applicant to become a Subscriber Participating TO will follow the processes set forth in Section 4.3.1.1 of the CAISO Tariff and Section 2.2 of the Transmission Control Agreement. The applicant will provide written information to the CAISO regarding the applicant's transmission assets and Entitlements and Subscriber Encumbrances used to provide Subscriber Rights that includes: (1) the size and location of the transmission assets and Entitlements; (2) the original or projected cost to build the transmission assets, for which the applicant may request confidential treatment pursuant to Section 20; (3) a schedule for depreciation of the transmission assets, for which the applicant may make a request for confidential treatment pursuant to Section 20; and (4) the initial Subscriber Encumbrance term for the transmission assets and any rollover rights specified in Section 3 of the Subscriber Participating TO's application to become a Participating TO. If the CAISO Governing Board approves the application, the Subscriber Participating TO will execute an Applicant Participating Transmission Owner Agreement with the CAISO to establish the relationship between the Subscriber Participating TO and the CAISO during the period from CAISO Governing Board approval until the Subscriber Participating TO either (1) satisfies the requirements of Section 4.3A.5 or (2) informs the CAISO in writing of the Subscriber Participating TO's decision to not move forward with the project's becoming part of the CAISO Controlled Grid.

#### **4.3A.3 Transmission Planning Process for Subscriber Participating TO Facilities Used to Provide Subscriber Rights**

A Subscriber Participating TO's transmission assets, Entitlements and Subscriber Encumbrances used to provide Subscriber Rights will be included in the Transmission Planning Process pursuant to Section 24 after (1) the CAISO Governing Board approves the associated application to become a Subscriber Participating TO, (2) FERC accepts an Applicant Participating Transmission Owner Agreement between the applicant to become a Subscriber Participating TO and the CAISO, (3) FERC accepts any applicable Generator Interconnection Agreements for Generating Facilities due to their interconnection to the CAISO Controlled Grid on the transmission assets, Entitlements, and Subscriber Encumbrances of the applicant seeking to become a Subscriber Participating TO, (4) the Subscriber Participating TO has begun the interconnection studies required by the interconnecting Transmission Owner(s), and (5) the Subscriber

Participating TO provides a notice in writing to the CAISO acknowledging that Construction Activities have begun.

#### **4.3A.4 Interconnection of Subscriber Participating TO Transmission Facilities Used to Provide Subscriber Rights**

##### **4.3A.4.1 Interconnection Study Process**

The CAISO will study the interconnection of all Generating Facilities to the Subscriber Participating TO's transmission assets not using Subscriber Encumbrances to provide Subscriber Rights, pursuant to Section 25 and Appendix DD. The CAISO will study the interconnection of all Generating Facilities to the Subscriber Participating TO's transmission assets using Subscriber Encumbrances to provide Subscriber Rights through the transmission interconnection process undertaken by the Participating TOs according to Section 25.1(g).

##### **4.3A.4.1.1 TP Deliverability Allocation Process**

The initial Subscriber Participating TO project will follow the TP Deliverability allocation process set forth in Appendix DD. The Interconnection Customers of the generation projects connected to the Subscriber Participating TO that own the necessary Subscriber Rights shall become eligible to apply into the TP Deliverability allocation process when (1) the Subscriber PTO has successfully met all requirements identified under Section 4.3A.3; and (2) all Transmission Owners have completed the interconnection studies.

##### **4.3A.4.2 Treatment of Needed Upgrades**

- (a) If the Transmission Planning Process identifies a need for Delivery Network Upgrades related to Generating Facilities to be served by a Subscriber Participating TO's transmission assets and Encumbrances used to provide Subscriber Rights for purposes of meeting a resource portfolio requirement established by the CPUC or other Local Regulatory Authority, and such Delivery Network Upgrades are included in an approved Transmission Plan, the Subscriber Participating TO's Subscribers will have the first option to acquire the additional Deliverability made possible by the Delivery Network Upgrades, up to the amount of Deliverability included in the CPUC or other Local Regulatory Authority resource portfolio requirement.

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- (b) If the Transmission Planning Process identifies a need for Upgrades related to Generating Facilities due to their interconnection to a Subscriber Participating TO's transmission assets and Encumbrances in addition to those Upgrades identified under Section 4.3A.4.2(a), such applicable Generating Facilities shall be required to apply for interconnection to the CAISO Controlled Grid in accordance with the provisions in Section 25 and Appendix DD.

**4.3A.5 Addition to the CAISO Controlled Grid of Subscriber Participating TO Transmission Facilities Used to Provide Subscriber Rights**

The CAISO will add Subscriber Participating TO transmission assets and Entitlements and Subscriber Encumbrances used to provide Subscriber Rights to the CAISO Controlled Grid after (1) the associated Subscriber Participating TO satisfies the requirements of the Transmission Control Agreement, (2) FERC approves any revisions to the Transmission Control Agreement to include the Subscriber Participating TO, (3) the Subscriber Participating TO energizes its project and turns the project over for CAISO Operational Control in accordance with the Transmission Control Agreement, and (4) FERC approves a Subscriber Participating TO Tariff for the Subscriber Participating TO. The Subscriber Participating TO will have its own TAC Area and its transmission assets and Entitlements will have their own Scheduling Points.

**4.3A.6 Processes Applicable to Construction of Subscriber Participating TO Transmission Facilities Not Used to Provide Subscriber Rights**

A Subscriber Participating TO may construct additions and upgrades to its transmission assets and Entitlements and Subscriber Encumbrances used to provide Subscriber Rights pursuant to Section 24, but such additions and upgrades will not provide additional Subscriber Rights. Requests for interconnection to the Subscriber Participating TO's additions and upgrades will be pursuant to Section 25 and Appendix DD.

**4.3A.7 Cost Recovery and Usage Costs for Subscriber Participating TO Transmission Facilities**

**4.3A.7.1 Amounts from Subscribers**

A Subscriber Participating TO must recover costs of its transmission assets and Entitlements and Subscriber Encumbrances used to provide Subscriber Rights solely from Subscribers pursuant to Subscription Agreements. Subscribers that Self-Schedule using CRNs on the transmission assets and

Entitlements will not pay Access Charges for such use.

**4.3A.7.2 Amounts from Non-Subscribers**

A Subscriber Participating TO may receive Non-Subscriber Usage Payment Amounts for use by Non-Subscribers of transmission assets and Entitlements and unscheduled Subscriber Rights pursuant to Section 15 of Schedule 3 of Appendix F. The Subscriber Participating TO will be responsible for obtaining FERC approval of the Non-Subscriber Usage Rate that is a required component of the calculation of Non-Subscriber Usage Payment Amounts. For a two-year period, Non-Subscriber Usage Payment Amounts will be calculated for import Schedules at a Scheduling Point on the Subscriber Participating TO's transmission facilities but not collected or allocated to the Subscriber Participating TO in accordance with CAISO Tariff, Appendix F, Section 15.1. The two-year period will commence upon the Commercial Operation Date of the last Generating Unit interconnected to the Subscriber Participating TO's transmission facilities on which that last Generating Unit is entitled to schedule using Subscriber Rights, and will include the period from the date that the Subscriber Participating TO turns over Operational Control of its transmission facilities to the CAISO to the commencement of the two-year period. This exception will apply to the first Subscriber Participating TO that turns over Operational Control of its transmission facilities and any other Subscriber Participating TO that may turn over Operational Control of its transmission facilities during this period, provided it will end for all Subscriber Participating TOs upon the expiration of the two-year period. During this entire period, the CAISO will publish annually the amount of import Schedules and the Non-Subscriber Usage Payment Amount that would have resulted absent this Section 4.3A.7.2.

**4.3A.7.3 Transmission Revenue Requirement**

- (a) A Subscriber Participating TO may not seek FERC approval of a Transmission Revenue Requirement for the original costs or any subsequent incurred costs for transmission assets and Entitlements and Subscriber Encumbrances used to provide Subscriber Rights or receive revenue for such transmission assets and Entitlements from the Regional Access Charge, even after all Subscriber Encumbrances on the transmission assets and Entitlements terminate. This Section will not prevent a Subscriber Participating TO from obtaining FERC approval of the Non-Subscriber Usage Rate.

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- (b) A Subscriber Participating TO may seek FERC approval of a Transmission Revenue Requirement for additions and upgrades to its transmission assets and Entitlements undertaken to facilitate an interconnection or pursuant to Section 24, unless such additions or upgrades are for the benefit of Subscribers in the use of their Subscriber Rights. Upon FERC approval, any reference in the CAISO Tariff to a Participating TO's Revenue Requirement or Transmission Revenue Requirement will be read as a reference to the Subscriber Participating TO's rates or revenue requirement as approved by FERC. A Subscriber Participating TO may receive revenue from the Regional Access Charge only with respect to generator Network Upgrades or Network Upgrades identified and approved in the Transmission Planning Process under Section 24 and Section 25 and in Appendix DD for existing Participating TOs that are not used to provide Subscriber Rights.

**4.3A.8 Access to Available Transmission Capacity of a Subscriber Participating TO**

The CAISO will make transmission capacity on Subscriber Participating TO facilities available for the purpose of: (1) scheduling Subscriber Rights transactions consistent with the Subscription Agreement, a Subscriber Participating TO's TRTC Instructions, and the CAISO Tariff; and (2) scheduling transactions for Market Participants in accordance with the CAISO Tariff, provided such use does not conflict with Subscriber Rights. The transmission capacity of a Subscriber Participating TO that is not subject to an Encumbrance as of the date of the Subscriber Participating TO's application to become a Subscriber Participating TO will not be treated as Subscriber Rights, and the CAISO will be the provider of transmission service pursuant to the CAISO Tariff for the use of this available transmission capacity. To the extent Subscribers do not schedule their Encumbrance in the Real-Time Market, the transmission capacity underlying the Encumbrance will be available for use in the CAISO Markets in accordance with Section 16 of the CAISO tariff.

**4.3A.9 Subscriber Participating TO Conversion of Subscriber Rights to CRRs**

Subscribers may release Subscriber Rights they hold for use by the CAISO in exchange for CRRs to effectuate a conversion as provided below. Except as provided below, the CRRs created by the conversion of Subscriber Rights will be administered in accordance with Section 36 in the same manner

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as other CRRs. Additional details about the associated timelines, procedures, and characteristics of this conversion and the treatment of CRRs generally are set forth in the Business Practice Manuals.

**(a) CRR Conversion Procedures**

- (1) A Subscriber must register and qualify as a Candidate CRR Holder in order to convert Subscriber Rights to CRRs or to acquire CRRs in the Secondary Registration System. Once a Subscriber is a CRR Holder, all rights and obligations pertaining to a CRR Holder shall apply to the Subscriber.
- (2) On a quarterly basis at least 10 calendar days prior to the release of the Full Network Model for the first month of each quarter, a Subscriber may instruct the CAISO to release all or a portion of the Subscriber Rights it holds for administration under the CAISO Tariff. The Subscriber conversion instruction must specify: (i) the CRR Source and CRR Sink, which must be associated with an eligible and registered individual PNode, an aggregate PNode, or a Scheduling Point on the Subscriber Participating TO's transmission facilities, (ii) the direction of the Subscriber Rights, (iii) the MW quantity of Subscriber Rights, and (iv) the time duration by quarter in consecutive full-quarter increments.
- (3) The Subscriber Participating TO must submit updated TRTC Instructions commensurate with the release of Subscriber Rights by a Subscriber, which in total must not exceed the Subscriber Rights on the Subscriber Participating TO's transmission facilities. The Subscriber Rights and the associated TRTC Instructions must reflect releases by quarter for a minimum of one quarter and remain unchanged for the entire quarter and any subsequent quarters specified in the conversion instructions.
- (4) Upon conversion of Subscriber Rights, the associated CRRs will be released for both on-peak and off-peak time periods and will not be available for a CRR Allocation or CRR Auction. Once Subscriber Rights have been converted, the CRR Holder may transfer its CRRs using the Secondary Registration System for the full duration that the rights have been released.
- (5) The CAISO will make available all released Subscriber Rights for use by Market Participants in accordance with the CAISO Tariff consistent with the Subscriber Rights as

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provided in the Transmission Control Agreement, subject to any restriction necessary to honor any associated Subscriber Encumbrance consistent with the TRTC Instructions and associated details submitted by the Subscriber Participating TO. The CAISO will account for a reduction in Subscriber Rights equal to the quantity of CRRs granted following the quarterly election process. Subscriber Rights converted to CRRs will lose their status as an Existing Contract throughout the entire time that they have been converted to CRRs.

**(b) Converted CRR Characteristics**

- (1) CRRs created by the conversion of Subscriber Rights will be administered and settled as CRR Options when a Congestion price difference in the Integrated Forward Market exists between the CRR Source and CRR Sink. No Congestion settlement will be made for Real-Time Market Congestion differences between the CRR Source and CRR Sink.
- (2) For each constrained flowgate or Intertie, CRRs created by the conversion of Subscriber Rights will not be subject to CRR underfunding allocation and will be derated hourly based on the ratio of the operating transfer capability (OTC) (*i.e.*, the TTC as reduced by the constraint) and the TTC (absent the OTC reduction) of the flowgate or Intertie and the direction associated with the CRR Source to CRR Sink combination derived from the Subscriber Rights.

**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

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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 the applicable safety and reliability standards, regulatory requirements, applicable operating guidelines, applicable rates, tariffs, statutes and regulations governing its provision of service to its End-Use Customers and Good Utility Practice so as to avoid any material adverse impact on the CAISO Controlled Grid;
- (b) provide the CAISO each year with a schedule of upcoming maintenance (including all equipment Outages) that has a reasonable potential of impacting the CAISO Controlled Grid in accordance with Section 9.3.6 and in accordance with the other scheduling procedures described in the CAISO Tariff;
- (c) coordinate with the CAISO, Participating TOs, and Generators to ensure that the CAISO Controlled Grid Critical Protective Systems, including relay systems, are installed and maintained in order to function on a coordinated and complementary basis with UDCs', Generators', and Participating TOs' protective systems.
- (d) coordinate any requests for emergency Outages on point of interconnection equipment directly with the appropriate CAISO Control Center as specified in Section 7.1.

**4.4.3 System Emergency Reports: UDC Obligations**

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

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

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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 Metering Service Obligations**

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

##### **4.4.6.1.2 Governing Agreements for Installations**

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

#### **4.4.6.2 Access to Facilities**

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

#### **4.4.6.3 Access During Emergencies**

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

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

Each UDC shall provide to the CAISO information as provided in Section 36.8.5.1 that enables the CAISO to perform transfers of CRRs that reflect Load Migration in a timely manner as required in Section 36.8.5.

#### **4.4.8 UDC Facilities Under CAISO Control**

The CAISO and each UDC shall enter into an agreement in relation to the operation and maintenance of

the UDC's facilities that are under the CAISO's Operational Control.

#### **4.5 Responsibilities of a Scheduling Coordinator**

##### **4.5.1 Scheduling Coordinator Certification**

Only Scheduling Coordinators that the CAISO has certified as having met the requirements of this Section 4.5.1 may participate in the Day-Ahead Market or Real-Time Market or submit Supply Plans or RA Plans. 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 as applicable;
- (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) identify each of the Convergence Bidding Entities that it is authorized to represent as Scheduling Coordinator;
- (d) confirm that each of the End-Use Customers it represents is eligible for service as a Direct Access End User;
- (e) confirm that none of the Wholesale Customers it represents is ineligible for wholesale transmission service pursuant to the provisions of FPA Section 212(h);
- (f) demonstrate to the CAISO's reasonable satisfaction that it meets the financial criteria set out in Section 12;
- (g) enter into a Scheduling Coordinator Agreement with the CAISO; and
- (h) provide NERC tagging data, as applicable.

##### **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

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application, as set forth in the applicable Business Practice Manual, to the CAISO by mail, electronic submission, 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 notify the Scheduling Coordinator Applicant of the applicable Scheduling Coordinator or Scheduling Coordinator Applicant. Nothing in this Section 4.5.1.1.3 shall prohibit one Scheduling Coordinator from registering with the CAISO to submit Bids for Demand Response Services from a Proxy Demand Resource or Reliability Demand Response Resource associated with a given meter (or Meter Point) where a different Scheduling Coordinator is registered for purposes of serving the demand of the Load associated with that meter (or Meter Point).

**4.5.1.1.4 Scheduling Coordinator Applicant Returns Application**

At least 120 days before the proposed commencement of service, the Scheduling Coordinator Applicant

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must return a completed application form with the non-refundable application fee of \$7,500 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 Other Scheduling Coordinator Application Requirements**

**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 \$7,500.

**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 or other suppliers have entered into Participating Generator Agreements, Net Scheduled Participating Generator Agreements, or Pseudo Tie Participating Generator Agreements as provided in Appendices B.2, B.3, and B.16, respectively with the CAISO or other contracts that obligate the supplier to comply with the terms of the CAISO Tariff, as applicable;
- (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

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Commission or a Local Regulatory Authority.

A Scheduling Coordinator Applicant that seeks to serve as Scheduling Coordinator for one or more Convergence Bidding Entities must certify that it is duly authorized to represent those Convergence Bidding Entities and to submit and settle Virtual Bids on their behalf.

**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;

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- (iii) non-compliance with third party contractual obligations;
- (iv) non-compliance with technical requirements; or
- (v) non-compliance with any other CAISO Tariff requirements.

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

**4.5.1.1.8.2 Time for Processing Application**

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

**4.5.1.1.9 Scheduling Coordinator Applicant's Response**

**4.5.1.1.9.1 Scheduling Coordinator Applicant's Acceptance**

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

**4.5.1.1.9.2 Scheduling Coordinator Applicant's Rejection**

**4.5.1.1.9.2.1 Resubmittal**

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

**4.5.1.1.9.2.2 Appeal**

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

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

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

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

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- (a) provided the technical/operational information required in Tariff Section 4.5 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 Fedwire transfers, with the Scheduling Coordinator being obligated to maintain at all times an account with a bank capable of Fedwire transfer and being permitted, at its option, to arrange for ACH payment service;
- (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. The Scheduling Coordinator is also responsible for ongoing compliance with all tariff requirements applicable to Scheduling Coordinators.

**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

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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.

**4.5.1.1.12 Generation Affiliate Disclosure Requirements**

Each Scheduling Coordinator Applicant will notify the CAISO of any Affiliate that owns, controls, and/or schedules resources that may provide Energy or Ancillary Services in the CAISO Markets. The Scheduling Coordinator Applicant will provide the CAISO with information on each such Affiliate, including information concerning the corporate relationship of such Affiliate and the business purpose of such Affiliate. These requirements will continue to apply after a Scheduling Coordinator Applicant becomes a Scheduling Coordinator.

**4.5.1.1.13 Resource Control Agreements**

Each Scheduling Coordinator Applicant will register with the CAISO any resource it or any Affiliate that satisfies the criteria set forth in Section 4.5.1.1.12 controls through a Resource Control Agreement to which the Scheduling Coordinator Applicant and/or any Affiliate that satisfies the criteria set forth in Section 4.5.1.1.12 is a party. Each Scheduling Coordinator Applicant that is a party to a Resource Control Agreement, or that has any Affiliate that satisfies the criteria set forth in Section 4.5.1.1.12 and is

a party to a Resource Control Agreement, will submit information regarding the Resource Control Agreement to the CAISO. These requirements will continue to apply after a Scheduling Coordinator Applicant becomes a Scheduling Coordinator. The applicable Business Practice Manual sets forth the procedures for registering a resource controlled through a Resource Control Agreement and for providing information regarding a Resource Control Agreement to the CAISO. Any utility subject to the jurisdiction of a Local Regulatory Authority is not obligated to disclose Resource Control Agreements entered into by an unregulated Affiliate unless the Resource Control Agreement is between the utility and the unregulated Affiliate. Such an unregulated Affiliate is not treated as an Affiliate of the utility for purposes of determining supply portfolios pursuant to Section 39.7.2.2.

#### **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, but not limited to, any changes to the information requested by the CAISO, any changes in its credit ratings, any changes regarding its Affiliates that satisfy the requirements of Section 4.5.1.1.12, any changes regarding resources controlled through Resource Control Agreements that satisfy the requirements of Section 4.5.1.1.13, and any changes to information regarding a Resource Control Agreement provided pursuant to Section 4.5.1.1.13. The applicable Business Practice Manual sets forth the procedures for changing the Scheduling Coordinator's information and the 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 five (5) 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

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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 ID Code Registration**

A Scheduling Coordinator Applicant is granted one Scheduling Coordinator ID Code (SCID) with its application fee. Requests may be made for additional Scheduling Coordinator ID Codes. The fee for each additional Scheduling Coordinator Identification Code is specified in Schedule 1 of Appendix F.

**4.5.2 Eligible Customers and Convergence Bidding Entities**

**4.5.2.1 SCs Representing Eligible Customers**

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.

**4.5.2.2 SCs Representing Convergence Bidding Entities**

Each Scheduling Coordinator that is or represents one or more Convergence Bidding Entities will provide the CAISO with a list of the Convergence Bidding Entities that it represents and the SCIDs that the Scheduling Coordinator will use to submit Virtual Bids for each Convergence Bidding Entity, at least eleven (11) Business Days prior to the Scheduling Coordinator's initial submission of a Virtual Bid on behalf of any of those Convergence Bidding Entities. This list must satisfy the requirements of Section 4.14.2.3. In the event that the Scheduling Coordinator will represent additional Convergence Bidding Entities or modifies any of the SCIDs that the Scheduling Coordinator will use to submit Virtual Bids on behalf of any Convergence Bidding Entity, the Scheduling Coordinator will provide the CAISO with an updated list of Convergence Bidding Entities and/or SCIDs at least eleven (11) Business Days prior to submitting a Virtual Bid involving a Convergence Bidding Entity and/or SCID not already included in the most recent list provided to the CAISO. The CAISO will incorporate the information provided pursuant to this Section 4.5.2.2 into the CAISO's official list of the Convergence Bidding Entities that Scheduling Coordinators represent and will incorporate the SCIDs that Scheduling Coordinators use to submit Virtual

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Bids on behalf of Convergence Bidding Entities into the Master File within eleven (11) Business Days after the CAISO determines that the information in each list or updated list provided by a Scheduling Coordinator or Convergence Bidding Entity is accurate and complete.

**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, 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. The CAISO shall not accept E-Tags for ten-minute recallable reserve transactions (i.e., transactions with a WECC energy product code of "C-RE"), unless the E-Tag is associated with delivery of emergency assistance Energy between another Balancing Authority Area and the CAISO Balancing Authority Area. The CAISO is not, and shall not be listed as, the "Purchasing Selling Entity" for purposes of E-Tags. Title to Energy shall pass directly from the entity that holds title when the Energy enters the CAISO Controlled Grid to the entity that removes the Energy from the CAISO Controlled Grid, in each case in accordance with the terms of this CAISO Tariff.

**4.5.3.3 Modifications in Demand 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 [Not Used]**

**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, AS Awards and Dispatch Instructions issued in the CAISO Markets, and all Virtual Awards in accordance with the provisions of this CAISO Tariff;

**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;

**4.5.3.14 Tax Compliance**

Providing, as described in the Business Practice Manuals, resale certificates or other proof acceptable to CAISO that its purchases of energy are exempt from any sales and use taxes that otherwise might apply;  
and

**4.5.3.15 SQMD Plan**

Complying with the SQMD Plan for eligible entities it serves pursuant to Section 10.3.7.

#### **4.5.3.16 RA Plans and Supply Plans**

Providing RA Plans for LSEs or CPEs for which it serves as Scheduling Coordinator and providing Supply Plans for Resource Adequacy Resources for which it serves as Scheduling Coordinator. If a CPE is also a Load Serving Entity and the CPE and Load Serving Entity are represented by the same Scheduling Coordinator, that Scheduling Coordinator must use distinct Scheduling Coordinator ID Codes for its activities related to the CPE and Load Serving Entity functions.

#### **4.5.4 Operations of a Scheduling Coordinator**

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

Each Scheduling Coordinator other than a Scheduling Coordinator that represents only Convergence Bidding Entities 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**

###### **4.5.4.3.1 Dynamic Scheduling of Imports**

Scheduling Coordinators may submit Bids for imports of Energy, Imbalance Reserves, Reliability Capacity, and Ancillary Services for which associated Energy is delivered from Dynamic System Resources located outside of the CAISO Balancing Authority Area, provided that: (a) such dynamic scheduling is technically feasible and consistent with NERC and WECC reliability standards and any requirements of the NRC, (b) all operating, technical, and business requirements for dynamic scheduling functionality, as set forth in the Dynamic Scheduling Protocol in Appendix M 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 Balancing Authorities each execute with the CAISO a Dynamic Scheduling Host Balancing Authority Operating Agreement as provided in Appendix B.9, or a special operating agreement particular to the operation of dynamic

functionality.

#### **4.5.4.3.2 Dynamic Scheduling of Exports of Energy**

Scheduling Coordinators may submit Bids for Dynamic Schedules of exports of Energy from Generating Units located in the CAISO Balancing Authority Area, provided that: (a) such dynamic scheduling is technically feasible and consistent with NERC and WECC reliability standards and any requirements of the NRC, (b) all operating, technical, and business requirements for dynamic scheduling functionality, as set forth in the Dynamic Scheduling Protocol in Appendix M or posted in standards on the CAISO Website, are satisfied, (c) the Scheduling Coordinator for the Generating Unit 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 Balancing Authorities each execute with the CAISO an operating agreement particular to the operation of dynamic functionality. Scheduling Coordinators may not submit Bids for Dynamic Schedules of exports of Ancillary Services from resources located in the CAISO Balancing Authority Area, nor may Scheduling Coordinators submit Bids for Dynamic Schedules of exports from Loads located in the CAISO Balancing Authority Area.

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

- (a) A Scheduling Coordinator's Scheduling Coordinator Agreement may be terminated by the CAISO on written notice to the Scheduling Coordinator:
  - (i) if the Scheduling Coordinator no longer meets the requirements for eligibility set out in Section 4.5 and fails to remedy the default within a period of five (5) Business Days after the CAISO has given written notice of the default;
  - (ii) if the Scheduling Coordinator fails to pay any sum under this CAISO Tariff and fails to remedy the default within a period of five (5) Business Days after the CAISO has given written notice of the default;
  - (iii) if the Scheduling Coordinator commits any other default under this CAISO Tariff or any of the CAISO Business Practice Manuals which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given it written notice of the default; or
  - (iv) if the Scheduling Coordinator does not participate in the CAISO's markets for

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Energy, Imbalance Reserves, Reliability Capacity, 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 ninety (90) days written notice to the CAISO, provided that such notice shall not be effective to terminate the Scheduling Coordinator Agreement until the Scheduling Coordinator has complied with all applicable requirements of Section 4.5.2.
- (c) The CAISO shall, following termination of a Scheduling Coordinator Agreement and within thirty (30) days of being satisfied that no sums remain owing by the Scheduling Coordinator under the CAISO Tariff, return or release to the Scheduling Coordinator, as appropriate, any money or credit support provided by such Scheduling Coordinator to the CAISO under Section 12.

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

**4.5.4.4.2** A Scheduling Coordinator that has received a notice of the CAISO's intent to terminate its Scheduling Coordinator Agreement for failure to participate in the CAISO's markets for Energy, Imbalance Reserves, Reliability Capacity, 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

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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

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each Eligible Customer shall thereafter be represented by the Scheduling Coordinator to which it is assigned unless and until it selects another Scheduling Coordinator in accordance with Section 4.5.4.6.1, subject to this Section 4.5.4.6.2 subsection (b).

- (b) Unless the CAISO is notified by another Scheduling Coordinator that it represents an Eligible Customer of a defaulting Scheduling Coordinator within seven (7) days of the notice of termination being posted on the CAISO Website, the Scheduling Coordinator to which that Eligible Customer has been assigned in accordance with subsection (a) may establish a reasonable minimum period for service, not to exceed thirty (30) days.
- (c) In the event no Scheduling Coordinator indicates its willingness to represent Eligible Customers of a defaulting Scheduling Coordinator, the UDC that has the obligation to serve End-Use Customers of the Eligible Customer, if any, shall arrange to serve those End-Use Customers of such Eligible Customers that are located within the service area of the UDC. Such service will be provided in a manner consistent with that which the UDC provides, pursuant to the rules and tariffs of the Local Regulatory Authority, for its bundled End-Use 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 electric grid within the CAISO Balancing Authority Area (which includes a Pseudo-Tie of a Generating Unit to the CAISO Balancing Authority Area) 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, including Generating Units participating as Non-Generator Resources, interconnected to the electric grid within the CAISO Balancing Authority Area (which includes a Pseudo-Tie of a Generating Unit to the CAISO Balancing Authority Area) unless the relevant Generator undertakes in writing, by entering into a Participating Generator Agreement or, if eligible to enter such an agreement under the applicable terms of the CAISO tariff, a Net Scheduled PGA, Pseudo-Tie Participating Generator Agreement, or Metered Subsystem Agreement, with the CAISO to comply with all applicable provisions of this CAISO Tariff as

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they may be amended from time to time, including, without limitation, the applicable provisions of this Section 4.6 and Section 7.7. The CAISO shall not accept Bids from Scheduling Coordinators relating to Participating Loads using the Non-Generator Resource model unless the resource owner or operator undertakes in writing, by entering into a Participating Load Agreement, 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

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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.

- (iii) In addition to complying with the other requirements of this Section 4.6.1.1 regarding the operation of its Generating Unit, a Participating Generator with a Pseudo-Tie of a Generating Unit to the CAISO Balancing Authority Area shall comply with the requirements of Section 1.2.1 and related provisions of the Pseudo-Tie Protocol in Appendix N.

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

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

#### **4.6.2 [Not Used]**

#### **4.6.3 Requirements for Certain Participating Generators**

##### **4.6.3.1 Participating Generators Directly Connected to a Distribution System**

With regard to any Generating Unit directly connected to a Distribution System, a Participating Generator shall comply with applicable UDC tariffs, requirements of the Local Regulatory Authority, interconnection requirements and generation agreements. With regard to a Participating Generator's Generating Units directly connected to a Distribution System, the CAISO and the UDC or MSS, as applicable, will coordinate to develop procedures to avoid conflicting CAISO and UDC or MSS, as applicable, operational directives.

##### **4.6.3.2 Exemption for Generating Units Less Than One (1) MW**

A Generator with a Generating Unit directly connected to a Distribution System will be exempt from compliance with this Section 4.6 and Section 10.1.3 in relation to that Generating Unit provided that (i) the rated capacity of the Generating Unit is less than one (1) MW, and (ii) the Generator does not use the Generating Unit to participate in the CAISO Markets. This exemption in no way affects the calculation of

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or any obligation to pay the appropriate charges or to comply with all the other applicable Sections of this CAISO Tariff. A Generating Unit with a rated capacity of less than 500 kW, unless the Generating Unit is (a) participating in an aggregation agreement approved by the CAISO or (b) a storage resource with a rated capacity of 100 kW or more, is not eligible to participate in the CAISO Markets and the Generator is not a Participating Generator for that Generating Unit.

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.

#### **4.6.3.3 Qualifying Facilities and Combined Heat and Power Resources**

The owner or operator of (1) a Qualifying Facility, (2) a resource that is subject to an Amended QF Contract, or (3) a Combined Heat and Power Resource may satisfy the requirements of Section 4.6, to the extent applicable, by entering into Net Scheduled Participating Generator Agreement (Net Scheduled PGA) with the CAISO, in which case it shall comply with the provisions of the Net Scheduled PGA and Section 4.6.3.4. In order to be eligible to enter into the Net Scheduled PGA, a Participating Generator must demonstrate to the CAISO (a) that its Generating Unit (1) has established QF status pursuant to PURPA, (2) is a party to an Amended QF Contract; or (3) is a CHP Resource and (b) that the Self-provided Load of the Participating Generator that is served by the resource either (1) has and continues through the term of the Net Scheduled PGA to have, standby service from a UDC or MSS Operator under terms approved by the Local Regulatory Authority or FERC, as applicable, or (2) 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 Net Scheduled PGA**

A Participating Generator that is eligible for and has entered into a Net Scheduled Participating Generator

Agreement shall be subject to the provisions of this Section 4.6.3.4, as reflected in the terms of the Net Scheduled PGA.

**4.6.3.4.1 Revenue Metering for a Net Scheduled Generating Unit**

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

**4.6.3.4.2 Telemetry for a Net Scheduled Generating Unit**

A Participating Generator that has entered into a Net Scheduled 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 Generating Unit 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 Net Scheduled Generating Unit**

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

**4.6.3.4.4 Operating Requirements for a Net Scheduled Generating Unit**

A Participating Generator that has entered into a Net Scheduled PGA shall abide by CAISO Tariff provisions regarding the CAISO's ability to dispatch or curtail Generation from the Net Scheduled Generating Units listed in its Net Scheduled PGA. The CAISO shall only dispatch or curtail a Net Scheduled Generating Unit of the Participating Generator: (a) to the extent the Participating Generator bids Energy, Imbalance Reserves, Reliability Capacity, or Ancillary Services from the Net Scheduled Generating Unit into the CAISO Markets or the Energy is otherwise available to the CAISO under Section

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40, subject to the restrictions on Dispatch Instructions or Operating Instructions set forth below; or (b) if the CAISO must dispatch or curtail the Net Scheduled Generating Unit in order to respond to an existing or imminent System Emergency or condition that would compromise CAISO Balancing Authority Area integrity or reliability as provided in Sections 7 and 7.6.1.

The CAISO will not knowingly issue a Dispatch Instruction or Operating Instruction to a Participating Generator that has entered into a Net Scheduled 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 limitations 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 limitations. 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 Net Scheduled PGA, in accordance with the provisions of Section 9.

**4.6.3.5 [Not Used]**

**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. Each Participating Generator shall provide information on its governor setting and certify that it has not inhibited the real power response of any Generating Unit by any means that would override the governor response except as necessary to address physical operational constraints for reasons that include ambient temperature limitations, outages of mechanical equipment or regulatory considerations. In the event there is a need to inhibit the real power response of any Generating Unit, the Participating Generators shall provide a written description of this limitation with its certification. All information provided to the CAISO regarding the

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operational and technical constraints in the Master File must be an accurate reflection of the design capabilities of the resources and its constituent equipment when operating at maximum sustainable performance over Minimum Run Time, recognizing that resource performance may degrade over time. Information registered in the Master File by a Scheduling Coordinator must also conform to any additional definitional requirements in Appendix A as may exist as to that information. A Scheduling Coordinator may not submit a Bid for a Generating Unit or offer to provide any other service in the CAISO Markets if that Bid or offer could not be delivered feasibly based on the operational and technical constraints for that Generating Unit registered in the Master File. All information registered in the Master File shall be consistent with the offers and services provided by the resources in the CAISO Markets. The Pump Ramping Conversion Factor is configurable and need not reflect a resource's design capabilities.

#### **4.6.5 NERC and WECC Requirements**

##### **4.6.5.1 Participating Generator Performance Standard**

Participating Generators shall, in relation to each of their Generating Units, meet all Applicable Reliability Criteria, including any standards regarding governor response capabilities, use of power system stabilizers, voltage control capabilities and hourly Energy delivery.

Participating Generators with governor controls that are synchronized to the CAISO Controlled Grid must respond immediately and automatically outside a deadband in proportion to frequency deviations through the action of a governor to help restore frequency to the scheduled value. Participating Generators shall set the governor droop for each Generating Unit with governor controls no higher than 4 percent droop for combustion turbines and 5 percent droop for other technology types; with a deadband no larger than +/- 0.036 Hz. Participating Generators will not inhibit the real power response of their Generating Units with governor controls by any means that would override the governor response except as necessary to address physical operational constraints for reasons that include ambient temperature limitations, outages of mechanical equipment or regulatory considerations. For each Generating Unit with governor controls, Participating Generators shall coordinate all plant control systems, locally or remotely controlled, so that they include frequency bias to ensure that each Generating Unit can respond immediately and automatically in proportion to frequency deviations to help restore frequency to the scheduled value. 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 PTO or, from time to time, the CAISO.

**4.6.5.2 [Not Used]**

**4.6.5.3 [Not Used]**

**4.6.6 Forced Outages**

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

**4.6.7 Recordkeeping; Information Sharing**

**4.6.7.1 Requirements for Maintaining Records**

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

**4.6.7.2 Providing Information to Generators**

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

**4.6.7.3 Preparation of Reports on Major Incidents**

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

**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

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

**4.6.10 RMTMax for CHP Resources**

**4.6.10.1 Initial Determination**

Each Generating Unit that provides Regulatory Must-Take Generation from a CHP Resource must establish an RMTMax, which is determined as follows:

- (a) If the Generating Unit's Scheduling Coordinator is a UDC or MSS and there is a power purchase agreement between the Generating Unit's owner or operator and its Scheduling Coordinator, by agreement of the two entities, or if not, by agreement of the Generating Unit's owner or operator and the CAISO, subject to subsection (d) below.
- (b) In the event agreement cannot be reached or there is insufficient evidence of any agreement, by affidavit of an independent California-licensed certified engineer based on the engineer's assessment of the annual and seasonal requirements of the host and the resulting electrical output. Unless otherwise agreed upon, the cost of the engineer will be evenly shared by the Generating Unit's owner or operator and its Scheduling Coordinator if the Scheduling Coordinator is a UDC or MSS and there is a power purchase agreement

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between the Generating Unit's owner or operator and the Scheduling Coordinator, or paid entirely by the Generating Unit's owner or operator, if the Scheduling Coordinator is not a UDC or MSS.

- (c) Based on an agreement between the Generating Unit owner or operator and the Scheduling Coordinator, if it is a UDC or MSS and there is a power purchase agreement between the Generating Unit's owner or operator and the Scheduling Coordinator, or, otherwise, between the Generating Unit owner or operator and the CAISO, two daily RMTMax values may be established, one for off-peak and one for on-peak, as those terms are defined by NERC.
- (d) RMTMax may not be established at a level that will conflict with the terms and conditions of a power purchase agreement negotiated by the Generating Unit owner or operator and the UDC or MSS.

**4.6.10.2 Redetermination**

The RMTMax must be reestablished on an annual basis using the methodologies described in section 4.6.10.1. It may be reestablished more frequently than once a year subject to the Master File change process if agreed by the Generating Unit's owner or operator and its Scheduling Coordinator, if the Scheduling Coordinator is a UDC or MSS, or by agreement of the Generating Unit's owner or operator and the CAISO.

**4.6.10.3 Usage Profile**

As part of the initial and annual recertification process, the Generating Unit owner or operator must provide the CAISO and its Scheduling Coordinator, if the Scheduling Coordinator is a UDC or MSS, with an annual non-binding indicative Regulatory Must-Take Generation usage profile.

**4.6.11 Storage Operating Characteristics**

Pursuant to Section 4.6.4, a Scheduling Coordinator for a storage resource participating as a Non-Generator Resource or Pumped-Storage Hydro Unit must submit to the CAISO the operational and technical constraints to the Master File representing an accurate reflection of the resource's design capabilities and its constituent equipment when operating at maximum sustainable performance over Minimum Run Time, recognizing that resource performance may degrade over time. Non-Generator

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Resources, Hybrid Resources, and Pumped-Storage Hydro Units may include among their Master File parameters the constraints listed in Section 27.9 to the extent they comply with this Section.

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

The CAISO shall only accept Bids for Supply of Energy, Imbalance Reserves, Reliability Capacity, or Ancillary Services or Submissions to Self-Provide Ancillary Services from Loads if such Loads are those of a Participating Load that has entered into a Participating Load Agreement with the CAISO and which meet standards adopted by the CAISO and published on the CAISO Website. The CAISO shall not accept submitted Bids for Supply of Energy, Imbalance Reserves, Reliability Capacity, or Ancillary Services from a Participating Load other than through a Scheduling Coordinator. The CAISO shall not accept Bids from Scheduling Coordinators for Participating Loads using the Non-Generator Resource model unless the resource owner or operator undertakes in writing, by entering into a Participating Load Agreement, to comply with all applicable provisions of this CAISO Tariff as they may be amended from time to time.

#### **4.8 Relationships Between CAISO and Intermittent Resources**

##### **4.8.1 Bidding and Settlement**

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

##### **4.8.2 Forecasting**

All Scheduling Coordinators for Eligible Intermittent Resources are subject to the forecasting requirements and the Forecast Fee as described below. All Eligible Intermittent Resources must provide the CAISO meteorological data as specified in Appendix Q. Scheduling Coordinators for Variable Energy Resources not located in the CAISO Balancing Authority Area that elect to use the forecast provided by the CAISO are also subject to the Forecast Fee. Scheduling Coordinators for Hybrid Resources that include an individual component that is capable of being separately registered with the CAISO as an Eligible Intermittent Resource must provide the CAISO with the meteorological data for that component

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that would be required by Appendix Q, if it were registered with the CAISO as an Eligible Intermittent Resource. Scheduling Coordinators electing to use the forecast provided by the CAISO also are subject to the Forecast Fee.

#### **4.8.2.1 Forecast Requirements**

##### **4.8.2.1.1 Use of Own Forecast**

For purposes of participating in the CAISO Markets, Eligible Intermittent Resource may opt to use their own forecast of their resource's output, and not use the forecast of their output provided by the CAISO, only to the extent the CAISO has certified that the Eligible Intermittent Resource has completed the certification requirements specified in the Business Practice Manuals. If the Eligible Intermittent Resources is certified to provide their own forecast, they must provide at a minimum a three-hour rolling forecast with fifteen- (15) minute granularity, updated every fifteen minutes, and may provide in the alternative a three-hour rolling forecast at five- (5) minute granularity, updated every five minutes. If an Eligible Intermittent Resource opts to provide the forecast of their output at a five-minute granularity, the CAISO will use the average of the projected Energy output for the relevant three five (5)-minute forecasts to determine the Variable Energy Resource Self-Schedule for the Fifteen Minute Market as specified in Section 34. An Eligible Intermittent Resource that has elected to use its own forecast of its output must also submit the meteorological and outage data specified in Appendix Q. For purposes of participating in the CAISO Markets, Participating Intermittent Resources may opt to use their own output forecast if they are certified to do so by the CAISO pursuant to the rules specified in the Business Practice Manuals, in which case: (1) the resource will retain its status as a Participating Intermittent Resource; (2) the CAISO will not submit the updated output forecast for that resource through the Real-Time Market; and (3) the resource will be subject to the same requirements that apply to Eligible Intermittent Resource that use their own output forecast as specified in the CAISO Tariff.

##### **4.8.2.1.2 Use of Forecast from Independent Forecast Provider**

For purposes of participating in the CAISO Markets, Eligible Intermittent Resources have the option to use a forecast of their output provided by CAISO. Variable Energy Resources that are located outside the CAISO Balancing Authority Area may also elect to use the output forecast provided by the CAISO,

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provided that: (1) they agree to provide the CAISO with the meteorological data specified in Appendix Q; and (2) they are certified to do so by the CAISO pursuant to the rules specified in the Business Practice Manuals. Once the election to use the output forecast provided by the CAISO is complete, the CAISO will specify the election status for the Eligible Intermittent Resource or the external Variable Energy Resource in the Master File. The Eligible Intermittent Resource and any Variable Energy Resource located outside of the CAISO Balancing Authority Area opting to use the forecast of their output provided by the CAISO, must provide the meteorological and outage data as specified in Appendix Q. Any changes to this election will be subject to the timeline and rule changes that apply to the Master File as specified in Section 30.7.3.2.

#### **4.8.2.2 Application of the Forecast Fee**

All Eligible Intermittent Resources are subject to the forecast fee specified in Section 2.4.1 of Appendix Q, regardless of whether the resource elects to use the CAISO-created forecast or relies on its own forecast. Variable Energy Resources located outside the CAISO Balancing Authority Area that elect to use the forecast of their output provided by the CAISO are also subject to the Forecast Fee specified in Section 2.4.1 of Appendix Q.

#### **4.8.3 [Not Used]**

### **4.9 Metered Subsystems**

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

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

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

Each MSS Operator shall operate its MSS at all times in accordance with Good Utility Practice and Applicable Reliability Criteria, including WECC and NERC criteria, and in a manner which ensures safe

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and reliable operation. All information pertaining to the physical state or operation, maintenance and failure of the MSS affecting the operation of the CAISO Balancing Authority Area that is made available to the CAISO by the MSS Operator shall also be made available to Scheduling Coordinators, provided that the CAISO shall provide reasonable notice to the MSS Operator. The CAISO shall not be required to make information available to the MSS Operator other than information that is made available to Scheduling Coordinators.

**4.9.3 Coordinating Maintenance Outages of MSS Facilities**

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

**4.9.4 MSS Operator Responsibilities**

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

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

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demonstrates the ability and willingness to so operate and maintain its facilities;

**4.9.4.2** provide the CAISO 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 the 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 that it becomes aware of that may compromise the CAISO Controlled Grid Critical Protective Systems;

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

**4.9.4.5** [Not Used]

**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, Imbalance Reserves, Reliability Capacity, or Ancillary Services 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, Imbalance Reserves, Reliability Capacity, and Ancillary Services to Loads connected to the MSS and for the delivery of Energy, Imbalance Reserves, Reliability Capacity, 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

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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 Energy, Imbalance Reserves, Reliability Capacity, and Ancillary Services: (1) Bids in the Day-Ahead Market and Real-Time Market (including Bids for internal Generation and internal Demand within the MSS), (2) Submissions to Self-Provide Ancillary Services or Bids for Regulation, Spinning Reserve, and Non-Spinning Reserve, capacity and associated Bid for Energy, or (3) any feasible combination thereof.

**4.9.5.3 MSS Demand Forecast**

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

**4.9.6 System Emergencies**

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

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

**4.9.6.3 System Emergency Reports: MSS Obligations**

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

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

#### **4.9.7 Coordination of Expansion or Modification to MSS Facilities**

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

#### **4.9.8 Ancillary Services Obligations for MSS**

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

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

#### **4.9.9 [Not Used]**

#### **4.9.10 Information Sharing**

##### **4.9.10.1 System Planning Studies and Forecasts**

The CAISO, the MSS Operator and Participating TOs shall share information such as projected Load growth and system expansions necessary to conduct necessary system planning studies to the extent that these may impact the operation of the CAISO Balancing Authority Area. Each MSS Operator shall provide to the CAISO annually its ten-year forecasts of Demand growth, internal Generation, and expansion of or replacement for any transmission facilities that are part of the MSS that will or may

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significantly affect any point of interconnection between the MSS and the CAISO Controlled Grid. Such forecasts shall be provided on the date that UDCs are required to submit forecasts to the CAISO under Section 4.4.5.1. Each MSS Operator or each Scheduling Coordinator for an MSS Operator shall also submit weekly and monthly peak Demand Forecasts in accordance with the CAISO's Business Practice Manuals.

**4.9.10.2 System Surveys and Inspections**

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

**4.9.10.3 Reports**

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

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

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

**4.9.10.3.4 Reliability Information**

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

**4.9.10.3.5 Forms**

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

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

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

**4.9.11.1 Installation of Facilities.**

**4.9.11.1.1 Meeting Service Obligations.**

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

**4.9.11.1.2 Governing Agreements for Installations.**

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

**4.9.11.2 Access to Facilities.**

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

**4.9.11.3 Access During Emergencies.**

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

**4.9.12 MSS System Unit**

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

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

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**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, Participating Loads or Proxy Demand Resources, as applicable, for the System Unit and the individual resources that make up the System Unit;

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

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

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

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

**4.9.12.2.6** shall provide, through the Scheduling Coordinator representing the MSS Operator, Settlement Quality Meter Data for the System Unit's Proxy Demand Resources and Reliability Demand Response Resources.

**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, Reliability Demand Response Resource, or Proxy Demand Resource, but the CAISO shall not have the authority to direct the MSS Operator to adjust the operation of the individual resources that make up the System Unit to comply with directives issued with respect to the System Unit.

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

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

MSS Operators must make an election or choice on three (3) issues that govern the manner in which the

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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, and (iii) 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 three (3) sets of options pursuant to the timeline specified for such elections in the Business Practice Manuals.

The MSS Operator's 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 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 and net or gross Settlement 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, Participating Loads or Proxy Demand Resources 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 or Generating Units in the MSS to follow its Load, provided that: (a) the Scheduling Coordinator for the MSS Operator shall remain

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responsible for purchases of Energy in accordance with the CAISO Tariff if the MSS Operator does not operate its System Unit or Generating Units and bid or schedule imports into the MSS, to match the metered Demand in the MSS and exports from the MSS; and (b) if the deviation between Generation and imports into the MSS and metered Demand and exports from the MSS exceeds the MSS Deviation Band, then the Scheduling Coordinator for the MSS Operator shall pay the additional amounts specified in Section 11.7. If an MSS Operator elects Load-following and net Settlements, all generating resources within the MSS must be designated as Load-following resources. If an MSS Operator elects Load-following and gross Settlements, generating resources within the MSS can be designated as either Load-following or non-Load-following resources. Consistent with these requirements, the MSS Operator may also modify the designation of generating resources within the MSS within the timing requirements specified for such Master File changes as described in the Business Practice Manuals.

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

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

following resource subject to Section 30.5.2.5.

#### **4.10 Candidate CRR Holder and CRR Holder Registration**

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

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

###### **4.10.1.1 Candidate CRR Holder Application**

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

###### **4.10.1.2 CAISO Information**

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

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

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

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

###### **4.10.1.4 Notice of Receipt**

Within three (3) Business Days of receiving the application, the CAISO will send a written notification to

the Candidate CRR Holder applicant that it has received the application and the non-refundable fee.

#### **4.10.1.5 CAISO Review of Application**

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

##### **4.10.1.5.1 Information Requirements**

The Candidate CRR Holder applicant must complete all of the following requirements as part of the application process:

- (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 and credit information as set forth in Section 12;
- (c) proof of completion of CRR training or expected completion of CRR training;
- (d) the prescribed non-refundable application fee; and
- (e) identity of the applicant's Affiliates, as described in Section 39.9.

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

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

#### **4.10.1.6 Deficient Application**

In the event that the CAISO has determined that the Candidate CRR Holder application as submitted is deficient the CAISO will send a written notification of the deficiency to the Candidate CRR Holder

applicant within ten (10) Business Days of receipt by the CAISO of the application explaining the deficiency and requesting additional information.

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

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

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

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

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

**4.10.1.7.1 Acceptance or Rejection Notification**

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

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

**4.10.1.7.2 Time for Processing Application**

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

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

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

If the CAISO accepts the application, the Candidate CRR Holder applicant must return an executed CRR Entity Agreement and any required financial and credit information pursuant to Section 12 of the CAISO

tariff.

#### **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 Fedwire transfers, with the Candidate CRR Holder being obligated to maintain at all times an account with a bank capable of Fedwire transfer and being permitted, at its option, to arrange for ACH payment service;
- (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 Ongoing Obligations after Registration and Qualifications**

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

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

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

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

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

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

If a Candidate CRR Holder or CRR Holder fails to inform the CAISO of a material change in its information provided to the CAISO including a Material Change in Financial Condition, that may affect the Financial Security of the CAISO, the CAISO may suspend or terminate the Candidate CRR Holder or CRR Holder's rights under the CAISO Tariff in accordance with the terms of Sections 12 and 4.10.3.2, 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:

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- (i) if the Candidate CRR Holder or CRR Holder no longer meets the requirements for eligibility set out in Section 4.10 and fails to remedy the default within a period of seven (7) days after the CAISO has given written notice of the default;
  - (ii) if the Candidate CRR Holder or CRR Holder fails to pay any sum under this CAISO Tariff and fails to remedy the default within a period of five (5) Business Days after the CAISO has given written notice of the default; or
  - (iii) if the Candidate CRR Holder or CRR Holder commits any other default under this CAISO Tariff or any of the Business Practice Manuals which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given it written notice of the default.
- (b) The Candidate CRR Holder or CRR Holder may terminate its CRR Entity Agreement in accordance with the provisions of that agreement.
- (c) Upon termination of the CRR Entity Agreement, Candidate CRR Holders or CRR Holders shall continue to be liable for any outstanding financial or other obligations incurred under the CAISO Tariff as a result of their status as a Candidate CRR Holder or CRR Holder.
- (d) The CAISO shall, following termination of a CRR Entity Agreement and within thirty (30) days of being satisfied that no sums remain owing by the Candidate CRR Holder or CRR Holder under the CAISO Tariff, return or release to the Candidate CRR Holder or CRR Holder, as appropriate, any Financial Security support provided by such Candidate CRR Holder or CRR Holder to the CAISO under Section 12.

**4.10.3.2 Suspension of Registration and Qualification**

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

**4.11 Relationship Between CAISO and SUDCs**

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

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

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

**4.11.2 Coordinating Maintenance Outages of SUDC Facilities**

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

**4.11.3 SUDC Responsibilities**

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

**4.11.3.1** operate and maintain its Distribution System in accordance with the applicable reliability standards, statutes and regulations, and Good Utility Practice so as to avoid any material adverse impact

on the reliability of the CAISO Balancing Authority Area and the CAISO Controlled Grid; and

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

**4.11.4 System Emergencies**

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

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

**4.11.5 Load Reduction**

**4.11.5.1** If the CAISO declares an emergency alert pursuant to its System Emergency Operating procedure that requests Load curtailment, the SUDC shall use any reasonably available local communication infrastructure to request that its customers curtail their electricity usage. The SUDC shall not be called separately to manually shed Load. Load restoration of any voluntary Load reduction will occur once the CAISO declares that a System Emergency no longer exists.

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

**4.11.6 System Emergency Reports: SUDC Obligations**

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

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

**4.11.7 Coordinating Expansion or Modifications to SUDC Facilities**

Each SUDC and the Participating TO with which it is interconnected shall coordinate in the planning and

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

**4.11.8 Information Sharing**

**4.11.8.1 System Planning Studies**

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

**4.11.8.2 System Surveys and Inspections**

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

**4.11.8.3 Reports**

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

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

**4.11.9 Equipment Installation and Access Rights to SUDC Facilities**

**4.11.9.1 Installation of Facilities**

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

**4.11.9.2 Access to Facilities**

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

**4.11.9.3 Access During Emergencies**

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

**4.11.9.4 Access for Audit Functions**

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

**4.12 Relationship of CAISO and Resource-Specific System Resources**

The CAISO shall not accept Bids for any Resource-Specific System Resource otherwise than through a Scheduling Coordinator. The CAISO shall further not be obligated to provide Bid Cost Recovery to any Resource-Specific System Resource unless the relevant Resource-Specific System Resource owner undertakes in writing, by entering into a Resource-Specific System Resource Agreement, 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 4.12. Except as otherwise provided in this

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Section 4.12, Resource-Specific System Resources shall have the same rights and obligations as other System Resources, including the ability to have Bids submitted for either full or partial output from the RSSR, provided that a Bid must be for at least the Minimum Load of the resource in order to be eligible for Bid Cost Recovery.

**4.12.1 General Responsibilities**

**4.12.1.1 Operate Pursuant to Relevant Provisions of CAISO Tariff**

Resource-Specific System Resource owners 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 following.

- (i) A Resource-Specific System Resource shall only be eligible for Bid Cost Recovery if the Resource-Specific System Resource has complied with a Start-Up Instruction or Dispatch Instruction issued by the CAISO as specified in Section 11.8.
- (ii) In order to be eligible for Bid Cost Recovery, a Resource-Specific System Resource owner shall ensure that its Scheduling Coordinator makes an election for Default Start-Up Bids and Default Minimum Load Bids pursuant to Sections 30.4 and 30.5.2.4.
- (iii) A Resource-Specific System Resource owner shall ensure that any Ancillary Services Bids submitted by its Scheduling Coordinator are submitted in accordance with Section 30.5.2.6.
- (iv) Owners of Dynamic Resource-Specific System Resources that are Resource Adequacy Resources shall comply with additional availability requirements to the extent required by Section 40.6.5.1.
- (v) Each Resource-Specific System Resource owner shall immediately inform the CAISO, through its respective Scheduling Coordinator and using the CAISO's outage management system as described in Section 9, of any change or potential change in the current status of any Resource-Specific System Resource that may affect a submitted Bid. This will include, but not be limited to, any change in status of equipment that could affect the maximum output of a Resource-Specific System Resource, the Minimum Load of a Resource-Specific System Resource, or the ability of a Resource-Specific System Resource to provide Ancillary Services in accordance with its Bid.

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- (vi) In the event that a Resource-Specific System Resource owner cannot meet its Day-Ahead Schedule, or comply with a Dispatch Instruction, whether due to a Resource-Specific System Resource trip or the loss of a piece of equipment causing a reduction in capacity or output, the Resource-Specific System Resource owner shall notify the CAISO, through its Scheduling Coordinator, at once. If a Resource-Specific System Resource owner will not be able to meet a time commitment or requires the cancellation of a Resource-Specific System Resource Start-Up, it shall notify the CAISO, through its Scheduling Coordinator, at once.

**4.12.1.2 Operate Pursuant to Relevant Operating Procedures**

Resource-Specific System Resource owners shall operate, or cause their Resource-Specific System Resources and associated facilities to be operated, in accordance with the relevant Operating Procedures and Business Practice Manuals established by the CAISO.

**4.12.2 Identification of Resource-Specific System Resources**

Each Resource-Specific System Resource owner shall provide data identifying each of its Resource-Specific System Resources and such information regarding the capacity and the operating characteristics of the Resource-Specific System Resource 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 must be an accurate reflection of the design capabilities of the resources and its constituent equipment when operating at maximum sustainable performance over Minimum Run Time, recognizing that resource performance may degrade over time. Information registered in the Master File by a Scheduling Coordinator must also conform to any additional definitional requirements in Appendix A as may exist as to that information. Pursuant to Sections 8.9 and 8.10, the CAISO may verify, inspect and test the capacity and operating characteristics of the resource provided to the CAISO.

**4.12.3 Telemetry Data to Demonstrate Compliance**

The Resource-Specific System Resource owner shall provide SCADA data by telemetry to the CAISO EMS at the Resource-Specific System Resource owner's expense in order to demonstrate compliance with CAISO Start-Up Instructions in order to be eligible for BCR. Telemetry data from Dynamic Resource-Specific System Resources shall be provided in accordance with the requirements of the CAISO's

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Dynamic Scheduling Protocol in Appendix M. For Non-Dynamic Resource-Specific System Resources, the Resource-Specific System Resource owner shall have the option of providing the required telemetry data by transmittal directly to the CAISO EMS in accordance with the CAISO's standards for direct telemetry or by means of transmittal to the CAISO EMS through the EMS of its Host Balancing Authority Area by use of the inter-control center communications protocol (ICCP).

**4.12.4 Recordkeeping**

Resource-Specific System Resource owners shall provide to the CAISO such information and maintain such records as are reasonably required by the CAISO to implement the provisions of the CAISO Tariff applicable to Resource-Specific System Resources.

**4.12.5 Access Rights**

A Resource-Specific System Resource owner shall, at the request of the CAISO and upon reasonable notice, provide access to its facilities and records (including those relating to communications and telemetry) as necessary to permit the CAISO to perform such testing as is necessary to test the accuracy of any telemetry equipment upon which the Resource-Specific System Resource owner's performance is measured.

**4.13 DRPs, RDRRs, and PDRs**

**4.13.1 Relationship Between CAISO and DRPs**

Consistent with Section 30.6, the CAISO shall only accept Bids from Reliability Demand Response Resources and Proxy Demand Resources if such Reliability Demand Response Resources or Proxy Demand Resources are represented by a Demand Response Provider that has entered into a Demand Response Provider Agreement with the CAISO, has accurately provided the information required in the Demand Response System, has satisfied all Reliability Demand Response Resource or Proxy Demand Resource registration requirements, and has met standards adopted by the CAISO and published on the CAISO Website. Reliability Demand Response Resources and Proxy Demand Resources may not participate in a Distributed Energy Resource Aggregation. The CAISO shall not accept Bids from a Demand Response Provider other than through a Scheduling Coordinator, which Scheduling Coordinator may be the Demand Response Provider itself or another entity. Proxy Demand Response Resources providing Ancillary Services must submit Meter Data for the interval preceding, during, and following the

Trading Interval(s) in which they were awarded Ancillary Services for the purposes of determining settlement pursuant to Section 8.10.8.

#### **4.13.2 Applicable Requirements for RDRRs, PDRs and DRPs**

A single Demand Response Provider must represent each Reliability Demand Response Resource or Proxy Demand Resource and may represent more than one (1) Reliability Demand Response Resource or Proxy Demand Resource. Each Reliability Demand Response Resource or Proxy Demand Resource that is not within a MSS must be associated with a single Utility Distribution Company. A Demand Response Provider may be, but is not required to be, a Load Serving Entity or a Utility Distribution Company. Each Reliability Demand Response Resource or Proxy Demand Resource is required to be located in a single Sub-LAP. All underlying locations of a Reliability Demand Response Resource or Proxy Demand Resource must be located in a single Sub-LAP. Each Demand Response Provider is required to satisfy registration requirements and to provide information to allow the CAISO to establish performance evaluation methodologies in accordance with Section 4.13.4 and the applicable Business Practice Manuals. Registration of a location for participation in Reliability Demand Response Resources or Proxy Demand Resources requires the approval of the CAISO resulting from its registration process. As part of the submitted registration process, both the appropriately Demand Response Provider designated Load Serving Entity and Utility Distribution Company will have an opportunity to review the location detail and provide comments with regard to its accuracy. Disputes regarding the acceptances or rejections of a registration of a location shall be undertaken with the applicable Local Regulatory Authority and shall not be arbitrated or in any way resolved through a CAISO dispute resolution mechanism or process. A location cannot be registered to both a Reliability Demand Response Resource and a Proxy Demand Resource for the same Trading Day.

#### **4.13.3 Identification of RDRRs and PDRs**

Each Demand Response Provider shall provide data, as described in the Business Practice Manual, identifying each of its Reliability Demand Response Resources or Proxy Demand Resources and such information regarding the capacity and the operating characteristics of the Reliability Demand Response Resource or Proxy Demand Resource 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

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File shall be accurate and actually based on physical characteristics of the resources. For Proxy Demand Resources and Reliability Demand Response Providers whose maximum Load curtailment is 1 MW or more, Demand Response Providers may elect to specify in the Master File the maximum number of Operating Hours in which the CAISO could commit or dispatch the Proxy Demand Resources or Reliability Demand Response Resources in the Operating Day. Demand Response Providers for Proxy Demand Resources and Reliability Demand Response Resources may elect to specify in the Master File how the Proxy Demand Resource and Reliability Demand Response Resources will bid and be dispatched in the Real-Time Market: in (i) Hourly Blocks, (ii) fifteen (15) minute intervals, or (iii) five (5) minute intervals. Proxy Demand Resources using the load-shift methodology described in Section 4.13.4.7 may elect to bid and be dispatched in the Real-Time Market in fifteen (15) minute intervals or five (5) minute intervals. If Demand Response Providers do not submit an election in the Master File, the CAISO will set Hourly Blocks as the default.

**4.13.4 Performance Evaluation Methodologies for PDRs and RDRRs**

The following methodologies may be utilized to calculate Customer Load Baselines and Demand Response Energy Measurements for Proxy Demand Resources and Reliability Demand Response Resources. Proxy Demand Resources and Reliability Demand Response Resources consisting of residential End Users may elect to use the ten-in-ten methodology, metering generator output methodology, control group methodology, five-in-ten methodology, or weather matching methodology. Proxy Demand Resources and Reliability Demand Response Resources consisting of non-residential End Users may elect to use the ten-in-ten methodology, metering generator output methodology, control group methodology, or weather matching methodology. Proxy Demand Resources with behind-the-meter energy storage also may elect to use the load-shift methodology. If an EVSE elects to participate as a Proxy Demand Resource and use a different methodology than its co-located Load, it must adhere to Section 4.13.4.6. Proxy Demand Resources providing Ancillary Services must submit Meter Data for the intervals immediately preceding, during, and following the Trading Interval(s) in which the Proxy Demand Resources were awarded Ancillary Services. As specified in the Business Practice Manual, the CAISO will retain authority to calculate or correct Customer Load Baselines and Demand Response Energy Measurements for those resources that used the CAISO's Demand Response System, until all relevant

metering, settlement, and correction windows have lapsed since the CAISO retired its ability to calculate on behalf of Scheduling Coordinators in the Demand Response System.

#### **4.13.4.1 Ten-in-Ten Load Baseline Methodology**

Scheduling Coordinators will be responsible for calculating the Customer Load Baseline for Proxy Demand Resources or Reliability Demand Response Resources using the ten-in-ten methodology as follows:

- (a) Meter Data will be collected for the Proxy Demand Resource or Reliability Demand Response Resource for calendar days preceding the Trading Day on which the Demand Response Event occurred. Where the Proxy Demand Resource or Reliability Demand Response Resource uses behind-the-meter generation to offset Demand, the Proxy Demand Resource or Reliability Demand Response Resource may elect to provide, at all times, Meter Data reflecting the total gross consumption, independent of any offsetting Energy produced by behind-the-meter generation. The calendar days for which the Meter Data will be collected will be determined by working sequentially backwards from the Trading Day under examination up to a maximum of forty-five (45) calendar days prior to the Trading Day, including only business days if the Trading Day is a business day, including only non-business days if the Trading Day is a non-business day, and excluding calendar days on which the Proxy Demand Resource was subject to an Outage or previously provided Demand Response Services (other than capacity awarded for AS or RUC) or the Reliability Demand Response Resource was subject to an Outage as described in the Business Practice Manual or previously provided Demand Response Services, except as discussed below. The collection of Meter Data for this purpose stops upon reaching the target number of calendar days, which is ten (10) calendar days if the Trading Day is a business day or four (4) calendar days if the Trading Day is a non-business day. If these targets cannot be met, a minimum of five (5) calendar days if the Trading Day is a business day or a minimum of four (4) calendar days if the Trading Day is a non-business day must be collected. If these targets cannot be met, Meter Data will be collected for the calendar days on which the Proxy Demand Resource was subject to

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an Outage or previously provided Demand Response Services (other than capacity awarded for AS or RUC) or the Reliability Demand Response Resource was subject to an Outage as described in the Business Practice Manual or previously provided Demand Response Services, and for which the amount of totalized load was highest during the hours when the Demand Response Services were provided in the forty-five (45) calendar days prior to the Trading Day.

- (b) The Scheduling Coordinator will be responsible for calculating the simple hourly average of the collected Meter Data to determine a baseline amount of Energy provided by the Proxy Demand Resource or Reliability Demand Response Resource.
- (c) Unless otherwise requested by the Demand Response Provider and approved by the CAISO, the Scheduling Coordinator will be responsible for multiplying the amount calculated pursuant to Section 4.13.4.1(b) by a percentage equal to the ratio of (i) the average load of the Proxy Demand Resource or Reliability Demand Response Resource during the second, third, and fourth hours preceding the hour of the Trading Day on which the Proxy Demand Resource or Reliability Demand Response Resource provided the Demand Response Services during the Demand Response Event to (ii) the average load of the Proxy Demand Resource or Reliability Demand Response Resource during the same second, third, and fourth hours of the calendar days for which Meter Data has been collected pursuant to Section 4.13.4.1(a). To provide a maximum adjustment factor of twenty (20) percent, the adjusted percentage can have a maximum value of one hundred-twenty (120) percent and a minimum value of eighty (80) percent.
- (d) If the Proxy Demand Resource or Reliability Demand Response Resource elects to provide Meter Data reflecting the total gross Demand at all times, independent of any offsetting Energy, the offsetting Energy must be metered separate from Load to enable the accurate calculation of total gross consumption.

**4.13.4.2 Metering Generator Output Methodology**

For behind-the-meter generation registered in Proxy Demand Resources or Reliability Demand Response Resources and settling Energy Transactions pursuant to Section 11.6.2, the Generator Output Baseline

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will be calculated as follows:

- (a) Meter Data will be collected for the behind-the-meter generation for the same hour as the Trading Hour on calendar days preceding the Trading Day on which the Demand Response Event occurred for which the Generator Output Baseline is calculated. Meter Data will consist of Energy output of the behind-the-meter generation up to, but not including, output that represent an export of energy from that location. To determine the hours for which the Meter Data will be collected, the calculation will work sequentially backwards from the Trading Day under examination up to a maximum of forty-five (45) calendar days prior to the Trading Day, including only business days if the Trading Day is a business day, including only non-business days if the Trading Day is a non-business day, and excluding hours in which the Proxy Demand Resource was subject to an Outage or previously provided Demand Response Services (other than capacity awarded for AS or RUC) pursuant to a Bid at or above the net benefits test set forth in Section 30.6.3, or the Reliability Demand Response Resource was subject to an Outage as described in the Business Practice Manual or previously provided Demand Response Services pursuant to a Bid at or above the net benefits test set forth in Section 30.6.3, except as discussed below. The calculation will have complete Meter Data for this purpose if and when it is able to collect Meter Data for its target number of hours the same as the Trading Hour, which target number is ten (10) hours if the Trading Day is a business day or four (4) hours if the Trading Day is a non-business day. If it is not possible to collect Meter Data for the target number of hours, the Meter Data will include a minimum of five (5) hours if the Trading Day is a business day or a minimum of four (4) hours if the Trading Day is a non-business day. If it is not possible to collect Meter Data for the minimum number of hours described above, the Generator Output Baseline will be set at zero.
- (b) The baseline amount of Energy provided by the behind-the-meter generation will be calculated on the simple hourly average of the collected Meter Data.
- (c) In calculating the Generator Output Baseline pursuant to Section 4.13.4.2(a), the Meter

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Data must be set to zero in any Settlement Interval in which the behind-the-meter generation is charging.

- (d) In any Settlement Interval where the behind-the-meter generation is exporting Energy (i.e., where the behind-the-meter generation Energy output exceeds its location Demand), the Meter Data will consist of the Energy output of the behind-the-meter generation up to, but not including, the output greater than its facility Demand that would represent an export of Energy from that location.

**4.13.4.3 Control Group Methodology**

Scheduling Coordinators will be responsible for calculating the Customer Load Baseline for Proxy Demand Resources or Reliability Demand Response Resources using the control group methodology as follows:

- (a) Prior to any Demand Response Event, a randomized control group of End Users that are registered in the Demand Response System but not responding to CAISO dispatch as Proxy Demand Resources or Reliability Demand Response Resources must be submitted to the CAISO. But for any Demand Response Event, the control group must have nearly identical Demand patterns in aggregate as the Proxy Demand Resources or Reliability Demand Response Resources. The control group must be geographically similar to the Proxy Demand Resources or Reliability Demand Response Resources such that they experience the same weather patterns and grid conditions. The control group must consist of 150 distinct End Users or more. Prior to use of the control group baseline methodology, Scheduling Coordinators will be responsible for validating the control group pursuant to Section 4.13.4.3(c).
- (b) The control group's aggregate Demand during the same Trade Date and Trading Hour(s) as the Demand Response Event, divided by the relevant number of End Users, will constitute the Customer Load Baseline.
- (c) Scheduling Coordinators are responsible for validating that the control group accurately represents its Proxy Demand Resources or Reliability Demand Response Resources. As described in the Business Practice Manual, to validate the control group, Meter Data of

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the control group and the Proxy Demand Resources or Reliability Demand Response Resources from the previous seventy-five (75) days must be evaluated, excluding days where the Proxy Demand Resources or Reliability Demand Response Resources provided Demand Response Services or participated in a utility demand response program. Using the most recent days, at least twenty (20) eligible days of Meter Data must be used for validation. From these days, an average of the hourly load profile from 12 p.m. to 9 p.m. must be developed for the Proxy Demand Resources or Reliability Demand Response Resources and the control group by day and by hour. The average hourly Demand of the Proxy Demand Resources or Reliability Demand Response Resources is then regressed against the average hourly Demand of the control group. As described in the Business Practice Manual, the control group must statistically demonstrate (i) lack of bias and (ii) sufficient statistical precision with (iii) sufficient confidence. Control groups that fail these screens may not be used.

- (d) For Proxy Demand Resources or Reliability Demand Response Resources whose number of End Users have not changed by more than ten (10) percent in the prior month, the control group must be re-validated every other month. For Proxy Demand Resources or Reliability Demand Response Resources whose number of End Users have changed by more than ten (10) percent in the prior month, control groups must continue to be re-validated monthly.
- (e) Control group randomization, equivalence, and validation, and all Demand Response Event calculations are subject to CAISO audit for three (3) years from the date Demand Response Event. All results must be reproducible, including underlying interval data, randomization, validation, bias, confidence, precision, and analysis.

**4.13.4.4 Five-in-Ten Methodology**

Scheduling Coordinators will be responsible for calculating the Customer Load Baseline for Proxy Demand Resources or Reliability Demand Response Resources using the five-in-ten methodology as follows:

- (a) Meter Data for the Proxy Demand Resource or Reliability Demand Response Resource

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will be collected for calendar days preceding the Trading Day on which the Demand Response Event occurred for the Customer Load Baseline. Where the Proxy Demand Response or Reliability Demand Response Resource may elect to provide, at all times, Meter Data reflecting the total gross consumption, independent of any offsetting Energy produced by behind-the-meter generation. The calendar days for which the Meter Data will be collected will be determined by working sequentially backwards from the Trading Day under examination up to a maximum of forty-five (45) calendar days prior to the Trading Day, including only business days if the Trading Day is a business day, including only non-business days if the Trading Day is a non-business day, and excluding calendar days on which the Proxy Demand Resource was subject to an Outage or previously provided Demand Response Services (other than capacity awarded for AS or RUC) or the Reliability Demand Response Resource was subject to an Outage as described in the Business Practice Manual or previously provided Demand Response Services, except as discussed below. The collection of Meter Data for this purpose stops upon reaching the target number of calendar days, which is ten (10) calendar days if the Trading Day is a business day or five (5) calendar days if the Trading Day is a non-business day. From the target days, the five (5) business days and three (3) non-business days with the highest totalized load during the hours when the Demand Response Services were provided will be used. If these targets cannot be met, the Meter Data will instead be used for the calendar days on which the Proxy Demand Resource was subject to an Outage or previously provided Demand Response Services (other than capacity awarded for AS or RUC) or the Reliability Demand Response Resource was subject to an Outage as described in the Business Practice Manual or previously provided Demand Response Services, and for which the amount of totalized load was highest during the hours when the Demand Response Services were provided in the forty-five (45) calendar days prior to the Trading Day.

- (b) For business days, the Scheduling Coordinator will be responsible for calculating the simple hourly average of the collected Meter Data to determine a baseline amount of

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Energy provided by the Proxy Demand Resource or Reliability Demand Response Resource. For non-business days, the Scheduling Coordinator will be responsible for calculating a weighted average of the collected Meter Data to determine a baseline as follows: the day closest to the Demand Response Event receives a weight of fifty (50) percent, the next closest receives a weight of thirty (30) percent, and the furthest receives a weight of twenty (20) percent.

- (c) Unless otherwise requested by the Demand Response Provider and approved by the CAISO, the Scheduling Coordinator will be responsible for multiplying the amount calculated pursuant to Section 4.13.4.4(b) by a percentage of the ratio of:
- (i) the average Demand of Proxy Demand Resource or Reliability Demand Response Resource during (a) the period from four (4) to two (2) hours preceding the Trading Intervals, and (b) the period from two (2) to four (4) hours following the Trading Intervals on which the Proxy Demand Resource or Reliability Demand Response Resource provided Demand Response Services during the Demand Response Event to
  - (ii) the average Demand of the Proxy Demand Resource or Reliability Demand Response Resource during (a) the period from four (4) to two (2) hours preceding the Trading Intervals, and (b) the period from (2) to four (4) hours following the Trading Intervals for which Meter Data was collected pursuant to Section 4.13.4.4(a).

To provide maximum adjustment factor of 1.4, the adjusted percentage can have a maximum value of one hundred-forty (140) percent and a minimum value of seventy-one (71) percent.

- (d) If the Proxy Demand Resource or Reliability Demand Response Resource elects to provide Meter Data reflecting the total gross Demand at all times, independent of any offsetting Energy, the offsetting Energy must be separated from Load to enable the accurate calculation of total gross consumption.

**4.13.4.5 Weather Matching Methodology**

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Scheduling Coordinators will be responsible for calculating the Customer Load Baseline for Proxy Demand Resources or Reliability Demand Response Resources using the weather matching methodology as follows:

- (a) The Scheduling Coordinator will be responsible for collecting Meter Data for the Proxy Demand Resource or Reliability Demand Response Resource for calendar days preceding the Trading Day on which the Demand Response Event occurred. Where the Proxy Demand Response or Reliability Demand Response Resource uses behind-the-meter generation to offset Demand, the Proxy Demand Resource or Reliability Demand Response Resource may elect to provide, at all times, Meter Data reflecting the total gross consumption, independent of any offsetting Energy produced by behind-the-meter generation. The calendar days for which the Meter Data will be collected will be determined by working sequentially backwards from the Trading Day under examination up to a maximum of ninety (90) calendar days prior to the Trading Day, including only business days if the Trading Day is a business day, including only non-business days if the Trading Day is a non-business day, and excluding calendar days on which the Proxy Demand Resource was subject to an Outage or previously provided Demand Response Services (other than capacity awarded for AS or RUC) or the Reliability Demand Response Resource was subject to an Outage as described in the Business Practice Manual or previously provided Demand Response Services. As detailed in the Business Practice Manual, from the ninety (90) calendar days prior to the Trading Day, the four (4) days with the closest daily maximum temperature to the Trading Day will be used to calculate the baseline.
- (b) The Scheduling Coordinator will be responsible for calculating the simple hourly average of the collected Meter Data to determine a baseline amount of Energy provided by the Proxy Demand Resource or Reliability Demand Response Resource.
- (c) Unless otherwise requested by the Demand Response Provider and approved by the CAISO, the Scheduling Coordinator will be responsible for multiplying the amount calculated pursuant to Section 4.13.4.5(b) by a percentage equal to the ratio of:

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- (i) the average Demand of the Proxy Demand Resource or Reliability Demand Response Resource during (a) the period from four (4) to two (2) hours preceding the Trading Intervals, and (b) the period from two (2) to four (4) hours following the Trading Intervals on which the Proxy Demand Resource or Reliability Demand Response Resource provided the Demand Response Services during the Demand Response Event to
- (ii) the average Demand of the Proxy Demand Resource or Reliability Demand Response Resource during (a) the period from four (4) to two (2) hours preceding the Trading Intervals, and (b) the period from two (2) to four (4) hours following the Trading Intervals for which Meter Data was collected pursuant to Section 4.13.4.5(a).

To provide a maximum adjustment factor of 1.4, the adjusted percentage can have a maximum value of one hundred-forty (140) percent and a minimum value of seventy-one (71) percent.

- (d) If the Proxy Demand Resource or Reliability Demand Response Resource elects to provide Meter Data reflecting the total gross Demand at all times, independent of any offsetting Energy, the offsetting Energy must be metered separate from Load to enable the accurate calculation of total gross consumption.

**4.13.4.6 Electric Vehicle Supply Equipment (EVSE)**

Proxy Demand Resources may include or consist entirely of EVSEs. Proxy Demand Resources may elect to use different methodologies to calculate the Customer Load Baselines and Demand Response Energy Measurements of (i) their EVSEs, including electric vehicle charging Load, and (ii) any other Load or behind-the-meter Generation participating as Proxy Demand Resources. Where a Proxy Demand Resource elects to do so, the EVSE Load must be metered separately from any other Load or Generation. Individual EVSEs may be aggregated into Proxy Demand Resources consistent with Section 4.13.2. Where the Load at the EVSE's Location also participates as a Proxy Demand Resource, the EVSE must participate in the same Proxy Demand Resource, but may elect to have a separately metered Customer Load Baseline and Demand Response Energy Measurement consistent with this Section. To

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calculate EVSE Customer Load Baselines and Demand Response Energy Measurements under this section, non-residential EVSEs may use the ten-in-ten methodology, and residential EVSEs may use the ten-in-ten methodology and the five-in-ten methodology. Scheduling Coordinators for EVSEs participating under this section will not apply an adjustment factor pursuant to subsection (c) of either methodology. Non-EVSE Load also participating in the EVSE's Proxy Demand Resource may use any eligible methodology for its Customer Load Baseline and Demand Response Energy Measurement.

**4.13.4.7 Load-Shift Methodology**

Only Proxy Demand Resources using behind-the-meter energy storage may elect to use the load-shift methodology described in this Section. The energy storage must be metered separately from other Load or Generation. Proxy Demand Resources using this methodology will consist of two Resource IDs:

- A consumption Resource ID to account for the energy storage charging alone; and
- A curtailment Resource ID to account for the energy storage discharging to offset onsite Demand and, including if the Demand Response Provider elects, any Demand curtailment by the onsite Load independent of the energy storage.

The CAISO will use reasonable efforts to optimize both Resource IDs to avoid conflicting Schedules. Scheduling Coordinators will be responsible for calculating separate Customer Load and Generator Output Baselines for the curtailment Resource ID and the consumption Resource ID.

- (a) Meter Data will be collected for each Resource ID for the fifteen (15) minute interval as the Trading Interval on calendar days preceding the Trading Day on which the Demand Response Event occurred for which the baselines are calculated. To determine the fifteen (15) minute intervals for which the Meter Data will be collected, the calculation will work sequentially backwards from the Trading Day under examination up to a maximum of forty-five (45) calendar days prior to the Trading Day, including only business days if the Trading Day is a business day, including only non-business days if the Trading Day is a non-business day, and excluding intervals in which the Proxy Demand Resource was subject to an Outage or previously provided Demand Response Services (other than capacity awarded for AS or RUC). The calculation will have complete Meter Data for this

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purpose if and when it is able to collect Meter Data for its target number of intervals the same as the Trading Interval, which target number is ten (10) intervals if the Trading Day is a business day or four (4) intervals if the Trading Day is a non-business day. If these targets cannot be met, a minimum of five (5) intervals if the Trading Day is a business day or a minimum of four (4) intervals if the Trading Day is a non-business day must be collected. If these targets cannot be met, the baselines will be set at zero.

- (b) Meter Data for the consumption Resource ID will include only Meter Data at or below 0 MWh. In intervals where the Meter Data is above 0 MWh, the Scheduling Coordinator will consider the Meter Data at 0 MWh for the consumption Resource ID.
- (c) Meter Data for the curtailment Resource ID will include only Meter Data at or above 0 MWh. In intervals where the Meter Data is below 0 MWh, the Scheduling Coordinator will consider the Meter Data at 0 MWh for the curtailment Resource ID. The Scheduling Coordinator will exclude Meter Data for Energy from the curtailment Resource ID that exceeds the onsite Demand.
- (d) The Scheduling Coordinator will be responsible for calculating the simple hourly average of the collected Meter Data to determine the baseline amounts of Energy provided or consumed by each Resource ID.

The Demand Response Provider may elect to include Demand Response Energy Measurements for the onsite Load, which the Scheduling Coordinator will add to the Demand Response Energy Measurement for the curtailment Resource ID pursuant to Section 11.6.7. If the Demand Response Provider elects to do so, the Scheduling Coordinator will calculate a separate Customer Load Baseline for the onsite Load, excluding the Energy or Demand from the energy storage. If the onsite Load is residential, the Scheduling Coordinator may calculate its Customer Load Baseline using the ten-in-ten methodology, five-in-ten methodology, or weather matching methodology performance methodology. If the onsite Load is non-residential, the Scheduling Coordinator may calculate its Customer Load Baseline using the ten-in-ten methodology or weather matching methodology performance methodology.

#### **4.13.5 Characteristics of PDRs and RDRRs**

##### **4.13.5.1 Availability to Provide Demand Response Services**

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Each Proxy Demand Resource and Reliability Demand Response Resource shall become available to provide Demand Response Services pursuant to the Demand Response Provider Agreement following the date on which the Demand Response Provider Agreement is executed by all parties thereto, as specified by the parties, and shall be available to provide Demand Response Services until the Demand Response Provider Agreement is terminated as set forth in the Demand Response Provider Agreement.

**4.13.5.2 Size Limits for PDRs and RDRRs**

**4.13.5.2.1 PDRs**

The minimum Load curtailment of a Proxy Demand Resource shall be no smaller than 0.1 MW. Loads may be aggregated together to achieve the 0.1 MW threshold. There is no upper limit on the maximum Load curtailment of a Proxy Demand Resource.

**4.13.5.2.2 RDRRs**

The minimum Load curtailment of a Reliability Demand Response Resource shall be no smaller than 0.5 MW. Loads may be aggregated together to achieve the 0.5 MW threshold. The maximum Load curtailment of a Reliability Demand Response Resource that selects the Discrete Real-Time Dispatch Option shall be no larger than 100 MW. The CAISO will approve uses above 100 MW where:

- (a) the Demand Response Provider attests that the Reliability Demand Response Resource (1) is located at a single site; (2) cannot safely or operationally be split into multiple loads; and (3) does not have the ability to operate under the Marginal Real-Time Dispatch Option; and
- (b) the CAISO determines that the Reliability Demand Response Resource's use of the Discrete Real-Time Dispatch Option does not cause significant reliability issues.

There is no upper limit on the maximum Load curtailment of a Reliability Demand Response Resource that selects the Marginal Real-Time Dispatch Option.

**4.13.5.3 Dispatch Parameters for RDRRs**

Each Reliability Demand Response Resource shall be capable of reaching its maximum Load curtailment within forty (40) minutes after it receives a Dispatch Instruction, and shall be capable of providing Demand Response Services for at least four (4) consecutive hours per Demand Response Event. Each Reliability Demand Response Resource shall have a minimum run time of no more than one (1) hour.

**4.14 Relationship Between the CAISO and CBEs**

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Only entities that satisfy all of the requirements specified in this Section 4.14 will be certified by the CAISO to be Convergence Bidding Entities and thus be authorized by the CAISO to submit Virtual Bids. A Convergence Bidding Entity may submit Virtual Bids only through a Scheduling Coordinator, which can be either the Convergence Bidding Entity itself or another entity that is a Scheduling Coordinator. A Convergence Bidding Entity may be represented by only one Scheduling Coordinator at any given time.

**4.14.1 Procedure to Become a Convergence Bidding Entity**

**4.14.1.1 Convergence Bidding Entity Application**

To become a Convergence Bidding Entity, a Convergence Bidding Entity applicant must submit a completed written application, as provided in the applicable form posted on the CAISO Website, to the CAISO by mail, electronic submission, or in person.

**4.14.1.2 CAISO Information**

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

- (a) the Convergence Bidding Entity application form; and
- (b) the CAISO Tariff and Business Practice Manuals.

**4.14.1.3 Convergence Bidding Entity Applicant Submits Application**

At least sixty (60) Business Days before the date on or after which the Convergence Bidding Entity applicant proposes to start submitting Virtual Bids, the Convergence Bidding Entity applicant must return a completed application form.

**4.14.1.4 Notice of Receipt**

Within three (3) Business Days of receiving the application, the CAISO will send written notification to the Convergence Bidding Entity applicant that it has received the application.

**4.14.1.5 CAISO Review of Application**

Within ten (10) Business Days after receiving an application, the CAISO will notify the Convergence Bidding Entity applicant whether the Convergence Bidding Entity applicant has submitted all necessary information as set forth in Section 4.14.1.

**4.14.1.5.1 Information Requirements**

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The Convergence Bidding Entity applicant must submit with its application:

- (a) the proposed date on or after which the Convergence Bidding Entity applicant proposes to start submitting Virtual Bids, which may not be less than sixty (60) Business Days after the date the application was filed, unless waived by the CAISO;
- (b) an explanation of whether the Convergence Bidding Entity applicant is a Rated or Unrated Public/Private Corporation, a Rated or Unrated Governmental Entity, a Local Publicly Owned Electric Utility, or another type of entity, and a chart, or equivalent information, depicting the Convergence Bidding Entity applicant's corporate structure, including all parent companies of the Convergence Bidding Entity applicant, all subsidiaries of the Convergence Bidding Entity applicant, and all Affiliates of the Convergence Bidding Entity applicant that meet the requirements of Section 4.14.2.1; and
- (c) the name of the Scheduling Coordinator and SCID(s) that the Convergence Bidding Entity anticipates will be used for submitting Virtual Bids on behalf of the Convergence Bidding Entity.

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

**4.14.1.6 Deficient Application**

In the event that the CAISO determines that the application is deficient, the CAISO will send an electronic notification of the deficiency to the Convergence Bidding Entity applicant within ten (10) Business Days of receipt by the CAISO of the application explaining the deficiency and requesting additional information.

**4.14.1.6.1 Additional Information**

Once the CAISO requests additional information, the Convergence Bidding Entity applicant has five (5) Business Days, or such longer period as the CAISO may agree not to exceed five (5) additional Business Days, to provide the additional material requested by the CAISO.

**4.14.1.6.2 CAISO Approval or Rejection of an Application**

If the Convergence Bidding Entity applicant does not submit additional information within five (5) Business Days or the longer period referred to in Section 4.14.1.6.1, the application may be rejected by the CAISO.

#### **4.14.1.7 CAISO Approval or Rejection of an Application**

##### **4.14.1.7.1 Approval or Rejection Notification**

- (a) If the CAISO approves the application, it will send a written notification of approval. In addition, the CAISO will provide an executable Convergence Bidding Entity Agreement.
- (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; or
  - (ii) non-compliance with any other CAISO Tariff requirements.

Upon request, the CAISO will provide guidance as to how the Convergence Bidding Entity applicant can cure the grounds for the rejection.

##### **4.14.1.7.2 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.

#### **4.14.1.8 Convergence Bidding Entity Applicant's Response**

##### **4.14.1.8.1 Convergence Bidding Entity Applicant's Acceptance**

If the CAISO accepts the application, the Convergence Bidding Entity applicant must return the partially executed Convergence Bidding Entity Agreement previously provided by the CAISO.

##### **4.14.1.8.2 Convergence Bidding Entity Applicant's Rejection**

###### **4.14.1.8.2.1 Resubmittal**

If the CAISO rejects the application, the Convergence Bidding Entity applicant may resubmit its application at any time.

###### **4.14.1.8.2.2 Appeal**

The Convergence Bidding Entity applicant may also appeal 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.

#### **4.14.1.9 Final Certification**

The Convergence Bidding Entity applicant will become a Convergence Bidding Entity when:

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- (a) its application has been accepted;
- (b) it has entered into a Convergence Bidding Entity Agreement and any other applicable agreements with the CAISO; and
- (c) it has fulfilled all requirements of Section 4.14.1.5.1.

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

#### **4.14.2 Convergence Bidding Entity's Ongoing Obligations**

##### **4.14.2.1 Affiliate Disclosure Requirements**

Each Convergence Bidding Entity applicant will notify the CAISO of any Affiliate that is a Market Participant, any Affiliate that participates in an organized electricity market in North America, and any guarantor of any such Affiliate. Upon request, a Convergence Bidding Entity applicant will provide the CAISO with information on each such Affiliate, including information concerning the ownership structure of such Affiliate and the business purpose of such Affiliate. These requirements will continue to apply after a Convergence Bidding Entity applicant becomes a Convergence Bidding Entity.

##### **4.14.2.2 Obligation to Report a Change in Filed Information**

Each Convergence Bidding Entity 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 but not limited to any changes to such information after the application is initially submitted, any changes to the additional information requested by the CAISO, and changes regarding its Affiliates that satisfy the requirements of Section 4.14.2.1, within five (5) Business Days of when each such change occurs. The applicable Business Practice Manual sets forth the procedures for changing the Convergence Bidding Entity's information.

##### **4.14.2.3 Identification of SCIDs**

Each Convergence Bidding Entity will provide the CAISO with a list of the SCIDs that the Scheduling Coordinator that represents the Convergence Bidding Entity will use to submit Virtual Bids for that Convergence Bidding Entity, at least eleven (11) Business Days prior to the Scheduling Coordinator's submission of a Virtual Bid on behalf of the Convergence Bidding Entity. If there is a subsequent change

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to the list of the SCIDs that the Scheduling Coordinator will use to submit Virtual Bids on behalf of the Convergence Bidding Entity or the identity of the Scheduling Coordinator that represents the Convergence Bidding Entity, the Convergence Bidding Entity will provide the CAISO with an updated list of SCIDs that the Scheduling Coordinator that represents the Convergence Bidding Entity will use to submit Virtual Bids on behalf of the Convergence Bidding Entity, at least eleven (11) Business Days prior to the Scheduling Coordinator's submittal of a Virtual Bid involving a Convergence Bidding Entity and/or SCID not already included in the most recent list provided to the CAISO. The identification of the Scheduling Coordinator and list of SCIDs provided by the Convergence Bidding Entity and the list of SCIDs provided by the Scheduling Coordinator regarding that Convergence Bidding Entity pursuant to Section 4.5.2.2 must correspond. In the event these lists do not correspond, the CAISO will inform the applicable Scheduling Coordinator and Convergence Bidding Entity, and the parties will provide revised lists that correspond prior to the Scheduling Coordinator's submission of a Virtual Bid on behalf of that Convergence Bidding Entity. The CAISO will incorporate the information provided pursuant to this Section 4.14.2.3 into the CAISO's official list of the Scheduling Coordinators that are eligible to submit Virtual Bids on behalf of Convergence Bidding Entities and the SCIDs used on their behalf will be incorporated into the Master File within eleven (11) Business Days after the CAISO determines that the information in each list, updated list, or revised list provided by a Scheduling Coordinator or Convergence Bidding Entity is accurate and complete.

**4.14.2.4 Failure to Promptly Report a Material Change**

If a Convergence Bidding Entity fails to inform the CAISO of a material change in its information provided to the CAISO, the CAISO may limit, suspend, or terminate the Convergence Bidding Entity's rights under the CAISO Tariff and terminate the Convergence Bidding Entity Agreement in accordance with the terms of Sections 4.14.3, 12, and 39.11.2. If the CAISO intends to terminate the Convergence Bidding Entity Agreement, it will file a notice of termination with FERC, if required by FERC rules, in accordance with the terms of the Convergence Bidding Entity Agreement. Such termination will be effective upon acceptance by FERC of a notice of termination, if required by FERC rules, or as otherwise permitted by FERC rules.

**4.14.3 Termination of a Convergence Bidding Entity Agreement**

- (a) A Convergence Bidding Entity Agreement may be terminated by the CAISO on written

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notice to the Convergence Bidding Entity in accordance with the terms of the Convergence Bidding Entity Agreement:

- (i) if the Convergence Bidding Entity no longer meets the requirements for eligibility set out in Section 4.14 and fails to remedy the default within a period of seven (7) Business Days after the CAISO has given written notice of the default;
  - (ii) if the Scheduling Coordinator that represents the Convergence Bidding Entity 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 Convergence Bidding Entity 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 Convergence Bidding Entity may terminate the Convergence Bidding Entity Agreement in accordance with the provisions of that agreement.
  - (c) Upon termination of the Convergence Bidding Entity Agreement, the Scheduling Coordinator that represents the Convergence Bidding Entity will continue to be liable for any outstanding financial or other obligations incurred under the CAISO Tariff as a result of the Convergence Bidding Entity's status as a Convergence Bidding Entity.
  - (d) The CAISO will, following termination of a Convergence Bidding Entity Agreement and within thirty (30) days of being satisfied that no sums remain owing by the Scheduling Coordinator that represents the Convergence Bidding Entity under the CAISO Tariff, return or release to the Scheduling Coordinator, as appropriate, any Financial Security support provided by such Scheduling Coordinator to the CAISO under Section 12.

**4.15 Relationships Between CAISO and Pseudo-Ties to CAISO**

A Generator that desires a Pseudo-Tie of its Generating Unit from a Native Balancing Authority Area to the CAISO Balancing Authority Area shall comply with the applicable provisions of the Pseudo-Tie Protocol in Appendix N in addition to all provisions of this CAISO Tariff applicable to Participating

Generators, except as expressly provided, including that it shall be required to enter into a Pseudo-Tie Participating Generator Agreement with the CAISO rather than a Participating Generator Agreement.

#### **4.16 Relationships Between CAISO and Pseudo-Ties Out**

A Pseudo-Tie of the output of a generating unit out of the CAISO Balancing Authority Area to an Attaining Balancing Authority Area shall comply with the applicable provisions of the Pseudo-Tie Protocol in Appendix N, including being the subject of a special operating agreement with the CAISO.

#### **4.17 Distributed Energy Resource Aggregations**

##### **4.17.1 CAISO Relationship with Distributed Energy Resource Providers**

The CAISO will accept Bids from Distributed Energy Resource Aggregations only if such Distributed Energy Resource Aggregations are represented by a Distributed Energy Resource Provider that has entered into a Distributed Energy Resource Provider Agreement with the CAISO to comply with all applicable provisions of the CAISO Tariff as they may be amended from time to time. The CAISO will not accept Bids from a Distributed Energy Resource Aggregation other than through a Scheduling Coordinator. The Scheduling Coordinator may be the Distributed Energy Resource Provider itself or another entity.

##### **4.17.2 Responsibilities of Distributed Energy Resource Providers**

The following general responsibilities apply to Distributed Energy Resource Providers:

- (a) Each Distributed Energy Resource Provider will operate and maintain its Distributed Energy Resource Aggregations consistent with applicable provisions of the CAISO Tariff.
- (b) Each Distributed Energy Resource Provider will comply with applicable Utility Distribution Company or Metered Subsystem tariffs and operating procedures incorporated therein as well as applicable requirements of the Local Regulatory Authority, if any. Each Distributed Energy Resource Provider will ensure that Distributed Energy Resources that comprise a Distributed Energy Resource Aggregation under its control comply with applicable Utility Distribution Company or Metered Subsystem tariffs and operating procedures incorporated therein as well as applicable requirements of the Local Regulatory Authority, if any.
- (c) Each Distributed Energy Resource Provider will comply with Applicable Reliability

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Criteria to the extent they apply.

- (d) Each Distributed Energy Resource Provider will operate and maintain its Distributed Energy Resource Aggregation(s) consistent with applicable Operating Procedures and Business Practice Manuals established by the CAISO.
- (e) Each Distributed Energy Resource Provider will operate its Distributed Energy Resource Aggregation(s) in a manner consistent with limitations established by or operating orders of the Utility Distribution Company or Metered Subsystem.
- (f) The CAISO will coordinate with the applicable Utility Distribution Company or Metered subsystem to avoid conflicting operational directives, which may include but is not limited to sharing Dispatch Instructions.

**4.17.3 Requirements for Distributed Energy Resource Aggregations**

The following requirements apply to Distributed Energy Resource Aggregations:

- (a) A Distributed Energy Resource Aggregation will consist of one (1) or more Distributed Energy Resources.
- (b) A Distributed Energy Resource may not participate in more than one Distributed Energy Resource Aggregation.
- (c) A Distributed Energy Resource participating in a Distributed Energy Resource Aggregation may not participate as a resource in the CAISO Market separate from the Distributed Energy Resource Aggregation.
- (d) Each Distributed Energy Resource Aggregation must be located in a single Sub-LAP.
- (e) A Distributed Energy Resource Aggregation must provide a net response at its PNode(s) within its sub-LAP that is consistent with CAISO Dispatch Instructions and applicable Generation Distribution Factors submitted through the Distributed Energy Resource Aggregation's Bid or as registered in the Master File.
- (f) Distributed Energy Resource Aggregations are Scheduling Coordinator Metered Entities. Scheduling Coordinators for a Distributed Energy Resource Aggregation must have entered into a Scheduling Coordinator Metering Agreement with the CAISO. A Distributed Energy Resource participating in a Distributed Energy Resource Aggregation

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may not also participate in the CAISO Markets as a CAISO Metered Entity.

- (g) A Distributed Energy Resource Aggregation may not receive compensation for capacity, Energy, or other services it provides in CAISO's markets if it provides the same services in retail programs.
- (h) Distributed Curtailment Resources may participate in Distributed Energy Resource Aggregations pursuant to these rules and Section 4.17.7.

**4.17.4 Identification of Distributed Energy Resources**

Each Distributed Energy Resource Provider will provide information, as described in the Business Practice Manual, identifying each of its Distributed Energy Resource Aggregations and such information regarding the location, capacity, operating characteristics and applicable Generation Distribution Factors of its Distributed Energy Resource Aggregation(s) as may be reasonably requested from time to time by the CAISO, and when the information changes due to the removal, addition, or modification of a Distributed Energy Resource or Distributed Curtailment Resource within the Distributed Energy Resource Aggregation. All information provided to the CAISO by a Distributed Energy Resource Provider regarding the operational and technical characteristics of its Distributed Energy Resource Aggregation(s) must be an accurate reflection of the design capabilities of the resources and its constituent equipment when operating at maximum sustainable performance over Minimum Run Time, recognizing that resource performance may degrade over time. Information registered in the Master File by a Scheduling Coordinator must also conform to any additional definitional requirements in Appendix A as may exist as to that information.

As further described in the Business Practice Manual, the CAISO will share any necessary information and data about the Distributed Energy Resources comprising a Distributed Energy Resource Aggregation with the applicable Utility Distribution Company or Metered Subsystem. The Utility Distribution Company or Metered Subsystem will have an opportunity to provide written comments within thirty (30) days regarding the accuracy of the information about Distributed Energy Resources comprising a Distributed Energy Resource Aggregation(s) or raise concerns with respect to whether the Distributed Energy Resources (1) are participating in another Distributed Energy Resource Aggregation; (2) are participating as a Proxy Demand Response resource or a Reliability Demand Response Resource; (3) do not comply

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with applicable Utility Distribution Company tariffs or requirements of the relevant Local Regulatory Authority; (4) receive compensation from retail programs for capacity, Energy, or other services that would be offered to the CAISO Markets; or (5) may pose a significant threat to the safe and reliable operation of the Distribution System, if operated as part of a Distributed Energy Resource Aggregation. The Utility Distribution Company or Metered Subsystem review of criterion (5) must be limited to those impacts resulting from the aggregation, exclusive of issues previously considered during the interconnection study process for each Distributed Energy Resource. The CAISO will provide the Distributed Energy Resource Provider with the Utility Distribution Company or Metered Subsystem's written comments and any other information regarding the Distributed Energy Resources provided by the Utility Distribution Company or Metered Subsystem to CAISO, and the Distributed Energy Resource Provider will resolve any concerns with the Utility Distribution Company or Metered Subsystem prior to the CAISO allowing the individual Distributed Energy Resource to participate in a Distributed Energy Resource Aggregation. Parties may resolve any disputes regarding any issues related to the distribution utility review process with the applicable Governmental Authority for the Utility Distribution Company or Metered Subsystem or under Section 13 of the CAISO tariff, as applicable to the dispute.

**4.17.4.1 Modifications to Distributed Energy Resource Aggregations**

The Distributed Energy Resource Provider will notify the CAISO of any changes to the information it provided during the registration process due to the removal, addition, or modification of a Distributed Energy Resource or Distributed Curtailment Resource within the Distributed Energy Resource Aggregation. The Distributed Energy Resource Provider also will notify the CAISO of any changes to its Distributed Energy Resource Aggregation's physical or operational characteristics. The CAISO will notify the applicable Utility Distribution Company or Metered Subsystem of any changes, and the Utility Distribution Company or Metered Subsystem will have fourteen (14) days to provide the CAISO any written comments raising concerns under Section 4.17.4.

**4.17.5 Characteristics of Distributed Energy Resource Aggregations**

**4.17.5.1 Size Limits**

A Distributed Energy Resource Aggregation will be no smaller than 100kW. A Distributed Energy Resource Aggregation that includes Distributed Energy Resources located at different PNodes will be no

larger than 20 MW.

#### **4.17.5.2 Metering and Telemetry**

Scheduling Coordinators shall submit to the CAISO Actual Settlement Quality Meter Data or Estimated Settlement Quality Meter Data for Distributed Energy Resource Aggregations they represent for each Settlement Period in an Operating Day. Distributed Energy Resources and Distributed Curtailment Resources participating in a Distributed Energy Resource Aggregation will be directly metered pursuant to a meter that complies with any applicable Utility Distribution Company tariff and any standards of the relevant Local Regulatory Authority or, if no such tariff exists or no standards have been set by that Local Regulatory Authority, the metering standards as further detailed in the CAISO's Business Practice Manual. Distributed Energy Resource Providers must make Settlement Quality Meter Data from individual Distributed Energy Resources and Distributed Curtailment Resources comprising a Distributed Energy Resource Aggregation available to the CAISO upon request.

Distributed Energy Resource Providers shall provide information regarding Distributed Energy Resource Aggregation(s) with a rated capacity of 10 MW or greater or, if the Distributed Energy Resource Aggregation(s) provides Ancillary Services, through telemetry to the CAISO's EMS in accordance with the CAISO's standards for direct telemetry and consistent with the requirement for telemetry set forth in Section 7.6.1. Distributed Energy Resource Providers are not required to have their own direct telemetry on each DER, and may acquire the data required to provide the CAISO with accurate telemetry data for the DERA by any means, including calculation.

#### **4.17.6 Operating Requirements**

Distributed Energy Resource Aggregations will respond to (1) CAISO Dispatch Instructions and (2) instructions from the Utility Distribution Company to maintain the safety and reliability of the Distribution System. The CAISO may dispatch a Distributed Energy Resource Aggregation to the extent the Distributed Energy Resource Aggregation bids or schedules into the CAISO Markets and receives an award. The CAISO may also issue an Exceptional Dispatch Instruction for the Distributed Energy Resource Aggregation for reliability pursuant to Section 34.11. Distributed Energy Resource Aggregations shall respond to Dispatch Instructions consistent with Generation Distribution Factors for the Distributed Energy Resource Aggregation.

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Each Distributed Energy Resource Provider will operate its Distributed Energy Resource Aggregation(s) in a manner consistent with limitations or operating orders established by the Utility Distribution Company or Metered Subsystem. Scheduling Coordinators for Distributed Energy Resources Providers shall submit Outages to the CAISO as necessary to reflect any distribution constraints impacting Distributed Energy Resources that comprise a Distributed Energy Resource Aggregation under its control. The CAISO shall have the authority to coordinate and approve Outage schedules for the Distributed Energy Resource Aggregation(s) listed in a Distributed Energy Resource Provider Agreement, in accordance with the provisions of Section 9. Where the Utility Distribution Company requires its own direct communication with the Distributed Energy Resource Provider for the safety and reliability of the Distribution System, those communication and data protocols will be established in Schedule 4 to the Distributed Energy Resource Provider Agreement.

**4.17.7 Distributed Energy Resource Aggregations with Demand Curtailment**

Distributed Energy Resource Aggregations that include Distributed Curtailment Resources are subject to all the requirements in Section 4.17 and this subsection. The Scheduling Coordinator for a Distributed Energy Resource Aggregation that includes a Distributed Curtailment Resource will submit Bids for Energy or Ancillary Services or Energy Self-Schedules representing the net injection of Energy from the Distributed Energy Resources that are not Distributed Curtailment Resources, if any, plus the Demand curtailment from the Distributed Curtailment Resources. Scheduling Coordinators must include Bid parameters consistent with Section 30.5.2.6. A Distributed Energy Resource Aggregation must provide a net response of Energy, Demand curtailment, or both at its PNode(s) within its sub-LAP that is consistent with CAISO Dispatch Instructions and applicable Generation Distribution Factors submitted through the Distributed Energy Resource Aggregation's Bid or as registered in the Master File. To calculate the Demand curtailment provided by the Distributed Curtailment Resources within a Distributed Energy Resource Aggregation, the Scheduling Coordinator must calculate a Demand Response Energy Measurement for the Distributed Curtailment Resources, excluding any Distributed Energy Resources that are injecting Energy and not Distributed Curtailment Resources, consistent with the requirements in Sections 4.13.4 and 11.6.

#### **4.18 Hybrid Resources**

In addition to the rights and obligations of this section, Hybrid Resources are Generating Units subject to Section 4.6. Scheduling Coordinators for Hybrid Resources will provide data regarding the capacity and the operating characteristics of their components 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 must be an accurate reflection of the design capabilities of the Hybrid Resources and their constituent equipment when operating at maximum sustainable performance over Minimum Run Time, recognizing that performance may degrade over time. Hybrid Resources are not Variable Energy Resources or Eligible Intermittent Resources; however, consistent with Section 4.8.2, Hybrid Resources that include a variable component must provide the CAISO with the data for that component that would be required by Appendix Q. Hybrid Resources with a variable or intermittent component also must provide the CAISO with telemetry and Meter Data on the variable components in addition to the Generating Facility's metering requirements under Section 10. Hybrid Resources' telemetry must include the High Sustainable Limit. Hybrid Resources that include an energy storage component must provide the CAISO with telemetry on the energy storage component's State of Charge.