**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 Pan for eligible entities it serves pursuant to Section 10.3.7.

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**4.7 Relationship Between CAISO and Participating Loads**

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

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**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 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).

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

Unless otherwise agreed by the CAISO, Scheduling Coordinators who wish to submit Bids into CAISO Markets for Energy or Ancillary Services to the CAISO must submit the information to the CAISO’s secure communication system. Scheduling Coordinators that wish to submit Dynamic Schedules or Bids for Ancillary Services to the CAISO must also comply with the applicable requirements of Sections 4.5.4.3, 8.3.7, and 8.4.5.

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**8.2.3.1 Regulation Service**

The CAISO shall maintain sufficient resources immediately responsive to the CAISO’s EMS control in order to provide sufficient Regulation service to allow the CAISO Balancing Authority Area to meet NERC and WECC reliability standards and any requirements of the NRC by continuously balancing resources to meet deviations between actual and scheduled Demand and to maintain Interchange Schedules. The quantity of Regulation Down and Regulation Up capacity needed for each Settlement Period of the Day-Ahead Market and in each fifteen (15) minute period in Real-Time shall be determined by the CAISO as a percentage of the applicable CAISO Forecast of CAISO Demand for the Day-Ahead and Real-Time Markets. In HASP, the amount of advisory Regulation from Dynamic System Resources required for each Settlement Period in the next Trading Hour is also determined based on the CAISO Forecast of CAISO Demand. The advisory awards of Regulation from Dynamic System Resources in HASP are not binding and are re-optimized through the FMM and RTD processes in the Real-Time Market. The CAISO’s determination is based upon its need to meet the NERC and WECC reliability standards and any requirements of the NRC. The CAISO will take into account the speed and accuracy of regulation resources in its determination of Regulation requirements, including as it qualifies self-provided Regulation. Upon request of a Scheduling Coordinator, the CAISO will share with the Scheduling Coordinator its reasoning and any related data used to make the determination of whether the Scheduling Coordinator’s self-provided Regulation capacity meets its regulation obligation.

**\* \* \* \* \***

**8.3.1 Procurement of Ancillary Services**

The CAISO shall operate competitive Day-Ahead and Real-Time Markets to procure Ancillary Services. The Security Constrained Unit Commitment (SCUC) and Security Constrained Economic Dispatch (SCED) applications used in the Integrated Forward Market (IFM) and the Real-Time Market (RTM) shall calculate optimal resource commitment, Energy, and Ancillary Services Awards and Schedules at least cost to End-Use Customers consistent with maintaining System Reliability. Any Scheduling Coordinator representing resources, System Units, Participating Loads, Proxy Demand Resources or imports of System Resources may submit Bids into the CAISO’s Ancillary Services markets provided that it is in possession of a current certificate for the resources concerned. Regulation Up, Regulation Down, and Operating Reserves necessary to meet CAISO requirements not met by self-provision will be procured by the CAISO as described in this CAISO Tariff. The amount of Ancillary Services procured in the IFM is based on the CAISO Forecast of CAISO Demand and the forecasted intertie schedules in the RTM for the Operating Hour net of (i) Self-Provided Ancillary Services from resources internal to the CAISO Balancing Authority Area (which includes Pseudo-Ties of Generating Units to the CAISO Balancing Authority Area) and Dynamic System Resources certified to provide Ancillary Services and (ii) Ancillary Services self-provided pursuant to an ETC, TOR or Converted Right. The amount of additional Ancillary Services procured in the RTM is based on the CAISO Forecast of CAISO Demand, the Day-Ahead Schedules established net interchange, and the forecast of the Intertie Schedules for the Operating Hour in the RTM net of (i) available awarded Day-Ahead Ancillary Services, (ii) Self-Provided Ancillary Services from resources internal to the CAISO Balancing Authority Area (which includes Pseudo-Ties of Generating Units to the CAISO Balancing Authority Area) and Dynamic System Resources certified to provide Ancillary Services, and (iii) Ancillary Services self-provided pursuant to an ETC, TOR or Converted Right. The amount of Ancillary Services procured in the Real-Time Market is based upon the CAISO Forecast of CAISO Demand and the net interchange for the Operating Hour from FMM Schedules net of (i) available awarded Day-Ahead Ancillary Services, (ii) Self-Provided Ancillary Services from resources internal to the CAISO Balancing Authority Area (which includes Pseudo-Ties of Generating Units to the CAISO Balancing Authority Area) and Dynamic System Resources certified to provide Ancillary Services, (iii) additional Operating Reserves procured in the FMM, and (iv) Ancillary Services self-provided pursuant to an ETC, TOR or Converted Right. The CAISO may procure incremental Ancillary Services in the Real-Time Market based in part on a determination during the FMM that any Ancillary Services capacity awarded or self-provided in the Day-Ahead Market is not available as a result of a resource constraint or Transmission Constraints. Resource constraints may include but are not limited to an Outage of a resource or Ramp Rate constraints. Incremental procurement in the Real-Time Market will exclude Ancillary Services Capacity the CAISO has determined is not available.

The CAISO will manage the Energy from both CAISO-procured and Self-Provided Ancillary Services as part of the FMM and Real-Time Dispatch. In the Day-Ahead Market, the CAISO procures one-hundred (100) percent of its Ancillary Service requirements based on the Day-Ahead Demand Forecast net of Self-Provided Ancillary Services. After the Day-Ahead Market, the CAISO procures additional Ancillary Services needed to meet system requirements from all resources in the Real-Time Market. The amount of Ancillary Services procured in the Real-Time Market is based on the CAISO Forecast of CAISO Demand for the Operating Hour net of Self-Provided Ancillary Services.

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**8.3.3.2 Criteria for Use of Ancillary Service Regions and Sub-Regions**

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

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**8.3.4 Certification and Testing Requirements**

The owner of and Scheduling Coordinator for each resource for which a Bid to provide Ancillary Services or Submission to Self-Provide Ancillary Services is allowed under the CAISO Tariff, and all other System Resources that are allowed to submit a Bid to provide Ancillary Services under this CAISO Tariff, must comply with the CAISO’s certification and testing requirements as contained in Appendix K and the CAISO’s Operating Procedures. Each resource used to bid Regulation or used to self-provide Regulation must have been certified and tested by the CAISO using the process defined in Part A of Appendix K. Each Dynamic System Resource offering Regulation must comply with the Dynamic Scheduling Protocol in Appendix M. Each resource used to bid Spinning Reserve or used to self-provide Spinning Reserve must have been certified and tested by the CAISO using the process defined in Part B of Appendix K. Each resource used to bid Non-Spinning Reserve or used to self-provide Non-Spinning Reserve must have been certified and tested by the CAISO using the process defined in Part C of Appendix K. CAISO certification to provide Ancillary Services may be revoked by the CAISO under the provisions of this CAISO Tariff, including Appendix K.

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**8.10.8.4 Rescission of Ancillary Service Capacity Payments for Non-Generator Resources**

For Non-Generator Resources, payment for Ancillary Service capacity will be rescinded, in accordance with the provisions of Section 11.10.9, to the extent the resource is unable as a result of its MWh constraint to generate Energy or consume Energy continuously to support its self-provision or award of Ancillary Services.

**8.10.8.5 [NOT USED]**

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

Payment for Regulation Up and Regulation Down capacity will be rescinded, in accordance with the provisions of Section 11.10.9, if the resource providing Regulation Up and Regulation Down capacity: (i) is off Regulation or off Automatic Generation Control, (ii) is not running, (iii) is not providing sufficient Regulating Range, (iv) is generating outside the Regulating Range, (v) has a Regulating Range that overlaps with its Forbidden Operating Regions, or (vi) has telemetry equipment that is not available. In addition to these criteria, payment for Regulation Up and Regulation Down capacity to Non-Generator Resources will be rescinded, in accordance with the provisions of Section 11.10.9, to the extent the resource is unable as a result of its MWh constraint to generate Energy (or curtail Energy consumption) continuously to support its self-provision or award of Regulation Up or unable as a result of its MWh constraint to consume Energy (or increase Energy consumption) continuously to support its self-provision or award of Regulation Down, whether or not the resources use Regulation Energy Management.

**8.10.8.7 Rescission of Payments for Resource and Transmission Constraints**

If the CAISO determines that any Day-Ahead Market award for Ancillary Services capacity or Self-Provided Ancillary Services capacity is not available during the RTM as a result of a resource constraint, then payments for that capacity will be rescinded in accordance with Section 11.10 or, in the case of Self-Provided Ancillary Services capacity, that capacity will not be compensated at the user rate as described in Sections 11.10.2, 11.10.3 and 11.10.4.

If the CAISO determines that any Day-Ahead Market award for Ancillary Services capacity or Self-Provided Ancillary Services capacity is not available during the RTM as a result of a Transmission Constraint, then payments for that capacity will not be rescinded, except as provided in section 11.10.9.1 for System Resources or, in the case of Self-Provided Ancillary Services capacity, that capacity will continue to be compensated at the user rate as described in Sections 11.10.2, 11.10.3 and 11.10.4.

For purposes of applying this Section to Dynamic Resources or Pseudo-Tie resources, the CAISO shall treat a reduction in the Total Transfer Capability at an Intertie between the Day-Ahead Market and RTM that is registered in the CAISO’s outage management system pursuant to Section 9 as a Transmission Constraint. For all other constraints that cause the CAISO to determine that any Day-Ahead Market award for Ancillary Services capacity or Self-Provided Ancillary Services capacity from Dynamic Resource or Pseudo-Tie resources is not available, the CAISO shall treat these constraints as resource constraints.

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**10.2.1.3 Provision of and Access to Settlement Quality Meter Data**

Scheduling Coordinators may obtain Settlement Quality Meter Data relating to the CAISO Metered Entities they represent by directly accessing the Settlement Quality Meter Data Systems as specified in the applicable Business Practice Manual.

• For CAISO Metered Entities, Revenue Quality Meter Data obtained by successfully polled meters will be validated, estimated and edited by the CAISO to produce Settlement Quality Meter Data (actual), which will be made available to Scheduling Coordinators within eight (8) Business Days from the Trading Day (T+8B) and will be used in the Recalculation Settlement Statement T+12B calculation.

• In the event that Revenue Quality Meter Data remains unavailable at midnight on the eighth (8) Business Day after the Trading Day (T+8B) due to unsuccessfully polled meters or facility and/or systems failures, the CAISO will estimate Settlement Quality Meter Data for CAISO Metered Entities for any outstanding metered Demand and/or Generation for the Recalculation Settlement Statement T+12B calculation as provided in Section 11.1.5.

• If the CAISO is notified in accordance with Section 10.2.13.2 that the revenue quality meter for a CAISO Metered Entity requires repair, the CAISO will produce Settlement Quality Meter Data (actual) for that entity using the estimation procedures referred to in Section 10.2.9, which will be made available to the Scheduling Coordinator for the CAISO Metered Entity within forty-eight (48) Business Days from the Trading Day (T+48C) and will be used in the Recalculation Settlement Statement T+55B calculation.

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**10.3.2.2 Format for Data Submission**

Scheduling Coordinators shall submit Settlement Quality Meter Data to the Settlement Quality Meter Data System for the Scheduling Coordinator Metered Entities they represent using one of the CAISO’s approved Meter Data Exchange Formats. Subject to any exemption granted by the CAISO, Scheduling Coordinators must ensure that Settlement Quality Meter Data submitted to the CAISO is in intervals of five (5) minutes for EIM Interties, Loads providing Ancillary Services, and Generators providing Ancillary Services. Scheduling Coordinators for EIM Participating Resources or for Generators not providing Ancillary Services may elect to submit Meter Data in 5-minute or 15-minute intervals. Scheduling Coordinators for all other Scheduling Coordinator Metered Entities may elect to submit Meter Data in 5-minute, 15-minutes, or 60-minute intervals. Elections will be recorded by the CAISO, and may not be deviated from or revised except by application. The elected interval may not be a granularity lower than what may be programmed on the Scheduling Coordinator Metered Entity’s physical meter(s) or as specified in the applicable Business Practice Manual.

Each Scheduling Coordinator shall submit Settlement Quality Meter Data in kWh or MWh values for all of the Scheduling Coordinator Metered Entities for which it is responsible, aggregated by the applicable market or resource level. Scheduling Coordinators are not required to submit values in the absence of Supply, Demand, or other participation in the CAISO Markets.

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**10.3.6.5 Submission of Actual Settlement Quality Meter Data or Scheduling Coordinator Estimated Settlement Quality Meter Data for Reliability Demand Response Resources that Provide Demand Response Services in Real-Time**

Each Scheduling Coordinator for a Demand Response Provider representing a Reliability Demand Response Resource that provides Demand Response Services only in Real-Time shall submit Actual Settlement Quality Meter Data or Scheduling Coordinator Estimated Settlement Quality Meter Data for the Reliability Demand Response Resource by midnight of the eighth Business Day after the Trading Day (T+8B) on which the Demand Response Services were provided, including Actual Settlement Quality Meter Data or Scheduling Coordinator Estimated Settlement Quality Meter Data for a Demand Response Event and for the forty-five (45) calendar days preceding the Trading Day for use in the CAISO’s calculation of the Customer Load Baseline pursuant to Section 4.13.4.

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**10.3.7.1 SQMD Plan**

For Scheduling Coordinator Metered Entities that were not participating as such before April 10, 2017, or that repower, modify their Meter Data interval, or add generating capacity after April 10, 2017,the Scheduling Coordinators must submit an SQMD Plan to ensure that the Scheduling Coordinator will submit and maintain the integrity of Meter Data submitted to the CAISO for that Scheduling Coordinator Metered Entity. The SQMD Plan will describe how the Scheduling Coordinator will collect, maintain, aggregate, and submit Settlement Quality Meter Data in accordance with CAISO Tariff and, where applicable, Local Regulatory Authority metering and settlement standards. SQMD Plans will include detailed descriptions of the following, as applicable, for each Scheduling Coordinator Metered Entity or Scheduling Coordinator Metered Entity aggregation or calculation:

(1) The type, programming, and configuration of all associated metering devices;

(2) How the Scheduling Coordinator or its agent will collect, validate, aggregate, and submit associated Meter Data;

(3) Single-line diagrams with professional engineer stamps (or equivalent) depicting the physical elements and relationships among the metering device(s);

(4) Any calculation or algorithm to derive Settlement Quality Meter Data from the metering device(s);

(5) Processes for aggregating individual Scheduling Coordinator Metered Entities and/or Resource IDs; and

(6) Plans and schedules to perform regular tests of the metering devices and audit the associated Meter Data pursuant to CAISO Tariff requirements.

Proxy Demand Resources and Reliability Demand Response Resources may satisfy this requirement through the demand response registration process.

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**10.3.7.5 Annual Affirmation**

In addition to the auditing and testing requirements contained in its SQMD Plan, on an annual basis the Scheduling Coordinator Metered Entity must perform a self-assessment and affirm to the CAISO, in writing, that it has implemented and continues to comply with its SQMD Plan. Where the Scheduling Coordinator Metered Entity performs a self-assessment and determines that it will not be able to affirm its compliance to the CAISO, the Scheduling Coordinator Metered Entity will describe the issue to the CAISO and its plan to remedy the issue. The associated Scheduling Coordinator may continue to submit Meter Data for settlement while the CAISO reviews the plan to remedy the issue. Proxy Demand Resources and Reliability Demand Response Resources that have satisfied the SQMD Plan requirement through the demand response registration process are not required to submit an annual affirmation.

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**11.5.2.2 Hourly Real-Time Demand Settlement**

The Default LAP Hourly Real-Time Price will apply to CAISO Demand and MSS Demand under net Settlement of imbalance energy, except for CAISO Demand not settled at the Default LAP as provided in Section 30.5.3.2, and per the methodology as may be further defined in the Business Practice Manuals. For each Settlement Interval, the differences between the Day-Ahead Scheduled CAISO Demand and Metered Demand (MWh) is settled at the Default LAP Hourly Real-Time Price or the Custom LAP Hourly Real-Time Price, as appropriate. For each Default LAP, the CAISO calculates the applicable Default LAP Hourly Real-Time Price as the weighted average LMP of the four Default LAP FMM LMPs and the twelve (12) five-minute Default LAP RTD LMPs. The CAISO calculates the weighted average LMP for each Default LAP as the summation of the weighted average SMEC, the weighted average MCC, and the weighted average MCL for that Default LAP. The CAISO calculates the weighted average SMEC, MCC, and MCL for each applicable Trading Hour based on the four applicable Default LAP FMM SMECs, MCCs, and MCLs, respectively, and the twelve (12) applicable Default LAP RTD SMECs, MCCs, and MCLs, respectively. For each Custom LAP, the CAISO calculates the applicable Custom LAP Hourly Real-Time Price as the weighted average LMP of the four Custom LAP FMM LMPs and the twelve (12) five-minute Custom LAP RTD LMPs. The CAISO calculates the weighted average LMP for each Custom LAP as the summation of the weighted average SMEC, the weighted average MCC, and the weighted average MCL for that Custom LAP. The CAISO calculates the weighted average SMEC, MCC, and MCL for each applicable Trading Hour based on the four applicable Custom LAP FMM SMECs, MCCs, and MCLs, respectively, and the twelve (12) applicable Custom LAP RTD SMECs, MCCs, and MCLs, respectively. In calculating the weighted average SMEC, MCC, and MCL for each hour for either the Default LAPs or Custom LAPs, the CAISO determines the weights based on the difference between Day-Ahead Schedules at the applicable LAP and the CAISO Forecast of CAISO Demand used in the FMM multiplied by the relevant FMM LMP at the applicable LAP plus the difference between the CAISO Forecast of CAISO Demand used in the FMM and the CAISO Forecast of CAISO Demand used in the RTD multiplied by the relevant RTD LMP at the applicable LAP divided by the sum of the difference between Day-Ahead Schedules at the applicable LAP and the CAISO Forecast of CAISO Demand used in the FMM plus the difference between the CAISO Forecast of CAISO Demand used in the FMM and the CAISO Forecast of CAISO Demand used in the RTD. Furthermore, the Default LAP Hourly Real-Time Prices and the Custom LAP Hourly Real-Time Prices will be bounded by the maximum and the lowest LMP and its components, for the applicable Trading Hour from those relevant intervals at the relevant LAP. If the calculated price exceeds the upper boundary or is below the lower boundary, then the Default LAP Hourly Real-Time Price or the Custom LAP Hourly Real-Time Price, as appropriate, instead will be calculated based on a weighted average price with the weightings based on gross deviations (absolute value of each deviation).

The Hourly Real-Time LAP Prices are determined by the requirements in Section 27.2.2.2.

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**11.5.7 Congestion Credit and Marginal Cost of Losses Credit**

**11.5.7.1 RTM Congestion Credit for ETCs and TORs**

The CAISO shall not apply charges or payments to Scheduling Coordinators related to the MCC associated with all Points of Receipt and Points of Delivery pairs associated with valid and balanced ETC Self-Schedules or TOR Self-Schedules after the Day-Ahead Market. The balanced portion for each ETC or TOR contract for each Settlement Interval will be based on the difference between: (1) the minimum of (a) the total Demand, (b) the total ETC or TOR Supply Self-Schedule submitted in RTM, including changes after twenty (20) minutes before the applicable Trading Hour if such change is permitted by the Existing Contract, or (c) the Existing Contract maximum capacity as specified in the TRTC Instructions; and (2) the valid and balanced portion of the Day-Ahead Schedule. In determining the balanced portions, the CAISO evaluates the amounts based on the following variables: (a) for exports and imports, the CAISO shall use the schedule quantity specified in the Interchange schedule used for check out between CAISO and other Balancing Authority Areas; (b) for CAISO Demand, the CAISO shall use the metered CAISO Demand associated with the applicable ETC or TOR; and (c) for all Generation the CAISO shall use the quantity specified in the Dispatch Instructions. For each Scheduling Coordinator, the CAISO shall determine for each Settlement Interval the applicable RTM Congestion Credit for FMM Instructed Imbalance Energy or RTD Instructed Imbalance Energy, which can be positive or negative, as the sum of the product of the relevant MWh quantity and the applicable weighted average MCC at each Point of Receipt and Point of Delivery associated with the valid and balanced portions of that Scheduling Coordinator’s ETC or TOR Self-Schedules. The weights in the two markets will be based on the absolute values of the (a) deviation of the FMM Schedule or the CAISO Forecast of CAISO Demand used in the FMM from Day-Ahead Schedules and (b) deviation of the RTD schedule or the CAISO Forecast of CAISO Demand used in the RTD from Day-Ahead Schedules.

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**12.1 Credit and Minimum Participation Requirements**

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(iii) Satisfy the following capitalization requirements:

(1) Pursuant to Sections 12.1 and 12.1.1, the prospective or existing Market Participant or its guarantor must have at least $1 million in Tangible Net Worth or $10 million in total assets, or post Financial Security using one or more of the forms specified in Section 12.2 in the amounts set forth below. In the event the prospective or existing Market Participant must post Financial Security, that financial security will not be added to Market Participant’s Aggregate Credit Limit and, therefore, cannot be used to meet Market Participant’s minimum credit requirements to participate in a Congestion Revenue Rights auction or to offset any market obligations as reflected in Market Participant’s Estimated Aggregate Liability. However, all Financial Security in any form may be used to satisfy any financial obligation of the Market Participant.

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**12.6.2 Credit Requirements for CRR Auctions**

**12.6.2.1 Credit Requirements Applicable to an Entity Other than a Federal Agency**

To establish available credit for participating in any CRR Auction, each CRR Holder or Candidate CRR Holder that is not a federal agency must satisfy the credit requirements set forth in Section 12.1 and provide Financial Security using one or more of the forms identified in Section 12.2 to secure the right to participate in the CAISO’s CRR Auctions as set forth below. In order to participate in an annual CRR Auction, the CRR Holder or Candidate CRR Holder must have Financial Security using one or more of the forms identified in Section 12.2 in an amount that is the greater of $500,000 or the sum of the maximum credit exposures of all of the CRR Holder’s or Candidate CRR Holder’s bids for CRRs submitted in the annual CRR Auction. In order to participate in a monthly CRR Auction, the CRR Holder or Candidate CRR Holder must have Financial Security using one or more of the forms identified in Section 12.2 in an amount that is the greater of $100,000 or the sum of the maximum credit exposures of all of the CRR Holder’s or Candidate CRR Holder’s bids for CRRs submitted in the monthly CRR Auction. The maximum credit exposure of a positively valued CRR bid is the maximum value of the CRR Holder’s or Candidate CRR Holder’s bid quantity (MW) multiplied by the sum of the bid price corresponding to the bid quantity and the Credit Margin of the CRR within the range of the minimum and maximum bid quantities submitted by the CRR Holder or Candidate CRR Holder. The maximum credit exposure of a negatively valued CRR bid is the maximum bid quantity (MW) submitted by the CRR Holder or Candidate CRR Holder multiplied by the Credit Margin of the CRR.

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**12.6.3 Credit Requirements for the Holding of CRRs**

**12.6.3.1 Credit Requirements Generally**

(a) Each CRR Holder that is not a federal agency, whether it obtains CRRs through a CRR Allocation or a CRR Auction, must maintain Financial Security utilizing one or more of the forms specified in Section 12.2 that meets or exceeds the credit requirement of the CRR portfolio determined as described in this Section 12.6.3. Each CRR Holder that is a federal agency, whether it obtains CRRs through a CRR Allocation or a CRR Auction, must provide to the CAISO a letter, executed by an officer of the CRR Holder, that satisfies all of the following requirements: (1) attests that the federal agency is lawfully authorized to obtain the CRRs and that any debt the federal agency incurs due to holding the CRRs is a debt of the United States; (2) identifies the current year’s appropriations for the federal agency from the United States Congress; and (3) verifies that the amount of the current year’s appropriations for the federal agency from the United States Congress meets or exceeds the credit requirement for the CRR portfolio determined as described in this Section 12.6.3. The provision of such an executed letter to the CAISO shall constitute sufficient Financial Security for the federal agency to hold the CRRs.

(b) Each CRR Holder shall be required to ensure that its Financial Security is sufficient to satisfy the credit requirements described in this Section 12.6.3. Except as provided in this paragraph, CRRs are evaluated on a portfolio basis as follows. If a CRR Holder owns more than one (1) CRR, such CRR Holder shall be subject to an overall credit requirement that is equal to the sum of the individual credit requirements applicable to each of the CRRs held by such CRR Holder , which is calculated after the MW associated with any Offsetting CRRs are netted out. If this sum is positive, the amount will be added to the CRR Holder’s Estimated Aggregate Liability. However, if the sum is negative, the CRR Holder’s Estimated Aggregate Liability shall not be reduced. If a CRR Holder holds one (1) or more CRRs obtained through a CRR Allocation and also holds one (1) or more CRRs obtained through a CRR Auction, the individual credit requirements applicable to any of the CRRs obtained through a CRR Allocation may not be netted against the individual credit requirements applicable to any of the CRRs obtained through a CRR Auction in determining such CRR Holder’s Estimated Aggregate Liability.

(c) The CAISO shall reevaluate the credit requirements for holding CRRs, and shall adjust the credit requirements accordingly, not less than monthly. The CAISO may adjust the credit requirements for holding CRRs with terms of one (1) year or less at the CAISO’s discretion to account for changes in the monthly auction prices for CRRs and changes in the Historical Expected Values for CRRs, or more frequently than monthly if necessary if the CAISO finds that actual or anticipated market conditions indicate that CRR credit requirements may be inadequate to cover the financial risk of the CRRs. The CAISO may also adjust the credit requirements for holding Long Term CRRs annually to reflect the changes in auction prices of one-year CRRs in annual auctions and changes in the Historical Expected Values for CRRs, and to reflect updates to Credit Margins based on actual Locational Marginal Price data derived from market operations. Whenever the CAISO requests additional Financial Security from a Market Participant as a result of a change in CRR value that is not related to an adjustment due to the monthly CRR Auction Price or an adjustment related to Historical Expected Value, the CAISO will provide a written explanation of the reason for that request. Any additional Financial Security must be in one or more of the forms specified in Section 12.2.

(d) In cases where the ownership of a CRR is to be transferred through the Secondary Registration System, the CAISO shall evaluate and adjust the credit requirements for both the current owner of the CRR and the prospective owner of the CRR as appropriate prior to the transfer. If additional Financial Security is required from either the current or prospective owner, the transfer will not be completed until such Financial Security has been provided to and accepted by the CAISO. CRRs transferred through the Secondary Registration System will be treated like auctioned CRRs for the purpose of calculating the credit requirements for holding the CRRs, regardless of whether the CRRs were originally allocated or purchased at auction or acquired through the Secondary Registration System. CRRs assigned to Load-gaining or Load-losing Load Serving Entities as a result of Load Migration will be treated like allocated CRRs for the purpose of calculating the credit requirements for holding the CRRs. Any additional Financial Security must be in one or more of the forms specified in Section 12..

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**12.6.3.4 Calculation of Credit Margin**

The Credit Margin ($/MW) for a CRR is equal to (i) the Expected Congestion Revenue minus (ii) the Fifth Percentile Congestion Revenue of such CRR. Both values will be based on the probability distribution of Congestion revenue of such CRR calculated using historical Locational Marginal Price data, when available, and proxy values, including data taken from Locational Marginal Price studies conducted by the CAISO, until such time as historical Locational Marginal Price data is available, with the details of such calculation published in a Business Practice Manual. The CAISO may reassess its determinations regarding the Credit Margin determination at any time and shall require additional Financial Security if the reassessment results in an increase in a CRR Holder’s CRR credit requirements that are not covered by the CRR Holder’s Financial Security. Any additional Financial Security must be in one or more of the forms specified in Section 12.2.

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**13.1.4 Disputes Arising Under Section 11**

In the case of a dispute of a Settlement Statement under section 11.29.8.4.2, 11.29.8.4.4, 11.29.8.4.5, 11.29.8.4.6, or 11.29.8.4.8, a Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO must initiate any good faith negotiation or other dispute resolution remedy under this Section 13 within 90 days of the day on which the CAISO provides notice of its resolution of a dispute under such section.

**\* \* \* \* \***

**17.3.4 Notification to SCs of CAISO Determination**

After performing validation of the TOR Self-Schedule, and prior to taking any action pursuant to 17.3, the CAISO will make an automated validation notice available to the Scheduling Coordinator indicating whether the TOR Self-Schedule is valid or invalid. If a TOR Self-Schedule involves more than one Scheduling Coordinator, the complete validation of the chain of TOR Self-Schedules will occur when the last Scheduling Coordinator submits its TOR Self-Schedule. At that time, the CAISO will make an automated validation notice available to each Scheduling Coordinator registered as associated with the chain of TOR Self-Schedules. The CAISO can accommodate corrections submitted by a Scheduling Coordinator to a TOR Self-Schedule up to Market Close of the Day-Ahead Market as further described in the applicable Business Practice Manual.

**\* \* \* \* \***

**20.2 Confidential Information**

The following information provided to the CAISO shall be treated by the CAISO as confidential:

(a) individual Bids;

(b) CRR bids and other CRR Allocation nomination information;

(c) transactions between Scheduling Coordinators, including Inter-SC Trades;

(d) individual Generator Outage programs unless a Generator makes a change to its Generator Outage program which causes Congestion in the short term (i.e. one month or less), in which case, the CAISO may publish the identity of that Generator; and

(e) The following information related to the resource adequacy program in accordance with Section 40:

(i) Annual and monthly Resource Adequacy Plans and Supply Plans;

(ii) Demand Forecasts; and

(iii) Information on existing import contracts.

(f) The following information related to the Transmission Planning Process in accordance with Section 24:

(i) Information received under Section 24.8 to the extent such information has been designated as confidential in accordance with the Business Practice Manual;

(ii) Information deemed confidential by DMM, per Section 8.6 of Appendix P;

(iii) Information received by the CAISO pursuant to agreements and contracts, executed prior to December 21, 2007, that preclude the release of the information;

(iv) Information that involves proprietary analytical tools, computer codes, or any other material that is protected by intellectual property rights held by the CAISO, Project Sponsor, Market Participant or other third-party; and

(v) Critical Energy Infrastructure Information.

However, composite documents, data, and other information that may be developed based on confidential information under this Section shall not be deemed confidential if the composite documents, data, and other information do not disclose any confidential information of any individual Scheduling Coordinator, Market Participant, or other third-party or Critical Energy Infrastructure Information.

**\* \* \* \* \***

**24.5.1 Competitive Solicitation Process**

According to the schedule set forth in the Business Practice Manual, in the month following the CAISO Governing Board’s approval of the comprehensive Transmission Plan, the CAISO will initiate a period of at least ten (10) weeks that will provide an opportunity for Project Sponsors to submit specific proposals to finance, own, and construct the Regional Transmission Facilities subject to competitive solicitation identified in the comprehensive Transmission Plan. If the transmission solution adopted in Phase 2 involves an upgrade or improvement to, addition on, or a replacement of a part of an existing Participating TO facility, the Participating TO will construct and own such upgrade, improvement, addition or replacement facilities unless a Project Sponsor and the Participating TO agree to a different arrangement. For Regional Transmission Facilities with capital costs of $50 million or less that were approved by CAISO management before Governing Board approval of the comprehensive Transmission Plan, the ten week period will be initiated following management approval of the facility, and the Project Sponsor selection process may follow an accelerated schedule described in the Business Practice Manual. Such proposals must include plan of service details and supporting information as set forth in the Business Practice Manual sufficient to: (1) enable the CAISO to determine whether the Project Sponsor meets the qualification criteria specified in section 24.5.3.1; (2) enable the CAISO to determine whether a Project Sponsor’s proposal meets the proposal qualification criteria in section 24.5.3.2; and (3) enable the CAISO, if there are multiple qualified Project Sponsors bidding on the same Regional Transmission Facility, to conduct a comparative analysis of the proposals and Project Sponsors and select an Approved Project Sponsor as described in section 24.5.3.5. The project proposal will identify the authorized governmental body from which the Project Sponsor will seek siting approval for the project.

Within 30 days after the CAISO posts the draft comprehensive Transmission Plan to its website, for each Regional Transmission Facility identified in the comprehensive Transmission Plan that is subject to competitive solicitation, the CAISO will post, for informational purposes only, those existing qualification criteria and selection factors, in addition to any binding cost containment commitments, which the CAISO believes are key for purposes of selecting an Approved Project Sponsor for the particular transmission solution, consistent with the comparative analysis described in section 24.5.4 and the project sponsor qualification and selection criteria specified in sections 24.5.3.1 and 24.5.4, respectively. The posting of such key criteria is solely intended to provide information to Project Sponsors to assist them in the preparation of their applications and to highlight specific topics to which particular attention should be paid in the application given their importance in connection with a particular Regional Transmission Facility. The posting of the key selection criteria is not a replacement or substitute for the qualification and selection criteria set forth in sections 24.5.3.1 and 24.5.4, and in its comparative analysis conducted in accordance with section 24.5.4, the CAISO is required to comparatively assess all of the qualification and selection criteria, not just those listed as key selection criteria. In its posting of the key selection criteria, the CAISO cannot add new or different criteria than those already specified in sections 24.5.3.1 and 24.5.4. To determine the key criteria for each transmission solution subject to competitive solicitation, the ISO will consider: (1) the nature, scope and urgency of the need for the transmission solution; (2) expected severity of siting or permitting challenges; (3) the size of the transmission solution, potential financial risk associated with the transmission solution, expected capital cost magnitude, cost overrun likelihood and the ability of the Project Sponsor to contain costs; (4) the degree of permitting, rights-of-way, construction, operation and maintenance difficulty; (5) risks associated with the construction, operation and maintenance of the transmission solution ; (6) technical and engineering design difficulty or whether specific expertise in design or construction is required; (7) special circumstances or difficulty associated with topography, terrain or configuration; (8) specific facility technologies or materials associated with the transmission solution; (9) binding cost containment measures, including cost caps; (10) abandonment risk; and (11) whether the overall cost of the transmission solution impacts the CAISO’s prior determination of, and inclusion in, the comprehensive Transmission Plan of the more efficient or cost effective solution during Phase 2 of the transmission planning process.

The posting of the key selection criteria shall not undermine the CAISO’s prior determination in Phase 2 of the transmission planning process of the more efficient or cost-effective transmission solution to be reflected in the comprehensive Transmission Plan, nor shall the posting of the key criteria replace or be inconsistent with the CAISO’s obligation under section 24.5.4 to undertake a comparative analysis of each Project Sponsor with respect to each Project Sponsor qualification and selection criterion. If the CAISO determines in Phase 2 of the transmission planning process that more than one transmission solution could constitute the more efficient or cost-effective solution to meet a specific identified need depending on the outcome of the competitive solicitation, the CAISO shall have the authority to identify more than one potential transmission solution in the comprehensive Transmission Plan. Under those circumstances, based on the outcome of the competitive solicitation, the CAISO will make the final determination of which alternative transmission solution identified in the Board-approved comprehensive Transmission Plan constitutes the more efficient or cost-effective transmission solution to be selected for construction.

**\* \* \* \* \***

**24.14 Cost Responsibility for Transmission Additions or Upgrades**

Cost responsibility for transmission additions or upgrades constructed pursuant to this Section 24 shall be determined as follows:

**\* \* \* \* \***

**25.1.2 Affidavit Requirement**

If the owner of a Generating Unit described in Section 25.1(d) or (e), or its designee, represents that the total generating capability and electrical characteristics of the Generating Unit will be substantially unchanged, then that entity must submit an affidavit to the CAISO and the applicable Participating TO representing that the total generating capability and electrical characteristics of the Generating Unit have remained substantially unchanged. However, if there is any change to the total generating capability and electrical characteristics of the Generating Unit, the affidavit shall include supporting information describing any such changes and a $50,000 deposit for the study. The CAISO, in coordination with the applicable Participating TO, will evaluate whether the total generating capability or electrical characteristics of the Generating Unit have substantially changed or will substantially change. The CAISO may engage the services of the applicable Participating TO in conducting such verification activities. Costs incurred by the CAISO and Participating TO (if any) shall be borne by the party making the request under Section 25.1.2, and such costs shall be included in a CAISO invoice for verification activities.

**\* \* \* \* \***

**26.1.4.3 Disbursement of Wheeling Revenues**

The CAISO shall collect and pay to Participating TOs and other entities as provided in Section 24.14.3 all Wheeling revenues at the same time as other CAISO charges and payments are settled. For Wheeling revenues associated with CRRs allocated to Load Serving Entities outside the CAISO Balancing Authority Area, the CAISO shall pay to the Participating TOs and other entities as provided in Section 24.10.3 any excess prepayment amounts within thirty (30) days of the end of the term of the CRR Allocation. The CAISO shall provide to the applicable Participating TO and other entities as provided in Section 24.14.3 a statement of the aggregate amount of Energy delivered to each Scheduling Coordinator using such Participating TO’s Scheduling Point to allow for calculation of Wheeling revenue and auditing of disbursements. Wheeling revenues shall be disbursed by the CAISO based on the following:

**26.1.4.3.1 Scheduling Point with All Participating TOs in the Same TAC Area**

With respect to revenues received for the payment of Regional Wheeling Access Charges for Wheeling to a Scheduling Point at which all of the facilities and Entitlements, less all Encumbrances, are owned by Participating TOs in the same TAC Area, Wheeling revenues shall be disbursed to each such Participating TO based on the ratio of each Participating TO's Regional Transmission Revenue Requirement to the sum of all such Participating TOs’ Regional Transmission Revenue Requirements. If the Scheduling Point is located at a Local Transmission Facility, revenues received with respect to Local Wheeling Access Charges for Wheeling to that Scheduling Point shall be disbursed to the Participating TOs that own facilities and Entitlements making up the Scheduling Point in proportion to their Local Transmission Revenue Requirements. Additionally, if a Participating TO has a transmission upgrade or addition that was funded by a Project Sponsor, the Wheeling revenue allocated to such Participating TO shall be disbursed as provided in Section 24.14.3.

**\* \* \* \* \***

**27.4.1 Security Constrained Unit Commitment**

The CAISO uses SCUC to run the MPM process associated with the DAM and the RTM. SCUC is conducted over multiple varying intervals to commit and schedule resources as follows: (1) in the Day-Ahead time frame, to meet Demand reflected in Bids submitted in the Day-Ahead Market and considered in the MPM process and IFM, and to procure AS in the IFM; (2) to meet the CAISO Forecast of CAISO Demand in the RUC, HASP, STUC and FMM, and in the MPM process utilized in the HASP and RTM; and (3) to procure any incremental AS in the RTM, and (4) to procure Flexible Ramping Product in the RTM. In the Day-Ahead MPM, IFM and RUC processes, the SCUC commits resources over the twenty-four (24) hourly intervals of the next Trading Day. In the FMM, which runs every fifteen (15) minutes and commits resources for the RTM, the SCUC optimizes over a number of 15-minute intervals corresponding to the Trading Hours for which the Real-Time Markets have closed. The Trading Hours for which the Real-Time Markets have closed consist of (a) the Trading Hour in which the applicable run is conducted and (b) all the fifteen-minute intervals of the entire subsequent Trading Hour. In the HASP, which runs once per hour, the SCUC: (1) accepts and awards HASP Block Intertie Schedules for Energy and Ancillary Services, respectively; (2) provides HASP Advisory Schedules to Economic Hourly Block Bids with Intra-Hour Option that will change for economic reasons at most once in the Trading Hour; and (3) provides HASP Advisory Schedules to all other participants in the RTM. In the STUC, which runs once an hour, the SCUC commits resources over the last fifteen (15) minutes of the imminent Trading Hour and the entire next four Trading Hours. The CAISO will commit Extremely Long Start Resources, for which commitment in the DAM does not provide sufficient time to Start-Up and be available to supply Energy during the next Trading Day as provided in Section 31.7.

**\* \* \* \* \***

**30.7.3.4 Validation after Market Close**

To the extent that a Scheduling Coordinator fails to enter a Bid for a resource that is required to submit a Bid in the full range of available capacity consistent with the bidding provisions of Section 30 or the Resource Adequacy provisions of Section 40, the CAISO will create a Bid for the Scheduling Coordinator, which is referred to as the Generated Bid. This does not apply to Load-following MSSs. The Generated Bid will be created only after the Market Close for the DAM and will be based on data registered in the Master File, and, if applicable, published natural gas pricing data and published pricing data for greenhouse gas allowances. The Generated Bid components will be calculated as set forth in Sections 30 and 40.6.8. The Scheduling Coordinator may view Generated Bids, but may not modify such Bids. The CAISO will provide notice to the Scheduling Coordinator of the use of a Generated Bid prior to Market Clearing of the IFM. In addition, validation of export priority pursuant to Sections 31.4 and 34.12.1 and Wheeling Through transactions pursuant to Section 30.5.4 occur after the Market Close for the DAM.

**\* \* \* \* \***

**31. Day-Ahead Market**

The DAM consists of the following functions performed in sequence: the MPM, IFM, and RUC. Scheduling Coordinators may submit Bids for Energy, Ancillary Services and RUC Capacity for an applicable Trading Day. The CAISO shall issue Schedules for all Supply and Demand, including Participating Load, Reliability Demand Response Resources, and Proxy Demand Resources, pursuant to their Bids as provided in this Section 31.

**\* \* \* \* \***

**31.5.1 RUC Participation**

**31.5.1.1 Capacity Eligible for RUC Participation**

RUC participation is voluntary for capacity that has not been designated as Resource Adequacy Capacity. Scheduling Coordinators may make such capacity available for participation in RUC by submitting a RUC Availability Bid, provided the Scheduling Coordinator has also submitted an Energy Bid (other than a Virtual Bid) for such capacity into the IFM. Virtual Bids are not eligible to participate in RUC. Capacity from Non-Dynamic System Resources that has not been designated Resource Adequacy Capacity is not eligible to participate in RUC. Capacity from resources including System Resources that has been designated as qualified Resource Adequacy Capacity must participate in RUC. RUC participation is required for Resource Adequacy Capacity to the extent that Resource Adequacy Capacity is not committed following the IFM. System Resources eligible to participate in RUC will be considered on an hourly basis; that is, RUC will not observe any multi-hour block constraints. In RUC the CAISO may commit a Multi-Stage Generating Resource with a Resource Adequacy must-offer obligation at any MSG Configuration with capacity equal to or greater than the MSG Configuration committed in the Integrated Forward Market. RUC will observe the Energy Limits that may have been submitted in conjunction with Energy Bids to the IFM. RMR Unit capacity will be considered in RUC in accordance with Section 31.5.1.3. MSS resources may participate in RUC in accordance with Section 31.5.2.3. COG resources are accounted for in RUC, but may not submit or be paid RUC Availability Payments. The ELS Resources committed through the ELC Process conducted two days before the day the RUC process is conducted for the next Trading Day as described in Section 31.7 are binding.

**\* \* \* \* \***

**34.2.1 The HASP Optimization**

The Hour-Ahead Scheduling Process is a Real-Time Market process and a special run of the RTUC through which the CAISO accepts or rejects the following Bids submitted by Scheduling Coordinators at Scheduling Points: (1) Self-Schedule Hourly Blocks for Energy and Ancillary Services, (2) VER Self-Schedules for Energy, (3) Economic Hourly Block Bids for Energy and Ancillary Services, and (4) Economic Hourly Block Bids with Intra-Hour Option for Energy and providing an hourly schedule that can be changed at most once in the Trading Hour. The CAISO also produces advisory Energy schedules and Ancillary Services awards. Through the HASP, the CAISO may also issue binding unit commitment instructions for any resource participating in the RTM. After the Market Close for the RTM for the relevant Trading Hour, the RTM Bids have been validated, and the RTM Bids have been mitigated and the MPM process has been performed, the CAISO then conducts the HASP optimization. The CAISO does not accept Bids for CAISO Demand for any of the Real-Time Market processes. Therefore, CAISO clears Supply Bids against the CAISO Forecast of CAISO Demand plus submitted Export Bids, to the extent the Export Bids are selected in the MPM process. The HASP optimization also factors in forecasted unscheduled flow at the Interties, as do all the Real-Time Market processes. The HASP optimization does not produce Settlement prices for Energy or Ancillary Services and the CAISO settles all Bids accepted through the HASP based on FMM Schedules and Awards and FMM LMPs and ASMPs.

**34.2.2 Treatment of Self-Schedules in HASP**

The HASP optimization does not adjust submitted Self-Schedule Hourly Blocks for Energy or Ancillary Services, or Self-Scheduled Variable Energy Resources unless it is not possible to balance Supply and the CAISO Forecast of CAISO Demand plus Export Bids and manage Congestion using the available Economic Bids, in which case the HASP performs non-economic adjustments to Self-Schedules to accommodate operational restrictions. Once accepted, Self-Schedule Hourly Blocks for Energy or Ancillary Services are considered as Self-Schedules or Self-Provision, respectively, in each of the four FMM intervals. For accepted Variable Energy Resource Self-Schedules from external resources that are not Dynamic Schedules, the CAISO uses the Self-Schedule in the HASP optimization and the Scheduling Coordinator can update the Self-Schedule based on the most current Energy forecast, if it is qualified to do so by the CAISO and the Scheduling Coordinator registers it as such in the Master File. The HASP produces advisory MWh schedules for each of the four fifteen-minute intervals for FMM Economic Bids cleared in HASP, which can vary from the MWhs schedules cleared in the FMM. The MWh quantities of Self-Schedules of Supply that clear in the HASP constitute a feasible Dispatch for the Real-Time Market at the time HASP is executed, but the HASP results do not constitute a final Schedule for Generating Units because these resources may be adjusted for reasons other than economics in the FMM or RTD, if necessary to manage Congestion and clear Supply and Demand. The submission of a change to an ETC Self-Schedule beyond the deadline specified in Section 16.9.1, that is permitted pursuant to the terms of the applicable ETC, shall not be deemed to be an unbalanced ETC Self-Schedule for the purposes of Settlement, consistent with the ETC and TOR Self-Schedule Settlement treatment described in Section 11.5.7.

**\* \* \* \* \***

**34.4 Fifteen Minute Market**

The CAISO conducts the Fifteen Minute Market using the second interval of each RTUC run horizon as follows: (1) at approximately 7.5 minutes prior to the first Trading Hour, for T-45 minutes to T+60 minutes where the binding interval is T-30 to T-15; (2) at approximately 7.5 minutes into the current hour for T-30 minutes to T+60 minutes where the binding interval is T-15 to T; (3) at approximately 22.5 minutes into the current hour for T-15 minutes to T+60 minutes for the binding interval T to T+15; and (4) at approximately 37.5 minutes into the current hour for T to T+60 minutes for the binding interval T+15 to T+30, where T is the beginning of the next Trading Hour. In these intervals the CAISO conducts the FMM to (1) determine financially binding FMM Schedules and corresponding LMPs for all Pricing Nodes, including all Scheduling Points; (2) determine financially and operationally binding Ancillary Services Awards and corresponding ASMPs, procure required additional Ancillary Services and calculate ASMP used for settling procured Ancillary Service capacity for the next fifteen-minute Real-Time Ancillary Service interval for all Pricing Nodes, including Scheduling Points; (3) determine LAP LMPs that are the basis for settling Demand; and (4) determine FMM Uncertainty Awards. In any FMM interval that falls within a time period in which a Multi-Stage Generating Resource is transitioning from one MSG Configuration to another MSG Configuration, the CAISO: (1) will not award any incremental Ancillary Services; (2) will disqualify any Day-Ahead Ancillary Services Awards; (3) will disqualify Day-Ahead qualified Submissions to Self-Provide Ancillary Services Award, and (4) will disqualify Submissions to Self-Provide Ancillary Services in RTM. Each particular FMM market optimization produces binding settlement prices for Energy, Flexible Ramping Product, and Ancillary Services for the first FMM interval in the FMM horizon but the optimization considers the advisory results from subsequent market intervals within the FMM horizon. The CAISO settles Hourly Intertie Schedules and Hourly Ancillary Services Awards accepted in the HASP as FMM Schedules and FMM Ancillary Services Awards in accordance with Section 11.5 and 11.10.1.2, respectively. In the event that a FMM run fails, the CAISO reverts to Day-Ahead Market Ancillary Services Awards and RUC Schedules results corresponding to the same interval, or the corresponding interval from the previous RTUC. The FMM will clear Supply against the CAISO Forecast of CAISO Demand and exports. The FMM issues Energy Schedules and Ancillary Services Awards by twenty-two and a half minutes prior to the binding fifteen-minute interval.

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**34.6 Short-Term Unit Commitment**

Once per hour, near the top of each Trading Hour, immediately after the FMM and the RTUC for the same interval is completed the CAISO performs an approximately five (5) hour Short-Term Unit Commitment (STUC) run using SCUC and the CAISO Forecast of CAISO Demand to commit Medium Start Units and Short Start Units with Start-Up Times greater than the time period covered by the RTUC described in Section 34.3. In any given Trading Hour, the STUC may commit resources for the third fifteen-minute interval of the current Trading Hour and extending into the next four (4) Trading Hours. The STUC looks ahead over a period of at least three (3) hours beyond the Trading Hour for which the RTUC optimization was run. STUC will utilize: (1) Bids previously submitted in the RTM by the Scheduling Coordinator for that Trading Hour; or (2) the Clean Bid from the Day-Ahead Market if the resource has a Day-Ahead Schedule or received a Start-Up Instruction in RUC for the Trading Hour; or (3) the Generated Bid if the resource has a Real-Time must-offer obligation for that Trading Hour and has not submitted a Bid in the RTM. The CAISO revises these replicated Bids each time the hourly STUC is run, to utilize the most recently available Bids. Not all resources identified for need as a given STUC run will necessarily receive CAISO commitment instructions immediately, because during the Trading Day the CAISO may issue a commitment instruction to a resource only at the latest possible time that allows the resource to be ready to provide Energy when it is expected to be needed. A Start-Up Instruction produced by STUC is considered binding if the resource could not achieve the target Start-Up Time as determined in the current STUC run in a subsequent RTUC or STUC run as a result of the Start-Up Time of the resource. A Start-Up Instruction produced by STUC is considered advisory if it is not binding, such that the resource could achieve its target start time as determined in the current RTUC run in a subsequent STUC or RTUC run based on its Start-Up Time. A binding Dispatch Instruction produced by STUC that results in a change in Commitment Status will be issued, in accordance with Section 6.3, after review and acceptance of the Start-Up Instruction by the CAISO Operator. The STUC will only decommit a resource to the extent that resource’s physical characteristics allow it to be cycled in the same approximately five (5) hour look-ahead time period for which it was previously committed. STUC does not produce Locational Marginal Prices for Settlement. A Day-Ahead Schedule or RUC Schedule for an MSG Configuration that is later impacted by the resource’s derate or outages, will be reconsidered in the STUC process taking into consideration the impacts of the derate or outage on the available MSG Configurations.

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**36.4.1.3 Transmission Capacity for CRR Allocation and CRR Auction**

With the exception of the Tier LT, the CAISO makes available sixty-five percent (65%) of Seasonal Available CRR Capacity for the annual CRR Allocation and CRR Auction processes, and one hundred percent (100%) of Monthly Available CRR Capacity for the monthly CRR Allocation and CRR Auction processes. The CAISO makes available sixty percent (60%) of Seasonal Available CRR Capacity in the Tier LT. Available capacity at Scheduling Points shall be determined in accordance with Section 36.8.4.2 for the purposes of CRR Allocation and CRR Auction of CRRs that have a CRR Source identified at a Scheduling Point. Before commencing with the annual or monthly CRR Allocation and CRR Auction processes, the CAISO may distribute Merchant Transmission CRRs and will model those as fixed injections and withdrawals on the DC FNM to be used in the allocation and auction. These fixed injections and withdrawals are not modified by the Simultaneous Feasibility Test. Similarly, before commencing the annual or monthly CRR Allocation and CRR Auction processes, the CAISO will model any previously allocated Long Term CRRs as fixed injections and withdrawals on the DC FNM to be used in the CRR Allocation and CRR Auction. These fixed injections and withdrawals are not modified by the Simultaneous Feasibility Test, which will ensure no degradation of previously allocated and outstanding Long Term CRRs due to the CRR Allocation and CRR Auction processes. Maintaining the feasibility of allocated Long Term CRRs over the length of their terms also is accomplished through the transmission planning process in Section 24.

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**37.11.1 Inaccurate or Late Actual SQMD Penalty**

There is no Sanction for the submission of inaccurate or late Actual Settlement Quality Meter Data used for a Recalculation Settlement Statement T+ 12B. However, failure by a Scheduling Coordinator, under a specific SCID, to submit Actual Settlement Quality Meter Data or to replace Estimated Settlement Quality Meter Data with Actual Settlement Quality Meter Data by forty-eight (48) Business Days after the Trading Day (T+48B) for one or more scheduled Resource IDs for a given Trading Day is late Actual Settlement Quality Meter Data and constitutes a Rule of Conduct violation. The Sanction is $1,000 and the Scheduling Coordinator is required to submit Actual Settlement Quality Meter Data during the period specified in Section 10.3.6.4 for Recalculation Settlement Statement T+9M. Where a Scheduling Coordinator fails to submit Actual Settlement Quality Meter Data or to replace Estimated Settlement Quality Meter Data with Actual Settlement Quality Meter Data by T+48B for one or more scheduled Resource IDs for a given Trading Day and that Scheduling Coordinator also fails to submit Actual Settlement Quality Meter Data during the period specified in Section 10.3.6.4 for Recalculation Settlement Statement T+9M, then the Scheduling Coordinator shall also be levied a Sanction of $3,000. The submission by a Scheduling Coordinator of Actual Settlement Quality Meter Data that causes an error to exist in such Actual Settlement Quality Meter Data after T+48B shall constitute inaccurate Actual Settlement Quality Meter Data and is a Rule of Conduct violation. The Sanction is $1,000. All violations of this Section 37.11.1 shall be found per SCID per Trading Day and all Sanctions assessed under this Section 37.11.1 shall be levied per SCID per Trading Day. Accordingly, for any given trade date, one Scheduling Coordinator may be found to have committed multiple violations of, and may be assessed multiple Sanctions under, this Section 37.11.1.

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**40.3.1.1 Local Capacity Technical Study Criteria**

The Local Capacity Technical Study will determine the minimum amount of Local Capacity Area Resources needed to address the Contingencies identified in Section 40.3.1.2. In performing the Local Capacity Technical Study, the CAISO will apply those methods for resolving Contingencies considered appropriate for the performance level that corresponds to a particular studied Contingency, as provided in NERC Reliability Standards TPL-001-0, TPL-002-0, TPL-003-0, and TPL-004-0, as augmented by CAISO Reliability Criteria in accordance with the Transmission Control Agreement and Section 24.3.1. The CAISO Reliability Criteria shall include:

(1) Time Allowed for Manual Readjustment: This is the amount of time required for the Operator to take all actions necessary to prepare the system for the next Contingency. This time should not be more than thirty (30) minutes.

(2) No voltage collapse or dynamic instability shall be allowed for a Contingency in Category D - extreme event (any B1-4 system readjusted (Common Mode) L-2), as listed in Section 40.3.1.2.

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**40.4.6.2.2 Bilateral Import Capability Transfers and Registration Process**

**40.4.6.2.2.1 Eligibility Registration for Bilateral Import Capability Transfers**

To be eligible to engage in any bilateral assignment, sale, or other transfer of Remaining Import Capability under Step 8 of Section 40.4.6.2.1 or Section 40.4.6.2.2.2 or Existing Contract Import Capability, and Pre-RA Import Commitment Capability under Section 40.6.4.2.2.2, a Load Serving Entity or other Market Participant must provide the CAISO through the Import Capability Transfer Registration Process the following information:

(a) Name of the Load Serving Entity or Market Participant

(b) E-mail contact information

The CAISO will post to the CAISO Website the information received under this Section on a monthly basis in accordance with the schedule set forth in the Business Practice Manual. Any assignment, sale, or other transfer of Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability may only be made by or to a Load Serving Entity or Market Participant whose information received under this Section has been posted to the CAISO Website prior to the date of the assignment, sale, or other transfer of the Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability. It shall be the exclusive responsibility of the Scheduling Coordinator for the Load Serving Entity or Market Participant to ensure that the information posted to the CAISO Website under this Section is accurate and up to date.

**\* \* \* \* \***

**40.8.1 Applicability**

The criteria in this Section 40.8 shall apply only: (i) where the CPUC or Local Regulatory Authority has not established and provided to the CAISO criteria to determine the types of resources that may be eligible to provide Qualifying Capacity and for calculating Qualifying Capacity for such eligible resource types and (ii) until the CAISO has been notified in writing by the CPUC of its intent to overturn, reject or fundamentally modify the capacity-based framework in CPUC Decisions 04-01-050 (Jan. 10, 2004), 04-10-035 (Oct. 28, 2004), and 05-10-042 (Oct. 31, 2005). The types of resources specified in this Section 40.8.1 will be eligible to provide Qualifying Capacity to the extent they meet the criteria for each type of resource set forth in this Section 40.8.1.

**40.8.1.1 [Not Used]**

**40.8.1.2 Nuclear and Thermal**

Nuclear and thermal Generating Units, other than Qualifying Facilities with Existing QF Contracts addressed in Section 40.8.1.8 below, must be a Participating Generator or a System Unit. The Qualifying Capacity of nuclear and thermal units, other than Qualifying Facilities addressed in Section 40.8.1.8, will be based on net dependable capacity defined by NERC Generating Availability Data System information.

**\* \* \* \* \***

**40.9.6.2 Determination of Availability Incentive Payment**

(a) **Self-Funding.** The Availability Incentive Payment will be funded entirely through the monthly Non-Availability Charges assessed. Availability Incentive Payments for Resource Adequacy Resources providing Flexible RA Capacity will be funded exclusively by Non-Availability Charges assessed against Resource Adequacy Resources providing Flexible RA Capacity.

(b) **Eligible Capacity.** The capacity of a Resource Adequacy Resource providing local, system or Flexible RA Capacity that is eligible to receive an Availability Incentive Payment shall be the resource’s average monthly MWs of capacity that exceed the upper bound of the Availability Standard.

(c) **Calculation.**

(1) The monthly Availability Incentive Payment rate will equal the total Non-Availability Charges assessed for the month plus any unpaid funds under Section 40.9.6.2(d), divided by the total Resource Adequacy Capacity eligible to receive the Availability Incentive Payment that month.

(2) The Availability Incentive Payment rate shall not exceed three times the Non-Availability Charge rate.

(3) The Availability Incentive Payment the CAISO shall pay to each eligible resource shall equal the product of its eligible capacity and the Availability Incentive Payment rate.

(d) **Unpaid Funds.** Any Non-Availability Charge funds that are not distributed to Resource Adequacy Resources eligible to receive Availability Incentive Payments in a month will be added to the funds available for Availability Incentive Payments in the next month and will continue to roll over to successive months until the end of the year. The CAISO distributes any unallocated funds remaining after the CAISO settles December monthly RAAIM Non-Availability Charges and Non-Availability Incentive Payments Load Serving Entities based on their overall ratio of obligation to demonstrate Flexible RA Capacity for the year.

**\* \* \* \* \***

**40.10.2.2 Allocation to Load-Following MSS**

(a) The CAISO will calculate the allocable share of the Flexible Capacity Need for each Load-following MSS as –

(1) the Local Regulatory Authority’s average percent contribution to the change in wind output, minus the change in solar PV output, minus the change in solar thermal output, during the five highest three-hour net-load changes in the month, for resources not included in the Load-following MSS Load Serving Entity’s resource portfolio; and

(2) plus the lesser of the MSS contribution calculated under Section 40.10.2.2(a)(1) or 3.5 percent of its forecasted peak load.

(3) plus the Load-following MSS Load Serving Entity’s allocable share of any forecast adjustment under Section 40.10.1.4.

(b) The CAISO will deduct the Flexible Capacity Need allocated to each Load-following MSS from the calculation to determine whether a cumulative deficiency in Flexible RA Capacity exists under Section 43A.2.7.

(c) If the Load-following MSS Load Serving Entity’s contribution to the three-hour net-load ramp calculated under Section 40.10.2.2(a)(1) is less than its contribution to the 3.5 percent of expected peak load, the CAISO will not reallocate that difference to other Local Regulatory Authorities to determine whether a cumulative deficiency in Flexible RA Capacity exists under Section 43A.2.7.

**\* \* \* \* \***

**40.10.4.1 Effective Flexible Capacity Calculation**

(a) **Flexible Resources.** The CAISO will calculate the Effective Flexible Capacity value of a resource, for use (i) if a Local Regulatory Authority has not established criteria for calculating the Effective Flexible Capacity value for eligible resource types, and (ii) for determining if a cumulative deficiency exists under Sections 43A.2.7(a) and (b), as follows, except as provided in Sections 40.10.4.1 (b) through (f) –

(1) If the Start-Up Time of the resource is greater than 90 minutes, the Effective Flexible Capacity value shall be the weighted average ramp rate of the resource calculated from PMin to Net Qualifying Capacity multiplied by 180 minutes. The Effective Flexible Capacity shall not exceed the difference between the PMin and PMax of the resource.

(2) If the Start-Up Time of the resource is less than or equal to 90 minutes, the Effective Flexible Capacity value shall be the weighted average ramp rate of the resource calculated from zero to Net Qualifying Capacity multiplied by 180 minutes. The Effective Flexible Capacity shall not exceed the Net Qualifying Capacity of the resource.

(b) **Hydroelectric Generating Unit.** The Effective Flexible Capacity of a hydroelectric generating unit will be the amount of capacity from which the resource can produce Energy consistently for 6 hours based upon the resource’s physical storage capacity, which shall not exceed its Net Qualifying Capacity.

(c) **Proxy Demand Resource.** The Effective Flexible Capacity of a Proxy Demand Resource will be based on the resource’s actual MWs of load modification in response to a dispatch by the CAISO during a test event. In determining the Effective Flexible Capacity of a Proxy Demand Resource, the CAISO will –

(1) conduct the test at a random time during the flexible capacity must-offer obligation period for the resource;

(2) use the applicable baseline load data, as described in the CAISO Tariff or Business Practice Manual, to measure the load modification of the Proxy Demand Resource being tested; and

(3) pay the resource’s bid price for the testing period.

**\* \* \* \* \***

**40.10.5.3 Review of Flexible RA Capacity Plans**

(a) **Validation For Deficiency In An Individual LSE Plan.**

(1) If the Local Regulatory Authority has not established its own flexible capacity procurement requirements, the CAISO will validate the annual and monthly LSE Flexible RA Capacity Plans for that Local Regulatory Authority’s jurisdictional Load Serving Entities, and will use the Effective Flexible Capacity value for each resource calculated under Section 40.10.4. The CAISO will determine whether each Load Serving Entity met its annual or monthly total Flexible RA Capacity Requirement, and for the monthly LSE Flexible RA Capacity Plan, whether it met the total monthly requirement within the minimum or maximum quantity, as applicable, for each Flexible Capacity Category.

(2) If the Local Regulatory Authority has established its own flexible capacity procurement requirements, the CAISO will not validate the individual LSE Flexible Capacity Plans for that Local Regulatory Authority’s jurisdictional Load Serving Entities.

(b) **Identification of Discrepancy.** The CAISO will compare all LSE Flexible RA Capacity Plans and Resource Flexible RA Capacity Plans to identify any discrepancy in the Resource Adequacy Resources listed or the amount of the Resource Adequacy Capacity committed.

(c) **Evaluation For Cumulative Deficiency.**

(1) The CAISO will evaluate the annual LSE Flexible RA Capacity Plans of all Load Serving Entities on a cumulative basis to determine whether the total amount of Flexible RA Capacity shown in the plans meets 90 percent of the annual Flexible Capacity Need determined by the CAISO pursuant to Section 40.10.1 or whether a cumulative deficiency may exist under Section 43A.2.7(a).

(2) The CAISO will evaluate the monthly Flexible RA Capacity Plans of all Load Serving Entities to determine whether (i) the total amount of Flexible RA Capacity shown in the plans, limited to the maximum monthly requirement for each category, meets the applicable monthly Flexible Capacity Need determined by the CAISO pursuant to Section 40.10.1 or whether a cumulative deficiency may exist under Section 43A.2.7(b)(1); or (ii) the total amount of Flexible RA Capacity shown in the base ramping Flexible Capacity Category in the plans meets the minimum monthly requirement for the base ramping Flexible Capacity Category determined by the CAISO pursuant to Section 40.10.1.5 or whether a cumulative deficiency may exist under Section 43A.2.7(b)(2).

(d) **Calculation of Flexible RA Capacity.** The CAISO will calculate the amount of Flexible RA Capacity included in the annual and monthly Flexible RA Capacity Plans using the MW amount of Flexible RA Capacity for each resource designated in a plan as a Flexible RA Capacity Resource up to the Effective Flexible Capacity value for the resource calculated under Section 40.10.4.

(e) **Allocated Flexible RA Capacity Requirement.** The CAISO will calculate the Load Serving Entity’s allocated annual and monthly Flexible RA Capacity Requirement –

(1) For Load Serving Entities within a Local Regulatory Authority that has not adopted its own allocation methodology, the CAISO will calculate the Load Serving Entity’s allocated requirement based on the CAISO’s allocation methodology set forth in Section 40.10.2.

(2) For Load Serving Entities within a Local Regulatory Authority that has adopted its own allocation methodology, the CAISO will use that Local Regulatory Authority’s methodology for the Local Regulatory Authority’s jurisdictional Load Serving Entities.

**40.10.5.4 Deficiency in LSE Flexible RA Capacity Plan**

(a) **Finding and Notification.** If the CAISO’s validation under Section 40.10.5.3(a) finds either: (i) that the total amount of Flexible RA Capacity included in an annual or monthly LSE Flexible RA Capacity Plan is not sufficient to satisfy the Load Serving Entity’s allocated Flexible RA Capacity Requirement; or (ii) that the total monthly requirement in a monthly LSE Flexible RA Capacity Plan was not met within the minimum or maximum quantity, as applicable, for each Flexible Capacity Category, the CAISO will –

(1) notify the relevant Scheduling Coordinator, and the Local Regulatory Authority or federal agency with jurisdiction over the relevant Load Serving Entity, in an attempt to resolve any deficiency in accordance with the procedures set forth in the Business Practice Manual; and

(2) provide the notice at least 40 days in advance of the first day of the month covered by the plan and include the reasons the CAISO believes a deficiency exists.

(b) **Resolved Deficiency.** If the CAISO issues a notice of deficiency under Section 40.10.5.4(a), and the deficiency is resolved, the Scheduling Coordinator for the Load Serving Entity shall -

(1) demonstrate, no less than 30 days prior to the first day of the month covered by the LSE Flexible RA Capacity Plan, that the identified deficiency is cured by submitting a revised LSE Flexible RA Capacity Plan, or

(2) advise the CAISO that the Load Serving Entity’s Local Regulatory Authority, or federal agency, as appropriate, has determined that no deficiency exists.

(c) **Unresolved Deficiency.** If the CAISO issues a notice of deficiency under Section 40.10.5.4(a) and is not advised that the deficiency is resolved, the CAISO will use the information contained in the Resource Flexible RA Capacity Plan to set the obligations of resources under Section 40.10 and/or to assign any costs incurred under this Section 40 and Section 43A.

**40.10.5.5 Discrepancy Between Flexible RA Capacity Plans.**

(a) **Finding and Notification.** If the CAISO’s review under Section 40.10.5.3(b) finds a discrepancy between an LSE Flexible RA Capacity Plan and a Resource Flexible RA Capacity Plan, the CAISO will –

(1) notify the relevant Scheduling Coordinators of the discrepancy in an attempt to resolve the discrepancy in accordance with the procedures set forth in the Business Practice Manual; and

(2) provide the notice at least 40 days in advance of the first day of the month covered by the plans and include the reasons the CAISO believes a discrepancy exists.

(b) **Resolved Discrepancy.** If the CAISO issues a notice of discrepancy under Section 40.10.5.5(a) and the discrepancy is resolved, the Scheduling Coordinator must provide the CAISO with a revised LSE Flexible RA Capacity Plan or Resource Flexible RA Capacity Plan, as applicable, no less than 30 days prior to the first day of the month covered by the plans.

(c) **Unresolved Discrepancy.** If the CAISO issues a notice of discrepancy under Section 40.10.5.5(a) and is not advised that the discrepancy is resolved, the CAISO will use the information contained in the Resource Flexible RA Capacity Plan to set the obligations of resources under Section 40.10 and/or to assign any costs incurred under this Section 40 and Section 43A.

**\* \* \* \* \***

**40.10.6 Flexible RA Capacity Must-Offer Obligation**

**40.10.6.1 Day-Ahead and Real-Time Availability**

(a) **Must-Offer Obligation.** The Scheduling Coordinator for a resource supplying Flexible RA Capacity must submit Economic Bids for Energy for the full amount of the resource’s Flexible RA Capacity, and Economic Bids for Ancillary Services that are not flagged as Contingency Only in the Day-Ahead Market for the full amount of the resource’s Flexible RA Capacity that is certified to provide Ancillary Services, in the Day-Ahead Market and the Real-Time Market for the applicable Trading Hours that is capable of being economically dispatched as follows, except as provided in Section 40.10.6.1(e) through(h) –

(1) Flexible Capacity Category for base ramping resources - the 17-hour period from 5:00 a.m. to 10:00 p.m., seven days a week;

(2) Flexible Capacity Category for peak ramping resources - the five-hour period determined for each season by the CAISO’s Flexible Capacity Needs Assessment, seven days a week; and

(3) Flexible Capacity Category for super-peak ramping resources - the five-hour period determined for each season by the CAISO’s Flexible Capacity Needs Assessment, weekdays, except holidays and as provided in Section 40.10.6.1(h), until the resource receives during the five-hour period of the must offer obligation and responds to five CAISO dispatches for Start-Up during the month, after which the resource will not be subject to a must-offer obligation as a super-peak ramping resource for the remainder of that month; however, any other must-offer obligations for Resource Adequacy Capacity will still apply.

(b) **Availability Requirement.** During the period of the applicable must-offer obligation, a Flexible RA Capacity Resource must be operationally available except for limitations specified in the Master File, legal or regulatory prohibitions or as otherwise required by this CAISO Tariff or by Good Utility Practice.

(c) **Co-optimization.** Through the IFM co-optimization process, the CAISO will utilize available Flexible RA Capacity to provide Energy or Ancillary Services in the most efficient manner to clear the Energy market, manage congestion and procure required Ancillary Services.

(d) **Participation in RUC.** A Flexible RA Capacity Resource must participate in the RUC to the extent that the resource has available Flexible RA Capacity that is not reflected in an IFM Schedule. Resource Adequacy Capacity participating in RUC will be optimized using a zero dollar ($0/MW-hour) RUC Availability Bid. Flexible RA Capacity selected in RUC will not be eligible to receive a RUC Availability Payment.

(e) **Use-Limited Resources.**

(1) A Use-Limited Resource providing Flexible RA Capacity must be capable of responding to Dispatch Instructions and, consistent with its use-limitations, must submit Economic Bids for Energy for the full amount of its Flexible RA Capacity in the Day-Ahead Market and the Real-Time Market for the Trading Hours applicable to the resource’s Flexible Capacity Category for that month for the Trading Hours that it is capable of being economically dispatched.

(2) The Scheduling Coordinator for the Use-Limited Resources designated as a combined resource under Section 40.10.3.2(b), 40.10.3.3(b) or 40.10.3.4(b) must submit Economic Bids for Energy for either resource for the full amount of the Flexible RA Capacity required by the applicable must-offer obligation; however, Economic Bids for Energy must be submitted for only one resource in the combination per Trade Day.

(f) **Short, Medium or Long Start Units.**

(1) Short Start Units or Medium Start Units providing Flexible RA Capacity that do not have an IFM Schedule or a RUC Schedule for any of their Resource Adequacy Capacity for a given Trading Hour are required to participate in the Real-Time Market consistent with the provisions in Section 40.6.2 that apply to Short Start Units providing RA Capacity.

(2) Long Start Units providing Flexible RA Capacity that do not have an IFM Schedule or a RUC Schedule for any of their Resource Adequacy Capacity for a given Trading Hour are required to participate in the Real-Time Market consistent with the provisions in Section 40.6.2 that apply to Long Start Units providing RA Capacity.

(3) If availability is required under Section 40.6.2, the Scheduling Coordinator for the resource must submit to the RTM for that Trading hour for which the resource is capable of responding to Dispatch Instructions: (i) Economic Bids for Energy for the full amount of the available Flexible RA Capacity, including capacity for which it has submitted Economic Bids for Ancillary Services; and (ii) Economic Bids for Ancillary Services for the full amount of its Flexible RA Capacity that is certified to provide Ancillary Services and that did not receive a day-ahead award, and for each Ancillary Service for which the resource is certified, including capacity for which it has submitted Economic Bids for Energy.

(g) **Extremely Long-Start Resources.** Flexible RA Capacity Resources that are Extremely Long-Start Resources must be available to the CAISO by complying with the Extremely Long-Start Commitment Process under Section 31.7 or otherwise committing the resource upon instruction from the CAISO, if physically capable. Once an Extremely Long-Start Resource is committed by the CAISO, it is subject to the provisions of Section 40.10.6 regarding Day-Ahead Availability and Real-Time Availability for the Trading Days for which it was committed.

(h) **Non-Generator Resources, Regulation Energy Management.** Non-Generator Resources providing Flexible RA Capacity and Regulation Energy Management must submit Economic Bids for Regulation Up and Regulation Down for Trading Hours in the 17-hour period from 5:00 a.m. to 10:00 p.m., seven days a week and shall not submit Bids for Energy or other Ancillary Services.

**40.10.6.2 Failure to Bid**

If the Scheduling Coordinator for a resource supplying Flexible RA Capacity does not submit Economic Bids for Energy for the full amount of the resource’s Flexible RA Capacity, and Economic Bids for Ancillary Services for the full amount of the resource’s Flexible RA Capacity that is certified to provide Ancillary Services, in the Day-Ahead Market and the Real-Time Market for the Trading Hours during the period of the applicable must-offer obligation –

(1) the CAISO will not insert Generated Bids for any Flexible RA Capacity for which the resource did not submit bids; and

(2) An Exceptional Dispatch instruction issued to the resource for all or a portion of its Flexible RA Capacity shall not be an Exceptional Dispatch CPM designation under Section 43A.2.5.

**\* \* \* \* \***

**42.1.5 CAISO to Take Necessary Steps to Ensure Criteria Compliance**

Notwithstanding the foregoing, if the CAISO concludes that it may be unable to comply with the Applicable Reliability Criteria, the CAISO shall, acting in accordance with Good Utility Practice, take such steps as it considers to be necessary to ensure compliance, including the negotiation of contracts through processes other than competitive solicitations. These steps can include the negotiation of contracts on a Real-Time basis for Generation, Ancillary Services, or unloaded resource capacity to meet Applicable Reliability Criteria. Unless otherwise specified, the contract price for Ancillary Services or unloaded capacity to meet Applicable Reliability Criteria shall be the applicable Fifteen-Minute Market Ancillary Service Marginal Price.

**\* \* \* \* \***

**43A.3.2 SC Month Plan Failure to Show Local Capacity Area Resources**

CPM Capacity designated under Section 43A.2.1.2 shall have a minimum commitment term of one (1) month. The term of the designation may not extend into a subsequent Resource Adequacy Compliance Year.

**\* \* \* \* \***

**43A.6.1 CPM Designation Market Notice**

The CAISO shall issue a Market Notice within two (2) Business Days of a CPM designation under Sections 43A.2.1 through 43A.2.6. CPM designations as a result of Exceptional Dispatches shall be subject to the reporting requirement set forth in Section 34.11.4. The Market Notice shall include a preliminary description of what caused the CPM designation, the name of the resource(s) procured, the preliminary expected duration of the CPM designation, the initial designation period, and an indication that a designation report is being prepared in accordance with Section 43A.6.2. For Exceptional Dispatch CPM designations, the market notice shall additionally indicate whether the designation was made to address an Exceptional Dispatch CPM System Reliability Need or an Exceptional Dispatch CPM Non-System Reliability Need, specify the quantity of the Exceptional Dispatch CPM capacity that was procured and the Exceptional Dispatch CPM Term, and identify the engineering assessment the CAISO used to determine the quantity of capacity needed from the resource to address the reliability issue.

**\* \* \* \* \***

**Appendix A**

**Master Definitions Supplement**

**\* \* \* \* \* \***

**\* \* \* \* \***

**- Business Practice Manuals (BPMs)**

A collection of documents made available by the CAISO on the CAISO Website that contain the rules, policies, procedures and guidelines established by the CAISO for operational, planning, accounting and settlement requirements of CAISO Market activities, consistent with the CAISO Tariff.

**\* \* \* \* \***

**- CAISO Forecast of CAISO Demand**

The forecast of CAISO Demand made by the CAISO for use in the CAISO Markets.

**\* \* \* \* \***

**- Capacity Procurement Mechanism (CPM)**

The Capacity Procurement Mechanism, as set forth in Section 43A.

**\* \* \* \* \***

**\* \* \* \* \***

**- Energy-Only Deliverability Status**

A condition elected by an Interconnection Customer for a Generating Facility interconnected with the CAISO Controlled Grid the result of which is that the Interconnection Customer is responsible only for the costs of Reliability Network Upgrades and is not responsible for the costs of Delivery Network Upgrades, but the Generating Facility will be deemed to have a Net Qualifying Capacity of zero, and, therefore, cannot be considered to be a Resource Adequacy Resource.

**\* \* \* \* \***

**- Energy Resource Area (ERA)**

A geographic region certified by the California Public Utilities Commission and the California Energy Commission as an area in which multiple LCRIGs could be located, provided that, for the interim period before those agencies certify such areas and for LCRIFs that are proposed to connect LCRIGs located outside the State of California, an Energy Resource Area shall mean a geographic region that would be connected to the CAISO Controlled Grid by an LCRIF with respect to which the CAISO Governing Board determines that all of the requirements of Section 24.4.63 are satisfied, except for the requirement that the LCRIGs to which the LCRIF would connect are located in an area certified as an ERA by those agencies.

**\* \* \* \* \***

**- Exceptional Dispatch CPM**

An Exceptional Dispatch CPM under Section 43A.2.5 with a term of 30 or 60 days.

**\* \* \* \* \***

**- Exceptional Dispatch Term**

The term of each Exceptional Dispatch CPM designation, as determined pursuant to Section 43A.3.6.

**\* \* \* \* \***

**- Fifteen-Minute Market (FMM)**

A Real-Time market procedure conducted throughout the Operating Day in fifteen-minute increments prior to the RTD, to clear Bids for Energy and Ancillary Services from imports and exports, internal Supply and CAISO Forecast of CAISO Demand, as further specified in Section 34.5.

**\* \* \* \* \***

**- Interconnection Base Case Data**

Data including, but not limited to, base power flow, short circuit and stability databases, underlying Load, Generation, and transmission facility assumptions, Contingency lists and automated contingency files, including relevant Remedial Action Schemes, Operating Procedures, per unit costs, and transmission diagrams used to perform Phase I Interconnection Studies and Phase II Interconnection Studies. Interconnection Base Case Data may include Critical Energy Infrastructure Information (as that term is defined by FERC). The Interconnection Base Case Data shall include transmission facilities approved by the CAISO under Section 24 and Network Upgrades associated with Generation Facilities in (iv) below and Generating Facilities that (i) are directly interconnected to the CAISO Controlled Grid; (ii) are interconnected to Affected Systems and may have an impact on the Interconnection Request; (iii) have a pending request to interconnect to an Affected System; or (iv) are not interconnected to the CAISO Controlled Grid, but are subject to a fully executed LGIA (or its equivalent predecessor agreement) or for which an unexecuted LGIA (or its equivalent predecessor agreement) has been requested to be filed with FERC. To the maximum extent practicable, the Interconnection Base Case Data shall utilize the Unified Planning Assumptions developed pursuant to Section 24.3.

**\* \* \* \* \***

**- Location Constrained Resource Interconnection Facility**

A Transmission Facility that has been determined by the CAISO to satisfy all of the requirements of Section 24.4.6.3.

**\* \* \* \* \***

**- Market Manipulation**

Market Manipulation has the meaning set forth in 18 C.F.R. § 1c.

**\* \* \* \* \***

**- Measured Demand**

The metered CAISO Demand plus Real-Time Interchange Export Schedules, excluding that portion of Demand of Non-Generator Resources dispatched as Regulation through Regulation Energy Management.

**\* \* \* \* \***

**- Non-Generator Resources**

Resources that operate as either Generation or Load and that can be dispatched to any operating level within their entire capacity range but are also constrained by a MWh limit to (1) generate Energy, (2) curtail the consumption of Energy in the case of demand response, or (3) consume Energy.

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**- Pre-Construction Activities**

Actions by a Participating TO, other than those required by an Engineering and Procurement Agreement under GIP Section 10 in Appendix Y, and Section 12 of Appendix DD, undertaken prior to Construction Activities in order to prepare for the construction of Participating TO’s Interconnection Facilities or Network Upgrades assigned to the Interconnection Customer, including, but not limited to, preliminary engineering, permitting activities, environmental analysis, or other activities specifically needed to obtain governmental approvals for the Participating TO’s Interconnection Facilities or Network Upgrades.

**\* \* \* \* \***

**- Real-Time Dispatch (RTD)**

The SCED and SCUC software used by the CAISO to determine which Ancillary Service and imbalance energy resources to Dispatch and to calculate LMPs.

**\* \* \* \* \***

**- Real-Time Market (RTM)**

The spot market conducted by the CAISO using SCUC and SCED in the Real-Time which includes the HASP, FMM, STUC and the RTD for the purpose of Unit Commitment, Ancillary Service procurement, Congestion Management and Energy procurement based on Supply Bids and CAISO Forecast of CAISO Demand.

**\* \* \* \* \***

**- Regulation Energy Management**

A market feature for resources located within the CAISO Balancing Authority Area that require Energy from the Real-Time Market to offer their full capacity as Regulation, as described in Section 8.4.1.2.

**\* \* \* \* \***

**- Request Window**

The period of time as set forth in the Business Practice Manual during which transmission additions or upgrades, requests for Economic Planning Studies, and other transmission related information is submitted to the CAISO in accordance with Section 24.4.1.

**\* \* \* \* \***

**- Scheduling Coordinator Metered Entity**

Pursuant to Section 10.1, an eligible entity that has elected that its Scheduling Coordinator will process and submit its Settlement Quality Meter Data to the CAISO. Eligible entities include:

i. a Generator, including Participating Generators and QFs;

ii. a Utility Distribution Company or Small Utility Distribution Company;

iii. a Participating Intermittent Resource;

iv. an EIM Entity or EIM Participating Resource;

v. a Proxy Demand Resource or Reliability Demand Response Resource;

vi. a Distributed Energy Resource;

vii. an End User; and

viii. Tie Point Meters with other Transmission Owners or Balancing Authority Areas.

**\* \* \* \* \***

**- Study Plan**

The plan to be developed pursuant to Section 24.3.1, which sets forth the technical studies to be performed during the annual Transmission Planning Process.

**\* \* \* \* \***

**\* \* \* \* \***

**\* \* \* \* \***

**- Unified Planning Assumptions**

The assumptions to be developed pursuant to Section 24.3.1 and used, to the maximum extent possible, in performing technical studies identified in the Study Plan as part of the annual Transmission Planning Process.

**\* \* \* \* \***

**Appendix F Rate Schedules**

**\* \* \* \* \***

**Schedule 4**

**Eligible Intermittent Resources Forecast Fee**

A charge up to $.10 per MWh shall be assessed on the metered Energy from Eligible Intermittent Resources as a Forecast Fee, provided that Eligible Intermittent Resources smaller than 10 MW that are not Participating Intermittent Resources and that sold power pursuant to a power purchase agreement entered into pursuant to PURPA prior to entering into a PGA or Net Scheduled PGA shall be exempt from the Forecast Fee.

The rate of the Forecast Fee shall be determined so as to recover the projected annual costs related to developing Energy forecasting systems, generating forecasts, validating forecasts, and monitoring forecast performance, that are incurred by the CAISO as a direct result of participation by Eligible Intermittent Resources in CAISO Markets, divided by the projected annual Energy production by all Eligible Intermittent Resources.

The initial Forecast Fee, and all subsequent changes as may be necessary from time to time to recover costs incurred by the CAISO for the forecasting conducted on the behalf of Eligible Intermittent Resources pursuant to the foregoing rate formula, shall be set forth in a Business Practice Manual.

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**Appendix J**

**GRANDFATHERED STANDARD CAPACITY PRODUCT PROVISIONS**

**1. Grandfathering of Standard Capacity Product Provisions**

Notwithstanding any other provisions of the CAISO Tariff, the following provisions shall apply pursuant to Section 40.9.2.1(a)(1).

**40.9.2 Exemptions**

The following exemptions apply to the CAISO’s Availability Standards program of this Section 40.9:

(1) Capacity under a resource specific power supply contract that existed prior to June 28, 2009 and Resource Adequacy Capacity that was procured under a contract that was either executed or submitted to the applicable Local Regulatory Authority for approval prior to June 28, 2009, and is associated with specific Generating Units or System Resources, will not be subject to Non-Availability Charges or Availability Incentive Payments. Such contracted Resource Adequacy Capacity, except for non-Resource-Specific System Resources, will be included in the development of Availability Standards and will be subject to any Outage reporting requirements necessary for this purpose. The exemption will apply only for the initial term of the contract and to the MW capacity quantity and Resource Adequacy Resources specified in the contract prior to June 28, 2009. The exemption shall terminate upon the conclusion of the initial contract term. Exempt contracts may be re-assigned or undergo novation on or after June 28, 2009, but the exemption shall not apply for any extended contract term, increased capacity quantity or additional resource(s) beyond those specified in the contract prior to June 28, 2009, except as provided in Section 40.9.2(7) or 40.9.2(8). Scheduling Coordinators for Resource Adequacy Resources subject to these contracts will be required to certify the start date of the contract, the expiration date, the Resource ID(s), and the amount of Resource Adequacy Capacity associated with each Resource ID included in the contract. For Resource Adequacy Resources whose Qualifying Capacity value is determined by historical output, the capacity under a resource specific power supply contract or Resource Adequacy Capacity that was procured under a contract that was either executed or submitted to the applicable Local Regulatory Authority for approval that meets the requirements in this subsection (2) will not be subject to Non-Availability Charges or Availability Incentive Payments, except that the deadline date for either type of contract shall be August 22, 2010 instead of June 28, 2009.

(2) For a contract entered into prior to June 28, 2009 that provides for the amount of Resource Adequacy Capacity to increase during the original term of the contract, based on a ratio of the Resource Adequacy Resource’s output or due to an addition of capacity, the exemption provided in subsection (2) of this Section 40.9.2 will apply to the additional capacity allowed under the contract; provided that the capacity increase (i) is expressly contained in the provisions of the contract, (ii) occurs during the primary term of the contract; and (iii) does not result from contract extensions or other amendments to the original terms and conditions of the contract, except as provided in Section 40.9.2(7) or 40.9.2(8). Scheduling Coordinators for Resource Adequacy Resources subject to contracts that provide for such capacity increases or additions must include in their certification, in addition to the requirements of subsection (2) of this Section 40.9.2, (i) the citation to any contract provisions that might entitle them to increased exempt Resource Adequacy Capacity from the contracted resources during the primary term of the contract; (ii) the amount of additional capacity to which they might be entitled; and (iii) the actual effective date of the capacity increase. If the actual amount of capacity and/or the actual effective date of the capacity increase is not known at the time of the initial certification, the Scheduling Coordinator shall provide a supplemental certification(s) when this information becomes known. For Resource Adequacy Resources whose Qualifying Capacity value is determined by historical output the exemption provided in subsection (2) of this Section 40.9.2 will apply to an increase in the capacity under a resource specific power supply contract or Resource Adequacy Capacity that was procured under a contract that was either executed or submitted to the applicable Local Regulatory Authority for approval that meets the requirements in this subsection (3), except that the deadline date for either type of contract to be exempt shall be August 22, 2010 instead of June 28, 2009.

**2. Definitions**

As used in this Appendix J, the capitalized terms defined below shall have the definitions specified in this Section 1. All other capitalized terms shall have the meaning specified in the Master Definition Supplement in Attachment A.

**- Incremental Change**

The change in dollar value of a specific Charge Code from the Initial Settlement Statement T+7B to a subsequent Recalculation Settlement Statement including any new Charge Codes or Trading Day charges appearing for the first time on a Settlement Statement.

**- Recalculation Settlement Statement**

The recalculation of a Settlement Statement in accordance with the provisions of the CAISO Tariff, which includes the Recalculation Settlement Statement T+38B, the Recalculation Settlement Statement T+76B, the Recalculation Settlement Statement T+18M, the Recalculation Settlement Statement T+35M, the Recalculation Settlement Statement T+36M or any other Recalculation Settlement Statement authorized by the CAISO Governing Board.

**- Recalculation Settlement Statement T+76B**

The reissue of an Initial Settlement Statement T+7B or a Recalculation Settlement Statement T+38B by the CAISO on the seventy-sixth (76th) Business Day from the relevant Trading Day (T+76B).

**- Settlement Statement**

Any one of the following: Initial Settlement Statement T+7B, Recalculation Settlement Statement T+38B, Recalculation Settlement Statement T+76B, Recalculation Settlement Statement T+18M, Recalculation Settlement Statement T+35M, Recalculation Settlement Statement T+36M, or any other Recalculation Settlement Statement authorized by the CAISO Governing Board.

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**Appendix N**

**Pseudo-Tie Protocols**

**1. Pseudo-Ties of Generating Units to the CAISO Balancing Authority Area**

**1.1 Consistency with NERC/WECC Requirements**

**1.1.1** Operation of Pseudo-Tie functionalities must comply with all applicable NERC, WECC, and North American Energy Standards Board (NAESB) reliability standards, policies, requirements, and guidelines regarding inter-Balancing Authority Area scheduling. A Pseudo-Tie must be registered as a “Point Of Delivery” (POD) with the NAESB Electric Industry Registry (EIR). All (off-system) static scheduling associated with Pseudo-Tie functionality must be consistent with NERC Reliability Standards for interchange scheduling and coordination.

**\* \* \* \* \* \***

**2. Pseudo-Ties of Generating Units out of the CAISO Balancing Authority Area**

**2.1 Consistency with NERC/WECC Requirements**

**2.1.1** Operation of Pseudo-Tie functionalities must comply with all applicable NERC, WECC, and NAESB reliability standards, policies, requirements, and guidelines regarding inter-Balancing Authority Area scheduling. A Pseudo-Tie must be registered as a “Point Of Delivery” (POD) with the NAESB EIR. All interchange scheduling associated with Pseudo-Tie functionality must be consistent with NERC Reliability Standards for interchange scheduling and coordination.

**\* \* \* \* \* \***

**Appendix Q**

**Eligible Intermittent Resources Protocol (EIRP)**

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**3.1.3 Designated Turbines**

For any wind eligible Intermittent Resource, designated turbines are required to improve forecast accuracy within a wind park. The CAISO shall identify a designated turbine, from which the Eligible Intermittent Resource shall provide nacelle wind speed and wind direction every four seconds. Wind EIRs with a PGA or NS PGA that are operating or have final regulatory approvals to construct as of November 1, 2018, that have wind turbines without nacelle anemometers need not comply with the requirements of this section for Designated Turbines. However, when the wind EIR repowers or replaces a portion of its existing wind turbines, then the Wind EIR must become compliant with the requirements of this section for Designated Turbines.

**\* \* \* \* \* \***

**Appendix DD**

**Generator Interconnection Deliverability and Allocation Procedures**

**Section 1 Objectives And Applicability**

**1.1 Objectives And Applicability**

The objective of this Generation Interconnection and Deliverability Allocation Procedures (GIDAP) is to implement the requirements for both Small and Large Generating Facility interconnections to the CAISO Controlled Grid and to provide a process for allocating Transmission Plan Deliverability for Interconnection Requests starting with Queue Cluster 5 and for subsequent Queue Clusters. This GIDAP applies to Interconnection Requests that are either assigned to Queue Cluster 5 and subsequent Queue Clusters, or submitted for the Independent Study Process, or Fast Track Process after July 25, 2012. The two exceptions to this rule of limited applicability are (i) the annual reassessment process set forth in Section 7.4, which shall apply to all CAISO Interconnection Customers in Queue Clusters, and (ii) the annual Generator Downsizing Process set forth in Section 7.5 which shall apply to all eligible Interconnection Customers, regardless of which interconnection procedures under the CAISO Tariff they are subject to.