UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

California Independent System Operator Corporation	)	Docket No. ER06-615- _____

CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION MODIFICATIONS TO MARKET REDESIGN AND TECHNOLOGY UPGRADE TARIFF

VOLUME 1

August 3, 2007

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California Independent
System Operator Corporation

August 3, 2007

Hon. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

RE: California Independent System Operator Corporation
Docket No. ER06-615-____
Docket No. ER07-_____

Dear Secretary Bose:

Pursuant to Section 205 of the Federal Power Act ("FPA"), 16 U.S.C. § 824d and Part 35 of the Federal Energy Regulatory Commission's ("FERC" or the "Commission") regulations, 18 C.F.R. § 35 *et seq.*, and in compliance with certain Commission orders in Docket No. ER06-615 regarding the terms and conditions of the California Independent System Operator Corporation ("CAISO") FERC electric tariff to implement the CAISO's Market Redesign and Technology Upgrade ("MRTU"), the CAISO respectfully submits an original and five copies of proposed revisions to its MRTU Tariff.[1] The CAISO is also tendering two copies of this filing to be time and date stamped and returned to our courier.

I. EXECUTIVE SUMMARY

The MRTU Tariff is the product of more than seven years of study, analysis, stakeholder input, coordination with state authorities, and Commission guidance to address structural flaws in the CAISO's electricity markets and to develop an improved infrastructure for the CAISO's markets and operations. As the Commission has recognized, the CAISO's MRTU initiative fixes flawed market rules that contributed to the 2000-2001 Western energy crisis, brings greater transparency to prices, improves congestion management, provides for resource adequacy, enhances market power mitigation, and streamlines the CAISO's daily operations. The MRTU Tariff will provide substantial benefits to customers not only in California but across the Western

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1 As discussed in more detail below, this filing includes Tariff changes to comply with the Commission's September 21, 2006, Order Conditionally Accepting the CAISO's MRTU Tariff, *Cal. Indep. Sys. Operator Corp.*, 116 FERC ¶ 61,274 (2006) ("September 21 Order"); the Commission's April 20, 2007, Order Granting in Part and Denying in Part Requests for Clarification and Rehearing, *Cal. Indep. Sys. Operator Corp.*, 119 FERC ¶ 61,076 (2007) ("April 20 Order"); and the Commission's June 25, 2007, Order on Compliance Filings, *Cal. Indep. Sys. Operator Corp.*, 119 FERC ¶ 61,313 (2007) ("June 25 Order").

Interconnection.[2] After years of effort, the implementation of MRTU is only months away. The CAISO Board of Governors in its December 19, 2006, meeting decided to extend the implementation date of MRTU to January 31, 2008 for Trading Day February 1, 2008 (the "MRTU Implementation Date"). The CAISO has already concluded six months of market simulation centered around connectivity, reporting and the Day-Ahead Market. After the last simulation (IMS_R2) concluded on July 20, 2007, the CAISO has been evaluating lessons learned, the status of the applications, and the status of integration; and has been validating the data flows from bid-to-bill and bid-to-market results prior to determining the schedule for the next market simulation and any impact on the overall MRTU schedule.

Today's filing refines and enhances the MRTU Tariff approved by the Commission in a series of orders issued since September of last year. The MRTU Tariff itself reflects the Commission's guidance in a series of more than 30 orders going back to the year 2000 providing guidance to the CAISO and stakeholders on the MRTU design.[3]

In the Commission's September 21, April 20 and June 25 Orders, the Commission directed the CAISO to make various changes to the MRTU Tariff and to consider other changes based on stakeholder input. The Commission directed the CAISO to submit many of these compliance changes for Commission review no later than 180 days prior to the MRTU Implementation Date. With the exception of a small number of items for which the CAISO has sought an extension of time, today's filing complies with these directives.[4]

The Commission has also issued orders conditionally accepting the CAISO's proposed refinements to the Congestion Revenue Right ("CRR") provisions of the MRTU Tariff and proposal to implement Long-Term CRRs.[5] The CAISO's July 20,

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2 Terms used herein with initial capitalization have the meanings set forth in the Master Definitions Supplement, Appendix A to the MRTU Tariff unless otherwise provided.

3 A more detailed background discussion is provided in Section IV of this filing letter.

4 Concurrently with this filing, the CAISO is filing motion for extension of time to comply with the Commission's directives that the CAISO: (1) develop and file interim measures to address the potential economic incentive for Load-Scheduling Entities to underschedule in the Day-Ahead Market prior to the implementation of convergence bidding (P 452 of September 21 Order); (2) provide further details about the impact of the transmission constraint violation penalty in the IFM and submit additional tariff language that indicates that this penalty is not a financial penalty in the traditional sense and clarify what constitutes an effective economic bid (PP 162 to 164 of June 25 Order); (3) submit revised tariff sheets to allow Metered Subsystem resources to designate RMR units as Load-Following (P 175 of the June 25 Order); (4) work with stakeholders to explore potential opportunities to cure a collective capacity shortfall and file any proposed modifications to the MRTU Tariff relating to this issue (P 380 of the June 25 Order); (5) file a status report, within 60 days of the date of the issuance of the June 25 Order, which details the progress made toward the CAISO's efforts to integrate demand resources into the MRTU market design (P 219 of the June 25 Order); and (6) work with a stakeholder to address concerns regarding capacity sold on a firm basis to a hub and then resold to a third party external to the CAISO and the related issue of visibility within the CAISO's software system (P 59 of the June 25 Order).

5 *See* the Commission's May 8, 2007, Order Conditionally Accepting for Filing, Subject to Modifications, Tariff Revisions and Directing Compliance Filing, *Cal. Indep. Sys. Operator Corp.*, 119

2007 filing in Docket Nos. ER07-869, ER07-475, and ER06-615 complies with certain CRR and Long-Term CRR directives in the April 20, May 8, June 25, and July 6 Orders.

In today's filing, the CAISO also is proposing a number of changes to the MRTU Tariff separate from the discrete compliance obligations imposed by the September 21, April 20, and June 25 Orders. The CAISO believes that it is appropriate to file these changes for Commission review pursuant to Section 205 of the FPA in a single package with the compliance changes because the proposed Tariff changes in the Section 205 components of the filing are closely tied to the compliance elements of the filing. All of these changes are important because they all are appropriate enhancements to the overall MRTU market design and Tariff structure already approved by the Commission. These changes are necessary to ensure that MRTU functions successfully. Therefore, the Section 205 proposals and the compliance changes should be evaluated together.

Although today's filing represents the bulk of enhancements to the MRTU Tariff anticipated prior to MRTU implementation, there are a number of more targeted filings modifying the MRTU Tariff planned for the coming months. These filings include: a successor to the CAISO's current Reliability Capacity Services Tariff ("RCST") that will complement the MRTU design, bid caps for Start-Up Bids and Minimum Load Bids, revisions to the CAISO's Grid Management Charge ("GMC") under the MRTU Tariff, modifications to the Station Power Protocol and *pro forma* contracts to ensure consistency with the MRTU Tariff, a restated comprehensive MRTU Tariff incorporating into the MRTU Tariff all relevant changes to the current ISO Tariff approved by the Commission since the approval; and a readiness certification in compliance with the September 21 Order. The CAISO's schedule for these additional filings is discussed in greater detail in Section VIII below.

The CAISO urges the Commission to accept this filing without substantive modification. The CAISO recognizes that some commenters would prefer certain additional embellishments to the MRTU Tariff. Many of these embellishments would require software modifications and cannot be accommodated without a significant adverse impact on the MRTU implementation schedule. The advanced stage of that schedule is evidenced by the fact that vendor systems to implement MRTU are on-site at the CAISO and currently undergoing testing. As the Commission has recognized in previous orders approving the MRTU Tariff and its July 30, 2007, order denying a request for a stay of an element of the MRTU Tariff, the harm to California and Western customers of further delaying the substantial benefits of MRTU outweigh the potential benefits of certain embellishments to the MRTU design. In other instances, where there was not stakeholder unanimity on a certain issue, the CAISO has sought to balance the interests and preferences of different groups of stakeholders. For the reasons explained below, the CAISO believes the instant filing reflects a just and reasonable balance of the interests of all stakeholders.

FERC ¶ 61,124 (2007) ("May 8 Order") and the Commission's July 6, 2007, Order Conditionally Accepting Tariff Provisions, Subject to Modification, and Granting in Part and Denying in Part Rehearing, *Cal. Indep. Sys. Operator Corp.*, 120 FERC ¶ 61,023 (2007) ("July 6 Order").

Key features of the instant filing include:

- A proposed new Section 35 of the MRTU Tariff to implement procedures for market validation and price correction. These new procedures will ensure the validation and correction of prices within reasonable time frames in order to reduce disputes and promote efficient market operations.

- Amendments to the MRTU Tariff to bring the CAISO's standard of liability for damages for certain actions into conformity with that of other Independent System Operators ("ISOs") and Regional Transmission Organizations ("RTOs").

- Extensive changes to the Settlements provisions (Section 11) of the MRTU Tariff in order to update those provisions to be fully consistent with the Settlements and Market Clearing software, clarify the existing intent of specific provisions, and correct grammatical or syntax errors.

- Numerous modifications to the Resource Adequacy provisions (Section 40) of the MRTU Tariff, to reflect Commission directives from the September 21, April 20 and June 25 Orders and to resolve several other issues identified through the Resource Adequacy stakeholder process.

- Changes to the MRTU Tariff as a result of the CAISO's extensive stakeholder process aimed to determining which portions of the CAISO's Business Practice Manuals should be reflected in the MRTU Tariff.

- A transparent process to manage proposed changes to Business Practice Manuals that applies to both the CAISO and stakeholders, provides multiple opportunities for stakeholder input, and a right to appeal proposed Business Practice Manual revisions to a committee of CAISO executives.

- Addition of language to the MRTU Tariff relating to metering and Qualifying Facilities as a result of the CAISO's "deferred maintenance" project.

- Incorporation of numerous additional defined terms and definitions in order to clarify the meaning of provisions of the MRTU Tariff.

- Modifications to numerous other provisions of the MRTU Tariff in compliance with the Commission's September 21, April 20 and June 25 Orders.

II. REQUESTED RELIEF

The CAISO respectfully requests that the proposed changes to the MRTU Tariff be approved, without modification, suspension, or hearing, to go into effect on January 31, 2008, the MRTU Implementation Date. The CAISO recognizes that there are a

significant number of changes to the MRTU Tariff proposed in the instant filing, however, all of these changes either have been discussed extensively with stakeholders or are being submitted to comply with the Commission's prior directives concerning the terms and conditions of the MRTU Tariff. Indeed, as explained in detail below and documented in Attachment D to this filing, the CAISO has conducted literally dozens of stakeholder meetings and conference calls concerning the various components of this filing since May 2006. This extensive stakeholder collaboration contributed substantially to the development of the instant filing, and the CAISO has made numerous modifications to its proposals based on stakeholder input. Therefore, with the exception of the technical conference the Commission has already indicated it will schedule on the issue of whether practices or details in the Business Practice Manuals ("BPMs") should be added to the MRTU Tariff, the CAISO believes the Commission can rule on the instant filing without further procedures.

The CAISO respectfully requests a waiver of the provisions of Section 35.3 of the Commission's regulations, 18 C.F.R. § 35.3 (2007), to permit an effective date more than 120 days after this filing.[6] The waiver is justified because a Commission order well in advance of the MRTU Implementation Date is needed in order to allow the CAISO sufficient time to consider the Commission's directives in finalizing the MRTU Tariff and preparing for MRTU implementation.

For these reasons, the CAISO respectfully asks that the Commission consider issuing an order on this filing early enough to allow the CAISO 30 days to file a comprehensive restated MRTU tariff to be filed at least 60 days prior to the effective date of MRTU. This would require an order from the Commission by October 2007. In addition to providing the Commission and parties with a conformed MRTU Tariff, the restated tariff would include conforming changes made effective in the currently effective ISO tariff that survive into MRTU[7] as well as conforming changes that need to be made globally in the tariff, such as usage of defined terms consistent with the new and modified definitions filed in Appendix A in response to P 1330 of the September 21 Order.[8] If the Commission elects not to act on this filing by October, the overall schedule for MRTU implementation could be affected, delaying the benefits to California and Western customers of the new market design.

The CAISO also requests that the Commission issue a notice of filing that establishes a 28 day deadline for comments on the proposed revisions to the MRTU Tariff and an additional 19 days for the CAISO to respond to such comments. Under the

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6 *See, e.g., Northern Maine Independent System Administrator, Inc.*, 89 FERC ¶ 61,179 at 61,560 (1999).

7 For example, the CAISO revised Section 12 of the currently effective ISO Tariff to implement new credit policies to establish unsecured credit limits in ER06-700 and more recently to implement CRR Credit Policies in ER07- 1077. These tariff revisions need to be rolled into the MRTU Tariff.

8 The CAISO also requests that the Commission also address pending compliance filings, including the compliance filing relating to Ancillary Services Regions filed on March 20, 2007 in respond to PP 380 and 381 of the September 21 Order.

proposed schedule, intervenor comments would be due on August 31, 2007, and the CAISO's response to intervenor comments would be due on September 19, 2007.[9]

Although the clean MRTU Tariff sheets provided in Attachment A to this filing letter do contain header and footer information, the CAISO requests waiver of the requirements of Order No. 614[10] and applicable provisions of section 35.9 of the Commission's regulations[11] to the extent this information does not fully comport with these requirements. This waiver is justified because portions of the current ISO Tariff are likely to be amended in the normal course of business between the filing date and the proposed January 31, 2008, MRTU Implementation Date. As noted above, the CAISO plans to file a restated MRTU Tariff and that tariff will fully comply with Order No. 614 containing the MRTU Tariff provisions approved by the Commission updated to reflect relevant changes to the current ISO Tariff.

Lastly, the CAISO requests waiver of section 35.13 of the Commission's regulations, 18 C.F.R. § 35.13, to the extent applicable to this filing and requests waiver of any other applicable requirement of 18 C.F.R. Part 35 for which waiver is not specifically requested, if necessary, in order to permit Commission acceptance of this filing.

III. SUPPORTING DOCUMENTS

This transmittal letter is intended to provide the Commission with an overview of the proposed changes to the MRTU Tariff. The attached memoranda to the CAISO Board of Governors, white paper, tables, and other documents provide additional information supporting the proposed changes to the MRTU Tariff.

The supporting documents submitted with this filing are as follows:

Attachment A	Clean MRTU Tariff Sheets
Attachment B	MRTU Tariff Sheets Redlined Against Previously-Approved Provisions of the MRTU Tariff
Attachment C	Table Summarizing Tariff Changes Submitted in This Filing
Attachment D	Overview of the CAISO Stakeholder Process Related to This Filing

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9 Answers to motions to intervene and comments are generally due 15 days after the motion is filed. *See* 18 C.F.R. § 385.213(d) (2007). Due to the extensive scope of the instant filing, the CAISO requests a modest extension of four days (for a total of 19 days) to file a response to comments on the instant filing.

10 *Designation of Electric Rate Schedule Sheets*, FERC Stats. & Regs., Regs. Preambles ¶ 31,096 (2000).

11 18 C.F.R. § 35.9 (2007).

Attachment E	June 15, 2007, White Paper on Price Validation and Correction and Standard of Liability under MRTU
Attachment F	July 9, 2007, Board Memorandum on Price Validation and Correction and Standard of Liability under MRTU
Attachment G	April 12, 2007, Board Memorandum on BPM Change Management
Attachment H	CAISO Responses to Stakeholder Comments on BPM for BPM Change Management
Attachment I	CAISO Responses to Stakeholder Comments on BPM Change Management Tariff Language
Attachment J	June 22, 2007, White Paper on RUC Zones
Attachment K	February 14, 2007, White Paper on Real-Time LAP Price Computation

IV. BACKGROUND

Leading up to this filing is an extensive history of CAISO stakeholder process and Commission orders that have shaped the development of the MRTU Tariff.[12] This history is detailed in several of the CAISO's previous MRTU filings, in particular the CAISO's February 9, 2006 MRTU Tariff filing ("MRTU Tariff Filing"), which consisted of all of the proposed modifications to the ISO Tariff reflecting the numerous changes to the CAISO's market structure included in the MRTU proposal.

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12 *See Cal. Indep. Sys. Operator Corp.*, 90 FERC ¶ 61,006 (2000), *reh'g denied*, 91 FERC ¶ 61,026 (2000); *San Diego Gas & Electric Co., et al.*, 97 FERC ¶ 61,275 (2001); *Cal. Indep. Sys. Operator Corp.*, 100 FERC ¶ 61,060 (2002) ("July 17, 2002 Order"), *order on reh'g and compliance filing*, 101 FERC ¶ 61,061 (2002); *Cal. Indep. Sys. Operator Corp.*, 105 FERC ¶ 61,140 (2003) ("October 28, 2003 Order"), *reh'g denied*, 105 FERC ¶ 61,278 (2003); *Cal. Indep. Sys. Operator Corp.*, 107 FERC ¶ 61,274 (2004) ("June 17, 2004 Order"); *Cal. Indep. Sys. Operator Corp.*, 108 FERC ¶ 61,254 (2004), *reh'g denied*, 110 FERC ¶ 61,041 (2005); *Cal. Indep. Sys. Operator Corp.*, 110 FERC ¶ 61,113 (2005) ("February 10, 2005 Order"); *Cal. Indep. Sys. Operator Corp.*, 111 FERC ¶ 61,384 (2005); *Cal. Indep. Sys. Operator Corp.*, 112 FERC ¶ 61,007 (2005); *Cal. Indep. Sys. Operator Corp.*, 112 FERC ¶ 61,013 (2005); *Cal. Indep. Sys. Operator Corp.*, 112 FERC ¶ 61,310 (2005); *Cal. Indep. Sys. Operator Corp.*, 113 FERC ¶ 61,151; *Cal. Indep. Sys. Operator Corp.*, 116 FERC ¶ 61,274 (2006); *Cal. Indep. Sys. Operator Corp.*, 119 FERC ¶ 61,076 (2007); *Cal. Indep. Sys. Operator Corp.*, 119 FERC ¶ 61,164 (2007); *Cal. Indep. Sys. Operator Corp.*, 119 FERC ¶ 61,313 (2007).

On September 21, 2006, the Commission accepted for filing the MRTU Tariff to become effective November 1, 2007, subject to a number of modifications, as detailed in the September 21 Order. In addition to tariff changes, the Commission also directed the CAISO to take various other actions, including providing additional details concerning several of its proposals, filing with the Commission status reports on specific issues, and making certain information available to Market Participants. The Commission provided several timeframes for the CAISO to comply with these various requirements.

On November 20, 2006, the CAISO filed the first of its compliance filings as required in the September 21 Order, consisting of those items that the Commission required the CAISO to file within 60 days of the issuance of the September 21 Order. On December 20, 2006, the CAISO filed the second of its compliance filings pursuant to the September 21 Order, consisting of those items that the Commission required the CAISO to file within 90 days of the issuance of the September 21 Order. The CAISO also sought and obtained extensions of time to comply with a several of the requirements set forth in the September 21 Order.[13]

On January 29, 2007, the CAISO filed with the Commission, pursuant to Order Nos. 681 and 681-A,[14] in Docket No. ER07-475, MRTU Tariff provisions related to short-term and long-term CRRs, to become effective on July 9, 2007. The CAISO amended this filing on February 2, 2007.

On March 9, 2007, the CAISO submitted a filing in Docket No. ER07-613 consisting of amendments to its currently effective tariff already approved and accepted by the Commission as part of the MRTU Tariff, so as to allow the CAISO to finalize preparation of its systems to ensure that certain features of the market design are ready when MRTU is launched. This filing also contained several provisions not previously proposed as part of the MRTU Tariff concerning Transmission Rights and Transmission Curtailment ("TRTC") Instructions.

On March 20, 2007, the CAISO submitted a filing in Docket No. ER06-615 in compliance with Paragraphs 380 and 381 of the September 21 Order pertaining to the use of: (i) Ancillary Service Sub-Regions, and (ii) Reliability Must-Run ("RMR") resources and market resources, respectively, in the CAISO's procurement of Ancillary Services under its MRTU Tariff.

On April 20, 2007, the Commission issued an order responding to requests for clarification and/or rehearing of the September 21 Order. Therein, the Commission upheld most of its findings from the September 21 Order, and emphasized that it continued to find MRTU to be just and reasonable. However, the Commission found that

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13 *See Notice of Extension of Time*, Docket Nos. ER06-615-000, *et al.* (Jan. 19, 2007).

14 *Long-Term Firm Transmission Rights in Organized Electricity Markets*, Order No. 681, 71 Fed. Reg. 43,564 (Aug. 1, 2006), FERC Stats. & Regs. ¶ 31,226, *order on reh'g*, Order No. 681-A, 117 FERC ¶ 61,201 (2006).

several suggested changes would improve MRTU, and directed those changes be made under several timeframes.

On May 7, 2007, in Docket No. ER07-869-000, the CAISO filed amendments to its long-term CRR proposal as well as several short-term CRR tariff provisions previously conditionally accepted by the Commission.

On May 8, 2007, the Commission issued an order conditionally accepting for filing, subject to modifications, the CAISO's March 9 filing, effective May 9, 2007.[15] The Commission directed the CAISO to submit within 15 days of the date of issuance of this order a compliance filing reflecting tariff revisions discussed in this order.

On June 7, 2007, the CAISO submitted for informational purposes its BPMs for Congestion Revenue Rights and BPM for Candidate CRR Holder Registration in compliance with the May 8 Order.

On June 20, 2007, the CAISO submitted a filing in Docket No. ER07-1060 consisting of amendments to its currently effective tariff already approved and accepted by the Commission as part of the MRTU Tariff, so as to allow the CAISO to ensure that its new processes regarding the certification and termination of Scheduling Coordinators are in place so that all new Scheduling Coordinator Applicants will be ready when MRTU is launched. This filing also contained several provisions not previously proposed as part of the MRTU Tariff. The Commission has not yet ruled on this filing.

On June 22, 2007, as clarified on June 29, 2007, the CAISO submitted a filing in Docket Nos. ER07-613 and ER07-1077 consisting of amendments to its currently effective tariff that set forth new credit policy provisions to accommodate the allocation, auction, and holding of CRRs. The Commission has not yet ruled on this filing.

On June 25, 2007, the Commission issued an order addressing the November 20 and December 20 compliance filings.[16] Therein, the Commission accepted the November 20 and December 20 compliance filings for filing, subject to further modifications. The Commission required the CAISO to submit the modifications discussed in this order in a compliance filing to be made on or before August 3, 2007.

On July 6, 2007, the Commission issued an order conditionally accepting, subject to modification, the CAISO's proposed revisions relating to short-term and long-term CRRs, as filed on January 29 and February 2, 2007, to become effective on July 9, 2007.[17] The Commission also granted in part and denied in part requests for rehearing on long-term transmission rights issues that were raised in Docket No. ER06-615-001.

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15 *Cal. Indep. Sys. Operator Corp.*, 119 FERC ¶ 61,124 (2007).

16 *Cal. Indep. Sys. Operator Corp.*, 119 FERC ¶ 61,313 (2007).

17 *Cal. Indep. Sys. Operator Corp.*, 120 FERC ¶ 61,023 (2007).

On July 20, 2007, the CAISO submitted a filing in Docket Nos. ER07-869, ER07-475, and ER06-615 to comply with certain CRR and Long-Term CRR directives in the April 20, May 8, June 25, and July 6 Orders.

V. SECTION 205 TARIFF CHANGES

A. Market Validation and Price Correction

The CAISO proposes to add a new Section 35 to the MRTU Tariff providing procedures for market validation and price correction. Section 35 is not intended to limit or supplant the CAISO's existing authority to ensure that prices paid, charged, and collected are consistent with the MRTU Tariff. With the introduction of Locational Marginal Price ("LMP") pricing and a Day-Ahead Market, however, the magnitude of the CAISO's price-setting responsibility will increase substantially and become far more complex. The experience of other RTOs and ISOs has shown the importance of a real-time validation process to continuously monitor the price-setting process and to correct any anomalous results as soon as possible. The implementation of new, specific business processes to ensure the validation and correction of prices within reasonable time frames will reduce disputes and promote efficient market operations.

In the development of this proposal, the CAISO began with an examination of the experience of other RTOs and ISOs with LMP pricing and day-ahead markets.[18] Using that input, the CAISO developed a white paper, which it posted on June 15, 2007, on its external website. A copy of this white paper is provided as Attachment E to this filing. The CAISO sent out a market notice detailing the procedures for the stakeholder input and received written comments from one stakeholder. On July 2, 2007, the CAISO hosted a conference call with stakeholders to discuss the written comment and any other comments or questions that stakeholders wanted to discuss concerning these proposals. Fifteen stakeholders participated and were generally supportive of the initiatives. The call ended early. No objections to the proposals were lodged by market participants during the stakeholder process.

The CAISO Governing Board considered and approved the market validation and price correction provisions at its meeting on July 18-19, 2007. The Board Memorandum regarding these provisions is attached as Attachment F to this filing.

Under proposed Section 35.1, the CAISO will continuously monitor market clearing results to identify anomalous resource commitment, dispatch levels, prices that may have resulted from erroneous input data or failure of the market application hardware or software, or other inconsistencies with the requirements of the MRTU Tariff. All market solutions for the Day-Ahead Market, Residual Unit Commitment ("RUC") process, Hour-Ahead Scheduling Process ("HASP"), and Real-Time Market shall be subject to this market validation process. Although the CAISO will make every effort to

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18 Specifically, the CAISO examined the experience of PJM, ISO-New England, and the NYISO.

validate market clearing processes and results prior to publication of results, this will not always be the case, particularly for the Real-Time Market.

The goal of the market validation process is to minimize the occurrence and length (number of market intervals) of circumstances where invalid or problematic market solutions affect the dispatch of energy, and also to minimize the number of corrections to prices published from such invalid market solutions. For all CAISO Markets, the CAISO shall closely monitor results, and, if time permits, correct problems and re-run markets as necessary to minimize the number of post-publication price corrections. The window of opportunity to identify an invalid market solution, fix the root problem, and re-run the market before results are published outside the CAISO varies by market.

Under Section 35.2, invalid prices may be corrected subsequent to their publication on the CAISO's OASIS and no later than the deadline established in the relevant Business Practice Manual. The MRTU Tariff establishes an outside limit for that deadline of 1700 hours on the eighth (calendar) day following the Trading Day. The CAISO intends, however, to phase in shorter deadlines as it gains experience with administering the procedures according to the following schedule: (1) For the first 90 days following the effective date of MRTU, the price correction process will end at 1700 hours on the eight day following the Trading Day; (2) for the next 270 days, the price correction process will end at 1700 hours on the fifth day following the Trading Day; (3) for all subsequent periods, the price correction process will end at 1700 hours on the third day following the Trading Day. The price correction process is complete when the CAISO provides notice on the CAISO Website or, in the absence of notice, with the established deadline.

Section 35.3 provides that all price are provisional until price correction is complete, after which they are final. Such final prices, however, may still be re-run or adjusted, consistent with other MRTU Tariff authority, if the CAISO later determines that they are inconsistent with Tariff requirements.

The CAISO may correct all invalid financially binding prices, as set forth in Section 35.4. The CAISO does not intend to correct advisory prices. The details of the correction process will be set forth in the applicable Business Practice Manual, inasmuch as they will be refined from time to time. Initially, as part of the Day-Ahead Market price correction, the CAISO intends to review Final Hourly LMPs for all Pricing Nodes and Aggregated Pricing Nodes, the Marginal Energy cost component, the Marginal Cost of Congestion, the Final Hourly Ancillary Service Market Prices ("ASMPs") for all Pricing Nodes, and the Final Hourly transmission constraint Shadow Prices at each Scheduling Point. As part of the price correction process for the HASP and Real Time Market, the CAISO intends to review HASP LMPs and ASMPs and their cost components prices; RTUC prices; all 5-minute LMPs for all Pricing Nodes and Aggregated Pricing Nodes; and final 5-minute transmission constraint Shadow Prices at each Scheduling Point.

The methodology for price correction is set forth in Section 35.5. The CAISO will correct the prices to conform to the MRTU Tariff when practicable and, when not practicable, to a price as close as possible as would have resulted from proper applicable of the CAISO Tariff. Section 32.5 sets forth a hierarchy of methods for correction. When the invalid prices are isolated and can be corrected without affecting other financially binding prices, the CAISO will selectively recalculate them. If that is not possible, but all market inputs are either preserved (for correct date), corrected (for incorrect data), or recreated or replicated using the best available alternative sources (for missing data), the CAISO will re-run the market using such inputs. In other instances, the CAISO will use prices from validated market solutions for binding or advisory intervals in which the market conditions were most similar to the intervals in which the invalid market solutions occurred. In the final method, an invalidated Day-Ahead Market solution cannot be replaced with a valid Day-Ahead Market solution from the previous Trading Day. The final method applies to the Day-Ahead Market only when fewer than all of the hourly market intervals with a market run are invalid. The CAISO will provide the details of the price correction methodology in the applicable Business Practice Manual.

Section 35.6 requires the CAISO to issue a weekly report on price corrections that occurred during the previous week. The CAISO must identify the affected market intervals and price locations, the reason for the correction, and the methodology used.

B. Changes to the CAISO Standard of Liability

The CAISO proposes to amend three sections of the MRTU Tariff to bring the CAISO's standard of liability for damages for certain actions into conformity with that of other ISOs and RTOs. Currently, under Section 14.5 of the MRTU Tariff, the CAISO is liable for direct and consequential damages from the performance or non-performance of its duties to the extent that the damages result from negligence or intentional wrongdoing. Under Section 14.6, Potomac Economics is held to the same standard of liability for calculations of Default Energy Bids. Finally, under Section 14.4, each Market Participant must indemnify the CAISO against damages arising from the Market Participant's acts or omissions except in the case of the CAISO's negligence or intentional wrongdoing.[19] The CAISO is proposing to amend the MRTU Tariff in each instance such that the standard of liability would be limited to gross negligence or intentional wrongdoing. This is consistent with the standard of liability that the Commission has accepted for ISO New England, PJM, the Midwest ISO, and the Southwest Power Pool ("SPP").[20]

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19 The same standard is set forth in Sections 14.2, 14.3 and 14.4 of the currently effective ISO Tariff. These sections are identical to the sections in the MRTU Tariff except for numbering changes and the fact that Potomac Economics calculates reference levels under the currently effective tariff.

20 *See PJM Interconnection L.L.C.*, 112 FERC ¶ 61,264 at PP 9-10 (2005); *Southwest Power Pool, Inc.*, 112 FERC ¶ 61,100 at PP 36-44 (2005) ("*SPP*"); *Midwest Indep. Transmission Sys. Operator, Inc.*, 110 FERC ¶ 61, 164 at P 29 (2005); *ISO New England, Inc., et al.*, 106 FERC ¶ 61,280 at PP 220-231 (2004).

The CAISO presented these proposed amendments to stakeholders during the same stakeholder process discussed above in connection with Market Validation and Price Correction. There were no objections. The CAISO Governing Board approved the proposal at its July 18-19, 2007, meeting. The Governing Board Memo is attached as Attachment F.

The Commission has always recognized that the liability standard under the CAISO Tariff might appropriately be modified. When the Commission approved the current liability provisions in the ISO Tariff, it did so subject to the outcome of its consideration of liability issues in its Standard Market Design rulemaking and without prejudice to the CAISO's making a filing that would limit its liability to direct damages.[21] The Commission never completed its Standard Market Design rulemaking and has subsequently addressed liability limitations on a case-by-case basis. In every instance in which an RTO or ISO has proposed limiting its liability to instance of gross negligence – PJM, SPP, the Midwest ISO, and ISO New England – the Commission has approved the limitation.

The reasons that the Commission has found a gross negligence standard appropriate for those other ISOs and RTO are equally compelling for the CAISO. Excessive damage awards can lead to higher insurance premiums and a higher cost of capital, costs that would be borne by all customers. Similarly, excessive damage awards would be passed through to all customers.[22] The Commission has noted that, as courts have found, the technological complexity of modern utility systems increases the potential for system failures unrelated to human errors, necessitating greater liability protection.[23] This is particularly true of ISOs and RTOs running complex day-ahead and LMP markets. ISOs and RTOs also cannot deny service to particular customers or adjust rates based on the potential risk of damages associated with service to those customers. Absent limitations on liability, all customers would ultimately bear the cost associated with the service to high risk customers, including those customers that do not have special reliability needs.[24] For these reasons a gross negligence standard strikes a more appropriate balance between lower rates for all customers and the burden of limited recovery for some than the current negligence standard.

The proposed amendment is a very limited adjustment of the CAISO's exposure to liability that simply brings the CAISO in line with other RTOs and ISOs. As a non-profit organization, the concern here is not protecting shareholders, but rather protecting customers from excessive rates. Under these circumstances, the proposed amendment is just and reasonable.

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21 *Cal. Indep. Sys. Operator Corp.*, 101 FERC ¶ 61,219 at P 110-113 (2002).

22 *SSP* at P 36; *PJM* at P 7; *Midwest Indep. Transmission Sys. Operator, Inc.*, at P 29.

23 *SSP* at P 36, citing *Transmission Access Policy Study Group v. FERC*, 225 F.3d 667, 727 (D.C. Cir. 2000).

24 *SSP* at P 38, *PJM* at P 8.

C. Proposed Modifications to Settlements Provisions

In the past year, the CAISO has devoted substantial effort to refining the settlements provisions of the MRTU Tariff. These changes fall in two general categories which are further described below. The first category of proposed changes arise of out the CAISO's own continued efforts to develop the equations and software to implement MRTU settlements requirements as reflected in Section 11 of the MRTU Tariff and ensure consistency of these equations with the Tariff. These proposed changes have resulted as a review of the filed MRTU tariff and the CAISO's settlements equations and software. Second, the CAISO is proposing a number of changes in compliance with prior directives by the Commission as further described below.

In Paragraph 1347 of the September 21 Order, the Commission found that it did not have sufficient information to determine whether changes to Section 11.29.7 were necessary in order to address an issue raised by Pacific Gas & Electric Co. ("PG&E") regarding the Settlements Cycle provisions contained in the MRTU Tariff. The Commission directed the CAISO to make a compliance filing to respond to these issues raised by PG&E.

In its November 20, 2006 compliance filing, the CAISO informed the Commission that it agreed that revisions to Section 11 of the MRTU Tariff would be necessary; not only to address PG&E's questions, but also to ensure that the language in the MRTU Tariff fully reflects the settlement statements content and procedures under the new Settlement and Market Clearing ("SaMC") software to be implemented at the start of MRTU. In the November 20 compliance filing, the CAISO provided an explanation regarding the settlement software changes under development to explain why the CAISO concluded that it was necessary to make some changes to Section 11.29.

The CAISO has sought and received extensions of the time permitted to make certain compliance filings related to the CAISO settlement process in order to allow the CAISO to develop a comprehensive set of changes to the settlement provisions of the MRTU Tariff. Specifically, the Commission has granted extensions of time to comply with the Commission's directive in Paragraph 854 of the September 21 Order to explain how the CAISO will "forgive" outstanding debt in the CRR yearly balancing account.[25] The specific Tariff changes that comply with this directive are discussed in the compliance portion of this filing letter.

As discussed below, the Commission also granted extensions of time to permit the CAISO to complete its stakeholder process addressing the issues of what details in the Business Practice Manuals should be moved to the MRTU Tariff. As noted below, the CAISO made changes to Section 11 of the MRTU Tariff based on stakeholder comments on the BPM for Settlements and Billing. Another set of settlements-related compliance

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25 *See* Notices Granting Extension issued in Docket No. ER06-615 on November 27, 2006, January 19, 2007, and May 25, 2007.

changes are the Tariff revisions concerning the allocation of Day-Ahead Market and Bid-Cost Recovery costs to Metered Subsystems submitted to comply with Paragraph 646 of the September 21 Order, which are further described below.

In addition to these compliance changes, today's filing includes changes submitted pursuant to Section 205 of the FPA to: (1) update the settlements provisions of the MRTU Tariff to be fully consistent with the SaMC software, (2) clarify the existing intent of specific provisions, and (3) correct grammatical or syntax errors. As such, today's filing includes a comprehensive set of changes to settlement-related provisions of the MRTU Tariff. These settlements-related Tariff changes are one of the clearest examples of the relationship between the Section 205 elements of today's filing and the compliance elements.

The CAISO has obtained substantial input on the settlements Tariff language in this filing. First, the BPM stakeholder process had several meetings discussing the BPM for Settlements and Billing. In addition, the CAISO posted drafts of the settlements Tariff language for public comment on April 9, 2007 and July 2, 2007. The CAISO also held conference calls on April 25 and again on July 16, 2007 to discuss this Tariff language.

SaMC is the new integrated set of settlement systems that allows for the processing of settlements, billing, invoicing, and the financial clearing business functions for CAISO. The implementation of this new settlements software will result in changes to the settlement statements terminology, but because payment acceleration will not be implemented at the start of MRTU, this will not result in any changes to the timing of the issuance of settlement statements initially, even though additional information statements will be issued by the CAISO over time, and the timing for appeal of information provided in the statements. In developing the new settlements systems, the CAISO endeavored to ensure that the timing requirements for issuance of statements and the process for resolving disputes associated with such statements did not change.

The most significant modification as a result of the new SaMC software is that the Settlement Statements today referred to as Preliminary and Final Statements will become a combination of Initial Settlement Statements and Recalculation Settlement Statements, plus the fact that the majority of the settlement amounts will appear on a single net Invoice or Payment Advice. The Initial Settlement Statement will be the first statement published by CAISO, and will contain the calculation of Settlements and allocation of the charges for a given Trading Day that is generated prior to Invoice or Payment Advices for the relevant Bill Period. A Recalculation Settlement Statement will constitute a restatement, revision, or true-up against a version of the Initial Settlement Statement that is published after the Initial Invoice or Payment Advice for the relevant Bill Period. These two types of Settlement Statements are distinguished by: (1) the names of the statements, including version reference; (2) the timing of publication in relation to the Invoicing process, meaning the calendar day on which it publishes; and (3) the inclusion of previous and net settlement amounts.

As described further below, many of the settlement-related Tariff changes consist of definitions for new terms used in the MRTU Tariff (some of which were included but not separately defined in the February 2006 MRTU Tariff filing) and clarifications to existing provisions of the MRTU Tariff, including substituting the appropriate use of defined terms where terminology was not consistent with the defined terms. The CAISO provided specific changes to provide further clarity on how Participating Load is treated in the various settlement provisions. The CAISO has also sought to consolidate settlements-related provisions in Section 11 of the MRTU Tariff. For example, the CAISO is proposing to move the MSS settlement provisions in Section 4.9.9.2 and 4.9.14 to Section 11.7 and the MSS GMC provisions in Section 4.9.9.3 to Section 11.22.[26]

In addition, because stakeholders had raised concerns regarding the organization of Section 8.10.8, which previously provided for the rescission of payments for undispatchable, unavailable, and undeliverable Ancillary Services and RUC Capacity, the CAISO modified this section for the following purposes: (1) to extract the provisions that were previously in Section 8.10.8 that pertain to the rules for rescission of RUC Availability Payments in the event that RUC Capacity is undispatchable or undeliverable and to place these provisions in Section 31.5.7; (2) to extract the provisions that pertain to the settlement of RUC Availability Payments rescinded for undispatchable or undeliverable RUC Capacity from 8.10.8 and place these provisions in Section 11.2.2.2; (3) to extract the settlements language that pertains to the settlement of rescission of payments for awarded Ancillary Services that is undispatchable, unavailable and undelivered and place this language in Section 11.10.9; (4)in part in response to stakeholder comments, to revise the provisions of Section 8.10.8 (including provisions moved to Section 11) to clarify that Self-Provided Ancillary Services capacity that is subject to rescission reduces the relevant Scheduling Coordinator's effective Ancillary Services self-provision in the Ancillary Services cost allocation, effectively charged back at the relevant Ancillary Services rate; and (5) to extract language from Section 8.10.8 that pertains commonly to settlement aspects of rescission of RUC and Ancillary Services payments and place this language in Section 11.16.

In the April 20 Order, the Commission directed the CAISO, in conjunction with the compliance filing to be made on August 3, 2007, to modify the MRTU Tariff in order to provide that wheel-throughs and exports will not be charged UFE.[27] The CAISO has deleted references to Real-Time Interchange Export Schedules in Section 11.5.3 to implement this change.

D. Proposed Changes to Resource Adequacy Provisions

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26 As noted below, the CAISO will be submitting a separate filing addressing any necessary changes to the GMC under MRTU.

27 April 20 Order at P 305.

In the September 21, April 20 and June 25 Orders, the Commission mandated a number of changes to the Resource Adequacy provisions of the MRTU Tariff. Those modifications are detailed below in Section VII.K of this transmittal letter. The CAISO is also proposing several additional changes to the Resource Adequacy provisions in this filing that, although consistent with the Commission's MRTU orders, were not specifically mandated therein. These proposed changes are as follows.

Two changes have been made to Section 40.1 of the MRTU Tariff. First, because the applicability of Section 40 must rationally be determined at the time Load-Serving Entities ("LSEs") elect their Reserve Sharing status, Section 40.1 has been clarified such that metered Demand data will be evaluated from the date of the election. Second, the Commission, as part of its decision on the CAISO's currently effective Interim Reliability Requirements Program ("IRRP"), directed that the CAISO exclude certain "behind-the-meter" entities within the scope of resource adequacy obligations.[28] This amendment brings that prior directive forward into the MRTU Tariff.

Section 40.3.4.2 is being modified based on stakeholder input so as to obligate the CAISO to provide a report on its website that describes the Local Capacity Area Resources procured under Section 40.3.4, the quantity, duration, reasons for procurement, and all payments made for such procurement. Changes have been included to clarify the timing of this report and the need for updates to the report in the event any additional procurement were to occur after the initial procurement resulting from information received in the annual Resource Adequacy Plans.

The CAISO is also proposing changes to several resource adequacy provisions in order to clarify the respective obligations of LSEs and suppliers of Resource Adequacy Capacity. During Track 1 of Phase 2 of the California Public Utility Commission's ("CPUC") ongoing resource adequacy proceeding (CPUC R.05-12-13), stakeholders requested further refinement of the respective obligations of LSEs and certain suppliers to facilitate development of a standard capacity product and a more liquid bilateral market for Resource Adequacy Capacity. A specific proposal, including draft MRTU Tariff language to be incorporated by reference into the standardized bilateral confirmation, was jointly submitted by a group of stakeholders.[29] Although not expressly adopted by the CPUC, the CPUC noted at page 48 of its Decision 007-06-029, "a readily available capacity product has significant potential benefits for the success of the RA program" and that parties "strongly indicate that additional action is required." The CAISO, in response to this stakeholder input and recognizing its central role in defining supplier obligations, has included many of the straightforward and non-controversial elements of the proposal in this filing. The affected provisions of the MRTU Tariff include Sections 40.4.2, 40.4.3, 40.4.4, 40.4.6.1, 40.4.7, and 40.7.2. As noted, the purpose of each of these

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28 *California Independent System Operator Corp.*, 115 FERC ¶ 61,172 (2006).

29 The proponents of the joint proposal included Calpine Corporation, Pacific Gas and Electric Company, Coral Power, LLC, Constellation Energy Commodities Group, Constellation Newenergy, Inc., J. Aron & Company, Strategic Energy, LLC, Alliance for Retail Energy Markets, Western Power Trading Forum, and Mirant California, LLC.

modifications is to better articulate the respective obligations of LSEs and suppliers so that the risk of non-compliance with MRTU Tariff provisions can be more rationally allocated in the bilateral transaction process.

Section 40.4.5 of the MRTU Tariff relates to the potential reduction in a Resource Adequacy Resource's Net Qualifying Capacity based on performance criteria to be adopted by the CAISO. Previously, this section provided that the performance criteria would not be implemented until after "adoption" by the CPUC and other Local Regulatory Authorities. While the CAISO continues to believe that close coordination with the CPUC and other Local Regulatory Authorities is vital to the success of any resource adequacy related program, the CAISO does not believe it is prudent to hinge application of performance criteria on the unanimous formal adoption of such performance criteria by the myriad of state regulatory entities. Accordingly, this provision has been deleted and replaced with a CAISO obligation to collaborate with the CPUC and other Local Regulatory Authorities in the development and adoption of supplier performance criteria.

In Docket No. ER07-648-000, the Commission accepted an import capability assignment process for resource adequacy purposes that was intended to apply currently and extend into MRTU.[30] In the current ISO Tariff, the Commission-approved process can be found in Section 40.5.2.2. The CAISO has renumbered current Section 40.5.2.2 as Section 40.4.6.2 in the MRTU Tariff and modified the previously approved language to reflect MRTU terminology. No substantive changes have been made.

Section 40.5.4 addresses the consequences of the failure by a Modified Load Serving LSE of meeting its obligation to submit Bids in the Day-Ahead Market and HASP. In particular, Modified Reserve Sharing LSEs that do not offer sufficient Resource Adequacy Capacity in the Day-Ahead Market or fail to replace unavailable capacity in the HASP are subject to clearly delineated Energy surcharges. Subdivision (3) of that Section specified that any surcharge received by the CAISO from Modified Reserve Sharing LSEs would be allocated to Scheduling Coordinators for other LSEs "in proportion to metered Demand during the relevant Trading Hour(s)." The CAISO has clarified, but not changed the intent of, the allocation by stating that the surcharges will be allocated "in proportion to each such Scheduling Coordinator's Measured Demand during the relevant Trading Hour(s) to the aggregate CAISO Measured Demand during the relevant Trading Hour(s)."

Under Section 40.6.4.1, resources with physical or regulatory operating limitations may register with the CAISO as Use-Limited Resources. Previously, hydroelectric Generating Units were expressly identified as exempted from the requirement to seek Use-Limited Resource status given their recognized operating limitations. Section 40.6.4.1 has been modified to expand the exemption to Participating Load and Pumping Load. Section 40.6.4.2 has been modified to explicitly acknowledge

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30 *California Independent System Operator Corp.*, 119 FERC ¶ 61,164 (2007).

that "[h]ydroelectric Generating Units and Pumping Load will be able to update use plans intra-monthly as necessary to reflect evolving hydrological and meteorological conditions." Finally, Section 40.6.4.2 has been amended to be consistent with the CAISO's practice of utilizing the Business Practice Manuals to set forth procedural schedules.

As the Commission is aware, the IRRP was developed after the original submission of the CAISO's MRTU Tariff. Accordingly, the IRRP filled in some omissions detected in the earlier filed MRTU Tariff. One such addition involved "compliance" provisions addressing how the CAISO would resolve deficiencies or discrepancies reflected in Resource Adequacy Plans and Supply Plans. In an order issued on June 6, 2007, the Commission accepted these compliance provisions of the IRRP.[31] Section 40.7 incorporates the previously approved provisions from the IRRP into the MRTU Tariff.

Sections 40.8.1.5 and 40.8.1.6 are part of the CAISO's default Qualifying Capacity counting provisions. Section 40.8.1.5, relating to the counting of firm energy contracts, has been modified to more accurately reflect the status of the "phase-out" period at the time the CAISO's MRTU Tariff will become effective. Simply put, the existing Section 40.8.1.5 unnecessarily refers to requirements applicable to periods prior to the 2008 MRTU effective date. Section 40.8.1.6, relating to the counting of wind and solar Generating Units, has been changed to incorporate recent changes adopted by the CPUC. The CAISO believes that its counting provisions should remain as consistent as possible, when appropriate, with the CPUC adopted counting rules. This modification to Section 40.8.1.6 implements that foundational philosophy.

Finally, an issue arose earlier this year through the WECC Seams Issues Subcommittee ("SIS") regarding the effect of the CAISO's Resource Adequacy-related provisions on the "firmness" of export schedules from the CAISO. The issue of whether an export is "firm" is critical in the Western Electricity Coordinating Council ("WECC") not only from a market perspective, but also due to the manner in which operating reserve requirements are calculated. If a schedule is not considered firm, it may require the importer to hold one-for-one additional operation reserves or risk being in violation of applicable reliability standards. In accordance with the discussion at the WECC SIS, the CAISO has added clarifying language to Section 40.6.11 that accepted export schedules will be considered "firm."

VI. ISSUES RELATED TO BUSINESS PRACTICE MANUALS

The CAISO has long recognized that it was appropriate to supplement the comprehensive MRTU Tariff with supporting manuals that provide implementation details, examples, templates, timelines, and other information to assist Market Participants in operating under the MRTU markets. Consistent with the Commission's

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31 *California Independent System Operator Corp.*, 119 FERC ¶ 61,240 (2007).

"rule of reason," these Business Practice Manuals provide helpful information but do not significantly affect any of the rates, terms and conditions of the MRTU Tariff.

During the period of the initial development and Commission review of the MRTU Tariff, stakeholders raised two general concerns about the BPMs. First, stakeholders were concerned that the BPMs (which had not yet been developed in early 2006 when the MRTU Tariff was initially filed with the Commission) would contain details that would significantly affect rates, terms, and conditions. Stakeholders contended that the BPMs, when developed, should be incorporated into the MRTU Tariff or otherwise filed for Commission approval. As described in further detail below, the CAISO has undertaken an extensive stakeholder process to develop the BPMs and address stakeholder concerns as to whether details in the BPMs should be moved to the MRTU Tariff, consistent with Commission guidance. The CAISO believes that the additional details added to the MRTU Tariff in today's filing, coupled with the additional details that the CAISO has added to the Tariff in previous compliance filings, fully satisfy any concerns about the application of the Commission's "rule of reason" to the CAISO's BPMs. The CAISO stands ready to address any remaining questions on this issue at the BPM technical conference to be conducted by Commission Staff in the near future consistent with the September 21 Order.[32]

The second major concern raised by stakeholders was the need for a formal review and approval process for amending the Business Practice Manuals. The CAISO agreed that such a process was appropriate and committed to develop a change management process for consideration by the CAISO Board of Governors and incorporation into the MRTU Tariff.[33] The Commission accepted the CAISO's proposal and directed the CAISO to file its proposed tariff language regarding a standard, formalized process for amending the BPMs no later than 180 days prior to the MRTU implementation date.[34] Today's filing contains that proposal. As discussed below, the CAISO's BPM change management process is a hybrid of the stakeholder processes utilized by other ISOs for changes to manuals and the process used to date for the stakeholder review of the CAISO BPMs. The CAISO believes this process provides substantial due process and review rights and ensures that stakeholder concerns about changes to a BPM will be fully vetted.

A. Whether Details in the BPMs Should Be Moved to the MRTU Tariff.

In the September 21 Order, the Commission rejected comments seeking a Commission mandate that the CAISO file the BPMs in their entirety for Commission review. Instead, the Commission directed the CAISO to continue its BPM stakeholder process:

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32 September 21 Order at P 1370.

33 *See* September 21 Order at P 1368.

34 September 21 Order at P 1371.

> We direct the CAISO to continue working with stakeholders to develop the Business Practice Manuals. Once this process is completed, we direct the CAISO to file, within 30 days of the completion of the Business Practice Manuals stakeholder process, but no later than 180 days before the effective date of MRTU Release 1, any necessary additions to the MRTU Tariff. We will then schedule a period of comments; after which, we direct Commission staff to convene a technical conference to assist us in the determination of which practices or details remaining in the Business Practice Manuals might appropriately belong in the MRTU Tariff.

September 21 Order at P 1370.

Although Paragraph 1370 did not specify an earlier date, the CAISO at one point proposed to complete the BPM stakeholder process by February 20. In an order issued in this docket on January 19, 2007, the Commission granted the CAISO an extension of time until May 2, 2007 to file tariff modifications relating to the larger BPM stakeholder review process. However, as explained in a Motion for Extension of Time filed by CAISO on May 2, 2007, the CAISO concluded that an extension of the BPM stakeholder process was appropriate to allow the CAISO to consider stakeholder comments on a number of BPMs that were still undergoing substantial revision. On May 25, 2007, the Commission granted the requested extension so that, consistent with the September 21 Order, the CAISO could continue to work with its stakeholders to develop Business Practice Manuals and related tariff language and file, within 30 days of the completion of the BPM stakeholder process but no later than August 3, 2007, any necessary additions to the MRTU Tariff.

The CAISO has now completed the development of BPMs with sufficient detail to determine whether details in the BPMs should be moved to the MRTU Tariff. A total of fourteen BPMs have been developed, supported by an extensive review effort by stakeholders. The CAISO's BPMs address the following topics:

1. Market Operations
2. Market Instruments
3. Settlements & Billing
4. Scheduling Coordinator Certification & Termination
5. Congestion Revenue Rights
6. Managing Full Network Model
7. Rule of Conduct Administration
8. Outage Management
9. Metering
10. Reliability Requirements
11. Credit Management
12. Compliance Monitoring
13. Definitions & Acronyms

14. BPM Change Management

Copies of the current versions of these BPMs can be found on the CAISO Website at: http://www.caiso.com/17ba/17baa8bc1ce20.html .

These BPMs have been reviewed through an extensive stakeholder process conducted by the CAISO. As illustrated in the table provided as Attachment D to this filing, the BPM stakeholder process has consisted of over a dozen meetings and conference calls since May 2006. In addition, the CAISO invited stakeholders to submit written comments on drafts of the BPMs. The CAISO's stakeholder process invited stakeholders to identify particular details in the BPMs that they believed should be in the tariff. The CAISO considered the comments and questions. In instances where the CAISO agreed, the process resulted in the posting of proposed tariff language. Where the CAISO did not agree, the CAISO explained why in a written response. Over the course of that stakeholder process, the CAISO responded to hundreds of stakeholder questions, including numerous questions as to whether details in the BPMs should be included in the MRTU Tariff. Highlights of the details the CAISO added to the MRTU Tariff based on the BPM stakeholder process are discussed below. All of the BPM-related changes to the MRTU Tariff submitted in the instant filing are also identified in Attachment C to this filing. The CAISO is developing a table that summarizes the CAISO's responses to stakeholder proposals to move detail from the draft BPMs to the MRTU Tariff. The CAISO intends to submit this table as a supplement to today's filing by August 10. The modest delay in submitting this table in support of today's filing should create no hardship because the CAISO is proposing a longer-than-standard comment period on this filing of 28 days.

The Commission should recognize that the additional detail the CAISO has added to the MRTU Tariff based on the BPM stakeholder process of the past year is in addition to the numerous examples where the CAISO previously agreed to add additional details to the Tariff based on stakeholder concerns. For example, prior to the February 2006 filing of the MRTU Tariff, the CAISO agreed to include in the Tariff additional detail on the Trading Hub price calculation. In response to comments on the February 2006 MRTU Tariff filing, the CAISO agreed to add still further detail to the MRTU Tariff on a wide range of issues, including additional detail on LMP calculations (September 21 Order at P 64); exemptions from Unaccounted for Energy and neutrality for Transmission Ownership Right ("TOR") Self-Schedules that are submitted for use of nodes on the TOR facilities in the CAISO's Control Area (September 21 Order at PP 987-88); provisions clarifying the eligibility of pump resources for CRRs (September 21 Order at P 777); clarifications concerning payment of Ancillary Services from imports selected in the Day-Ahead Market and reduced in the HASP due to a derate at the applicable intertie (September 21 Order at P 347); and clarification of the physical validation requirements for Inter-SC Trades (September 21 Order at P 463).

The Commission also directed the CAISO to add detail to the MRTU Tariff on a number of other issues, including an explanation of how the CAISO will determine the

commitment of extremely long start resources and how such commitment will be integrated with the normal day-ahead commitment process (September 21 Order at P 125); the definition of RUC zones and the methodology used to define a RUC zone (September 21 Order at P 152); details addressing the settlement of emergency energy (September 21 Order at P 219); the criteria for procurement of Ancillary Services on a more granular level and a description of: (1) how the Full Network Model optimization will apply to reserves as it does to energy; and (2) if the Full Network Model optimization does not apply to reserves, how the CAISO will determine the definition of an ancillary services region or sub-region (September 21 Order at P 380); clarification of the process for handling interruptible imports (September 21 Order at P 389); a more thorough explanation of the MSS-LAP development process (September 21 Order at P 630); and details of how the CAISO's proposal to make mid-year CRR adjustments will be accomplished in practice (September 21 Order at P 790).

Based on the multiple rounds of CAISO commitments and/or Commission directives to add detail to the MRTU Tariff, the CAISO anticipates that most of the significant issues involving the level of detail in the MRTU Tariff have already been addressed. Moreover, the CAISO has reviewed the level of detail in the tariffs of other ISOs and RTOs approved by the Commission, and is confident that the CAISO's MRTU Tariff contains, as a general matter, at least as much detail as found in other ISO/RTO tariffs and often more detail.

As the Commission made clear in the September 21 Order, in determining whether to include details from the BPMs in the MRTU Tariff, the Commission applies its "rule of reason."[35] As described in *Town of Easton v. Delmarva Power and Light Company*,[36] under the rule of reason the Commission "balance[s] [its] desire not to deprive utilities or groups of utilities of the flexibility they need to manage their own affairs by introducing substantial delay and layered decision-making into their operations . . . with the need for the full disclosure that furthers the purpose of having filing and posting requirements which provide real benefits to existing and potential customers or users of the services in question." In its *Prior Notice and Filing Requirements Under Part II of the Federal Power Act*,[37] the Commission adopted the description offered by the U.S. Court of Appeals for the District of Columbia Circuit in *City of Cleveland v. FERC*:

> [T]here is an infinitude of practices affecting rates and service. The statutory directive must reasonably be read to require the recitation of only those practices that affect rates and service *significantly*, that are realistically susceptible of specification, and that are not so generally understood in any contractual arrangement as to make recitation superfluous. It is obviously left to the

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35 September 21 Order at P 1370.

36 24 FERC ¶ 61,251 at 61,531 (1983).

37 64 FERC ¶ 61,139 at 61,988 (1993).

> Commission, within broad bounds of discretion, to give concrete application to this amorphous directive.[38]

More recently, in Order No. 890,[39] the Commission has made clear that it will continue to apply its rule of reason in a manner that would not require all of a transmission provider's business practices to be included in its tariff:

> The Commission disagrees with parties arguing that all of a transmission provider's rules, standards, and practices should be incorporated into its OATT. We believe that requiring transmission providers to file all of their rules, standards and practices in their OATTs would be impractical and potentially administratively burdensome.

Order No. 890 at P 1651. As an example, the Commission noted that, "while MISO's business practices manuals implicate the Commission's jurisdiction because they generally involve 'the installation, operation, or use of facilities for the transmission or delivery of power in interstate commerce,' they do not require an FPA section 205 filing because 'they mostly involve general operating procedures.'"[40]

The Commission recently applied these principles to reject calls that the CAISO include the CAISO's Credit Policy Guide in the currently effective ISO Tariff.[41] The Commission also recently rejected arguments that the CAISO should be required to describe the supporting information for exercising the negotiated rate option in the MRTU Tariff, finding "that the criteria for this rate may require frequent updates in order to capture the potential change in costs or market conditions, and therefore, is best suited for inclusion in the Business Practice Manual."[42]

The CAISO notes that some stakeholders have raised concerns about whether settlements formulae and other material in the BPM for Settlements and Billing should be included in the Tariff. While the CAISO agrees that these formulae and related details relate to rates, the CAISO believes it is fully consistent with Order No. 890 and Commission precedent that the implementation detail should remain in the BPM so long as all the terms and conditions that significantly affect rates and services remain in the Tariff. Because the plain language description of how the various CAISO charge types will be calculated are included in the MRTU Tariff, there is no need to also include the corresponding formulae. As part of the BPM development process, the CAISO continues to be very diligent to ensure that each charge type corresponds to specific provisions in the MRTU Tariff. To facilitate the process of being able to map the tariff provisions to

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38 773 F.2d 1368, 1376 (D.C. Cir. 1985) (emphasis added).

39 *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, 72 FR 12266 (March 15, 2007), FERC Stats. & Regs. ¶ 31,241 (2007) ("Order No. 890"), *reh'g pending.*

40 Order No. 890 at P 1650.

41 119 FERC ¶ 61,053 at P 15 (2007).

42 June 25 Order at P 344.

the charge types contained in the BPM, the CAISO has provided numerous tools that assist parties in navigating the BPM for Settlements which contains all the charges and payments settled by the CAISO and the CAISO Tariff.[43] In addition, as required by Section 11.29.5.4 of the MRTU Tariff, the CAISO Settlement software shall be audited by an independent firm of auditors to determine consistency with the MRTU Tariff. This audit is for the purposes of establishing the prima facie proof that charges shown in a Settlement Statement have been calculated in a method consistent with the MRTU Tariff. The CAISO has included this effort as part of its preparatory activities prior to MRTU going live. The CAISO has developed its tariff and corresponding settlements software while continuously verifying that the two are consistent with each other and has already made significant efforts to reconcile any discrepancies, including those submitted to the Commission for its consideration today. Therefore, the CAISO does not anticipate any significant discrepancies will be found between the two. In the event that discrepancies are discovered, the CAISO will make any necessary tariff filings to eliminate any such discrepancies.

As discussed in Section V.C of this filing letter, the CAISO has, however, added significant detail concerning settlements and billing to the MRTU Tariff. In addition to the examples noted above where the CAISO previously has agreed to add detail to the MRTU Tariff or the Commission has already directed the CAISO to provide further detail, the following is an illustrative list of specific instances where the CAISO has agreed to provide further detail or clarification in the MRTU Tariff based on stakeholder comments on the draft BPMs:

BPM for Settlements and Billing

The BPM for Settlements and Billing describes the market settlement, market participant invoicing, and the market settlement dispute processes.

- A stakeholder noted that the definition of "Measured Demand" in the MRTU Tariff is not in alphabetical order, making it difficult to find. The CAISO agreed to make this change.

- Stakeholders identified inconsistencies among the MRTU Tariff language, supplemental MRTU testimony, Settlement BPM equations, and MRTU training material used in the calculation of the Hourly Real-Time LAP Price and LAP UIE Adjustment Price. The CAISO added tariff language in Section 11.5.2.2 to address these issues.

- Stakeholders noted that the concept and settlement treatment of Real Time Operational Adjustments is not defined in Tariff Section 11.5. In response, the CAISO added tariff language to Section 11.5 to address this issue.

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43 *See* http://www.caiso.com/17e9/17e97b196bd30.html

- Stakeholders noted that "The No Pay [Non-Spinning Reserve] Price used in the No Pay charge is calculated as the weighted average of the Non-Spinning Reserve ASMPs across all Day Ahead IFM, HASP, and Real-Time markets....The No Pay Non-Spinning Reserve Price used in the No Pay charge is calculated as the weighted average of the Non-Spinning Reserve ASMPs across Day Ahead IFM, HASP, and Real-Time AS markets. The weighting factors are Awarded Non-Spinning Bid in each AS markets." The Tariff section referenced by S&B Attachment E, 8.10.8, refers to payment "rescission" and does not reflect the fact that the no pay amount will be based upon the weighted average price across all three Ancillary Service markets (Day-Ahead, HASP, Real-Time). In response, the CAISO made revisions to Section 8.10.8 of the MRTU Tariff to address these inconsistencies.

- A stakeholder noted that it is essential to link the charge types to the tariff provisions. In response, the CAISO developed a document mapping charge types to the relevant provisions of the MRTU Tariff. This document is posted on the CAISO Website at http://www.caiso.com/1b69/1b69edeb31d0.pdf.

BPM for Compliance Monitoring

The BPM for Compliance Monitoring presents the requirements for compliance with operating orders, both general and specific conducts. It also describes CAISO compliance and auditing processes as well as CAISO investigation and enforcement processes.

- Stakeholder comments were submitted stating that Section 6.1 of the Compliance Monitoring BPM should be included in the MRTU Tariff. In response, the CAISO revised Sections 8.10.8 and 11.10.9 of the MRTU Tariff to clarify Settlement calculations.

- Stakeholder comments were submitted pointing out a conflict between Section 7.4 of the Compliance Monitoring BPM and Section 8.10.8.1 of the MRTU Tariff. In response to these comments, the CAISO revised Sections 8.10.8.1 and 11 of the MRTU Tariff to be consistent with the provisions of Section 7.4 of the BPM regarding the absence of a financial consequence for unavailability or undeliverability of RA RUC Capacity.

- Stakeholders noted that Section 10.2.7 states "For any RA Resource failing to pass a performance audit, CAISO also notifies the California Public Utilities Commission (CPUC) or the relevant Local Regulatory Authority of the failure." However, MRTU Tariff Section 8.9.7 only refers to contacting the CPUC and therefore should be updated for completeness and consistency. Section 8.9.7 of the CAISO Tariff was revised in the CAISO's November 20, 2006 compliance filing to incorporate the requested change and is now consistent with the BPM.

BPM for Congestion Revenue Rights

The BPM for Congestion Revenue Rights presents guidelines and implementation details concerning the role of CRRs under MRTU, including the types of CRRs, allocations, auctions, and the CRR secondary market. The changes described below were added to the MRTU Tariff in the CAISO's CRR-related filing submitted on May 7, 2007. The Commission accepted the May 7 filing in its July 6 Order. The CAISO proposed further changes to the CRR provisions of the Tariff in its July 20, 2007 filing.

- Section 3.2.1 of the CRR BPM states that "The amount of available credit for participating in a CRR Auction cannot exceed the entity's Aggregate Credit Limit." In response to stakeholder comments, the CAISO defined "Aggregate Credit Limit" in Section 36.5.1 of the MRTU Tariff.

- Stakeholder comments were submitted arguing that the CRR BPM provision 3.3 warrants inclusion in the MRTU Tariff. The CAISO agreed to add appropriate language to MRTU Tariff Section 36.8.

- Section 3.4 of the CRR BPM states that "Since digital certificates are issued to specific individuals on behalf of the entity they work for, it is the individual attending the training that will be issued the digital certificate. The CAISO can update training requirements annually or on an as-needed basis. If an employee leaves a company, the CAISO should be notified so that this certificate can be revoked. It is the intent that once an employee has been trained at the CAISO that this training would then be passed on to other employees of the company. If the employee that was trained does leave the company then the CAISO will let the employer decide if they have another employee that is adequately trained or if not then have someone attend the next available training class." Stakeholder comments were submitted stating that the details on digital certificate, notification and revocation should be summarized in the MRTU Tariff. The CAISO agreed to add the appropriate language to Section 36.5.2 of the MRTU Tariff.

- Stakeholder comments were submitted contending that the CRR BPM provision 5.1 warrants inclusion in the MRTU Tariff. In response, the CAISO agreed to add language to MRTU Tariff Section 36.8 for internal loads and Section 36.9 for external loads.

- Section 5.2 of the CRR BPM states that: "For a discussion on the Merchant Transmission project allocation process, refer to Section 14 of this BPM (section 14 of this BPM is still being developed)." Stakeholder comments argued that there is a need to have the ability to see tariff impacts after this process is resolved. The CAISO agreed to amend Section 36.11 of the MRTU Tariff to reflect the CAISO's merchant transmission proposal.

- Section 6.3.3 of the CRR BPM states that "To verify a CRR Source Location, the contract duration must be a minimum of 30 days. CAISO will also allow daily contracts to be used to meet this requirement. ...." Stakeholder comments pointed out that these statements seem to be contradictory and should also be included in the tariff. Furthermore, stakeholders noted that Section 6.3.3 states that "specific details on the level of documentation that will be required for the verification process will be developed and incorporated into this BPM at a later date." Stakeholders argued that tariff impacts cannot be assessed without detailed requirements. In response to these comments, the CAISO agreed to add language to MRTU Tariff Section 36.8.3.4

- Stakeholders argued that the following provision of Sections 6.3.4 and 6.4.4 should be included in the MRTU Tariff: ""As mentioned in Section 6.3.4.4 of this BPM, there can be a pro rata adjustment for contracts that do not cover the entire CRR term....CAISO works with each of the Candidate CRR Holders to review contracts or other documentation that demonstrates CRR Source Locations utilized during the relevant historical period. CAISO considers a contract (or combination of contracts) that covers a portion of a season (minimum 30-day period) to be sufficient verification for the entire season, but the MW values are pro rata adjusted for the relevant term of the CRR if the contracts are not for the complete CRR term." The CAISO agreed to add appropriate language to MRTU Tariff section 36.8.3.4.4.

- Stakeholders argued that the following language from Section 6.4 of the CRR BPM should be included in the MRTU Tariff: "The CAISO will make available, prior to the beginning of the allocation process, a list of allowable sources and sinks to be used in the allocation." The CAISO agreed to add appropriate language to MRTU Tariff Sections 36.8.2 and 36.8.3.4.1.

- Section 6.4 of the CRR BPM states that ""Sub-LAPs if within the LSE's Default LAP (in the annual tier 3 and monthly tier 2". Whereas MRTU Tariff section 36.8.3.6 states: "In Tier 2 of the monthly CRR Allocations, each LSE may nominate Monthly CRRs up to 100% of its Monthly CRR Eligible Quantities, minus the quantity of CRRs allocated to that LSE in Tier 1 In Tier 2 of the Monthly Allocation, Sub-LAPs will be eligible CRR Sinks." Stakeholder comments pointed out that the MRTU tariff is not clear that sub-laps must be within the eligible lap and that the tariff is silent about there being any verification of sinks in tier 3. As a result of these comments, the CAISO agreed to add language to MRTU Tariff section 36.8.3.6.2 relating to Section 6.4 of the CRR BPM.

- Sections 12.2.3 and 12.2.4 of the CRR BPM state that ""The eligible CRR Sink Locations are Scheduling Points that the entity historically used to serve its load. To verify a CRR Sink Location, the entity must have final Hour-Ahead Schedules at that particular Scheduling Point." Whereas MRTU Tariff Section 36.9.4 states:

"Eligible CRR Sinks will be the Scheduling Points for which the CAISO has established CRR Eligible Quantities based on the LSE's submitted historical hourly export data." Stakeholder comments pointed out that the MRTU Tariff doesn't specify final schedules as verification data and requested a resolution in the MRTU Tariff. The CAISO agreed to make changes to MRTU Tariff Section 36.9.3. The CAISO will base the Scheduling Point verification on the tagged Real-Time Interchange Export Schedules.

BPM for Market Instruments

The BPM for Market Instruments describes the types of market instruments that are available to Market Participants to participate in the Day-Ahead Market, and Real-Time Market, including details on Bids and Inter-SC Trades.

- In response to stakeholder comments, the CAISO agreed to add tariff language relating to Section 3.2 of the Market Instruments BPM. Section 3.2 provides that "CAISO does not accept bids for the next Trading Day between the time of Market Close at 1000 hours and the publication of the DAM results at 1300 hours." Stakeholders argued that this provision is a hard limitation on the ability of Scheduling Coordinators ("SCs") to schedule or bid and therefore should be included in the tariff. The CAISO agreed with this assessment and revised tariff language in Section 30.5.1.

- The CAISO agreed to add tariff language to clarify the timing for submitting Inter-SC Trades. The CAISO made changes to Section 28.3.3. This change relates to Section 3.5 of the Market Instruments BPM.

- Stakeholders noted that the terms "Bid based" and "Cost based" in section 30.4 of the MRTU Tariff will be changed to "Registered Cost" and "Proxy Cost" in a future FERC clean up tariff amendment and that as a result language would need to be reconciled in the Tariff. The CAISO agreed and modified Section 30.4 of the MRTU tariff to be consistent with the BPM.

- Stakeholders noted that the following should be specified in the Tariff and reconciled with the ability to change bids every six months: "SCs need not enter Minimum Load Cost into their DAM Bid. If the SC does submit data for this component, the CAISO overwrites the Bid component with the data from the Master File." In response, the CAISO added language to Section 30.12 of the MRTU Tariff to be consistent with the BPM.

- Referring to BPM Sections 5.1.3.1.1 and 5.1.3.1.2, stakeholders noted that Start up bid is "Not entered by SC through SIBR. If the SC does submit data for this component, CAISO overwrites the Bid component with the data from the Master File. If the SC has selected Registered Cost for the Minimum Load Cost, this value can be changed every six months through the Master File. If the SC has

selected Proxy Cost for the Minimum Load Cost, CAISO calculates this value daily based on the daily gas price. The process used by CAISO to calculate the daily gas price is described in Attachment C. The Minimum Load Cost is constant for the entire Trading Day. If the SC submits a Minimum Load Cost component in the DAM..." Stakeholders noted that these statements conflict with one another and conflict with the tariff. The CAISO added language to the MRTU Tariff Sections 30.4. and 30.12 to clarify these inconsistencies.

- Referring to BPM Section 5.2.2.1, Stakeholders noted that "TOR Self-Schedules must be submitted balanced between source and sink, and must be within the allotted ownership rights for that TOR, as specified in the TRTC provided in advance to the CAISO. Sources and sinks must use the same TOR Contract Reference Number. The Contract Reference Number must be registered in the Master File prior to the TOR Self- Schedule taking place. (CAISO Tariff Section 17.3.1, Validation of TOR Self-Schedules). " Tariff section 17.3.1 did not exist in the February version of the MRTU Tariff and TOR details were included part of its November 20, 2006 compliance filing and accepted in large part in the Commission's June 25 Order. Additional compliance requirements relating to TORs stemming from the June 25 Order are discussed below.

- Stakeholders noted the following language from BPM Section 5.2.2.2, "Sources and sinks must use the same ETC Contract Reference Number. The Contract Reference Number must be registered in the Master File prior to the ETC Self-Schedule taking place." However, these provisions could not be found by stakeholders in referenced MRTU Tariff Section number 16.6.1. Stakeholders submitted that these provisions should be in the Tariff. In response, in its March 9 filing, CAISO filed tariff language indicating requirement for ETC contract reference number. The specific Tariff reference is Section 17.1.4.

- Stakeholders noted that the following language was not in the Tariff and should be included therein: "Load Distribution Factors (LDFs) for allowed customized aggregation come from the LDF library maintained by CAISO. The LDF Library contains the following: Distribution Location – the Connectivity Node (CNode) associated with the Custom Load Aggregation Resource Distribution Factor – Load Distribution Factor for the Custom Load Aggregation Resource located at the Distribution Location" Specifically, stakeholders noted that aggregation resource load bids could not be found in the Tariff. In response, the CAISO noted that LDF is defined in Appendix A to the MRTU Tariff in relation to a Load Aggregation Point. In response to questions regarding the Market Operations BPM, the CAISO included additional tariff language at Section 27.5.5 concerning LDFs.

- Stakeholders noted that the following language from BPM section 7.1 was unclear and requested inclusion of this language in the Tariff: "All resources with RA Capacity must participate in the RUC process by submitting an RA RUC

Availability Bid, expressed in MW. Stakeholders were unclear as to the requirement. In response, the CAISO confirmed that RA Capacity must submit Bids in the Day-Ahead market and added tariff language to Section 31.5.1.1 that clarifies that RUC participation is required for RA resources to the extent capacity is not committed in the IFM.

- Stakeholders noted that the BPM limited Trades to Aggregated Pricing Nodes that are also Defined Trading Hubs or LAPS. The MRTU Tariff did not seem to include a restriction to defined trading hubs or LAPS. Stakeholders requested resolution of the BPM with the Tariff. The CAISO reconciled this tariff language in its November 20, 2006 compliance filing. *See* Section 28.1.6.4 of the MRTU Tariff as modified in the November 20, 2006 compliance filing.

- Stakeholders noted that Section 8.2 of the Market Instruments BPM states "ETC Self-Schedules that are over the Entitlement amount. ETCs that are over their Entitlement amount at market close time will be deemed invalid." Stakeholders submitted that specifics should be in the Tariff. The CAISO added additional tariff language to Section 17 of the MRTU Tariff, specifically Section 17.3.2.2. This change was made in the November 20, 2006 compliance filing.

- Stakeholders noted that the specifics for the following language should be included in the Tariff: "TOR Self-Schedules that are over the transmission right amount. TORs that are over there transmission right amount will be deemed invalid at market close time." The CAISO added additional tariff language to Section 17 of the MRTU Tariff, specifically Section 17.3.2.2. This change was made in the November 20, 2006 compliance filing.

- Stakeholders noted that the following BPM language differed from Tariff language: "The process of requesting operational parameter changes follows the following timeframe: 5-11 business days from receipt of the request to implementation into the Master File database to be available for scheduling." However, MRTU Tariff Section 30.7.3.2 indicates that updates will be made: "Once a day the Master File data is updated with changes to the Master File that were submitted at least seven (7) Business Days in advance" The CAISO conformed the BPM and Tariff language. *See* Section 30.7.3.2 of the MRTU Tariff.

- Stakeholders argued that the provisions of Market Instruments section D.3 concerning details pertaining to Default Energy Bids should be included in the Tariff because of their impact on generator's dispatch and payment. The CAISO made a compliance filing on this subject on December 20, 2006 in compliance with PP 1057-59, which the Commission accepted in its June 25 Order at P 337.

- MRTU Tariff section 39.7.1.2 includes no provisions comparable to the BPM governing the feasibility test. Stakeholders stated that the CAISO needed to

reconcile this by making a filing to include these provisions if they are not already included elsewhere in the MRTU Tariff. The CAISO agreed that additional Tariff language was appropriate and has filed modifications to Section 39.7.1.2 as part of this compliance filing.

- Stakeholders submitted that the following BPM provisions should be added to the Tariff: "RMR units do not receive the 10% adder for their contract capacity. For available capacity in excess of the MNDC the Scheduling Coordinator representing the RMR unit must rank order their calculation preference between the same three methodologies, namely LMP-based, Cost-based and Negotiated. This preference will then apply to the non-RMR capacity between the MNDC and the PMax of the unit. The independent entity will concatenate these two calculation methodologies (contract based for the RMR capacity and preference based for the non-RMR capacity), adjust them for monotonocity and submit them to CAISO as a single DEB." In response, the CAISO added tariff language to Section 39.7.1.6 to clarify applicability of DEB tariff provisions to RMR Units.

- Stakeholders commented that the CAISO should add tariff language to clarify the eligibility of partially-contracted RA units to receive a Bid Adder as noted in Section E.4 of the Market Instruments BPM. Although the CAISO agreed to add such language in response to stakeholder request, in reviewing Section 39.8.3, the CAISO finds that the tariff language already provides that the Bid Adder for a partially-contracted RA will be reduced based on the percentage of the unit's RA capacity.

BPM for Market Operations

The BPM for Market Operations provides details on the rules, design, and operational elements of the activities that lead up to and include the Day-Ahead and Real-Time Energy and Ancillary Service markets.

- In response to stakeholder comments, the CAISO agreed to add further detail to MRTU Tariff Section 4.5.3.2 relating to providing e-Tags for all transactions.

- Stakeholders commented that the following language should be included in the MRTU Tariff: "In general, the pricing Location of a Generating Unit coincides with the CNode where the relevant revenue quality meter is connected or corrected...Although the schedule, Dispatch, and LMP of a Generating Unit refers to the PNode, the Energy injection is modeled in the FNM for network analysis purposes at the corresponding Generating Unit(s) (at the physical interconnection point)". In response, the CAISO agreed to add further detail to MRTU Tariff Section 27.5.1.

- Stakeholders commented that the following language should be included in the MRTU Tariff: "For IFM, the LDF library uses a similar-day methodology for

smoothing the most recent LDFs. The similar-day methodology uses data separately for each day of the week and holidays, rather than for weather conditions. More recent days are weighted more heavily in the smoothing calculations." In response, the CAISO added a new section on LDFs to MRTU Tariff Section 27.5.5.

BPM for Scheduling Coordinator Certification and Termination

The BPM for Scheduling Coordination Certification and Termination presents the guidelines, business processes, and rules used to comply with CAISO's application and certification procedures for Scheduling Coordinators.

- Stakeholders commented that all specific roles and responsibilities of the ISO and Market Participants need to be captured in the MRTU Tariff. The CAISO agreed and made necessary changes to update Section 4.5.1.1.10.1 of the MRTU Tariff.

- Stakeholders commented that the following language is not in the Tariff: "The SC applicant has one calendar year in which to complete and pass the requirements for final approval. If an application is not completed within one calendar year from the initial submittal date, CASIO can close the application. At a later date, if the SC applicant wishes to again pursue certification, a new application and fee is required." In response, the CAISO conducted a stakeholder process and submitted a filing to the Commission on June 20, 2007 regarding the proposed changes to the current version of the ISO Tariff that are reflected in this section of the BPM. The CAISO also added these same changes as new Section 4.5.1.1.10.2 of the MRTU Tariff.

- Stakeholders commented on the following language in Section 5.2 of the SC BPM: "2) Send a hardcopy of the application form, including the $500.00 non-refundable application fee [NOTE: THIS FEE IS UNDER CONSIDERATION FOR POTENTIAL CHANGE IN CONJUNCTION WITH A POTENTIAL CHANGE TO THE MRTU TARIFF. A MARKET NOTICE WILL BE ISSUED IDENTIFYING THE STAKEHOLDER PROCESS TO ADDRESS THE POTENTIAL CHANGES.] to..." Stakeholders argued that significantly higher fees may warrant consideration of inclusion in the tariff of the fee or the fee setting process. In response, the CAISO conducted a stakeholder process and submitted a filing to the Commission on June 20, 2007 regarding the proposed change to the current version of the ISO Tariff to increase the Scheduling Coordinator application fee from $500 to $5,000. The CAISO has proposed to revise this section of the BPM to incorporate this change and to make the same change to Section 4.5.1.1.4 of the MRTU Tariff.

- Stakeholders commented that Section 5.2 of the BPM for Scheduling Coordinator Certification & Termination provides for an application fee and charges for submitting a Scheduling Coordinator Application and additional Scheduling Coordinator IDs, respectively and that these rates and charges must be reflected in the MRTU Tariff. In response, the CAISO conducted a stakeholder process and submitted a filing to the Commission on June 20, 2007 regarding a proposed change to the current version of the ISO Tariff and incorporated into Section 4.5.1.3 of the MRTU Tariff a provision explicitly specifying the charge for additional Scheduling Coordinator IDs, as provided in Section 5.5.1 of the BPM.

- Stakeholders commented on the following language in SC BPM section 5.3: "This requirement enables the SC applicant to have access to the CAISO Market applications. The SC applicant selects and implements the network interface that it needs. The CAISO web services are provided over two network interfaces: Internet and Energy Communication Network (ECN). Both interfaces are symmetrical with respect to the functionality and data provided. It is the responsibility of the SC applicant to ensure adequate local network capacity and performance to support these web services." Stakeholders noted that no specific requirements are stated herein (not withstanding what may be included in the linked information). However, no requirements associated with the ECN could be identified within the tariff. Stakeholders stated that the tariff should include all conditions of SCs. In response, the CAISO noted that Section 4.5.1.1.10.1(g) of the CAISO Tariff specifies that a Scheduling Coordinator Applicant must install a computer link account in order to communicate with the CAISO, which computer link is to the ECN. Moreover, CAISO Tariff Sections 6.1.2, 6.1.3, 6.2.1, 6.5.5, etc. all require Scheduling Coordinators to communicate with the CAISO through the CAISO's secure communications system, which is the ECN. The CAISO stated that while these Tariff provisions are sufficiently clear in imposing this obligation on Scheduling Coordinators, the CAISO agreed to add a specific reference to the requirements of the BPM in Section 4.5.1.1.10.1(g). Moreover, the CAISO conducted a stakeholder process and submitted a filing to the Commission on June 20, 2007 regarding the proposed change to the current version of the ISO Tariff.

- Stakeholders noted that while SC BPM section 5.3.4 states that "The SC applicant is required to complete training, which consists of..." no requirements associated with training could be found within the tariff. Stakeholders noted that the tariff should include all conditions of SCs. In response, the CAISO revised Section 4.5.1.1.10.1(d) of the CAISO Tariff to incorporate a requirement that a Scheduling Coordinator Applicant must complete training as specified in the BPM prior to certification as a Scheduling Coordinator. Moreover, the CAISO conducted a stakeholder

process and submitted a filing to the Commission on June 20, 2007 regarding the proposed change to the current version of the ISO Tariff.

- Stakeholders commented that the SC Certification requirements specified in section 6.1.2 of the SC Certification BPM are vague. The CAISO agreed to revise Section 4.5.1.1.10.1(d) of the CAISO Tariff to incorporate a requirement that a Scheduling Coordinator Applicant must complete testing as specified in the BPM prior to certification as a Scheduling Coordinator. Moreover, the CAISO conducted a stakeholder process and submitted a filing to the Commission on June 20, 2007 regarding the proposed change to the current version of the ISO Tariff.

- Stakeholders noted that SC BPM section states that "All SC applicants must complete real-time and contact drills." However, stakeholders noted that no comparable requirement could be found within the tariff. CAISO noted that the requirement that a Scheduling Coordinator demonstrate that it has a 24-hour a day scheduling center with continuous communication capability to the CAISO is embedded in CAISO Tariff Sections 4.5.1(a), 4.5.1.1.10.1(f), 4.5.1.1.11(d), 4.5.4.1, 6.1.1, 6.2.1, and others. Regardless, the CAISO proposes to revise Section 4.5.1.1.10.1(d) of the CAISO Tariff to incorporate a requirement that a Scheduling Coordinator Applicant must complete training and testing as specified in the BPM prior to certification as a Scheduling Coordinator. Moreover, the CAISO conducted a stakeholder process and submitted a filing to the Commission on June 20, 2007 regarding the proposed change to the current version of the ISO Tariff.

- Stakeholders noted that no requirement comparable to SC BPM section 5.3.8 could be found in the Tariff. In response, CAISO stated that Section 6.1.5 of the Tariff requires each Scheduling Coordinator and any other Connected Entity to provide the CAISO the information specified in this provision regarding emergency contacts. With regard to the other information needed in the Scheduling Coordinator's emergency plan, the CAISO agreed to revise Section 4.5.1.1.10.1(f) of the CAISO Tariff to incorporate an explicit requirement that a Scheduling Coordinator Applicant must submit this information as specified in the BPM prior to certification as a Scheduling Coordinator. Moreover, the CAISO conducted a stakeholder process and submitted a filing to the Commission on June 20, 2007 regarding the proposed change to the current version of the ISO Tariff.

- Stakeholders noted that section 5.3.14 of the SC BPM states that "SCs must employ several different computer systems and subsystems to properly participate in CAISO Markets. In employing these systems and in all communications with the CAISO, SCs must adhere to the computer

system security requirements of CAISO." Stakeholders noted that no "system security" requirements could be found within the tariff. In response, the CAISO noted that the requirement that a Scheduling Coordinator adhere to the CAISO's system security requirements is embedded in CAISO Tariff Sections 6.1.3 and 6.2, among others. Regardless, the CAISO agreed to revise Section 4.5.1.1.10.1(b) of the CAISO Tariff to incorporate an explicit requirement that a Scheduling Coordinator must execute an agreement for compliance with the CAISO's system security requirements prior to certification as a Scheduling Coordinator. Moreover, the CAISO conducted a stakeholder process and submitted a filing to the Commission on June 20, 2007 regarding the proposed change to the current version of the ISO Tariff.

BPM for Reliability Requirements

The BPM for Reliability Requirements provides details on the CAISO's implementation of Resource Adequacy requirements and how Scheduling Coordinators will meet these requirements.

- Stakeholder comments were submitted regarding Section 40 of the MRTU Tariff. Section 40, relating to resource adequacy, applies to all Load Serving Entities except a Load Serving Entity or LSE that has a metered peak Demand of less than one MW during the twelve months preceding the date for electing LSE resource adequacy status, *i.e.*, Reserve Sharing LSE or Modified Reserve Sharing LSE. In response to these comments, the CAISO added detail to the MRTU Tariff to clarify how the exemption will be determined.

- Stakeholders noted that no validation or compliance requirements were found in Section 40, but were included in the BPM based on existing Commission-approved IRRP provisions. Stakeholders stated that BPM terms and conditions on this subject are important and should be included in the Tariff. The CAISO agreed and, as noted above, has incorporated the prior Commission-approved provisions from the IRRP as MRTU Tariff Section 40.7.

BPM for Definitions and Acronyms

The BPM for Definitions and Acronyms describes the terms and acronyms used in the CAISO BPMs.

- Stakeholder comments were submitted in writing and in conference calls regarding numerous defined terms both in the BPM and in the MRTU Tariff. In response to these comments, the CAISO agreed to substitute the term "Generation Distribution Factor" in the MRTU Tariff for "Distribution Curve," incorporate

several new defined terms regarding Qualifying Facilities ("QFs") into the MRTU Tariff, and make revisions to the terms "Black Start," "Default Energy Bid," "Frequently Mitigated Unit" and "Non-Spinning Reserve" in both the MRTU Tariff and the BPM, among many other revisions to the defined terms based on review prompted by stakeholder comments.

The CAISO recognizes that, consistent with Paragraph 1370 of the MRTU Tariff, the Commission will be scheduling a technical conference to assist the Commission in determining whether any additional practices or details in the BPMs should be moved to the MRTU Tariff. The CAISO is fully prepared to participate in this technical conference. The CAISO suggests that the technical conference be scheduled for a date after the date comments are due on today's filing and that the Commission direct interested parties to identify any specific proposals to move details in the BPMs to the MRTU Tariff. The CAISO believes it is critical that commenters identify specific BPM provisions that they allege should be moved to the MRTU Tariff. This is consistent with the Commission's statement that it will apply its rule of reason on a case-by-case basis. Specifically, the CAISO proposes that this technical conference be scheduled during the week of September 24.

The CAISO notes that completion of the BPM stakeholder process for the purposes of compliance with Paragraph 1370 does not mean that the BPMs will not change as a result of additional efforts to prepare for implementation of MRTU, including the filing of additional tariff language through either Section 205 or compliance filings or as a result of internal assessments to ensure accuracy and consistency between the MRTU Tariff and CAISO software. As the Commission and stakeholders are aware, the CAISO is currently engaged in end-to-end testing. In recognition of this fact and the fact that the formal BPM change management process will not be in effect until implementation of MRTU, the CAISO will endeavor to follow the following process whenever any additional tariff language or BPM language is posted: (1) when the CAISO posts draft tariff language for any future tariff amendment filing, it will post any proposed companion BPM language, if appropriate and feasible; and (2) similarly, if the CAISO posts revisions to a BPM it will also post any additional tariff language, if necessary, or state that existing tariff language is adequate.

B. The Business Practice Manual Change Management Process.

As noted above, in Paragraph 1371 of the September 21 Order, the Commission accepted a CAISO proposal to develop a BPM change management proposal and directed the CAISO to include this change management process in the MRTU Tariff no later than 180 days prior to MRTU implementation.

The CAISO's proposed BPM change management process is a hybrid of best practices taken from other ISO stakeholder processes and the processes used during the 2006-2007 stakeholder review of the current BPMs. The process is designed to encourage the exchange of ideas and information regarding maintenance and

modifications to the CAISO BPMs in a fair and transparent manner. The CAISO made numerous additions to the BPM change management process in response to stakeholder comments, including a Proposed Revision Request process that both the CAISO and stakeholders must use, transparent tracking of proposed BPM changes on the CAISO Website, monthly meetings on proposed BPM revisions, regular reporting to the CAISO Board of Governors, an executive appeal process with public meetings, and an agreement that the BPM for Change Management cannot be modified with approval of the CAISO Board. The resulting dialogue will allow all stakeholder concerns to be fully vetted, will provide a valuable record as to how decisions are developed, and will establish a positive blueprint for future modifications.

Throughout 2007, the CAISO conducted a stakeholder process to develop the BPM change management process. The CAISO solicited stakeholder comments on a BPM change management straw proposal in January 2007. In March 2007, the CAISO solicited input on a draft BPM for Change Management which incorporated many of the features requested by stakeholders. In April 2007, the CAISO presented the proposed BPM change management process to the CAISO Board of Governors and obtained Board authorization to develop the implementing Tariff language and file the proposal at FERC. The April 12, 2007, Board memorandum on BPM change management is provided as Attachment G to this filing. A summary of CAISO responses to stakeholder comments on BPM change management was also presented to the CAISO Board, and is provided as Attachment H to this filing.

Between April 18, 2007 and June 26, 2007, the CAISO posted four drafts of Tariff language to implement the BPM change management process. On May 22, 2007, the CAISO held a stakeholder meeting on BPM change management issues. On June 8, 2007, the CAISO posted responses to stakeholder questions on the BPM change management Tariff language. A copy of these responses is provided as Attachment I to this filing.

The process for modification of the BPMs itself is designed to be consistent with the Commission's "rule of reason," which requires that only those provisions that significantly affect terms, rates and conditions need to be filed and approved by the Commission. The proposed MRTU Tariff language in Sections 22.4.3 and 22.11 addressing the BPM change management process contains the terms and conditions that significantly affect the BPM change management process, while the CAISO's proposed new BPM for BPM Change Management will contain the implementation details relating to this process.[44] This two-tiered design is designed to fully comply with the Commission's precedent discussed above.

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44 The titles of Sections 22.4.3 and 22.11 refer not only to BPMs but also to Operating Procedures. Order No. 890 requires the CAISO to document its process for modifying Operating Procedures. The CAISO will be developing an Operating Procedure change management process for inclusion in its Order No. 890 compliance filing in October of this year.

The CAISO's change management proposal borrows elements of ERCOT's web-based approach to considering protocol revisions, which can be found at: http://www.ercot.com/mktrules/protocols/index.html. Under this proposal, a simple request template will trigger a systematic review process that the submitter and interested stakeholders alike can follow on a devoted page on the CAISO's website to provide transparency.

The CAISO's process starts with submission of a Proposed Revision Request ("PRR"). The PRR is a template on which a submitter outlines the proposed change, the reason for the change, impacts and benefits of the change on CAISO Market operations and on stakeholders, and offers suggested language to implement the proposed change. The same form will be used by everyone requesting a change whether it is requested by a market participant or CAISO management. As provided in Section 22.11.1.1, a PRR may be submitted by any Market Participant, a Local Regulatory Authority, CAISO management or another entity that operates in the CAISO markets and has demonstrated that it is affected by the relevant sections of the BPM. The CAISO may prepare an impact analysis for BPM PRRs submitted by other entities to the extent the CAISO deems such an analysis appropriate.

A designated CAISO BPM change management coordinator will manage the process for consideration and resolution of each PRR. As set forth in Section 22.11.1.3, the BPM change management coordinator shall be an identified employee of the CAISO who will be responsible for submitting reports to the CAISO Governing Board at each regularly scheduled Board meeting, indicating the status of pending BPM PRRs, including a summary of proposed revisions that have been accepted and the reason for any proposed revision that has been rejected, including the positions of stakeholders, and any decision on appeal. During the first year of MRTU, when the CAISO is submitting quarterly post-MRTU implementation reports in accordance with Paragraph 1417 of the September 21 Order, the CAISO commits to include all BPM PRR reports to the CAISO Board in those quarterly reports.

The BPM change management coordinator will make a preliminary categorization of incoming PRRs into the following categories:

(a) Category A – Clarifications of existing BPM language, grammatical errors, and revisions with minor significance that will be subject to the standard BPM PRR review and action process described in Section 22.11.1.5 except in the event of urgent or emergency circumstances.

(b) Category B – Revisions that may be of substantial significance, including changes to the CAISO or Market Participants' systems that will be subject to the BPM PRR review and action process described in Section 22.11.1.5 except in the event of urgent or emergency circumstances. In the case of a proposed change affecting the CAISO's systems, the CAISO will prepare

a BPM PRR impact analysis for Category B revision requests, if not already prepared.

(c) Category C – For revisions that are beyond the scope of the BPM or that may require revisions to the CAISO Tariff, the CAISO will identify additional processes that may need to be undertaken in the consideration of the requested change beyond the BPM PRR process.

Section 22.11.1.5 sets forth the general process for public review and comment on BPM PRRs, including monthly public meetings, the posting of public comments on the CAISO website, and the publication by the BPM change management coordinator of both a report on recommended actions on BPM PRRs and a final decision on each BPM PRR, all of which provide timely feedback to all questions and concerns. The BPM PRR report shall be sufficiently detailed and shall be published in a timeframe that allows interested stakeholders a meaningful opportunity to provide written comment.

Section 22.11.1.6 of the MRTU Tariff provides that any entity eligible to submit a BPM PRR may, within ten (10) Business Days, appeal in writing the BPM change management coordinator's final decision any BPM PRR to a committee comprising at least three CAISO executives. Meetings of this executive committee shall be public. The executive sponsor of a BPM PRR may not sit on the executive committee reviewing any appeal of a final decision regarding that same BPM PRR. The executive sponsor may participate in the discussion of the BPM PRR but may not vote on the appeal. The CAISO committee will review the appeal and issue a public decision. If not satisfied with the decision on appeal, the appellant may raise concerns it may have with the CAISO Board of Governors at the next regularly scheduled Board meeting through the public comment period or through prior letter to the Governing Board.

The CAISO is committed to the public, transparent process described above wherever practicable. In some circumstances, however, immediate changes to BPMs will be essential to protect System Reliability or security, to protect the competitiveness or efficiency of the CAISO Market, to comply with legal requirements, or to address emergency circumstances specific to a BPM. Where there is insufficient time to comply with the BPM PRR procedures set forth in Section 22.11.1, the CAISO shall take reasonable steps to communicate with Market Participants and any other directly-affected entities prior to taking expedited action. If the CAISO takes expedited action to change or clarify a provision of a BPM in emergency circumstances, the CAISO shall promptly issue a Market Notice and submit a BPM PRR to examine *ex ante* the necessity of the change and its impacts.

Finally, Section 22.11.2 sets forth a higher standard for changes to the Business Practice Manual for BPM Change Management than for changes to other BPMs, requiring CAISO Governing Board approval of any change. It would be burdensome and impractical to require the CAISO Governing Board to act on changes to BPMs generally. However, the CAISO proposes this additional level of process specifically for the BPM

for BPM Change Management in response to stakeholder concerns that the CAISO might, through a revision to the BPM for BPM Change Management, reduce the opportunities for public involvement in the change management process for the substantive BPMs. While a Market Participant or other member of the public always has the opportunity to provide public comment to the CAISO Governing Board regarding a change or proposed change to a BPM, the specific requirements of Section 22.11.2 will ensure that a change to the BPM for BPM change management would be the subject of specific public comment and a formal vote by the CAISO Governing Board.

The BPM change management process and the implementing Tariff language in Section 22.11 includes many enhancements proposed by stakeholders and adopted by the CAISO. The CAISO is aware of two significant concerns that some stakeholders have with this process. Some stakeholders have requested a formal appeal to the CAISO Board for any proposed BPM change. The CAISO believes a standard appeal requiring the CAISO Board to make a decision on the operational details of BPM issues is not an efficient use of resources. The CAISO has, however, added three features to address the concerns of these stakeholders: (1) the right to appeal the BPM change management coordinator's final decision any BPM PRR to a committee comprising at least three CAISO executives, which shall hold public meetings on the appeal, (2) a requirement that the CAISO Board approve changes to the Business Practice Manual for BPM Change Management, and (3) the addition of language to Section 22.11.1.6 expressly providing that an appellant may raise concerns it may have with the CAISO Board of Governors at the next regularly scheduled Board meeting through the public comment period or through prior letter to the Governing Board. With these additions, the CAISO believes that stakeholders have ample assurances that their appeals of BPM revision determinations will receive a full and fair hearing.

Second, a few stakeholders have contended that the CAISO should adopt formal stakeholder voting on BPM changes through a sector voting structure. The CAISO does not believe such a requirement is necessary or appropriate. Unlike some other ISOs and RTOs, the CAISO has an approved governance process which does not include a formal stakeholder advisory body. The CAISO believes a formal stakeholder voting structure would create far more conflicts and issues than other viable approaches to obtain stakeholder input on issues. Among the highly contentious issues that would need to be resolved in order to develop such a process are the issues of: (1) the appropriate number of segments, (2) the appropriate segment categories, (3) how to determine which entities could populate a given segment, (4) how votes would be allocated among segments, (5) how votes would be allocated in a segment, and (6) whether entities could be adequately covered by any single segment. A wide range of Market Participants (including investor-owned utilities, municipal entities, generators, marketers, load-serving entities, and others) have expressed concerns about the potential to be under-represented or misrepresented in such a stakeholder structure. The CAISO urges the Commission to reject calls for a segment-based stakeholder process and to allow the CAISO to consider and respond to stakeholder concerns through a robust process building on the MRTU stakeholder efforts over the past couple years.

In sum, this process will provide a just and reasonable method for all stakeholders to request, track and discuss potential changes to the BPMs within a completely transparent and easily accessible system. The system reasonably balances the competing interests of a public, transparent process and direct stakeholder participation with direct management accountability for business practices and the successful operation of the CAISO markets and systems.

VII. DESCRIPTION OF ADDITIONAL COMPLIANCE CHANGES

A complete list of the changes to the MRTU Tariff made in this filing in compliance with the September 21, April 20 and June 25 Orders is set forth in the table included with this filing as Attachment C. Attachment C lists the relevant ordering paragraph from the applicable Order, a description of the required change, and either a blackline showing the CAISO's proposed modification to the MRTU Tariff to effect the required change or a cross-reference to the affected provisions. Many of these modifications are straightforward in nature, and therefore need no additional explanation by the CAISO. For instance, many of the changes directed by the Commission are uncomplicated and did not involve any exercise of discretion by the CAISO. These items are included in Attachment C, but are not individually discussed in this transmittal letter.

A number of the modifications submitted in compliance with the September 21, April 20 and June 25 Orders do, however, benefit from additional explanation. Moreover, the Commission directed the CAISO to provide additional explanation or justification regarding several issues in this filing. A discussion of these items is set forth below, organized using the subject headings adopted by the Commission in the September 21, April 20 and June 25 Order. These items are also identified in Attachment C.

Also, the CAISO is requesting an extension of time to comply with the following items:

- The Commission's directive as set forth in Paragraph 452 of the September 21 Order to develop and file interim measures to address the potential economic incentive for LSEs to underschedule in the Day-Ahead Market prior to the implementation of convergence bidding.

- The requirements, as set forth in Paragraphs 162 and 163 of the June 25 Order, that the CAISO provide further details about the impact of the transmission constraint violation penalty in the IFM, that the CAISO submit additional tariff language that indicates that this penalty is not a financial penalty in the traditional sense and clarify what constitutes an effective economic bid, and that the CAISO provide explanations concerning this new language in the transmittal letter for the August 3 filing.

- The Commission's directive in Paragraph 175 of the June 25 Order that the CAISO, upon completion of a stakeholder process, submit revised tariff sheets to allow Metered Subsystem resources to designate RMR units as Load-Following.

- The Commission's directive in Paragraph 380 of the June 25 Order that the CAISO work with stakeholders to explore potential opportunities to cure a collective capacity shortfall and file any proposed modifications to the MRTU Tariff relating to this issue on or before August 3, 2007.

- The requirement from Paragraph 219 of the June 25 Order that the CAISO file a status report, within 60 days of the date of the issuance of the June 25 Order, which details the progress made toward the CAISO's efforts to integrate demand resources into the MRTU market design.

- The requirement set forth in Paragraph 59 of the June 25 Order that the CAISO work with SMUD to ensure that SMUD's concern regarding capacity sold on a firm basis to a hub and then resold to a third party external to the CAISO is resolved, and submit a report in conjunction with the August 3 compliance filing.

The CAISO is making this request in a separate motion filed with the Commission concurrently with the instant filing.

A. Locational Marginal Pricing

1. Tariff Details on LMP Pricing

In Paragraphs 64 and 97 of the September 21 Order, the Commission directed the CAISO to augment its tariff with more details concerning the LMP calculation and its components and file those details within 30 days of completion of the BPM stakeholder process, but no later than 180 days prior to MRTU implementation. Also, in the April 20 Order, the Commission directed the CAISO to consider the concerns of the Sacramento Municipal Utility District ("SMUD") that the LMP methodology might be incorrect when it files these details.[45] In compliance with this directive, the CAISO is proposing to add a new Appendix C to the MRTU Tariff which contains details relating to the calculation of LMPs. These details are included in a section discussing LMP composition generally, and sections detailing the calculation of the various LMP components: the System Marginal Energy Cost component of LMP, Marginal Congestion component calculation, the Marginal Losses component calculation, Trading Hub price calculation, Load Zone price calculation, and Scheduling Point price calculation. These details are sufficient to allow Market Participants to understand precisely how the CAISO will calculate Energy prices at Energy at Generation PNodes, Scheduling Points, and Aggregated Pricing Nodes.

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45 April 20 Order at PP 38-40.

In response to SMUD's concerns, the CAISO notes that SMUD provides no basis, empirical or theoretical, for their assertion that the CAISO's LMP methodology would or could produce marginal losses at congestion points that are larger than physically possible. More generally, the CAISO is not aware of any existing LMP calculation methodology utilized by another ISO or RTO that would compute marginal losses to take into account transmission constraints at each node in the manner SMUD suggests. In theory it may be possible to invent such a methodology, but absent any demonstrated flaws in the approach being implemented the CAISO does not see any plausible benefit to such an effort. The CAISO believes that the manner in which it addresses marginal losses in its LMP methodology is consistent with approved and effective methodologies utilized by other ISOs and RTOs, and that given the unsubstantiated nature of SMUD's assertions there is no reason to divert scarce resources to explore the suggested modifications to that methodology.

2. Market Participant and Consultant Access to CRR Full Network Model

In the June 25 Order, the Commission directed the CAISO to modify its proposed security check process for consultants of Market Participants that wish to obtain the CRR Full Network Model. Most significantly, the Commission required that the CAISO modify its procedure in order to specify that the CAISO, rather than the Investor Owned Utilities ("IOUs") will conduct the security check process.[46] The Commission stated that the CAISO must file tariff sheets that include the terms under which a Market Participant and consultants may obtain the CRR Full Network Model, a summary of the security check process, and a timeframe for completion of the security check process.[47] The Commission also directed the CAISO to revise the Non-Disclosure Agreement ("NDA") to reflect the revised terms under which Market Participants and consultants may obtain the Full Network Model, and required the CAISO to make two specific changes to the NDA.[48]

With respect to the security check procedures, as explained in detail in its Request for Clarification, or in the Alternative, Rehearing of the June 25 Order, filed in this docket on July 25, 2007, the CAISO is proposing to remove the security check requirement altogether from its proposed process for obtaining the CRR Full Network Model. In its Request for Clarification, the CAISO explained that this solution is appropriate because: (1) the CAISO proposed that procedure based on the understanding that the IOUs would be conducting the security checks; (2) the CAISO lacks sufficient resources to conduct security checks alone; (3) the Commission's prior directives concerning release of the CRR Full Network Model only required execution of a Non-Disclosure Agreement; and (4) no other ISOs or RTOs appear to require security checks to obtain their network models. Therefore, the CAISO is not including in this filing any

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46 June 25 Order at P 37.

47 *Id.* at P 43.

48 *Id.* at PP 40, 43.

tariff language concerning the implementation of a security check procedure for obtaining the CRR Full Network Model.

The CAISO is proposing to add a new Section 6.5.1.4 to the MRTU Tariff to specify the terms under which entities may obtain the CRR Full Network Model. For those Market Participants who are WECC members, the CAISO will require that Market Participant to execute the NDA for CRR Full Network Model Distribution that is posted on the CAISO Website and provide to the CAISO a non-disclosure statement, as attached to the NDA, executed by each employee and consultant of the Market Participant who will have access to the CRR Full Network Model. With respect to those Market Participants who are not WECC members, the CAISO will also require such Market Participants to provide to the CAISO a fully executed WECC Non-Member Confidentiality Agreement for WECC Data. This requirement will help to ensure that the information contained in the CRR Full Network Model is kept private, and that those entities requesting this data have a legitimate reason for doing so. Finally, the CAISO is also proposing to require that non-Market Participants, in addition to satisfying the requirements pertaining to Market Participants, reasonably demonstrate a legitimate business interest in the CAISO Markets in order to obtain access to the CRR Full Network Model. This requirement is consistent with Paragraph 39 of the June 25 Order, which stated that firms with legitimate business interests in the CAISO markets, but who are not otherwise Market Participants, should have access to the CRR Full Network Model.

The Commission also required the CAISO to revise its CRR Full Network Model release procedures in order to provide transmission owners included in the Full Network Model topology an opportunity to review requests to receive the Model to ensure that the CAISO does not compromise their data prior to completing a security review.[49] Because the transmission owner notification requirement is related to the security check process, the CAISO believes that the elimination of the security check requirement should make this revision unnecessary.

Finally, the CAISO is also proposing to add a new Section 6.5.1.5 to the MRTU Tariff to make clear that the NDA applicable to distribution of the CRR Full Network Model shall be posted on the CAISO Website, that the CAISO will receive the costs of litigation related to the NDA only if the CAISO prevails in litigation,[50] and that recipients of the CRR Full Network Model may use the CRR Full Network Model and related studies in pleadings to the Commission provided they request confidential treatment of all information subject to the NDA.[51]

B. Day-Ahead Market

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49 *Id.* at P 38.

50 *See id.* at P 40.

51 *See id.*

In its protest of the November 20, 2006, compliance filing, Powerex requested that the CAISO clarify Powerex's interpretation of the scheduling priorities as set forth in MRTU Tariff Section 34.10.1. Powerex stated that it appears that the CAISO will seek first to dispatch based on economic bids submitted in the HASP or Real-Time Market and then invoke contingency-only operating reserves if activated by the operator to provide energy. Second, according to Powerex, the CAISO will reduce the supply of self-schedules for exports at scheduling points in the HASP that are served by resource adequacy or RUC capacity. Third, the CAISO will reduce the supply of non-Participating Load reduction and self-schedules for exports at scheduling points in the HASP that are not served by Resource Adequacy or RUC capacity.

In Paragraph 49 of the June 25 Order, the Commission stated that it agreed with Powerex's understanding of the scheduling priorities set forth in Section 34.10.1 and directed the CAISO to provide an explanation of the process in conjunction with the August 3 Compliance Filing. Pursuant to this directive, the CAISO confirms that Powerex's understanding of Section 34.10.1 is correct with respect to scheduling priorities. As Powerex notes, in order to meet the need for increasing Supply, the CAISO will seek first to dispatch Economic Bids submitted in the HASP or RTM, with the last option being to utilize non-participating load reduction and self-schedules for exports at scheduling points in the HASP that are not served by Resource Adequacy or RUC capacity. Therefore, no modifications to the MRTU Tariff are necessary.

In Paragraph 55 of the June 25 Order, the Commission stated that it agreed with Southern California Edison ("SCE") that an export from RA capacity procured in order to cover the export should have the same priority as internal California load, and directed the CAISO to work with SCE to submit appropriate modifications to the MRTU Tariff and/or BPM. The CAISO has worked with SCE to develop agreed upon tariff language and has modified Sections 31.5.1.1 and 34.10 in order to reflect this priority.

C. Residual Unit Commitment

In Paragraph 152 of the September 21 Order, the Commission agreed with commenters that the MRTU Tariff did not define RUC zones and the methodology that the CAISO will use under MRTU to define those zones. Therefore, the Commission directed the CAISO, no later than 180 days prior to the effective date of MRTU Release 1, to submit revised tariff sheets to include the definition of RUC zones and the methodology used to define a RUC zone.

The CAISO is proposing to define "RUC Zone" in the MRTU Tariff as follows: "A forecast region representing a UDC or MSS Service Area, Local Capacity Area, or other collection of Nodes for which the CAISO has developed sufficient historical CASIO Demand and relevant weather data to perform a Demand Forecast for such area, for which as further provided in Section 31.5.3.7 the CAISO may adjust the CAISO Forecast of CAISO Demand to ensure that the RUC process produces adequate local capacity procurement." The CAISO is also proposing a number of changes to Section

31.5 pursuant to Paragraph 152. First, the CAISO has added a new Section to the MRTU Tariff, Section 31.5.3.7. This section provides that the CAISO shall adjust its forecast of CAISO Demand by RUC Zone, but will pool together RUC costs from all RUC Zones in order to settle RUC costs. This reflects the fact that RUC Zones are a tool that will allow the CAISO to procure RUC on a more granular basis, which means that the CAISO's RUC procurement will be more precise. However, the RUC Zones will not impact the allocation of RUC Costs, because those costs will be pooled together prior to being allocated to Market Participants.

The CAISO is also proposing a new Section 31.5.3.7.2 setting forth the methodology by which the CAISO will define and designate RUC Zones. This Section provides that RUC Zones will be designated by the CAISO as necessary and to the extent that the CAISO has developed sufficient data on historical CAISO Demand and weather conditions to allow it to perform Demand Forecasts. This Section also states that the status of each RUC Zone shall remain active for as long as the CAISO maintains regional forecasting capabilities, but once a RUC Zone is designated the CAISO will only adjust the forecast of CAISO Demand as necessary to address RUC procurement constraints. The details concerning the process for designating and modifying RUC Zones will be included in the BPM for Market Operations. Finally, Section 31.5.3.7.2 states that the actual RUC Zones will be posted on the CAISO Webpage. Because RUC Zones will be modified as necessary based on forecasting data, it would be inappropriate to include this list in the Tariff itself. Moreover, there is no need to include this list in the Tariff because Section 31.5.3.7.2 provides sufficient implementation details concerning the CAISO's methodology for designating and modifying RUC Zones.[52]

In Paragraph 62 of the April 20 Order, the Commission directed the CAISO to work with SWP to resolve the treatment and allocation of RUC costs to Participating Load. In Paragraph 68 of the June 25 Order directed the CAISO to continue to work with SWP to resolve the treatment of schedule changes by Participating Load under the RUC process and to provide any corresponding MRTU Tariff changes on or before August 3, 2007. The CAISO has since had numerous discussions with representatives in an attempt to resolve SWP's concerns regarding the treatment of Participating Load generally in RUC. As a result of those discussions, the CAISO is proposing to modify Section 11.8.6.5.3 in order to clarify that Participating Load shall not be subject to the first tier allocation of RUC compensation costs. The CAISO believes this change satisfies both concerns that were the basis of these Commission directives.

In Paragraph 89 of the June 25 Order the Commission directed the CAISO to revise Section 11.5.8 to provide more detail on the process and timeline for addressing submittals of cost justification information for emergency energy provided to the CAISO, including details as to how any dispute regarding the cost justification will be resolved. In compliance, the CAISO proposes to amend Section 11.5.8.1 to state that cost support information must be provided in writing to the CAISO within thirty (30) days following

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52 A copy of a white paper prepared by the CAISO for stakeholders setting forth its proposed RUC Zone policy for is included with this filing as Attachment J.

the date of the provision of emergency assistance, and that the CAISO will provide notice of its determination whether to pay a higher price based on the cost support information within thirty (30) days after receipt of the information. With respect to disputes, the CAISO has included language in Section 11.5.8.1 providing that disputes regarding the CAISO's determination whether to pay a higher price for emergency assistance based on cost support information shall be subject to the CAISO ADR Procedures. Such treatment is consistent with the manner in which other disputes arising under the CAISO's settlement provisions are handled.

D. Ancillary Services

In Paragraph 104 of the April 20 Order, the Commission directed the CAISO to work with Western Area Power Administration ("WAPA") to determine whether the CAISO's proposed work-around for MRTU Release 1 relating to self-provided Ancillary Services ("AS") Imports – under which AS Imports that were previously self-provided will be bid in at $0 or a negative price – will allow WAPA's Boulder Canyon Project customers to self-provide AS from outside the CAISO Control Area. If not, the Commission stated that the CAISO should develop additional provisions for the MRTU Tariff which will allow imports of federal power without violating the restriction on the resale of federal power, and to submit such provisions no later than 180 days prior to the initial release of MRTU. The CAISO has amended Section 8.1 of the MRTU Tariff in order to make clear that it will accept submission to Self-Provide Ancillary Services from outside the CAISO Control Area from Dynamic System Resources certified to provide Ancillary Services. The CAISO believes that this change should sufficiently address WAPA's concern.

E. Metered Subsystems

In Paragraph 646 of the September 21 Order, the Commission directed the CAISO to make compliance filing, no later than 180 days prior to MRTU implementation, finalizing a proposal concerning how to allocate DA Market and Bid Cost Recovery ("BCR") costs to MSSs. In compliance with this directive, the CAISO is proposing modifications to Sections 11.8.6.4 (Allocation of Net IFM Bid Cost Uplift), 11.8.6.5 (Allocation of RUC Compensation Costs), and 11.8.6.6 (Allocation of Net RTM Bid Cost Uplift) to address the allocation of these costs to MSSs. In addition, consistent with the CAISO's commitment and as required by the Commission in Paragraph 172 of its June 25 Order the CAISO is providing additional detail to clarify that MSS entities electing gross settlement will have their MSS Load settled at the Default LAP. This is included in Section 27 of the MRTU Tariff. The CAISO is clarifying how MSS energy is settled in Section 27.2.1 as required by the Commission and is also providing clarifications in Section 11.2.3, 11.5.1 and 11.5.2 to better reflect how MSS energy is settled.

1. MSS BCR

The proposed changes put forth by the CAISO in this filing are the product of stakeholder discussions which began with individual discussions with the Northern California Power Agency ("NCPA"). The CAISO engaged in these discussions with NCPA in the first instance because they represent the majority of MSS entities in the CAISO Control Area. The CAISO subsequently on November 7, 2006_ posted its "MSS BCR Rules: Proposed General Principles for BCR Eligibility of MSS Resources." This served as the basis for the March 27, 2007 "White Paper: Bid Cost Recovery for Metered Susbsystems" ("BCR Whitepaper"), which was developed to explain how the MSS BCR is included in the overall BCR rules. The CAISO then held a stakeholder discussion on the MSS BCR rules. Both MSS and non-MSS representatives participated in an exchange on how the basic principles of BCR conditionally approved by the Commission were extended to incorporate BCR for MSSs. On April 2, 2007 the CAISO posted tariff language to reflect the rules developed in the BCR Whitepaper. This tariff language was reviewed with stakeholders on April 25, 2007. On July 2, the CAISO posted revised tariff language to address MSS BCR in response to stakeholder comments and further internal review. This revised tariff language was again made available for discussion at the July 16 meeting.

The MSS BCR is based on the same BCR principles that apply to all other resources generally as reflected in Section 11.8 of the Tariff. Consequently the proposed tariff changes for MSS BCR are all embedded in the various provisions of the filed and conditionally accepted tariff provisions as the BCR processes for the non-MSS entities. As is the case for MSS energy settlement described below, the MSS BCR proposed provisions vary depending on whether the MSS entity has elected to follow net or gross settlement. As further described below, the basic principle is that if MSSs elect gross settlement, the BCR applies, like with all other non-MSS entities, at an individual resource level, whereas for MSSs that have elected net settlement, the BCR applies for the MSS resources within each geographically contiguous MSS as a whole.

Similarly, MSSs that elect gross settlement will be subject to the uplift charges based on the Scheduling Coordinator's Measured Demand, as does all other Demand. On the other hand, if an MSS entity elects net settlement or Load following, the CAISO will allocate the bid cost uplift based on the MSS's Aggregation Net Measured Demand. The MSS Aggregation Net Measured Demand consists of the sum of all of the net metered CAISO Demand from all the Net-Load MSSs in the MSS Aggregation plus any exports out of the CAISO Control Area from the MSS Aggregation. The Net metered CAISO Demand of an MSS is defined as the algebraic difference between the CAISO Demand and Generation internal to the MSS and a Net-Load MSS consists of an individual MSS within an MSS Aggregation with positive Net metered CAISO Demand.

In section 11.8.2.3.1, the CAISO proposes that for MSS entities that have elected gross settlement, regardless of whether they have elected to follow their load or whether they have opted into RUC, the CAISO will calculate the IFM Bid Costs and IFM Market Revenues used to determine the payment for the unrecovered bid costs and the uplift associated with these unrecovered bid cost payments on an individual resource basis just

as the CAISO does for all non-MSS entities. However, for MSS entities that have elected net settlement, only the level of MSS supply that exceeds the MSS demand will be subject to BCR and the BCR will settled for the MSS as whole for all BCR Eligible Resources within the MSS as opposed to on an individual resource basis. The CAISO will calculate the IFM Bid Cost Shortfalls/Surpluses for Energy and Ancillary Services separately in each Trading Hour and will then pro rate the IFM Bid Cost Shortfalls/Surpluses by the MSS's ratio of the net positive generation schedule to the gross generation schedule for the MSS. This pro-ration is necessary to ensure that only the excess Energy from generating resources in the MSS that is delivered into the CAISO grid is subject to the BCR. The CAISO then determines the overall hourly IFM Bid Cost Shorfall/Surplus by summing the pro-rated IFM Bid Cost Shortfall/Surplus for Energy with the IFM Bid Cost Shortfall/Surplus for Ancillary Services.

Similarly, in Section 11.8.3.3, the CAISO provides that the RUC Bid Costs and RUC Market Revenues used in determining the RUC Bid Cost Shortfalls and Surpluses, which are used to determine the RUC unrecovered bid cost payments, are based on and calculated at the individual resource level if the MSS has elected gross settlement. On the other hand, similar to the IFM BCR calculations, the RUC Bid Cost Shortfalls and Surpluses for the MSS entities that have elected net settlement will be calculated at the MSS level. These same principles are enunciated in Section 11.8.4.3 for the RTM.

The Unrecovered Bid Cost Uplift Payments for MSSs will again vary depending on whether the MSS has elected net or gross settlement. For an MSS entity that has elected gross settlement, the CAISO will pay the MSS for its Unrecovered Bid Cost Uplift if the net of all IFM, RUC and RTM Bid Cost Shortfalls and Surpluses over the trading day for the BCR Eligible Resource in the MSS is positive. On the other hand, for MSS entities that have elected net settlement, the CAISO will again make the Unrecovered Bid Cost Uplift Payments at the MSS level as opposed to the individual resource level. Therefore, the CAISO calculates the MSS IFM, RUC, and RTM Bid Cost Shortfall or Surplus for each market for each Trading Hour as the sum of the IFM, RUC, and RTM Bid Cost Shortfalls and Surpluses for all resources in the MSS. Then the CAISO will pay the Scheduling Coordinator for a given MSS that has elected net Settlement for its Unrecovered Bid Cost Uplift if the net of all IFM, RUC, and RTM Bid Cost Shortfalls and Surpluses for that MSS as a whole over the Trading Day is positive.

In Section 11.8.6.4, the CAISO provides for the allocation of Net IFM Bid Cost Uplift and proposes additional changes to address the allocation of such uplift to MSS entities. In the first tier, regardless of their election, all MSS entities will be subject to the IFM Load Uplift Obligation based on the difference between the total Demand scheduled in the Day-Ahead Schedule for the individual Scheduling Coordinator, plus imports scheduled for that Scheduling Coordinator in the Day-Ahead Schedule, adjusted for any applicable Inter-SC Trades of IFM Load Uplift Obligations. In the second tier, MS operators that have elected both gross settlement to follow their load will be allocated the IFM Uplift amounts based on their Measured Demand. On the other hand, for entities that have either elected to follow their load or settle on a net basis, the uplift will be

allocated on the basis of the MSS Aggregation Net Measured Demand. Sections 11.8.6.5 and 11.8.6.6 provide similar uplift allocations for the RUC and RTM based on whether the MSS entity selects net or gross settlement.

In its previously filed MRTU Tariff the CAISO had maintained Section 4.9.14.3 of the existing ISO Tariff, which specifies the ability for an MSS to choose not to be compensated for the Emissions Costs, Start-Up Fuel Costs and Minimum Load Costs of its Generating Units, which in turn would result in the MSS operator being subject to its proportionate share of the total amount of these types of costs incurred by the CAISO based on the MSS's net Measured Demand rather than based on its gross Measured Demand. The Start-Up Fuel Cost and Minimum Load Cost aspects of this provision are no longer applicable under MRTU because these costs are now recovered through the Bid Cost Recovery method. A stakeholder recently requested that under the MSS BCR construct the MSS be given the ability to choose to not be compensated for BCR for its Generating Units and similarly be given differential treatment in the allocation of the CAISO's BCR uplifts. The CAISO initially did not believe it to be appropriate to offer this option under the BCR construct and did not include this option in the MSS Whitepaper discussed with stakeholders. However, in light of this recent stakeholder request, the CAISO proposes to continue discussions on this single aspect of MSS BCR which does not affect the methodology proposed in this filing. The CAISO proposes to first hold discussions with the stakeholder that has made the request to better understand their request, and then hold a conference call with all stakeholders to discuss the proposal. The CAISO will report to the Commission whether additional tariff changes are required upon the completion of the conference call and no later than mid-September.

2. MSS Energy Settlements

The CAISO proposes two new definitions that provide additional detail on how the MSS Energy will be settled. Much of this detail is provided in a set of new definitions that are used for settlement of MSS energy. The settlements principles for MSS energy remain the same, but the CAISO has provided additional detail to provide more clarity.

As previously filed, Energy for MSS entities that have elected gross settlement is settled in the same way that Energy for all other Scheduling Coordinators is settled, both in the IFM and RTM. Accordingly, as previously filed, Section 11.2.3.1.1 and 11.2.3.2 respectively provide that IFM charges for MSS Demand that has elected gross energy settlement will be settled at the Default LAP price, in the same manner as all other Demand except Demand that is subject to an exception as specified in Section 30.4.3.2 of the MRTU Tariff and internal MSS supply, which is settled at the LMP at the applicable PNode.

In this filing, the CAISO provides additional clarifying language in Section 11.2.3.1.1 that the demand internal to the MSS will be settled at the price at the Default

LAP where the MSS LAP is located, and that internal MSS supply will be settled at the Resource Specific Settlement LMP at the PNode. Section 11.2.3.2.1 provides for settlement of IFM charges for MSS Demand under net settlement. In that Section, the CAISO is proposing to insert the new term "IFM MSS Price." As defined, this price, as reflected in the proposed definition, differs depending on whether the scheduled MSS internal Demand exceeds the scheduled MSS internal Supply. When the scheduled MSS internal Demand exceeds the scheduled MSS internal Supply (net MSS Load), the MSS Demand will be settled at the IFM LAP price, which reflects the LMPs of those nodes where the MSS LAP is located. When the scheduled MSS internal Demand is less then the scheduled MSS internal Supply, the MSS Demand will be settled at the weighted average of the IFM LMPs for all applicable PNodes within the relevant MSS, reflecting the LMPs of the nodes where Generating Units inside the MSS are located. The weighting factors for computing the weighted average are the MSS Generation corresponding to the different PNodes in the Day-Ahead Schedule (scheduled supply).

The CAISO is also proposing some additional language to the Real-Time settlement provisions in order to clarify the settlement of MSS Energy in the RTM. In section 11.5.1, the CAISO proposes language providing that for MSS entities that have elected net Settlement, the CAISO will settle the IIE Settlement Amounts for Energy dispatched through the Real-Time Market optimization, Minimum Load Energy from System Units dispatched in Real-Time, Energy from Regulation, Ramping Energy Deviation, Rerate Energy, MSS Load following Energy and Real-Time Self-Scheduled Energy as the product of the sum of all of these types of Energy and the Real-Time Settlement Interval MSS Price. Like in the IFM, for MSS Operators that have elected gross Settlement, regardless of whether that entity has elected to follow its Load or to participate in RUC, the IIE is settled similarly to non-MSS entities as provided in the existing Section 11.5.1. The CAISO also proposes a definition for Real-Time Settlement Interval MSS Price which demonstrates the different price treatment depending on whether the MSS internal metered Demand exceeds the MSS internal measured Generation. When the MSS internal metered Demand exceeds the MSS internal measured Generation, the IIE for the MSS will be settled at the Real-Time LAP price. However, when the MSS internal metered Demand is less than the MSS internal measured Generation, the IIE for the MSS will be settled at the weighted average of the Real-Time LMPs for all applicable PNodes within the relevant MSS. The weighting factors for computing the weighted average are based on the measured Energy of all Generation at the corresponding PNodes.

In Section 11.5.2, the CAISO proposes similar language to clarify the UIE settlement for MSS operators electing gross settlement versus those electing net settlement. Again, for MSS entities electing gross settlement, their UIE settlement is performed in a manner similar to all other non-MSS entities as already provided in that section. The CAISO proposes additional clarifying language which provides that for MSS entities that have elected net settlement, the Tier 1 UIE Settlement Amount is calculated for each Settlement Interval as the product of its Tier 1 UIE quantity and its Real-Time Settlement Interval MSS Price and the Tier 2 UIE Settlement Amount is

calculated for each Settlement Interval as the product of its Tier 2 UIE quantity and the Real-Time Settlement Interval MSS Price. For MSS Operators that have elected net Settlement, the Tier 2 UIE Settlement Amount for Demand of a net MSS Demand is calculated for the Trading Hour as the sum of the product of the hourly Tier 2 UIE quantity and the Real-Time Settlement Interval MSS Price.

3. Other MSS Issues

In Paragraph 339 of the April 20 Order, the Commission agreed with the Northern California Power Administration ("NCPA") that a load-following MSS should not be assessed instructed imbalance energy costs if the imbalances are a result of differences between the load-following estimate the MSS sends to the CAISO and its obligation to follow its load in real time. Therefore, the Commission directed the CAISO to submit a compliance filing, in conjunction with the compliance filings it will make on or before August 3, 2007, to modify the MRTU Tariff to ensure that load-following MSSs are not subject to instructed imbalance energy costs if those costs are a result of imbalances caused by following load in Real-Time. In response this directive the CAISO is proposing to include in Section 11.22.2.5.6 additional language that prevents the application of the Market Usage Charge for IIE to Scheduling Coordinators for a Load following MSS.[53]

F. Real-Time LAP Price Computation

Section 11.5.2 of the MRTU Tariff, as originally filed with the Commission on February 9, 2006, provides for the settlement of Real-Time Load Aggregation Point ("LAP") load deviations (LAP level uninstructed imbalance energy) through a combination of an hourly LAP price (Tier 2 UIE price) and an hourly LAP price adjustment (UIE Adjustment). Under these previously filed provisions, over-consumption described as Real-Time LAP load in excess of the Day-Ahead LAP load schedule is charged the sum of the LAP price and the LAP price adjustment, and under-consumption (real-time LAP load below the day-ahead LAP schedule) is paid the difference of the LAP price and the LAP price adjustment. In the fall of 2006, certain stakeholders raised concerns regarding this approach. Moreover, in the stakeholder discussions related to the design of Convergence Bidding, it appeared that having two different Real-Time LAP prices (depending on over- or under- consumption) would not be compatible with the idea of "price convergence" between Day-Ahead and Real-Time markets. Upon further scrutiny of its filed methodology, the CAISO concluded that under some (albeit rare) conditions, the two-price methodology as stated in the Tariff might lead to excessive charges to a single Scheduling Coordinator.

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53 The CAISO recognizes that additional changes are required to the GMC language to conform it to the new market structure under MRTU. These changes are not included in this filing as they are the subject of a current stakeholder process, which upon its completion the CAISO intends to file its proposed changes to its GMC.

In response to this concern, the CAISO proposes to change the originally filed real-time LAP settlement methodology to address these concerns. The changes proposed here are a result of stakeholder input that included comments on the initial white papers posted on October 26, 2006 and December 6, 2006 and discussed at the Market Initiatives Stakeholder meeting on November 29, 2006. The CAISO's final proposal is set forth in a February 2007 white paper provided as Attachment K to this filing. The CAISO proposes to change to originally filed Real-Time LAP pricing methodology to a single Real-Time price for settlement of both over- and under- consumption[54], using as weights (for the relevant Real-Time nodal load LMPs) the Real-Time LAP nodal loads (rather than the absolute value of LAP nodal load deviations, as proposed in February 9, 2006 filing). The Real-Time adjustment element is eliminated. The result is that the Real-Time LAP settlement may not be revenue neutral due to the changes in the LAP Load Distribution Factors ("LDFs") between Day-Ahead and Real-Time.[55] The CAISO proposed two possible approaches for addressing the revenue neutrality issue. The first neutrality allocation scheme was presented in the both the first and second white papers issued on the real-time LAP allocation and allocated over or under collected revenue based on the real-time metered CAISO Demand (*i.e.*, metered demand excluding exports). The second neutrality allocation scheme, presented as an alternative to the first allocation scheme in the second white paper posted on December 6, 2006, allocated over or under collected revenue based on the Day-Ahead scheduled CAISO Demand, *i.e.*, CAISO internal load cleared in the Day-Ahead Market.

In responding to the alternatives presented by the CAISO, stakeholders' comments unanimously supported the proposed change of the Real-Time price methodology with neutrality allocation applied to Real-Time metered CAISO Demand. Additionally, some stakeholders further proposed that allocation should also be applied to exports and convergence bids, however, at this time the CAISO does not believe that it is appropriate to allocate neutrality revenues to convergence bids and exports. Therefore, the CAISO is proposing to change the Real-Time LAP price methodology in the MRTU Tariff to:

- A single real-time price for settlement of both over- and under- consumption, using as weights (for the relevant real-time nodal load LMPs) the real-time LAP nodal loads
- Neutrality allocated to real-time metered CAISO Demand
- Neutrality not allocated to convergence bids or exports

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54 This is in line with the practice at the eastern ISOs, where the real-time price for settlement with zonal load deviations in each load zone is the same for over- and under-consumption. The real-time zonal price in each zone is computed using total real-time zonal load and real-time Load Distribution Factors as proposed by the CAISO. However, the resulting revenue neutrality is not separated from other real-time neutrality revenues/costs such as marginal loss surplus or net real-time congestion revenues/costs, and is thus allocated along with other real-time neutrality.

55 Revenue neutrality was the main reason for having two real-time prices in the initial filed methodology

G. Demand Response and Participating Load

In Paragraph 703 of the September 21 Order, the Commission stated that the MRTU Tariff could benefit from further refinement in its treatment of Participating Load. The Commission directed the CAISO to work with the California State Water Project ("SWP") to improve the MRTU Tariff's handling of the "unique constraints posed by participating load" and to make a compliance filing no later than 180 days prior to the effective date of MRTU. As originally filed with the Commission in February 2006, the MRTU Tariff accommodated individual Pumping Load resources as Participating Load but did not allow for Pumping Load resources to be aggregated and participate as Participating Load due to software constraints. In order to accommodate aggregation of Pumping Load, the CAISO has developed a proposal and related tariff language to allow the aggregation of Pumping Load resources through an accommodation that would require the Aggregated Pumping Load resource to participate as a Generating Unit when offering to curtail demand though submission of Supply Bids and to participate as Non-participating Load through submission of Demand Bids when offering to consume Energy. These changes are reflected in MRTU Tariff Sections 30.5.2.3, 30.5.2.6.3 and 30.5.3.

H. Congestion Revenue Rights

In Paragraph 854 of the September 21 Order, the Commission found that the CAISO has not sufficiently explained its proposal to "forgive" outstanding debt in the yearly balancing account. The Commission therefore directed the CAISO, within 60 days of the date of that order, to provide additional explanation concerning the reasoning for forgiving outstanding debt in the yearly balancing account, and what, if any, subsequent restrictions will be imposed on entities that fail to pay their debt. The CAISO subsequently sought and obtained extensions from the Commission to provide this explanation no later than 180 days prior to MRTU implementation. The CAISO had not intended the last sentence of its previously-filed tariff Section 11.2.4.4.2, which stipulates that "Unpaid claims become ineligible for further recourse and are written off, and any remaining shortfalls are also written off after this yearly clearing process," to allow for forgiveness outstanding debt. The provision that contained the language relating to "forgiving" outstanding debt in the yearly CRR balancing account, in that section was deleted by the CAISO in its January 29, 2007 Long-Term Firm Transmission Rights ("LT-FTR") filing. In conjunction with this change, the CAISO revised Section 11.2.4.4.1 to provide for the full funding of both long-term and short-term CRRs through monthly clearing of the CRR Balancing Account. If the balance in the CRR Balancing Account is not sufficient to satisfy all revenue shortfalls for the month, then such shortfalls will be recovered by charging Scheduling Coordinators an amount equal to the revenue shortfall multiplied by the ratio of each Scheduling Coordinator's percentage share of total Measured Demand for the month. The Commission accepted these revisions in the July 6 Order.

The CAISO is also proposing modifications to several provisions in Section 11 of the MRTU Tariff to make clear that the rules regarding non-payment and default also

apply to CRR Holders, including the CAISO's ability to draw on any and all Financial Security provided by CRR Holders in the event of a default, in the same way the apply to Scheduling Coordinators. The result of all of these modifications is that the MRTU Tariff will no longer "forgive" outstanding debt in the CRR Balancing Account. Any CRR Holder that defaults on any CRR payment obligation will be treated like existing Scheduling Coordinators in a settlement period: net creditors will be shorted on a *pro rata* basis if any SC or CRR Holder fails to pay any CAISO invoice scheduled to be paid during that settlement period. Like SCs, any CRR Holder that defaults on a payment will continue to be liable for the full amount of that payment, plus interest, pursuant to Section 11 of the MRTU Tariff.

In the May 8 Order, the Commission directed the CAISO to incorporate into the MRTU Tariff, no later than 180 days prior to implementation of MRTU, provisions pertaining to Transmission Rights and Transmission Curtailment ("TRTC") Instructions.[56] These provisions were filed by the CAISO as Appendix BB to the currently effective ISO Tariff on March 9, 2007 in Docket No. ER07-613-000 and approved by the Commission in the May 8 Order. Pursuant to the Commission's directive, the CAISO has incorporated these provisions into the tariff sheets included in this filing. The CAISO has also incorporated various other previously-filed CRR provisions into today's filing.[57]

On May 7, 2007, the CAISO proposed changes to its tariff in compliance with the Commission's April 20 Order, granting rehearing on two issues relating to CRR allocation to LSEs located outside of the CAISO Control Area. First, the CAISO proposed language to enable LSEs external to the CAISO Control Area to obtain Seasonal and Monthly CRRs to serve external load from facilities located outside the CAISO Control Area on a similar basis as external load is eligible to obtain CRRs to hedge transmission of resources within the CAISO. On July 6, 2007, the Commission conditionally accepted the CAISO's proposed tariff changes subject to further requirement that the CAISO submit tariff changes to provide external LSEs with the opportunity to nominate Long Term CRRs associated with wheel throughs transactions in the CRR Allocation process.[58] On July 20, 2007, the CAISO submitted its compliance filing in response to the Commission's July 6 order.

In its May 7 Filing on CRRs, the CAISO also proposed changes to its tariff in compliance with the Commission's directives in Paragraphs 368 and 378 of the April 20 Order, where the Commission directed the CAISO to submit modified MRTU Tariff

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56 May 8 Order at P 52.

57 The CAISO recently submitted a filing in Docket No. ER07- 1077 to modify Section 12 of the current ISO Tariff to implement CRR Credit Policies. These changes are still pending before the Commission and have not yet been incorporated into the MRTU Tariff. The CAISO will add these CRR Credit provisions to the MRTU Tariff as part of its filing of a comprehensive restated MRTU Tariff to incorporate all relevant amendments to the ISO Tariff that have been approved subsequent to the approval of the MRTU Tariff.

58 July 6 Order at P 188.

sheets that provide external entities the option of meeting their prepayment obligation by paying for it on a monthly basis. On July 6, 2007, the Commission conditionally accepted the proposed tariff sheets subject to further modification that the CAISO extend the monthly payment option to external entities for Long Term CRRs as well as Seasonal CRRs.[59] The CAISO submitted proposed revisions in compliance with this requirement on July 20, 2007 in Docket No. ER07-869-001.

The CAISO's July 20, 2007 filing also included proposed tariff changes in compliance with the following directives from the Commission's July 6 Order on CRRs:

1. Nomination of Trading Hubs by External LSEs (P 46)

2. Limiting an LSE's or External LSE's Long Term CRR Eligibility to twenty percent of its Adjusted Load Metric in Year One (P 136)

3. Proposal to apply a Forward Looking Showing for all CRR Nominations of External LSEs (P 189)

4. Clarification of phrase "exposed to congestion charges" as set forth in Section 36.9.3 (P 191)

5. Additional detail on how the CAISO is taking on responsibility to perform transfers of CRRs according to clearly specified procedures for Load Migration (P 204)

6. Details on how the timing of resource adequacy load ratio share calculation will be synchronized with the need to make mid-year adjustments to CRR holdings (P 204)

7. The adoption of AReM's suggestion to allow a Load gaining LSE obtaining load through load migration to request the obtained CRRs through the Priority Nomination Process (P 212)

I. Transmission Ownership Rights and Existing Transmission Contracts

In Paragraph 428 of the April 20 Order, the Commission directed the CAISO to modify the MRTU Tariff in order to specify that opportunities offered to ETC rights holders to correct identified scheduling errors should also apply to Converted Rights holders and TOR holders as well. In Paragraphs 255 and 256 of the June 25 Order, the Commission accepted the CAISO's commitment to revise Sections 16.6.4 and 17.3.4 to address stakeholder concerns. In compliance, the CAISO has modified Sections 16.6.4 and 17.3.4 to make clear that after performing validation of an ETC or TOR Self-Schedule, the CAISO will make an automated validation notice available to the

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59 July 6 Order at P 56 and 190.

Scheduling Coordinator indicating whether the ETC or TOR Self-Schedule is valid or invalid. If an ETC or TOR Self-Schedule involves more than one Scheduling Coordinator, the complete validation of the chain of ETC or TOR Self-Schedules will occur when the last Scheduling Coordinator submits its ETC or 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 ETC or TOR Self-Schedules. Sections 16.6.4 and 17.3.4 have also been modified to state that the CAISO will accommodate corrections submitted by a Scheduling Coordinator to an ETC or TOR Self-Schedule up to Market Close of the Day-Ahead Market, in accordance with a process to be set for in the applicable BPM.

In Paragraph 314 of the June 25 Order, the Commission required that the CAISO specify in Section 17.3.3 that the CAISO will honor loss provisions in bilateral agreements concerning TORs. The CAISO has included in that section the specific provision that if a specific loss percentage exists in applicable agreement between the TOR holder and the CAISO, the CAISO will not apply the IFM and RTM Marginal Cost of Losses as provided in Sections 11.2.1.7 and 11.5.7.2 of the MRTU Tariff. As specified in Section 11.2.1.7, the CAISO will apply a credit for the IFM Marginal Cost of Losses to the valid and balanced portions of TOR Self-Schedules that are submitted pursuant to agreements between the CAISO and the TOR holder containing losses provisions. The CAISO will provide the losses specified in the contract. In the IFM, any such credit will result in a reduction of the IFM Marginal Losses Surplus. The CAISO will also apply this credit to eligible valid and balanced TOR Self-Schedules submitted in the HASP and RTM. The CAISO has created a Real-Time Marginal Cost of Losses Offset, which, similar to the Real-Time Marginal Cost of Congestion Offset, will be used to account for the non-assessment of the Marginal Cost of Losses to eligible TOR Self-Schedules. This offset ensures that the allocation of any costs associated with the non-assessment of the RTM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules will not be assessed to such TOR Self-Schedules as provided in Section 11.5.4.2.

In Paragraphs 438 and 439 of the April 20 Order and Paragraph 287 of the June 25 Order, the Commission found that the CAISO needs to clarify the MRTU Tariff to ensure that when ETC and TOR holders submit schedule changes consistent with their existing agreements, the "perfect hedge" settlements treatment providing for reversal of Congestion Charges will continue to apply. In compliance, the CAISO has modified Sections 16.9.1 and 33.3 regarding ETCs and Section 17.2 regarding TORs to make clear that a change in schedule by an ETC or TOR holder pursuant to an applicable ETC or existing agreement between the CAISO and the TOR holder will not affect the Settlements treatment otherwise applicable to the ETC or TOR holder, including the "perfect hedge" against Congestion Charges.

In Paragraphs 463 and 464 of the April 20 Order and Paragraph 288 of the June 25 Order, the Commission directed the CAISO to clarify how CAISO operating orders during System Emergencies will apply to ETC and TOR holders and to make clear that an agreement between the CAISO and another Control Area Operator will govern in the

event of an inconsistency with the terms of the MRTU Tariff. In compliance, the CAISO has modified Sections 16.5.1 and 17.2.1 to incorporate the revisions directed by the Commission.

In Paragraph 272 of the June 25 Order, the Commission found that the CAISO had not fully complied with the Commission's directives regarding the CAISO's honoring of the existing agreements of TOR holders and directed the CAISO to further modify Section 17 to add that, in the event of a conflict between the MRTU Tariff and a bilateral agreement governing TORs, the agreement prevails. In compliance, the CAISO has modified Section 17 to provide that the provisions of any agreement between a Participating TO and a Non-Participating TO regarding TORs will prevail over the provisions of Section 17, in addition to the provisions of any agreement between the CAISO and the Non-Participating TO.

J. Market Power Mitigation

In Paragraph 502 of the April 20 Order, the Commission directed the CAISO to submit, as part of its August 3 compliance filing, tariff language that incorporates both the names of the specific price indices used in the calculation of Default Energy Bids as well as the acceptable lag time for gas prices that will be utilized. The CAISO is therefore proposing to modify Section 39.7.1.1 to specify that the gas price indices for the Day-Ahead and Real-Time Markets will be calculated using at least two prices from two or more of the following publications: Natural Gas Intelligence, Btu Daily Gas Wire, Platt's Gas Daily and the Intercontinental Exchange. With respect to the timeframe for the indices, for the Day-Ahead Market, the CAISO will update the gas price index between 00:00 and 03:00 Pacific Time in the Day-Ahead using gas prices published on the prior day, unless gas prices are not published on that day, in which case the CAISO will use the most recently published prices that are available. For the Real-Time Market, the CAISO will update gas price indices between the hours of 19:00 and 22:00 Pacific Time using gas prices published in the Day-Ahead, unless gas prices are not published on that day, in which case the CAISO will use the most recently published prices that are available.

In Paragraphs 345 and 346 of the June 25 Order, the Commission addressed the CAISO's authority to establish temporary Default Energy Bid prices in situations where a generator provides inadequate information or does not elect to use any other option beyond the negotiated rate. The Commission found that the CAISO must have the flexibility to establish such bids on an expedited basis in order to avoid disruption of supply to the market.[60] However, the Commission emphasized that the CAISO must ensure, prior to calculating any temporary Default Energy Bid, that all resources have been exhausted under MRTU Tariff Section 39.7.1.[61] The Commission also stated that the CAISO must attempt in good faith to obtain the necessary data from generators prior

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60 June 25 Order at P 345.

61 *Id.*

to calculating temporary default energy bids.[62] In compliance with these statements, the CAISO is proposing revisions to Section 39.7.1.5 in order to make clear that if a Scheduling Coordinator does not elect to use any of the other options available pursuant to Section 39.7.1, or if sufficient data do not exist to calculate a Default Energy Bid using any of the available options, the CAISO will first seek to obtain from the Scheduling Coordinator any additional data required for calculating the Default Energy Bid options available pursuant to Section 39.7.1. If, after seeking to obtain such data, the CAISO still does not have sufficient data necessary to calculate a Default Energy Bid using one of the Section 39.7.1 options, then the CAISO will establish a temporary Default Energy Bid using the alternative types of information set forth in Section 39.7.1.5.

In Paragraph 418 of the June 25 Order the Commission directed the CAISO to modify MRTU Tariff Section 39.3.1(4) to provide further detail regarding the types of bidding practices that may distort prices or uplift charges away from those expected in a competitive market. The CAISO has, in compliance, amended Section 39.3.1 to set forth two types of practices that can result in prices inconsistent with competitive market outcomes: (1) submitting Demand Bids at prices that are unjustifiably low relative to the expected marginal cost of meeting total expected demand resulting in DAM prices that are significantly below competitive levels and DAM clearing demand that is significantly below total expected demand; and (2) registering Start-Up Cost and Minimum Load Cost data or submitting Bid Costs on behalf of an Electric Facility that are unjustifiably high (relative to known operational characteristics and/or the known operating cost of the resource) or misrepresenting the physical operating capabilities of an Electric Facility in uplift payments or prices significantly in excess of actual costs.

K. Resource Adequacy

1. Changes Made Pursuant to the September 21 Order

In Paragraph 1167 of the September 21 Order, the Commission directed the CAISO to incorporate into the MRTU Tariff the reliability criteria it will use to determine Local Capacity Area Resource requirements and to distinguish the reliability needs addressed by that study process from those addressed by the RMR technical study process. The Commission established a 60-day compliance date. However, in order to accommodate further stakeholder review of the local reliability criteria and to obtain approval from the CAISO Board of Governors to use a single set of local reliability criteria for both resources adequacy purposes and the RMR study process, the Commission granted the CAISO's request for an extension until August 3, 2007 to submit this compliance requirement.[63]

As discussed further below, the CAISO has complied with the September 21 Order by incorporating into the MRTU Tariff a single set of local reliability criteria. In its January 11, 2007 Motion for Extension, the CAISO also expressed its intention to

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62 *Id.* at P 346.

63 *See Notice of Extension of Time*, Docket Nos. ER06-615-000, et al. (Jan. 19, 2007).

include tariff language under Section 205 of the Federal Power Act to implement a successor to the currently effective RCST as a part of this package. The successor, now known as the Interim Capacity Procurement Mechanism ("ICPM"), is currently being considered through an ongoing stakeholder process. As explained in the motion for extension filed in this proceeding concurrently with the instant filing, the CAISO intends to obtain Board of Governor approval at the October meeting, and to file the tariff language shortly thereafter by late October. In recognition that issues, such as cost allocation for CAISO backstop procurement, will be addressed in the ICPM process and so as to not prejudge its outcome, the CAISO has removed from Sections 40.3.4 and 42.1.8 the prior provisions relating to cost allocation of backstop procurement. These prior provisions were a source of some confusion because of reliance on both RMR and the CAISO's generic contracting authority under Section 42. Instead, the CAISO has included, as a placeholder in Section 40.3.4, a reference to Section 11.20, which will be the eventual home of the cost allocation provisions related to the backstop procurement of Local Capacity Area Resources. A corollary to this change is the need to reinsert the currently effective cost allocation Tariff language from Section 42 back into Section 42.1.8 so as to reestablish the CAISO's present authority under Section 42. The intended result is to leave Section 42 substantively "as is" at this time and only incorporate those changes necessary to conform the existing Tariff language with the MRTU structure and terminology.

Pursuant to the requirements of Paragraph 1167 of the September 21 Order, the CAISO has included, in new Section 40.3.1.2, the reliability criteria underlying its Local Capacity Technical Study (a newly defined term for the Section 40.3 study). Previously, the CAISO referred to Applicable Reliability Criteria, which encompasses North American Electric Reliability Corporation ("NERC") and WECC reliability criteria. However, the Commission found this approach ambiguous. Therefore, the CAISO has complied with the Commission's directive by identifying the specific contingencies included in the existing NERC/WECC standards that will be assessed in the Local Capacity Technical Study. This new approach favors transparency and clarity over flexibility and adaptability and is consistent with the Commission's directive in the September 21 Order. In addition, in new Section 40.3.1.1, the CAISO explicitly states that it will apply those methods for resolving the contingencies considered appropriate for the performance level that corresponds to a particular studied contingency in accordance with NERC/WECC Planning Standard 1.A, *i.e.*, interruption of firm load for performance level C, only to the extent such application will not violate Reliability Criteria adopted by the CAISO in accordance with its Transmission Control Agreement. Reliability Criteria under the CAISO Tariff is "[p]re-established criteria that are to be followed in order to maintain desired performance of the CAISO Controlled Grid under contingency or steady-state conditions." As such, Reliability Criteria encompass NERC/WECC standards as well as potentially other "pre-established" CAISO criteria. This qualification to the strict application of NERC/WECC standards is necessary to align this provision with the CAISO's authority under the California Public Utilities Code Section 345, which allows the CAISO to adopt standards that are more strict than that of the WECC.

The CAISO has obviated the need to distinguish between the reliability criteria applicable to the RMR analysis and the Local Capacity Technical Study by modifying the RMR criteria to be coextensive with that used for the Local Capacity Technical Study.[64] This aligning of the two criteria was done to comport with the reality that the Local Capacity Technical Study has rendered the prior Local Area Reliability Study ("LARS") process for RMR obsolete. The LARS criteria constitute a subset of the criteria used in the Local Capacity Technical Study. This fact, together with the CAISO's primary reliance on LSE procurement for Local Capacity Area Resources, has eliminated the CAISO's need to perform the LARS study. The CAISO anticipates utilizing the ICPM as the primary backstop to obtain any residual Local Area Capacity to ensure compliance with the local reliability criteria included in Section 40.3, with RMR contracts used for special cases where the ICPM would not be appropriate. However, if the ICPM is delayed or otherwise becomes impractical, the aligning of the criteria will further facilitate the use of RMR for backstop capacity procurement purposes.[65]

Finally, it should be noted that other elements of the Local Capacity Technical Study, *i.e.*, Demand Forecast data, remain flexible and the subject of collaboration with the CPUC, Local Regulatory Authority, and other stakeholders under Section 40.3.1. In response to stakeholder input, some additional procedural requirements on this collaborative process and the schedule for conducting the Local Capacity Technical Study have been incorporated into Section 40.3.1.

2. Changes Made Pursuant to the April 20 Order

In Paragraph 570 of the April 20 Order, the Commission directed the CAISO to work with Arizona/Southwest Coops and Anza to determine who should serve as Anza's Local Regulatory Authority and also required the CAISO to consider an amended definition, if necessary, of Local Regulatory Authority to allow an entity such as Anza to act as its own Local Regulatory Authority. Accordingly, the CAISO proposes to amend to definition of Local Regulatory Authority to include "the board of directors of an electric cooperative." The CAISO submits that this modification will allow Anza, and similar entities, to act as their own Local Regulatory Authorities, if appropriate.

In Paragraph 617 of the April 20 Order, the Commission directed the CAISO to file amended tariff sheets to strike the word, "resource," from section 40.6.11 so that the section instead provides that the CAISO may curtail exports from Resource Adequacy Capacity to prevent or alleviate a System Emergency. This addresses the concern that the CAISO could curtail all capacity from a resource that has only sold a portion of its overall capacity under a resource adequacy contract. The CAISO has made this change.

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64 The CAISO obtained Board of Governor approval to align the criteria at its July 18, 2007 meeting.

65 The CAISO recognizes that if the ICPM is delayed or otherwise is unlikely to come to fruition, the cost allocation aspects of RMR will need reconsideration to better correspond to cost causation principles under a resource adequacy paradigm.

In Paragraph 618 of the April 20 Order, the Commission directed the CAISO to file amended tariff sheets providing that Scheduling Coordinators representing Resource Adequacy Capacity must show that their generation capacity is not already under bilateral contract or committed for minimum operating reserves. The CAISO sought clarification of this directive of the April 20 Order, noting that there is nothing intrinsically inconsistent between a bilateral commitment for Energy or Operating Reserves from particular generation capacity and the resource adequacy availability obligation. So long as the generation capacity is "visible" to the CAISO through a Self-Schedule or Economic Bid, the underlying contractual commitment for the power product is unimportant to the resource adequacy provisions of the MRTU Tariff. The critical factor, which is already captured in the MRTU Tariff, is that the generation capacity be listed in a Supply Plan and a corresponding Resource Adequacy Plan from and LSE serving Demand in the CAISO Control Area. Further, if the Commission's concern involved the potential for "double" counting capacity that is both committed to an LSE within the CAISO Control Area and an LSE without an obligation to submit a Resource Adequacy Plan, *i.e.*, an LSE exclusively serving Demand outside the CAISO Control Area, then the CAISO noted it believes that matter is addressed through the affirmative representations required by the SC in submitting the Supply Plan. Nevertheless, the CAISO has modified Section 40.4.7 to explicitly require an affirmative representation from the SC of the accuracy of the information in the Supply Plan; namely, that the Resource Adequacy Capacity will be made available to the CAISO.

In Paragraphs 159 and 621 of the April 20 Order, the Commission directed that the CAISO implement a pro rata reduction in capacity from Partial Resource Adequacy Resources that suffer partial de rates. The CAISO has modified Section 40.6.6 in response to this directive.

In Paragraph 633 of the April 20 Order, the Commission directed the CAISO to file amended tariff sheets modifying MRTU Tariff Section 40.6 to specify the real-time availability requirements for System Resources. The Commission agreed that the availability requirements should mirror those of a similar Resource Adequacy Resource inside the CAISO Control Area. The CAISO has modified Sections 40.6.3, 40.6.5, and 40.6.5.1 to conform the availability requirements applicable to System Resources with Resource Adequacy Resources internal to the CAISO. All System Resources that sell Resource Adequacy Capacity are subject to the general Day-Ahead availability obligations set forth in Section 40.6.1. Section 40.6.3 has been altered to recognize that all System Resources should not be assumed to be Long-Start Units, but rather that Dynamic System Resources are capable of intra-hour dispatch by the CAISO and therefore should mirror the obligations imposed on Short Start Units, unless precluded by demonstrable physical operating characteristics. That section has also been altered to specify that Short Start Units and Dynamic System Resources, to the extent they are also Use-Limited Resources, should submit bids in the Real-Time Market only to the extent consistent with their applicable use plan. Other changes conforming to this treatment of System Resources capable of submitting Dynamic Schedules are reflected in Sections 40.6.5 and 40.6.5.1.

In Paragraph 638 of the April 20 Order, the Commission granted the CAISO's request for rehearing concerning the CAISO's preference to utilize the California Energy Commission ("CEC") to perform coincident peak Demand Forecast determinations for all LSEs within the CAISO Control Area. Accordingly, the Commission agreed that the CAISO may rely on the CEC, and only if the CEC is unable to perform the coincident peak Demand Forecast determinations would the CAISO be required to do so. Consistent with this ruling, changes have been made to MRTU Tariff Sections 40.2.2.3, 40.2.3.3, and 40.2.4, clarifying that all forward Demand Forecasts should rely on those developed by the CEC. This reliance on the CEC Demand Forecast has also necessitated other conforming changes. First, Section 40.5.2 addressed the accuracy of Demand Forecasts submitted by Modified Reserve Sharing LSEs. Now that the annual and monthly, in contrast to the hourly, Demand Forecasts are prepared by the CEC and not the Modified Reserve Sharing LSE, there is no need for assessing the accuracy of the annual and monthly Demand Forecasts. Section 40.5.2 has been modified to reflect this reality. Second, the allocation of responsibility for Local Capacity Area Resources in Section 40.3.2 previously relied on historic contribution to the CAISO Control Area peak from the prior year. However, CAISO use of historic data for a local capacity obligation conflicted with the current Local Capacity Technical Study methodology, the obligation of CPUC jurisdictional LSEs to procure in accordance with the CEC forecast, and the Commission's recognition that resource adequacy obligations should derive from a uniform assessment of Demand. Thus, to ensure that the LSEs' procurement obligations are consistent with their assigned responsibility for Local Capacity Area Resources, the CAISO has amended Section 40.3.2 to also rely on CEC Demand Forecasts. Third, Section 20, relating to confidentiality, has been changed to acknowledge that the CAISO may exchange otherwise confidential Demand information with the CEC to facilitate its role in developing Demand Forecasts. The CAISO will only provide this information to the CEC, however, if the CEC determines the information also warrants confidential treatment under the California Public Records Act.

3. Changes Made Pursuant to the June 25 Order

In Paragraph 379 of the June 25 Order, the Commission directed the CAISO to modify the Local Capacity Area Resource requirements prior to the CAISO's engaging in backstop procurement. In compliance with this directive, the CAISO has adapted for use in the MRTU Tariff the cure provisions developed as part of the RCST settlement. Section 40.3.4(a) defers CAISO backstop procurement for an LSE specific deficiency until after the deficient LSE has had the opportunity to supplement its Resource Adequacy Plan as permitted by the CPUC, Local Regulatory Authority, or federal agency. However, because Section 40.7, relating to compliance, already included cure provisions for other deficiencies or discrepancies in LSE Resource Adequacy Plans, the terms of the cure provision for Local Area Capacity Resources are also located in Section 40.7. Under Section 40.7, the CAISO will first notify the Scheduling Coordinator for the LSE, other relevant regulatory authorities, and, if appropriate, Scheduling Coordinator for the Local Area Capacity Resource in an effort to informally resolve the deficiency. If the

deficiency, *i.e.*, reporting error, is not resolved through this informal process so as to eliminate the local capacity reliability criteria violation, the LSE shall have until thirty (30) days prior to the beginning of the Resource Adequacy Compliance Year to submit a revised annual Resource Adequacy Plan. Accordingly, based on the current definition of Resource Adequacy Compliance Year, LSEs will have, if permitted by their regulatory authority, until December 1 to cure any deficiency in their Local Area Capacity Resource procurement. LSE-specific deficiencies that arise after submission of the annual Resource Adequacy Plan and are revealed through the monthly Resource Adequacy Plan may be corrected, similar to all types of errors in the monthly Resource Adequacy Plans, up until ten days prior to the effective month.

In Paragraph 380 of the June 25 Order, the Commission accepted the CAISO's commitment to work with stakeholders to explore potential opportunities to cure a collective shortfall in local capacity area resource requirement and to file any proposed modifications to the MRTU Tariff in conjunction with the August 3, 2007, compliance filing. For the reasons set forth in the motion for extension filed in this proceeding concurrently with the instant filing, such changes will be considered for the ICPM backstop filing after receiving additional stakeholder input.

In Paragraph 399 of the June 25 Order, the Commission required the CAISO to coordinate with Local Regulatory Authorities and to modify the tariff to provide notice and information regarding the scope of backstop procurement attributable to LSEs' failure to procure Resource Adequacy capacity. According, the CAISO proposes to modify Section 40.3.4 to permit this coordination. However, it should be noted that the CAISO has not included a similar provision for capacity procured by the CAISO for system purposes. The reason is that the CAISO contemplates all system backstop procurement occurring pursuant to the ICPM. As such, a similar information exchange provision will be included in that filing in accordance with Paragraph 401 of the June 25 Order.

L. Improvements in the MRTU Tariff Defined Terms and Definitions

In Paragraphs 530, 1330 and 1345 of the September 21 Order, the Commission directed the CAISO to make changes to clarify numerous defined terms in the MRTU Tariff. Subsequent to the September 21 Order, the CAISO sought and obtained an extension of time to file these changes no later than 180 days prior to MRTU implementation.[66] As explained in its January 11, 2007 motion for extension, the CAISO engaged in a comprehensive process to review all of its defined terms for consistency, which has resulted in numerous changes, in addition to the specific changes directed in these three paragraphs. These changes are set forth in the blacklines included as part of Attachment B. In the interest of efficiency, the CAISO has not included the numerous changes to the definitions in the Attachment C table. A substantial number of the revisions to the defined terms involve: (1) the addition of new defined terms to add

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66 *See Notice of Extension of Time*, Docket Nos. ER06-615-000, et al. (Jan. 19, 2007).

greater clarity in the understanding of the terms of the MRTU Tariff (and in some cases to delete unused terms); (2) the incorporation of revisions to the definitions of existing defined terms to clarify their meaning and to incorporate appropriate use of defined terms in the definitions themselves; or (3) simply the reordering of the listing of existing defined terms to place them in alphabetical order. To the extent that changes to individual definitions merit discussion, such discussion is included in this transmittal letter under the appropriate subject heading or is set forth below.

In Paragraph 530 of the September 21 Order, the Commission directed the CAISO to revise the definitions in Section 11. Specifically, the Commission requested that the CAISO assure that the definitions are clear and that the section define accurately how the bid cost recovery mechanism will operate. The CAISO has made a series of changes in response to this requirement, including providing new definitions for a number of defined terms that assist in the understanding of how the Bid Cost Recovery rules apply and the Bid Cost Recovery uplift payments and allocation apply. The CAISO also has substituted the appropriate use of defined terms where the use of terminology in Section 11 was not consistent with the existing defined terms. The following definitional changes and additions are proposed in today's filing:

(1) The CAISO proposes the following definitions that assist in clarifying the Bid Cost Recovery provisions of Section 11.8: Commitment Interval, IFM Pumping Bid Cost, RUC Availability Bid Cost, RTM Pumping Bid Cost, RUC Compensation Cost, and Unrecovered Bid Cost Uplift Payment.

(2) The CAISO proposes changes to the following definitions to clarify their meaning and use in Section 11: Ancillary Services Bid Cost, Bid Costs, IFM Bid Cost, Pumping Cost, Pump Shut-Down Costs, Time, RTM Bid Cost, and RUC Bid Cost.

(3) The CAISO proposes to eliminate the defined terms Load Reduction Initiation, Load Reduction Initiation Payment, and Minimum Curtailable Demand Bid as the CAISO proposes to no longer in the tariff and would otherwise create confusion as to how Participating Load bid costs are recovered and factored into the Unrecovered Bid Cost Uplift Payments. The CAISO also proposes to eliminate the use of related terms "IFM Load Reduction Initiation Cost for Participating Loads," "RTM Load Reduction Initiation Cost for Participating Loads," "IFM Minimum Curtailable Demand for Participating Load" and "RTM Minimum Curtailable Demand for Participating Load." The CAISO proposes to use the terms IFM Pumping Costs, IFM Pump Shut-Down Costs, Pumping Load, RTM Pumping Costs, and RTM Pump-Shut Down Costs to capture the treatment of bid costs related to Participating Load in the Bid Cost Recovery process. These terms refer to all Participating Load under MRTU, whether or not the Participating Load is a pump.

(4) The CAISO proposes to eliminate the term Minimum Up Time as the term Minimum Run Time is already in the tariff and will use that term instead.

(5) The term Hourly Real Time Market Uplift used in Section 11.8.6.6 is replaced with the term hourly RTM Bid Cost Uplift, which is already defined.

(6) The CAISO proposes to replace the terms IFM Pump and Participating Load Shut-Down Cost and RTM Pump and Participating Load Shut-Down Costs with the terms IFM Pump Shut-Down Cost and RTM Pump Shut-Down Cost.

In Paragraph 427 of the June 25 Order, the Commission acknowledged Williams' concern regarding the word change from "Intervention" to "Interruption" in the title of MRTU Tariff Section 11.5.6.1 and directed the CAISO to explain the purpose of this change along with providing the definitions of Market Intervention and Market Interruption. In response to the Commission's directives, the CAISO is proposing two new definitions for Market Intervention and Market Interruption. A Market Interruptions is defined as "The disruption of the normal operations of a CAISO Market" whereas Market Interventions are defined as "An action taken by the CAISO to override or augment the operation of a CAISO Market." These concepts are related but are distinct and the CAISO believes should be distinguished. By definition therefore, a Market Intervention may cause a Market Interruption. However, not all Market Interruptions are necessarily caused by a Market Intervention.

The CAISO initially changed the reference in Section 11.5.6.1 in its November 20 Compliance filing in response to the Commission's directive in P 269 to clearly define excess costs incurred. Through this change the CAISO intended to reflect that the types of Exceptional Dispatch settled under Section 11.5.6.1 include Exceptional Dispatches that are necessary to avoid a Market Interruption and not just a Market Intervention. The CAISO believes this is necessary as it must have the ability to take action to prevent Market Interruptions that may be caused by actions taken by entities other than itself. At that time the CAISO should have also changed the references to Market Intervention in the body of Section 11.5.6.1, and the title and body of Sections 11.5.6.1.1 to Market Interruption. The CAISO is proposing to make these changes at this time consistent with the newly defined terms.

Also regarding these latter two terms, the CAISO has determined that the references to market intervention in Section 11.5.8 and the definitions of "Exceptional Dispatch" and "Excess Cost Payments" should more appropriately refer to Market Interruption. The CAISO is proposing to make similar changes to these provisions to incorporate the use of the new defined terms.

One other set of revisions to a defined term that arise out of the revised provisions regarding CAISO Settlements is the set of revisions to the term "Tolerance Band." In the

course of developing the BPM for Settlements, the CAISO determined that almost all of the provisions of Appendix N of the MRTU Tariff could be deleted, as all of the same provisions are incorporated into the BPM. One section of Appendix N, however, that is not incorporated directly in the BPM is Section D 2.6.1 of Part D specifying the parameters of the Tolerance Band. As these parameters are specified in terms very similar to the existing version of the definition of "Tolerance Band," the CAISO has proposed to make a set of modification to the definition to incorporate the primary additional provisions of Section D 2.6.1 of Part D of Appendix N into the definition, thereby permitting the CAISO to propose the deletion of that section along with the vast majority of the rest of Appendix N. As these revisions to the definition of "Tolerance Band" are existing provisions of the MRTU Tariff, the CAISO submits that they should be accepted by the Commission.

In Paragraph 1330 of the September 21 Order, the Commission directed the CAISO to provide definitions for all capitalized terms and acronyms in the MRTU Tariff. The CAISO has undertaken an extensive process to identify all of these capitalized terms and acronyms. In conjunction with this process, the CAISO conducted a stakeholder process regarding draft versions of revisions to Appendix A, in which stakeholders identified numerous existing defined terms regarding which they suggested revisions to the existing definitions. The version of Appendix A that the CAISO has proposed incorporates both a substantial number of definitions for terms that were previously capitalized in the MRTU Tariff without definition and revisions to the definitions of previously existing defined terms. The CAISO submits that the Commission should accept both types of revisions as in compliance with the directive of Paragraph 1330.

Moreover, in conjunction with its efforts to improve the listing of defined terms in Appendix A, the CAISO identified numerous terms that were not listed in alphabetical order. To remedy this deficiency, the CAISO has moved many terms in Appendix A in order to have them listed in alphabetical order. In order to show the movement of these terms, however, the CAISO has had to show those terms in the blacklines for the revised version of Appendix A in Attachment B hereto as both deleted and inserted, as if they were new terms in different locations. Consequently, many of the terms that the blacklines indicate as newly-added actually are existing defined terms in Appendix A, many of which have few or no changes to the versions already accepted by the Commission. The CAISO submits that the Commission should accept all of those moved but unchanged terms. Any comments objecting to such unchanged terms would essentially be out-of-time protests to the prior Commission orders accepting these definitions.

M. Other Tariff Changes

In Paragraph 650 of the April 20 Order the Commission granted the CAISO's request for clarification that the CAISO should make changes that it committed to make in response to comments on February 2006 tariff filing, but on which the Commission did not explicitly rule in the September 21 Order. The Commission stated that, to the extent

that the CAISO has not already submitted these modifications in previous compliance filings, the CAISO should do so in the August 3 filing. The CAISO has, except for one item, already made and submitted the changes discussed in Paragraph 650 of the April 20 Order. The one remaining item involves the CAISO's commitment, in response to comments received from Southern California Edison, to modify the MRTU Tariff to provide that if an MSS is unable to relieve congestion internal to its system, any Exceptional Dispatches made by the CAISO to resolve this congestion should be allocated to the responsible MSS. The CAISO has, consistent with this commitment, modified MRTU Tariff Section 11.5.6.2.5.2 to state that "to the extent the Exceptional Dispatches are made to resolve congestion internal to the MSS, the Scheduling Coordinator for such an MSS will also be subject to these two categories of Excess Cost Payments."

In Paragraph 1331 of the September 21 Order, the Commission noted and accepted the CAISO's commitment to make a "deferred maintenance" filing prior to the implementation of MRTU in order to identify and correct a number of "clean up" items in the MRTU Tariff. This process is ongoing. Nevertheless, the CAISO has addressed several items to date that fall into this category, and is including those items in this filing in order to expedite the process of finalizing the MRTU Tariff.

One category of changes being proposed pursuant to the "deferred maintenance" commitment are those relating to Section 10 of the MRTU Tariff. In its response to comments on the February 9 tariff filing, the CAISO noted that, unrelated to MRTU, in the process of creating its current "Simplified and Reorganized Tariff" ("S&R Tariff") and the MRTU Tariff, the distinction between CAISO Metered Entities and SC Metered Entities had been inadvertently blurred in Section 10 of the MRTU Tariff. The CAISO stated that it was in the process of reviewing the relevant tariff provisions and would make a separate filing with the Commission to address these concerns. In its November 20, 2006 compliance filing, the CAISO informed the Commission that it planned to make these Section 10 changes in conjunction with finalizing the BPM addressing metering, which would entail removing some material from the MRTU Tariff and placing that material in the metering BPM. The CAISO informed the Commission that it planned to make this filing at least 180 days prior to the initial release of MRTU.

Many of the changes to Section 10 are those made in accordance with the CAISO's commitment, as contained in its response to comments on the February 9 Tariff Filing, to clarify the distinction between SC Metered Entities and CAISO Metered Entities and their associated responsibilities. This clarification effort involves changes to numerous provisions in Section 10, including Sections 10.1.1, 10.1.4, 10.1.5, 10.2, 10.2.4, 10.3.8, 10.3.9, 10.3.13, 10.3.14.2, 10.3.16, 10.3.17 and 10.3.18.

Also, consistent with the discussion of this issue in the November 20, 2006 compliance filing, the CAISO has, as part of its process of reviewing and updating the metering BPM, removed some material from Section 10 of the MRTU Tariff and proposes placing that material in the metering BPM. For instance, Section 10.1.6 is

revised to provide that certain information that the CAISO had previously committed to providing on the CAISO website will now be contained in the metering BPM.[67] This will improve Market Participant accessibility to this information.

The CAISO is also proposing to move to the metering BPM various procedural terms and provisions currently contained in Section 10, including the means of access to the CAISO's Settlement Quality Meter Data Systems in Section 10.2.1.3, the requirement to post names of manufacturers of certified meters in Section 10.2.3, the requirements for Meter Data security and validation in Section 10.2.8, the timing of the recording of Meter Data in Section 10.2.9.2, provisions for exemptions in Sections 10.2.12, 10.3.15, and 10.3.18 (proposed new 10.4.4), requirements for maintenance of Metering Facilities in Section 10.2.13, requirements regarding installation of additional Metering Facilities in Section 10.2.14, Scheduling Coordinator responsibility for Meter Data in Section 10.3.3, the timing of Scheduling Coordinator Meter Data submission in Section 10.3.6 and Meter Data communications requirements in Section 10.3.16. Because such provisions do not "significantly affect terms, rates and conditions," it is appropriate for the CAISO to include them in a BPM, rather than in the MRTU Tariff proper.

In addition, the CAISO is proposing several revisions to the provisions of Section 10 to improve the accuracy of the use of MRTU Tariff defined terms, in compliance with Paragraph 1330 of the September 21 Order, and otherwise to improve the clarity of the provisions. The CAISO proposes to improve the accuracy of the references to the various types of Meter Data and CAISO Meter Data processing systems in Sections 10.1.1, 10.1.5, 10.2.1.1, 10.2.1.3, 10.2.6, 10.2.8, 10.2.8.2, 10.2.10.3 and 10.2.12. The CAISO proposes to remove outdated references to Compatible Meter Data Systems from Sections 10.2, 10.2.1.2.2, 10.3.2.1 and 10.3.12. The CAISO is also proposing to revise the terms relating to Meter Service Agreements and to consolidate the provisions addressing the requirements for such agreements in Sections 10.1.4, 10.1.5, 10.2.6, 10.2.7, 10.2.9.3, 10.2.12, 10.3.13 and 10.3.14.2. The CAISO proposes other improvements in the use of defined terms in Sections 10.1.3.1, 10.1.3.2, 10.1.4, 10.1.5, 10.2.1.2, 10.2.2, 10.2.4.2, 10.2.4.6, 10.2.6, 10.2.9, 10.2.10.1, 10.2.12, 10.2.14.2, 10.3.2.2, 10.3.2.3, 10.3.4, 10.3.8, 10.3.9 and 10.3.14.

Another category of changes that falls under this heading is changes relating to the treatment of QFs. These changes are reflected primarily as additions to Section 4.6.3 of the MRTU Tariff, plus the addition of a new Section 10.1.3.3 regarding metering of QF facilities and some additional defined terms in Appendix A. Most of these additions to the MRTU Tariff are based on provisions that currently exist in the CAISO's QF-specific Participating Generator Agreement approved by the Commission in Docket Nos. ER98-997 and ER98-1309.[68] The CAISO had made a commitment in the S&R

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67 *See, e.g.*, MRTU Tariff Section 10.1.6.

68 *See California Independent System Operator Corp.*, 96 FERC ¶ 63,015 (2001), *aff'd*, 104 FERC ¶ 61,196 (2003).

proceeding to make the tariff consistent with the QF PGA and Commission orders. The CAISO's filing of these revisions fulfills that commitment.

N. Changes to Address Incomplete Merger of Tariff and Protocol Provisions in the S&R Tariff

As part of the transition to the new MRTU Tariff, the CAISO filed a simplified and reorganized tariff ("S&R Tariff") on September 22, 2005.[69] In the S&R Tariff, the CAISO merged the Protocols into the ISO Tariff so that single subjects would be addressed in the same location to the extent possible and to eliminate duplicative provisions. The CAISO also reorganized the tariff to reflect the organization contemplated for the MRTU Tariff so that the subsequent MRTU revisions would be transparent. In its transmittal letter, the CAISO made clear that the S&R Tariff was substantively identical to the pre-S&R Tariff and that to the extent that any interpretative question should arise under the S&R Tariff as a result of the simplification and reorganization, the pre-S&R Tariff would control. In its February 24, 2006 *Order Approving Tariff Revisions*,[70] the Commission accepted the S&R Tariff on this basis.[71]

As a general matter, the CAISO believes that the creation of S&R Tariff has not created interpretive confusion. However, the CAISO would like to propose additional revisions consistent with the objective of the S&R Tariff in one area where we believe some ambiguity may be created due the merging of a section of the Dispatch Protocol ("DP") into a related section of the ISO Tariff.

As originally filed, as part of the S&R Tariff, Section 40.3.1.5, now 42.1.5 of the currently effective ISO Tariff and the MRTU Tariff, consisted of Section 2.3.5.1.5 of the pre-S&R tariff plus part of the first sentence and the entire second sentence of DP Section 10.3. Former Section 2.3.5.1.5, now the first sentence of Section 42.1.5, provides as follows:

> Notwithstanding the foregoing, if the ISO [now "CAISO"] concludes that it may be unable to comply with the Applicable Reliability Criteria, the ISO [now "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.

The balance of Section 42.1.5, which came from DP 10.3, provides:

> The steps can include the negotiation of contracts for Ancillary Services on a Real-Time basis. If the CAISO is unable to obtain such Ancillary

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69 The S&R Tariff filing was assigned to Docket No. ER05-1501.

70 California Independent System Operator Corporation, 114 FERC ¶ 61,199 (2006).

71 *Id.* at PP 15 and 16.

> Services from within the CAISO Controlled Grid, the CAISO may solicit Ancillary Services from other Control Areas on a Real-Time Basis.[72]

Read together, the merger of these provisions might create an inference that the CAISO's authority to contract would be limited to contracts for Ancillary Services whereas the CAISO's authority under the pre-S&R Tariff clearly extends to contracts for Generation or Ancillary Services. In addition, read together, the merger of these two provisions might create an inference that the CAISO would only be permitted to procure resources outside the CAISO Control Area after it determined that no resources were available in the Control Area. The CAISO offers modified tariff language to make it clear and consistent with its pre-existing tariff authority that the CAISO can contract for both Ancillary Services and Energy and that it can contract with both in-Control Area and out-of-Control Area resources.

First, it is clear that the pre-S&R tariff provides authority to the CAISO to contract of Energy or Ancillary Services. Section 2.3.5.1.4, which immediately precedes Section 2.3.5.1.5, of the pre-S&R Tariff provides:

> If Replacement Reserve, short-term *Generation supply* contracts or curtailment contracts are required to meet Applicable Reliability Criteria, the ISO shall select the bids that permit the satisfaction of those Applicable Reliability Criteria at the lowest cost. [Emphasis added.]

With the exception of changing "Replacement Reserve" to "Ancillary Services" and "ISO" to "CAISO," this is identical to Section 42.1.4 of the MRTU Tariff, except that the comma prior to "short-term Generation supply" was inadvertently deleted in the S&R Tariff and is now also proposed to be restored.

Second, the CAISO's tariff authority is clear based on the tariff language in Section 42.1.5 that the CAISO may contract with out-of-Control Area resources or in-Control Area resources. Accordingly, the CAISO proposed to modify Section 42.1.5 to read as follows:

> 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

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72 DP 10.3 provided in its entirely as follows:

> If, on a Real-Time basis, the ISO is unable to comply with the Applicable Reliability Criteria, the ISO shall take such steps as it considers necessary, to ensure compliance including the negotiation of contracts for Ancillary Services through process other than competitive solicitations. If the ISO is unable to obtain such resources from within the ISO Controlled Grid, the ISO may solicit Ancillary Services from other Control Areas on a real-time basis.

steps can include the negotiation of contracts for Generation or Ancillary Services on a Real-Time basis.

VIII. FUTURE FILINGS TO PREPARE FOR MRTU IMPLEMENTATION

In addition to the compliance requirements for which the CAISO has sought an extension of time, at this time, the CAISO contemplates a number of subsequent additional filings as part of MRTU Implementation: (1) a backstop capacity procurement program; (2) bid cap options for Start-up and Minimum Load costs; (3) a revision of the Grid Management Charge ("GMC"); (4) station power modifications; (5) a restated comprehensive MRTU Tariff incorporating into the MRTU Tariff all relevant changes to the current ISO Tariff approved by the Commission since the approval; and (6) readiness certification. The CAISO is also engaged in a process of reviewing its *pro forma* contracts, including the RMR *pro forma* contract, and will propose changes to these contracts as necessary to ensure consistency with the MRTU Tariff.

Currently, the CAISO relies upon the Commission's "must offer" obligation and the Reliability Capacity Services Tariff ("RCST") to fulfill capacity needs that are not met by RMR Units and the RA program. Both the "must offer" obligation and the RCST provisions of the current ISO Tariff terminate with or before the commencement of MRTU. As discussed above, the CAISO has made a commitment to work with stakeholders to develop a backstop capacity procurement program to address any insufficiency of the capacity procured through the RA program to meet reliability needs. In May 2007, the CAISO held a stakeholder meeting regarding an ICPM that would be effective January 1, 2008. After receiving comments, the CAISO issued a white paper on June 29, 2007, and conducted another stakeholder conference on July 25, 2007. As explained in the CAISO's concurrent motion for extension, the CAISO intends to file this proposal – the Interim Capacity Procurement Mechanism – in October 2007 after further stakeholder input and presentation to the CAISO Board of Governors in October.

Beginning in February, 2007, the CAISO's Department of Market Monitoring ("DMM") began an evaluation of whether it was necessary, in order to prevent the exercise of local market power, to impose a bid cap on market-based Start-up and Minimum Load Cost bids. A range of options for capping start-up and minimum load bids under the bid-based option were presented and analyzed by DMM in an initial whitepaper and in a supplemental whitepaper issued in May. Conference calls were held with stakeholders to discuss these two whitepapers and written comments received were posted on the CAISO website. In a report issued in May 2007, DMM made specific recommendations regarding the institution of a cap. The CAISO is working on refining and implementing the recommendations of DMM and intends to file a proposal in mid-September.

The current GMC, which is the result of a filing made on July 26, 2006,[73] and runs through the end of 2007, includes a number of billing determinants that are based on the degree of participation in specific CAISO markets. With the implementation of MRTU, those markets will be modified, and it may be necessary to create new billing determinants for the GMC. As a result, the CAISO commenced a stakeholder process in 2007 to develop a new GMC framework for MRTU. To date, there have been seven conference calls and two stakeholder meetings. The CAISO contemplates filing an MRTU GMC after the October 2007 meeting of the Board of Governors.

The Commission approved the MRTU Tariff as a unified whole to replace the entire ISO Tariff. When the MRTU Tariff was drafted, it modified only those portions of the ISO Tariff as were necessary to implement the new markets and technologies. Since the approval of the MRTU Tariff, however, there have been numerous amendments to the ISO Tariff that are unrelated to the MRTU markets and technologies, such as amendments related to the transmission Access Charge, reliability requirements, and credit policies. If the MRTU Tariff were simply to go into effect in the form currently approved by the Commission, those amendments would be lost. The CAISO intends, therefore, to file a comprehensive restated MRTU Tariff to incorporate all relevant amendments to the ISO Tariff that have been approved subsequent to the approval of the MRTU Tariff.

The CAISO will be engaging in an effort to modify the existing *pro forma* Contracts and the Station Power Protocol to ensure consistency with the MRUT Tariff and to file them on or before the CAISO's filing of its comprehensive restated MRTU Tariff.

Finally, pursuant to Paragraph 1414 of the September 21 Order, the CAISO intends to make an informational filing at least 60 days prior to the effective date of MRTU, including a statement certifying market readiness.

IX. SERVICE

The CAISO has served copies of this filing on the California Public Utilities Commission, the California Energy Commission, the California Electricity Oversight Board, all parties with effective Scheduling Coordinator Service Agreements under the CAISO Tariff, and all parties in Docket No. ER06-615. In addition, the CAISO has posted a copy of the filing on the CAISO Website.

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[73] California Independent System Operator Company Filing Under Section 205 of the FPA to Modify Tariff Terms Related to Grid Management Charge, Docket No. ER06-1281 (July 26, 2006). This filing was approved by the Commission in a letter order issued on September 6, 2006. Letter Order Approving Revisions to Grid Management Charge, Docket No. ER06-1281 (Sept. 6, 2006).

X. COMMUNICATIONS

Communications regarding this filing should be addressed to the following individuals whose names should be placed on the official service list established by the Secretary with respect to this submittal: [74]

Sidney M. Davies
Assistant General Counsel
Anna McKenna
Counsel
California Independent System
Operator Corporation
151 Blue Ravine Road
Folsom, CA 95630
Tel: (916) 351-4400
Fax: (916) 608-7296
E-mail: sdavies@caiso.com
amckenna@caiso.com

Sean A. Atkins
Michael Kunselman
Alston & Bird LLP
The Atlantic Building
950 F. Street, N.W.
Washington, DC 20004
Tel: (202) 756-3300
Fax: (202) 756-3333
E-mail: sean.atkins@alston.com
michael.kunselman@alston.com

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74 The CAISO respectfully requests waiver of Rule 203(b)(3), 18 C.F.R. § 385.203(b)(3), to permit each of the persons listed above to be included on the service list for this proceeding.

XI. CONCLUSION

For the reasons set forth above, the CAISO respectfully requests that the Commission accept its proposed modifications to the MRTU Tariff included with this filing.

Respectfully submitted,

Sidney M. Davies
Assistant General Counsel
Anna McKenna
Counsel
Grant Rosenblum
Senior Counsel
Michael D. Dozier
Counsel
Beth Ann Burns
Senior Counsel
California Independent System
Operator Corporation
151 Blue Ravine Road
Folsom, CA 95630
Tel: (916) 351-4400

Sean A. Atkins
Michael Kunselman
Petra Holden
Stacey Tyrewala
Alston & Bird LLP
The Atlantic Building
950 F Street NW
Washington, DC 20004
Tel: (202) 756-3300

Dated: August 3, 2007

Certificate of Service

I hereby certify that I have this day served a copy of this document upon all parties listed on the official service list compiled by the Secretary in the above-captioned proceedings, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated this 3rd day of August, 2007 at Folsom in the State of California.

/s/ Sidney M. Davies
Sidney M. Davies
(916) 608-7144

Attachment A

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

4.3.1.3 Western Path 15 shall be required to turn over to CAISO Operational Control only its rights and interests in the Path 15 Upgrade and shall not be required to turn over to CAISO Operational Control Central Valley Project transmission facilities, Pacific AC Intertie transmission facilities, California-Oregon Transmission Project facilities, or any other new transmission facilities or Entitlements not related

4.5 Responsibilities of a Scheduling Coordinator.

4.5.1 Scheduling Coordinator Certification.

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

Each Scheduling Coordinator shall:

(a) demonstrate to the CAISO's reasonable satisfaction that it is capable of performing the functions of a Scheduling Coordinator under this CAISO Tariff including (without limitation) the functions specified in Sections 4.5.3 and 4.5.4;

(b) identify each of the Eligible Customers (including itself if it trades for its own account) which it is authorized to represent as Scheduling Coordinator and confirm that the metering requirements under Section 10 are met in relation to each Eligible Customer that it represents under this CAISO Tariff;

(c) confirm that each of the End-Use Customers it represents is eligible for service as a Direct Access End User;

(d) confirm that none of the Wholesale Customers it represents is ineligible for wholesale transmission service pursuant to the provisions of FPA Section 212(h);

(e) demonstrate to the CAISO's reasonable satisfaction that it meets the financial criteria set out in Section 12;

(f) enter into a Scheduling Coordinator Agreement with the CAISO; and

(g) provide NERC tagging data.

4.5.1.1 Procedure to become a Scheduling Coordinator.

4.5.1.1.1 Scheduling Coordinator Application.

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

4.5.1.1.2 CAISO Information.

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

(a) the Scheduling Coordinator Application Form, as set forth in the applicable Business Practice Manual;

(b) the CAISO Tariff and Business Practice Manuals; and

(c) forms for a credit application for Scheduling Coordinator Applicants applying for Unsecured Credit Limits and for provision of Financial Security to be provided pursuant to Section 12.

4.5.1.1.3 Duplicate Information.

If two or more Scheduling Coordinators apply simultaneously to register with the CAISO for a single meter or Meter Point for a CAISO Metered Entity or if a Scheduling Coordinator applies to register with the CAISO for a meter or Meter Point for a CAISO Metered Entity for which a Scheduling Coordinator has already registered, the CAISO will return the application with an explanation that only one Scheduling Coordinator may register with the CAISO for the meter or Meter Point in question and that a Scheduling

Coordinator has already registered or that more than one Scheduling Coordinator is attempting to register for that meter or Meter Point. The CAISO will send the Scheduling Coordinator Applicant the name and address of the applicable Scheduling Coordinator or Scheduling Coordinator Applicant.

4.5.1.1.4 Scheduling Coordinator Applicant Returns Application.

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

4.5.1.1.5 Notice of Receipt.

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

4.5.1.1.6 CAISO Review of Application.

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

4.5.1.1.6.1 Information Requirements.

The Scheduling Coordinator Applicant must submit with its application:

(a) the proposed date for commencement of service, which may not be less than 120 days after the date the application was filed, unless waived by the CAISO;

(b) financial and credit information as set forth in Section 12; and

(c) the prescribed non-refundable application fee of $5,000.

4.5.1.1.6.2 Scheduling Coordinator Applicant's Obligation for Contracts.

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

(a) represented Generators have entered into Participating Generator Agreements or Qualifying Facility Participating Generator Agreements as provided in Appendices B.2 and B.3, respectively with the CAISO;

(b) represented UDCs have entered into UDC Operating Agreements as provided in Appendix B.8 with the CAISO;

(c) represented CAISO Metered Entities have entered into Meter Service Agreements for CAISO Metered Entities as provided in Appendix B.6 with the CAISO;

(d) none of the Wholesale Customers it will represent are ineligible for wholesale transmission service pursuant to the provisions of the FPA Section 212(h); and

(e) each End-Use Customer it will represent is eligible for service as a Direct Access End User pursuant to an established program approved by the California Public Utilities Commission or a Local Regulatory Authority.

4.5.1.1.7 Deficient Application.

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

4.5.1.1.7.1 Scheduling Coordinator Applicant's Additional Information.

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

4.5.1.1.7.2 No Response from Scheduling Coordinator Applicant.

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

4.5.1.1.8 CAISO Approval or Rejection of an Application.

4.5.1.1.8.1 Approval or Rejection Notification.

(a) If the CAISO approves the application, it will send an electronic notification of approval. In addition, the CAISO will provide a Scheduling Coordinator Agreement, a Meter Service Agreement for Scheduling Coordinators as provided in Appendix B.7, if applicable, any other applicable agreements, and any required CAISO network connectivity security agreement for the Scheduling Coordinator Applicant's signature.

(b) If the CAISO rejects the application, the CAISO will send an electronic notification of rejection stating one or more of the following grounds:

i. incomplete information;

ii. non-compliance with credit requirements pursuant to Section 12;

iii. non-compliance with third party contractual obligations;

iv. non-compliance with technical requirements; or

v. non-compliance with any other CAISO Tariff requirements.

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

4.5.1.1.8.2 Time for Processing Application.

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

4.5.1.1.9 Scheduling Coordinator Applicant's Response.

4.5.1.1.9.1 Scheduling Coordinator Applicant's Acceptance.

If the CAISO accepts the application, the Scheduling Coordinator Applicant must return an executed Scheduling Coordinator Agreement, Meter Service Agreement for Scheduling Coordinators, if applicable,

any other applicable agreements, and a completed credit application and Financial Security provided pursuant to Section 12, as applicable.

4.5.1.1.9.2 Scheduling Coordinator Applicant's Rejection.

4.5.1.1.9.2.1 Resubmittal.

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

4.5.1.1.9.2.2 Appeal.

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

4.5.1.1.10 Post Application Procedures Prior to Final Certification.

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

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

(a) provided the technical/operational information required to complete the Scheduling Coordinator Application Form as set forth in the applicable Business Practice Manual, and to comply with Section 10.3;

(b) executed a network connectivity security agreement for access to the CAISO's software used in conducting business with the CAISO and compliance with the CAISO's system security requirements in a form approved by the CAISO, if applicable;

(c) obtained and installed any required software for functional interface for Validation, Estimation and Editing meter values (VEE), if applicable;

(d) undertaken required training and testing regarding the use of the CAISO's market, operating, and technical systems, as specified in the applicable Business Practice Manual;

(e) provided its bank account information and arranged for Fed-Wire transfers;

(f) provided an emergency plan specifying the procedures by which Scheduling Coordinator operations and contacts with the CAISO will be maintained during an emergency, containing information specified in the applicable Business Practice Manual; and

(g) obtained and installed a computer link and any necessary software in order to communicate with the CAISO, as specified in the applicable Business Practice Manual.

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

4.5.1.1.10.2 Application Closure after 12 Months.

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

4.5.1.1.11 Final Certification of Scheduling Coordinator Applicant.

The Scheduling Coordinator Applicant will become a Scheduling Coordinator when:

(a) its application has been accepted;

(b) it has entered into a Scheduling Coordinator Agreement, a Meter Service Agreement for Scheduling Coordinators, if applicable, and any other applicable agreements with the CAISO;

(c) it has met the credit requirements of Section 12; and

(d) it has fulfilled all technical/operational requirements of Sections 4.5.4.1 and 4.5.1.1.10.1.

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

4.5.1.2 Scheduling Coordinator's Ongoing Obligations After Certification.

4.5.1.2.1 Scheduling Coordinator's Obligation to Report Changes.

4.5.1.2.1.1 Obligation to Report a Change in Filed Information.

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

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

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

4.5.1.2.2 CAISO's Response for Failure to Inform.

4.5.1.2.2.1 Failure to Promptly Report a Material Change.

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

4.5.1.3 Additional Scheduling Coordinator Identification Code Registration.

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

4.5.2 Eligible Customers Represented by Scheduling Coordinators.

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

4.5.3 Responsibilities of a Scheduling Coordinator.

Each Scheduling Coordinator shall be responsible for:

4.5.3.1 Obligation to Pay.

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

4.5.3.2 Submit Bids and Interchange Schedules.

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

Scheduling Coordinator.

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

4.5.3.3 Modifications in Demand and Supply.

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

4.5.3.4 Inter-SC Trades.

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

4.5.3.5 Tracking and Settling Trades.

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

4.5.3.6 Ancillary Services.

Providing Ancillary Services in accordance with Section 8;

4.5.3.7 Annual and Weekly Forecasts.

Submitting to the CAISO the forecasted weekly peak Demand on the CAISO Controlled Grid and the forecasted Generation capacity. The forecasts shall cover a period of twelve (12) months on a rolling basis;

4.5.3.8 Business Practice Manuals.

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

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

4.5.3.10 Participating Intermittent Resources.

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

4.5.3.11 Day-Ahead Market Published Schedules and Awards.

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

4.5.3.12 Financial Responsibility.

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

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

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

4.5.4 Operations of a Scheduling Coordinator.

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

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

4.5.4.2 [NOT USED]

4.5.4.3 Dynamic Scheduling.

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

4.5.4.4 Termination of Scheduling Coordinator Agreement and Suspension of Certification.

(a) A Scheduling Coordinator's Scheduling Coordinator Agreement may be terminated by the CAISO on written notice to the Scheduling Coordinator:

(i) if the Scheduling Coordinator no longer meets the requirements for eligibility set out in Section 4.5 and fails to remedy the default within a period of five (5) Business Days after the CAISO has given written notice of the default;

(ii) if the Scheduling Coordinator fails to pay any sum under this CAISO Tariff and fails to remedy the default within a period of five (5) Business Days after the CAISO has given written notice of the default;

(iii) if the Scheduling Coordinator commits any other default under this CAISO Tariff or any of the CAISO Business Practice Manuals which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given it written notice of the default; or

(iv) if the Scheduling Coordinator does not schedule or bid in the CAISO's markets for Energy or Ancillary Services for a period of twelve (12) consecutive months and fails to comply with the provisions of Section 4.5.4.4.2 within 120 days after the CAISO has given it written notice of the CAISO's intent to terminate its Scheduling Coordinator Agreement.

(b) A Scheduling Coordinator's Scheduling Coordinator Agreement may be terminated by the Scheduling Coordinator on sixty (60) days written notice to the CAISO, provided that such notice shall not be effective to terminate the Scheduling Coordinator Agreement until the Scheduling Coordinator has complied with all applicable requirements of Section 4.5.2.

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

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

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

4.5.4.5 Notification of Termination.

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

4.5.4.5.1 Filing of Notice of Termination.

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

4.5.4.6 Continuation of Service on Termination.

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

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

4.5.4.6.2 Interim Service.

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

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

(b) Unless the CAISO is notified by another Scheduling Coordinator that it represents an Eligible Customer of a defaulting Scheduling Coordinator within seven (7) days of the notice of termination being posted on the CAISO Website, the Scheduling Coordinator to which that Eligible Customer has been assigned in accordance with subsection (a) may establish a reasonable minimum period for service, not to exceed thirty (30) days.

status of equipment that could affect the maximum output of a Generating Unit, the minimum load of a Generating Unit, the ability of a Generating Unit to operate with automatic voltage regulation, operation of the PSSs (whether in or out of service), the availability of a Generating Unit governor, or a Generating Unit's ability to provide Ancillary Services as required. Each Participating Generator shall immediately report to the CAISO, through its Scheduling Coordinator any actual or potential concerns or problems that it may have with respect to Generating Unit direct digital control equipment, Generating Unit voltage control equipment, or any other equipment that may impact the reliable operation of the CAISO Controlled Grid.

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

4.6.1.2 Operate Pursuant to Relevant Operating Procedures.

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

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

With regard to any Generating Unit directly connected to a UDC system, a Participating Generator shall comply with applicable UDC tariffs, interconnection requirements and generation agreements. With regard to a Participating Generator's Generating Units directly connected to a UDC system, the CAISO

and the UDC will coordinate to develop procedures to avoid conflicting CAISO and UDC operational directives. With regard to Regulatory Must-Take Generation, the CAISO will honor applicable terms and conditions of existing agreements, including Existing QF Contracts, as specified in Section 4.6.3.2. Qualifying Facilities that are not Regulatory Must-Take Generation subject to an Existing QF Contract shall comply with the requirements applicable to Participating Generators, as specified in Section 4.6.3.3.

4.6.3.1 Exemption for Generating Units Less Than 1 MW.

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

4.6.3.2 Existing Agreements for Regulatory Must-Take Generation.

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

4.6.3.3 Qualifying Facilities without Existing QF Contracts.

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

4.6.3.4 Participating Generator with a QF PGA.

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

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

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

4.6.3.4.2 Telemetry for a QF Subject to a QF PGA.

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

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

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

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

A Participating Generator that has entered into a QF PGA shall abide by CAISO Tariff provisions

regarding the CAISO's ability to dispatch or curtail Generation from the Net Scheduled QF(s) listed in its QF PGA. The CAISO shall only dispatch or curtail a Net Scheduled QF of the Participating Generator: (a) to the extent the Participating Generator bids Energy or Ancillary Services from the Net Scheduled QF into the CAISO Markets or the Energy is otherwise available to the CAISO under Section 40, subject to the restrictions on operating orders set forth below; or (b) if the CAISO must dispatch or curtail the Net Scheduled QF in order to respond to an existing or imminent System Emergency or condition that would compromise CAISO Control Area integrity or reliability as provided in Sections 7 and 7.6.1 of the CAISO Tariff.

The CAISO will not knowingly issue an operating order to a Participating Generator that has entered into a QF PGA that: (1) requires a Participating Generator to reduce its Generation below the delineated minimum operating limit, other than in a System Emergency; (2) conflicts with operating instructions provided to the CAISO by the Participating Generator; or (3) results in damage to the Participating Generator's equipment, provided that any such equipment limitation has been provided to the CAISO and incorporated in the Participating Generator's operating instructions provided to the CAISO. If the Participating Generator: (1) receives a Schedule which requires operation below the minimum operating limit, and (2) deviates from that Schedule to continue to operate at the minimum operating limit, it will not be subject to any penalties or sanctions as a result of operating at the minimum operating limit. The Participating Generator's consequences for deviating from Schedules in Real-Time will be governed by the CAISO Tariff.

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

4.6.4 Identification of Generating Units.

Each Participating Generator shall provide data identifying each of its Generating Units and such information regarding the capacity and the operating characteristics of the Generating Unit as may be reasonably requested from time to time by the CAISO. All information provided to the CAISO regarding

the operational and technical constraints in the Master File shall be accurate and actually based on physical characteristics of the resources except for the Pump Ramping Conversion Factor, which is configurable.

4.6.5 WECC Requirements.

4.6.5.1 Participating Generator Performance Standard.

Participating Generators shall, in relation to each of their Generating Units, meet all applicable WECC standards including any standards regarding governor response capabilities, use of power system stabilizers, voltage control capabilities and hourly Energy delivery. Unless otherwise agreed by the

MSS. Alternatively, the Scheduling Coordinator representing the MSS may purchase Ancillary Services from the CAISO or third parties to meet all or part of its Ancillary Services Obligations in accordance with the CAISO Tariff.

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

4.9.9 [NOT USED]

[SHEET NOT USED]

4.9.10 Information Sharing.

4.9.10.1 System Planning Studies and Forecasts.

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

4.9.10.2 System Surveys and Inspections.

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

4.9.10.3 Reports.

4.9.10.3.1 The CAISO shall make available to each MSS Operator any public annual reviews or reports regarding performance standards, measurements and incentives relating to the CAISO Controlled Grid and shall also make available, upon reasonable notice, any such reports that the CAISO receives from Participating TOs. Each MSS Operator shall make available to the CAISO any public annual

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

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

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

4.9.12.4 When and to the extent that Energy from a System Unit is scheduled to provide for the needs of Loads within the MSS and is not being Bid to the CAISO Markets, the CAISO shall have the authority to Dispatch the System Unit only to avert or respond to a circumstance described in the third sentence of Section 7.6.1 or, pursuant to Section7.7.2.3, to a System Emergency.

4.9.13 MSS Elections and Participation in CAISO Markets.

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

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

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

4.9.13.1 Gross or Net Settlement.

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

4.9.13.2 Load-Following or Non Load-Following Election.

The MSS Operator has the option to elect to operate a System Unit of Generating Units in the MSS to follow its Load, provided that: (a) the Scheduling Coordinator for the MSS Operator shall remain responsible for purchases of Energy in accordance with the CAISO Tariff if the MSS Operator does not operate its System Unit or Generating Units and schedule imports into the MSS, to match the metered

Demand in the MSS and exports from the MSS; and (b) if the deviation between Generation and imports into the MSS and metered Demand and exports from the MSS exceeds the MSS Deviation Band, then the Scheduling Coordinator for the MSS Operator shall pay the additional amounts specified in Section 11.7. If an MSS Operator elects Load-following and net Settlements, all generating resources within the MSS must be designated as Load-following resources. If an MSS Operator elects Load-following and gross Settlements, generating resources within the MSS can be designated as either Load-following or non Load-following resources. Consistent with these requirements, the MSS Operator may also modify the designation of generating resources within the MSS within the timing requirements specified for such Master File changes as described in the Business Practice Manuals.

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

4.10 Candidate CRR Holder and CRR Holder Registration.

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

4.10.1 Procedure to Become a Candidate CRR Holder.

4.10.1.1 Candidate CRR Holder Application.

To become a Candidate CRR Holder, a Candidate CRR Holder applicant must submit a completed

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

4.10.1.2 CAISO Information.

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

(a) the Candidate CRR Holder application form;

(b) the CAISO Tariff and Business Practice Manuals; and

(c) an application for an Unsecured Credit Limit for Candidate CRR Holder applicants requesting an Unsecured Credit Limit in lieu of another form of Financial Security.

4.10.1.3 Candidate CRR Holder Applicant Submits Application.

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

4.10.1.4 Notice of Receipt.

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

4.10.1.5 CAISO Review of Application.

Within ten (10) Business Days after receiving an application, the CAISO will notify the Candidate CRR Holder applicant whether the Candidate CRR Holder applicant has fulfilled all necessary information as set forth in Section 4.10.1. If the Candidate CRR Holder applicant fails to fulfill all application

requirements within a year from the date that the CAISO acknowledges receipt of the Candidate CRR Holder application, the application will be nullified and the applicant will be required to resubmit a new application in order to reinstate its status as a Candidate CRR Holder applicant.

4.10.1.5.1 Information Requirements.

The Candidate CRR Holder applicant must submit with its application:

(a) the proposed date for commencement of the CRR Allocation, CRR Auction or Secondary Registration System in which the applicant intends to qualify to participate, which may not be less than sixty (60) days after the date the application was filed, unless waived by the CAISO;

(b) Financial Security information as set forth in Section 12;

(c) proof of completion of CRR training or expected completion of CRR training; and

(d) the prescribed non-refundable application fee.

4.10.1.5.2 Candidate CRR Holder Load Serving Entity Certifications.

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

4.10.1.6 Deficient Application.

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

4.10.1.6.1 Candidate CRR Holder Applicant's Additional Information.

Once the CAISO requests additional information, the Candidate CRR Holder applicant has five (5)

Business Days, or such longer period as the CAISO may agree, to provide the additional material requested by the CAISO.

4.10.1.6.2 No Response from Candidate CRR Holder Applicant.

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

4.10.1.7 CAISO Acceptance or Rejection of an Application.

4.10.1.7.1 Acceptance or Rejection Notification.

(a) If the CAISO accepts the application, it will send a written notification to the Candidate CRR Holder applicant stating that its application has been accepted.

(b) If the CAISO rejects the application, the CAISO will send a rejection letter stating one or more of the following grounds:

i. incomplete information;

ii. non-compliance with Financial Security requirements; or

iii. non-compliance with any other CAISO Tariff requirements.

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

4.10.1.7.2 Time for Processing Application.

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

4.10.1.8 Candidate CRR Holder Applicant's Response.

4.10.1.8.1 Candidate CRR Holder Applicant's Acceptance.

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

4.10.1.8.2 Candidate CRR Holder Applicant's Rejection.

4.10.1.8.2.1 Resubmittal.

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

4.10.1.8.2.2 Appeal.

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

4.10.1.9 Final Registration and Qualification of Candidate CRR Holder Applicant.

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

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

(a) fully executed a CRR Entity Agreement with the CAISO;

(b) provided its bank account information and arranged for Fed-Wire transfers;

(c) met the Financial Security requirements of Section 12;

(d) certified that it has attended required CRR training; and

(e) obtained and installed any necessary software for communication with the CAISO as necessary.

4.10.1.9.2 Market Notice.

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

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

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

4.10.2.1.1 Obligation to Report a Change in Filed Information.

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

4.10.2.1.2 Obligation to Report a Material Change in Financial Condition.

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

4.10.2.2 Failure to Promptly Report a Material Change.

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

4.10.3 Termination of a CRR Entity Agreement.

4.10.3.1 Prior Notice Requirements.

(a) A CRR Entity Agreement may be terminated by the CAISO on written notice to the Candidate CRR Holder or CRR Holder that is a party to the CRR Entity Agreement in accordance with the terms of the CRR Entity Agreement:

(i) if the Candidate CRR Holder or CRR Holder no longer meets the requirements for eligibility set out in Section 4.10 and fails to remedy the default within a period of seven (7) days after the CAISO has given written notice of the default;

(ii) if the Candidate CRR Holder or CRR Holder fails to pay any sum under this CAISO Tariff and fails to remedy the default within a period of five (5) Business Days after the CAISO has given written notice of the default; or

(iii) if the Candidate CRR Holder or CRR Holder commits any other default under this CAISO Tariff or any of the Business Practice Manuals which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given it written notice of the default.

(b) The Candidate CRR Holder or CRR Holder may terminate its CRR Entity Agreement in accordance with the provisions of that agreement.

(c) Upon termination of the CRR Entity Agreement, Candidate CRR Holders or CRR Holders shall continue to be liable for any outstanding financial or other obligations incurred under the CAISO Tariff as a result of their status as a Candidate CRR Holder or CRR Holder.

(d) The CAISO shall, following termination of a CRR Entity Agreement and within thirty (30) days of being satisfied that no sums remain owing by the Candidate CRR Holder or CRR Holder under the CAISO Tariff, return or release to the Candidate CRR Holder or CRR Holder, as appropriate, any Financial Security support provided by such Candidate CRR Holder or CRR Holder to the CAISO under Section 12.

4.10.3.2 Suspension of Registration and Qualification.

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

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

6.5.1.1 Market Participants With Non-Disclosure Agreements.

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

(a) CRR Full Network Model;

(b) Constraints and interface definitions;

(c) Load Distribution Factors for each CRR Allocation and CRR Auction that is published prior to the CRR Allocation and CRR Auction; and

(d) Nominations and/or parameters to be used for modeling in each annual CRR Allocation and CRR Auction processes: Transmission Ownership Rights, Existing Contracts and Converted Rights expected usage, and Merchant Transmission CRRs.

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

(a) CRR Full Network Model;

(b) Constraints and interface definitions;

(c) Load Distribution Factors for each CRR Allocation and CRR Auction that is published prior to the CRR Allocation or CRR Auction; and

(d) Nominations and/or parameters to be used for modeling in each monthly CRR Allocation and CRR Auction processes: Transmission Ownership Rights, Existing Contracts and Converted Rights expected usage, and Merchant Transmission CRRs.

6.5.1.2 CRR Participants Without Non-Disclosure Agreements.

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

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

6.5.1.3 Public Market Information.

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

(a) Market Clearing Prices for all Aggregated PNodes used in the CRR Auction clearing for on-peak and off-peak;

(b) CRR Holdings by CRR Holder (including):

(i) CRR Source name(s);

(ii) CRR Sink name(s);

(iii) CRR quantity (MW) for each CRR Source(s) and CRR Sink(s);

(iv) CRR start and end dates;

(v) Time of use specifications for the CRR(s); and

(vi) Whether the CRR is a CRR Option or CRR Obligation.

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

(a) Market Clearing Prices for all Aggregated PNodes used in the CRR Auction clearing for on-peak and off-peak;

(b) CRR Holdings by CRR Holder (including):

(i) CRR Source name(s);

(ii) CRR Sink name(s);

(iii) CRR quantity (MW) for each CRR Source(s) and CRR Sink(s);

(iv) CRR start and end dates;

(v) Time of use specifications for the CRR(s); and

(vi) Whether the CRR is a CRR Option or a CRR Obligation.

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

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

6.5.1.4 Requirements to Obtain the CRR Full Network Model.

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

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

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

(c) A non-Market Participant that is a member of the WECC and that requests the CRR Full Network Model: (i) shall reasonably demonstrate a legitimate business interest in the CAISO Markets, (ii) shall execute the Non-Disclosure Agreement for CRR Full Network Model Distribution that is posted on the CAISO Website, and (iii) shall provide to the CAISO a non-disclosure statement, the form of which

is attached as an exhibit to the Non-Disclosure Agreement executed by the non-Market Participant, executed by each employee and consultant of the non-Market Participant who will have access to the CRR Full Network Model.

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

6.5.1.5 Non-Disclosure Agreement.

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

6.5.1.6 Obligation to Report Violations of Section 6.5.1.4.

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

6.5.2 Communications Prior to the Day-Ahead Market.

6.5.2.1 Communications Regarding the State of the CAISO Controlled Grid.

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

(a) Future planned Outages of transmission facilities;

(b) Operational Transfer Capability (OTC); and

(c) Available Transfer Capability (ATC) for WECC paths and interconnections with external Control Areas.

6.5.2.2 Communications With Scheduling Coordinators.

6.5.2.2.1 Bid Adder Eligibility.

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

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

6.5.2.2.2 Day-Ahead Market Bid Submittal.

Seven Days prior to the target Day-Ahead Market, Scheduling Coordinators can begin submitting Bids for that DAM.

6.5.2.3 Public Market Information.

6.5.2.3.1 Demand Forecasts.

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

6.5.2.3.1.2 By 6:00 pm the day prior to (two days before the Operating Day) the target Day-Ahead Market, the CAISO will publish the updated the CAISO Forecast of CAISO Demand.

6.5.2.3.2 Network and System Conditions.

By 6:00 pm the day prior to (two days ahead of) the target Day-Ahead Market, the CAISO will publish known network and system conditions, including but not limited to OTC and ATC, the total capacity of Inter-Control Area Interfaces, and the available capacity.

6.5.2.3.3 Ancillary Services Requirements.

By 6:00 pm the day prior to (two days ahead of) the target Day-Ahead Market, the CAISO will publish forecasted Ancillary Services requirements and regional constraints by AS Region.

6.5.2.3.4 Gas Price Indices.

The CAISO will publish relevant gas price indices when available.

6.5.2.3.5 Extremely Long-Start Unit Commitment.

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

6.5.3 Day-Ahead Market Communications.

6.5.3.1 Communications With Scheduling Coordinators.

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

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

6.5.3.1.3 Between 5:00 am and 10:00 am, the CAISO will provide feedback to Scheduling Coordinators about their validated ETC and TOR quantities, and calculated Default Energy Bids.

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

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

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

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

(a) Unit commitment status for resources committed in the IFM;

(b) Day-Ahead Schedules and prices;

(c) Day-Ahead AS Awards and prices;

(d) RUC Awards and RUC Capacity and resource-specific RUC Prices;

(e) RUC Start-Up Instructions; and

(f) Day-Ahead final resource Bid mitigation results.

6.5.3.2 Public Market Information.

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

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

(a) Total Day-Ahead Schedules (MWh) by Generator, Demand and Scheduling Point for the CAISO Control Area;

(b) Total Day-Ahead AS Awards by AS Region;

(c) RUC Prices by bus PNode;

(d) Day-Ahead LMP for Energy, including the Energy, MCC and MCL components;

(e) Day-Ahead ASMP by bus by PNode;

(f) Day Ahead mitigation indicator;

(g) CAISO Forecast of CAISO Demand;

(h) Shadow Prices; and

(i) Total Day-Ahead system Marginal Cost of Losses in MWh for each Trading Hour of the next Operating Day.

6.5.4 HASP Communications.

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

6.5.4.1 Communications With Scheduling Coordinators.

6.5.4.1.1 Before T-135, the CAISO will continuously screen Inter-SC Trades of Energy for the HASP, Inter-SC Trades of Ancillary Services, and Inter-SC Trades of IFM Load Uplift Obligations submitted by Scheduling Coordinators and will communicate with the Scheduling Coordinators about the consistency and validity of these Inter-SC Trades based on information available to the CAISO.

6.5.4.1.2 Between T-135 and T-45, the CAISO will perform the pre-market validation check for Inter-SC Trades for the HASP and Inter-SC Trades of Ancillary Services and will provide feedback to the Scheduling Coordinators about the validity of these Inter-SC Trades based on information available to the CAISO.

6.5.4.1.3 At approximately T-75, the CAISO will send a message to the Scheduling Coordinators regarding the outcome of the Bid validation.

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

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

(a) HASP Intertie Schedules and LMPs; and

(b) HASP AS Awards and ASMPs

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

(a) HASP Advisory Schedules;

(b) HASP AS Awards; and

(c) HASP final resource Bid mitigation results.

6.5.4.1.7 At approximately T-30, the CAISO performs the Inter-SC Trade of Energy post-market validation and sends the results back to the applicable Scheduling Coordinators.

6.5.4.1.8 After T-30, on an hourly basis, the CAISO will publish via the secure communication system the following:

(a) Advisory Resource-Specific LMPs, and

(b) Resource-Specific ASMPs.

6.5.4.2 Public Market Information.

6.5.4.2.1 By T-105 the CAISO will publish information regarding Outages on the transmission system on OASIS that will be used for HASP Schedules and Congestion Management.

6.5.4.2.2 At T-30, on an hourly basis, the CAISO will publish on OASIS the following:

(a) HASP Intertie Schedules;

(b) Total HASP advisory Schedules (MWh) by Scheduling Point;

(c) HASP AS Awards by Scheduling Point;

(d) HASP LMPs for Scheduling Points;

(e) HASP advisory LMPs;

(f) HASP Intertie ASMP for AS by bus PNode;

(g) HASP advisory ASMP for AS by bus PNode;

(h) HASP Shadow Prices; and

(i) Total HASP system losses in MWh for the next Operating Hour.

6.5.5 Real-Time Market Communications.

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

(a) CAISO Forecast of CAISO Demand;

(b) Total Real-Time Dispatched Energy and Demand on a 24-hour delayed basis;

(c) Real-Time Dispatch Interval LMP;

(d) Real-Time system losses; and

(e) Actual Operating Reserve.

6.5.6 Market Bid Information.

6.5.6.1 Public Market Information.

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

(a) AS Market Bids;

(b) Energy Market Bids; and

(c) RUC Market Bids.

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

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

7.7.3 Notifications by CAISO of System Conditions.

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

7.7.3.1 System Alert.

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

7.7.3.2 System Warning.

The CAISO will give a system warning notice when the operating requirements for the CAISO Controlled Grid are not being met in the HASP or Real-Time Market, or the quantity of Regulation, Spinning Reserve,

Non-Spinning Reserve, and Energy available to the CAISO is not acceptable for the Applicable Reliability Criteria. This system warning notice will notify Market Participants that the CAISO will, acting in accordance with Good Utility Practice, take such steps as it considers necessary to ensure compliance with Applicable Reliability Criteria, including the negotiation of Generation through processes other than competitive Bids.

8. ANCILLARY SERVICES.

8.1 Scope.

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

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

These services will be procured as stated in Section 8.3.5. Bids for Non-Spinning Reserve may be submitted by Scheduling Coordinators for Curtailable Demand as well as for Generation. Identification of specific services in this CAISO Tariff shall not preclude development of additional interconnected operation services over time. The CAISO and Market Participants will seek to develop additional categories of these unbundled services over time as the operation of the CAISO Controlled Grid matures or as required by regulatory authorities.

Outage, the CAISO will give notice of any change in the use of Ancillary Services Regions as soon as reasonably practicable after the occurrence of the Forced Outage.

Details regarding: (a) how the CAISO establishes Sub-Regions and the Ancillary Service limits (*i.e.*, a maximum or a minimum amount (or both a maximum and minimum amounts) of Ancillary Services to be procured within a region) for the System Region and/or Sub-Regions, and (b) the process the CAISO will use to notify Market Participants of any change in Ancillary Services Regions, are contained in the Business Practice Manual for Ancillary Services.

8.3.4 Certification and Testing Requirements.

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

of this CAISO Tariff, including Appendix K.

8.3.5 The CAISO shall procure Regulation Up, Regulation Down, Spinning, and Non-Spinning Reserves on a daily, hourly and Real-Time basis in the IFM, HASP and RTM respectively. The CAISO shall procure Ancillary Services on a longer-term basis pursuant to Section 40 if necessary to meet reliability criteria. The CAISO Governing Board must approve all long-term contracts. The CAISO shall contract for Voltage Support annually (or for such other period as the CAISO may determine is economically advantageous) and on a daily or hourly basis as required to maintain System Reliability. The CAISO shall contract annually (or for such other period as the CAISO may determine is economically advantageous) for Black Start Generation.

8.4 Technical Requirements for Providing Ancillary Services.

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

8.4.1 Operating Characteristics Required to Provide Ancillary Services.

Each Generating Unit, System Unit, Participating Load or System Resource which a Scheduling Coordinator wishes to submit a Bid to provide Ancillary Services must comply with the requirements for the specific Ancillary Service as set forth in the Business Practice Manual. The requirements in the Business Practice Manuals include Ancillary Service control, capability and availability standards. The requirements also involve the following operating characteristics:

(a) ramp rate increase and decrease (MW/minute);

(b) power factor (leading and lagging) as required by Section 8.2.3.3;

(c) maximum output (real and reactive), except that System Resources shall be required to comply only with the requirement for maximum real power;

(d) minimum output (real and reactive), except that System Resources shall be required to comply only with the requirement for minimum real power;

(e) AGC capability, control scheme, and range; and

(f) minimum length of time the resource can be available to provide the relevant Ancillary Service.

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

8.4.1.1 Regulation.

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

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

8.4.7.1 Market-Based Prices.

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

8.4.7.2 Bidding and Self-Provision of Ancillary Services.

Scheduling Coordinators may bid or self-provide Ancillary Services from resources located within the CAISO Control Area or Dynamic System Resources certified to provide Ancillary Services, submit Bids for Ancillary Services from resources located outside the CAISO Control Area, or specify Inter-SC Trades of Ancillary Services. Ancillary Services in the Day-Ahead Market, in the HASP, and in the Real-Time Market are comprised of the following: Regulation Up, Regulation Down, Spinning Reserve, and Non-Spinning Reserve. Each Generating Unit (including Physical Scheduling Plants), System Unit, Participating Load, or System Resource for which a Scheduling Coordinator wishes to submit Ancillary Service Bids must meet the requirements set forth in this CAISO Tariff. The same resource capacity may be offered into more than one CAISO Ancillary Service auction at the same time. Ancillary Services Bids and Submissions to Self-Provide an Ancillary Service can be submitted up to seven (7) days in advance. Ramp Rates will be only used by the CAISO for procuring capacity associated with the specific Ancillary Services. The CAISO will issue Real-Time Dispatch Instructions in the Real-Time Market for the Energy associated with the awarded capacity based upon the applicable Operational Ramp Rate submitted with the single Energy Bid Curve in accordance with Section 30.10. There is no provision for exports with regard to Ancillary Services Bids. The functionality necessary to accept such Bids does not exist in the CAISO scheduling software. To the extent a Scheduling Coordinator has an on-demand obligation to

serve loads outside the CAISO Control Area, it can do so provided that (1) it is using export transmission capacity available in Real-Time, (2) the resource capacity providing Energy to satisfy the on-demand obligation is not under an RMR Contract or Resource Adequacy Capacity obligation, and has not been paid a RUC Availability Payment for the Trading Hour.

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

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

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

8.5 The Bidding Process.

payment for the Ancillary Service concerned for the committed period and adjustments to reflect this shall be made in the calculation of payments to the Scheduling Coordinator, provided that any such penalty shall be reduced to reflect any adjustment made over the duration of the committed period under Section 8.10.8 or 8.10.8.1.

System Units providing RUC Capacity or providing Ancillary Services to the CAISO are subject to the same testing, compensation, and penalties as are applied to individual Generating Units providing RUC Capacity or provision of Ancillary Services. To perform testing, the CAISO will bias the MSS's MSRE to test the responsiveness of the System Unit.

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

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

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

8.10.8.1 Rescission of Payments for Undispatchable Ancillary Service Capacity.

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

[SHEET NOT USED]

8.10.8.2 Rescission of Payments for Unavailable Ancillary Service Capacity.

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

8.10.8.3 Rescission of Payments for Undelivered Ancillary Service Capacity.

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

8.10.8.4 [NOT USED]

8.10.8.5 [NOT USED]

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

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

8.10.8.7 [NOT USED]

8.10.8.8 [NOT USED]

8.11 Temporary Changes To Ancillary Services Penalties.

8.11.1 Application and Termination.

The temporary change, respecting Ancillary Services penalties, set out in Section 8.11.2 shall continue in effect until such time as the Chief Executive Officer of the CAISO issues a Notice of Full-Scale Operations, posted on the CAISO Internet "Website", at http://www.CAISO.com, or such other Internet address as the

transmission system that could affect the reliability of the CAISO Controlled Grid. This would include, but is not limited to, adverse weather conditions, fires, bomb threats, system failures, etc. To the extent possible, the CAISO shall reflect all transmission Outages in the Integrated Forward Market, HASP, and Real-Time Market.

9.3.10.2 Any Operator, upon identification of a situation likely to result in a Forced Outage within the next twenty-four (24) hours unless immediate corrective action is taken, where such action requires the removing from service or restricting an operating Generating Unit or removing a transmission facility from service, shall communicate directly with the CAISO Control Center. All notifications of Forced Outages shall be communicated to the CAISO Control Center with as much notice as possible in order that the necessary security analysis and CAISO Controlled Grid assessments may be performed. If prior notice of a Forced Outage cannot be given, the Operator shall notify the CAISO of the Forced Outage within thirty (30) minutes after it occurs. Any Operator, upon identification of a situation likely to result in a Forced Outage but of a nature not requiring a removal from service until some time more than twenty-four (24) hours in the future will be subject to the provisions of Section 9 with respect to any necessary Outage except the requirements imposing time limits for notification will be waived and the request will be expedited by the CAISO provided notice is given as soon as possible.

9.3.10.3 The CAISO Control Center shall coordinate any operational changes necessary to accommodate a Forced Outage and Market Participants shall comply with the CAISO's instructions given for that purpose.

9.3.10.4 All Forced Outages shall be communicated by the CAISO Control Center to Operators likely to be affected by the Outage using the same procedures adopted for Maintenance Outage coordination procedures.

9.3.10.5 Within forty-eight (48) hours of the commencement of a Forced Outage, the Operator shall provide to the CAISO an explanation of the Forced Outage, including a description of the equipment

failure or other cause and a description of all remedial actions taken by the Operator. Upon request of the CAISO, Operators, and where applicable, Eligible Customers, Scheduling Coordinators, UDCs and MSSs promptly shall provide information requested by the CAISO to enable the CAISO to review the explanation submitted by the Operator and to prepare reports on Forced Outages. If the CAISO

10 METERING.

10.1 General Provisions.

10.1.1 Role of the CAISO.

The CAISO is responsible for establishing and maintaining the Revenue Meter Data Acquisition and Processing System (RMDAPS) and the Settlement Quality Meter Data Systems (SQMDS). RMDAPS will acquire Revenue Quality Meter Data for use in the CAISO's Settlement and billing process, and SQMDS acquires Scheduling Coordinators' Settlement Quality Meter Data. The CAISO is also responsible for the following for CAISO Metered Entities:

(a) setting standards and procedures for the registration, certification, auditing, testing and maintenance of revenue quality meters and Meter Data servers; and

(b) establishing procedures for the collection, security, validation and estimation of Meter Data.

10.1.2 Meter Data Retention by the CAISO.

The CAISO will maintain a record of all Revenue Quality Meter Data and Settlement Quality Meter Data provided to it, as well as the Settlement Quality Meter Data it produces, for a period of 18 months on site at the CAISO's facilities and for a period of 10 years in the CAISO's archive storage facilities. The CAISO will, on reasonable notice, provide a Scheduling Coordinator with access to Meter Data or Settlement Quality Meter Data provided that the Scheduling Coordinator requesting access represented the entity for which that data was provided at the time the data was provided to the CAISO.

10.1.3 Netting.

10.1.3.1 Permitted Netting.

CAISO Metered Entities and Scheduling Coordinators may, when providing Meter Data to the CAISO, net MWh values for Generating Unit output and auxiliary Load equipment electrically connected to that Generating Unit at the same point provided that the Generating Unit is on-line and is producing sufficient

output to serve all of that auxiliary Load equipment. For example, where a Generating Unit's auxiliary Load equipment is served via a distribution line that is separate from the switchyard to which the Generating Unit is connected, that Generating Unit and auxiliary Load equipment will not be considered to be electrically connected at the same point.

10.1.3.2 Prohibited Netting.

CAISO Metered Entities or Scheduling Coordinators may not net values for Generating Unit output and Load. CAISO Metered Entities or Scheduling Coordinators that serve third party Load connected to a Generating Unit's auxiliary system must add that third party Load to the Generating Unit's output. The CAISO Metered Entity may add that third party Load to the Generating Unit's output either by means of a hard wire local meter connection between the metering systems of the third party Load and the Generating Unit or by requesting the CAISO to use RMDAPS to perform the addition. Scheduling Coordinators representing SC Metered Entities that serve third party Load connected to the auxiliary system of a Generating Unit must ensure that those SC Metered Entities add the Energy consumed by such third parties to that Generating Unit's output so as to ensure proper settlement of that Generating Unit's gross output. The CAISO Metered Entity or the Scheduling Coordinator must ensure that the third party Load has Metering Facilities that meet the standards referred to in this Section 10 and the Business Practice Manuals.

10.1.3.3 Permitted Netting for a QF with a QF PGA and Other QF Metering Requirements.

A Generating Unit that is a QF and that qualifies as Regulatory Must-Take Generation is subject to the revenue metering requirements set forth in the Existing QF Contract for the QF and is not subject to the revenue metering requirements of Section 10. A QF Generating Unit not operating under the terms of an Existing QF Contract is subject to the metering requirements of Section 10 prohibiting the net metering of Generation and Load, except if it is subject to a QF PGA. A Generating Unit that is a QF and that operates under the terms of a QF PGA is eligible for net metering treatment. Notwithstanding Section 10.1.3.2, a Participating Generator with a QF PGA may net the value for the Generation produced by

each Net Scheduled QF listed in its QF PGA and the value for the Demand of the Self-provided Load that is (i) served by the Net Scheduled QF and (ii) electrically located on the same side of the Point of Demarcation. The Participating Generator with a QF PGA may satisfy the provisions of Section 10 for the installation of revenue metering by installing Metering Facilities at the Point of Demarcation; provided that the installed Metering Facilities satisfy the technical, functional, and performance requirements for Metering Facilities set forth in Section 10 and the applicable Business Practice Manual.

10.1.4 Meter Service Agreements.

A CAISO Metered Entity shall enter into a Meter Service Agreement for CAISO Metered Entities with the CAISO. A Scheduling Coordinator representing a Scheduling Coordinator Metered Entity shall enter into a Meter Service Agreement for Scheduling Coordinators. If a CAISO Metered Entity is also a Scheduling Coordinator, it shall be treated as a CAISO Metered Entity for the purposes of this Section 10 and will be required to enter into a Meter Service Agreement for CAISO Metered Entities. A CAISO Metered Entity will not be required to enter into a Meter Service Agreement for Scheduling Coordinators unless it represents any Scheduling Coordinator Metered Entities. A Meter Service Agreement for Scheduling Coordinators entered into by a CAISO Metered Entity shall only apply to those Scheduling Coordinator Metered Entities that the CAISO Metered Entity represents; the Meter Service Agreement for Scheduling Coordinators shall not apply to the CAISO Metered Entity other than in its capacity as Scheduling Coordinator for those Scheduling Coordinator Metered Entities.

10.1.5 Access to Meter Data.

The CAISO has complete authority over all rights of access to (and has authority to deny access to) the CAISO's RMDAPS and Settlement Quality Meter Data Systems including servers (where used), interface equipment, and software needed to collect the relevant information for Settlement, billing and related purposes. Each Market Participant acknowledges this CAISO authority as a condition of CAISO Controlled Grid service and participation. For CAISO Metered Entities, authority over the sealing of meters, and all related Metering Facilities, shall reside solely with the CAISO for all CAISO designated Meter Points, regardless of any remote electronic access that a CAISO Metered Entity or its Scheduling Coordinator may have provided to third parties, except as otherwise may be required by law, FERC, any Local Regulatory Authority or other provision of this CAISO Tariff. Meter Data supplied by a CAISO Metered Entity shall be made available by the CAISO to the Scheduling Coordinator representing such CAISO Metered Entity at the time the Meter Data was provided and the other authorized users identified in its Meter Service Agreement for CAISO Metered Entities, but shall not be disclosed to any other third party except as may otherwise be required by law, FERC, any Local Regulatory Authority or other provision of this CAISO Tariff. Meter Data supplied by a Scheduling Coordinator for a Scheduling Coordinator Metered Entity shall be made available by the CAISO to the Scheduling Coordinator representing such Scheduling Coordinator Metered Entity at the time the Meter Data was provided and the other authorized users identified in its Meter Service Agreement for Scheduling Coordinator Metered Entities, but shall not be disclosed to any other third party except as may otherwise be required by law, FERC, any Local Regulatory Authority or other provision of this CAISO Tariff. Access by third parties other than authorized users to Meter Data held by the CAISO shall be coordinated through the Scheduling Coordinator that provided the Meter Data or that is representing the relevant CAISO Metered Entity that supplied the data and shall not be obtained directly from the CAISO on any basis including, without limitation, by accessing the RMDAPS.

10.1.6 Failure of CAISO Facilities or Systems.

In the event facility and/or systems failures impact the CAISO's ability to accept, collect, and process Revenue Quality Meter Data or Settlement Quality Meter Data, alternative measures may be required by the CAISO, CAISO-Metered Entities, and Scheduling Coordinator Metered Entities. These measures are described in the applicable Business Practice Manual.

10.2 Metering for CAISO Metered Entities.

CAISO Metered Entities' revenue quality meters will be directly polled by the CAISO's RMDAPS

as specified in this CAISO Tariff and Business Practice Manuals.

10.2.1 Responsibilities of CAISO Metered Entities.

10.2.1.1 Duty to Provide Revenue Quality Meter Data.

CAISO Metered Entities shall ensure that Revenue Quality Meter Data from their meters directly connected to the CAISO Controlled Grid or at interconnections thereto, including interconnections between utility Service Areas which have separate UFE calculations, is made available to the CAISO RMDAPS in accordance with the requirements of this Section 10 and the Business Practice Manuals.

10.2.1.2 Format for Data Submission.

CAISO Metered Entities must ensure that the Meter Data obtained by the CAISO directly from their revenue quality meters is raw, unedited and unaggregated Meter Data in kWh and kVarh values, as specified in the applicable Business Practice Manual. The CAISO will be responsible for the Validation, Estimation and Editing of that Meter Data in order to produce Settlement Quality Meter Data.

10.2.1.3 Access to Settlement Quality Meter Data.

Scheduling Coordinators may obtain Settlement Quality Meter Data relating to the CAISO Metered Entities they represent by directly accessing the Settlement Quality Meter Data Systems as specified in the applicable Business Practice Manual. The CAISO will use its best efforts to ensure that such data is made available to Scheduling Coordinators within five (5) Business Days of the relevant Trading Day.

10.2.2 Duty to Install and Maintain Meters.

CAISO Metered Entities, at their cost, shall install and maintain, or cause to be installed and maintained, metering equipment and associated communication devices at CAISO-designated Meter Points to meet the requirements of this Section 10 and the applicable Business Practice Manuals. The CAISO may require CAISO Metered Entities to install, at the cost of CAISO Metered Entities, additional meters and relevant metering system components, including Real-Time metering, at CAISO-specified Meter Points or other locations as deemed necessary by the CAISO, in addition to those connected to or existing on the CAISO Controlled Grid at the CAISO Operations Date. In directing the addition of meters and metering system components that would impose increased costs on a CAISO Metered Entity, the CAISO shall give due consideration to whether the expected benefits of such equipment are sufficient to justify such increased costs. Nothing in this Section 10 shall preclude CAISO Metered Entities from installing additional meters, instrument transformers and associated communications facilities not deemed necessary by the CAISO at their own cost. A CAISO Metered Entity may not commence installing such additional metered facilities until the CAISO has approved the CAISO Metered Entity's Proposal for Installation. If a CAISO Metered Entity installs such additional metering, such metering must: (i) be installed and maintained at the CAISO Metered Entity's cost and (ii) not unduly interfere with the accuracy of any primary meter and, if that primary meter is directly polled by the CAISO, the CAISO's ability to poll directly that meter.

10.2.3 Metering Standards.

Each CAISO Metered Entity shall ensure that each of its meters used to provide Meter Data to the CAISO complies with the meter standards and accuracy requirements for meters set forth in this Tariff and the applicable Business Practice Manuals.

10.2.4 Certification of Meters.

Each CAISO Metered Entity that makes Meter Data available to the CAISO shall ensure that metering facilities used to produce such Meter Data have been certified by the CAISO as meeting the requirements of Section 10. Certification of the relevant metering facilities shall only be provided upon the production of such evidence as the CAISO may reasonably require to demonstrate that the facilities in question have been documented, inspected and successfully tested by the CAISO or a CAISO Authorized Inspector for conformance to the standards and accuracy requirements referred to in the Business Practice Manuals and this Section 10. CAISO certification pursuant to this Section 10.2.4 shall not relieve the CAISO Metered Entity from the obligation to ensure that its metering facilities continue to remain in compliance with the requirements of this CAISO Tariff and the applicable Business Practice Manuals.

10.2.4.1 Requesting Certification.

A CAISO Metered Entity seeking certification of its Metering Facilities shall independently engage a CAISO Authorized Inspector to perform certification of its Metering Facilities. A CAISO Metered Entity may request the CAISO to perform the certification of its Metering Facilities if it would be impractical or impossible for that CAISO Metered Entity to engage a CAISO Authorized Inspector to perform the certification. The CAISO may refuse any such request by a CAISO Metered Entity if it is of the opinion that it is not impractical or impossible for that CAISO Metered Entity to engage a CAISO Authorized Inspector.

10.2.4.2 Certification by the CAISO.

All requests made to the CAISO to perform the certification of Metering Facilities must be made in accordance with the certification process for Metering Facilities and technical specifications published in the Business Practice Manuals and be accompanied by the documents referred to in the applicable Business Practice Manual. If the CAISO agrees to perform the certification of Metering Facilities, the CAISO and that CAISO Metered Entity will agree the terms and conditions on which the CAISO will undertake the certification, including the assistance to be provided by the CAISO Metered Entity, the responsibility for costs and the indemnities to be provided.

10.2.4.3 Criteria for Certification.

Subject to any exemption granted by the CAISO, the criteria for certifying the Metering Facilities of CAISO Metered Entities pursuant to the CAISO Tariff are the criteria set forth in the Business Practice Manuals.

10.2.4.4 Certificate of Compliance.

If the Metering Facilities satisfy the certification criteria as specified in this CAISO Tariff and in the Business Practice Manuals (after taking into account any exemptions to the certification criteria granted by the CAISO), the CAISO will issue a Certificate of Compliance in respect of those Metering Facilities and provide the original Certificate of Compliance to the CAISO Metered Entity that requested the certification of those Metering Facilities.

10.2.4.5 Obligation to Maintain Certification.

CAISO Metered Entities must ensure that their Metering Facilities continue to comply with the certification criteria referred to in the CAISO Tariff and the Business Practice Manuals.

10.2.4.6 Revocation of Certification.

The CAISO may revoke in full or in part any Certificate of Compliance if:

(a) it has reasonable grounds to believe that all or some of the Metering Facilities covered by that Certificate of Compliance no longer meet the certification criteria for Metering Facilities contained in the CAISO Tariff and the Business Practice Manuals; and

(b) it has given written notice to the relevant CAISO Metered Entity stating that it does not believe that the identified Metering Facilities meet the certification criteria (including the reasons for that belief) and that CAISO Metered Entity fails to satisfy the CAISO, within the time period specified in the CAISO's notice, that the Metering Facilities meet the certification criteria.

If the CAISO revokes in full or part a Certificate of Compliance, the relevant CAISO Metered Entity may seek recertification of the relevant Metering Facilities by requesting certification. Such request must indicate that it relates to Metering Facilities in respect of which the CAISO has previously revoked a Certificate of Compliance.

Subject to any exemption granted by the CAISO under this CAISO Tariff, the CAISO will not accept Revenue Quality Meter Data from a CAISO Metered Entity unless that Revenue Quality Meter Data is produced by Metering Facilities that are certified in accordance with this CAISO Tariff and the CAISO Metered Entity has a current Certificate of Compliance.

10.2.4.7 Changes to Certified Metering Facilities.

The CAISO's approval must be obtained before any modifications or changes are made to any Metering Facilities of a CAISO Metered Entity which have been certified pursuant to the CAISO Tariff. The CAISO may, at its discretion, require those Metering Facilities to be recertified.

10.2.5 CAISO Authorized Inspectors.

10.2.5.1 Published List of Inspectors.

The CAISO will publish on the CAISO Website, for informational purposes only, a list of the CAISO Authorized Inspectors and details of the procedure for applying to become a CAISO Authorized Inspector.

The CAISO will, on request, provide a copy of that list to entities that do not have access to the CAISO Website.

10.2.5.2 Current Certificates.

It is the responsibility of the relevant CAISO Metered Entity to ensure that any inspector it engages to undertake the certification of its Metering Facilities holds a current certificate of approval issued by the CAISO which authorizes that inspector to carry out the duties of a CAISO Authorized Inspector.

10.2.6 Metering Communications.

The CAISO's RMDAPS shall collect and process Revenue Quality Meter Data made available by CAISO Metered Entities pursuant to Meter Service Agreements for CAISO Metered Entities and the applicable Business Practice Manual. Revenue Quality Meter Data for CAISO Metered Entities shall be made available to the CAISO's RMDAPS as specified in the applicable Business Practice Manual either directly by the CAISO Metered Entity or via a central data server which collects Revenue Quality Meter Data for various CAISO Metered Entities provided that the central data server does not aggregate or adjust that data. Revenue Quality Meter Data on the CAISO's RMDAPS may be provided or made accessible to other CAISO systems as deemed necessary by the CAISO, subject to the CAISO being satisfied that such access by such authorized uses and/or systems will not adversely effect the security of the data held by the CAISO. CAISO Metered Entities shall ensure that their Metering Facilities are compatible with the CAISO's RMDAPS for these purposes. The CAISO may, at its discretion, exempt a CAISO Metered Entity from the requirement to make Revenue Quality Meter Data directly available to the CAISO's RMDAPS, for example, where the installation of communication links is unnecessary, impracticable or uneconomic. The CAISO shall maintain the RMDAPS and remedy any faults occurring in such system. Scheduling Coordinators and other authorized users requiring Settlement Quality Meter Data for CAISO Metered Entities on whose behalf they Bid may obtain such data by accessing the CAISO's Settlement Quality Meter Data Systems in accordance with the CAISO Tariff and applicable Business Practice Manuals. Scheduling Coordinators and other authorized users shall not poll the CAISO revenue meters for any other purpose, unless specifically authorized in the Meter Service Agreement for CAISO Metered Entities.

10.2.7 Format of Meter Data.

CAISO Metered Entities shall make available to the CAISO's RMDAPS Revenue Quality Meter Data meeting the requirements of this Section 10. The format of Meter Data to be submitted shall be identified by Transmission Owner, Distribution System, PNode, CAISO Controlled Grid interface point and other information reasonably required by the CAISO.

10.2.8 Security and Meter Data Validation Procedures.

The applicable Business Practice Manuals shall specify, in such detail as the CAISO may deem necessary, the Meter Data security and validation procedures that the CAISO shall apply to the Revenue Quality Meter Data made available by each CAISO Metered Entity. The CAISO may base the security and validation procedures on historical data or an appropriate alternative data source. The CAISO shall correct or replace or cause to be corrected or replaced inaccurate or missing data. The procedure may include data correction and substitution algorithms which shall estimate, substitute and flag such inaccurate or missing data. Any necessary correction or replacement shall be approved by the CAISO prior to the data being sent to the CAISO for settlement purposes. Security and validation measures for existing Tie Point Meters shall be consistent with existing arrangements with the operators in adjacent Control Areas. Any additional measures or changes to the existing arrangements shall only be implemented upon mutual agreement of the CAISO and the operator in the adjacent Control Area.

10.2.8.1 Meter Site Security.

Metering Facilities of CAISO Metered Entities (including communications devices) and secondary devices that could have any impact on the performance of the Metering Facilities must be sealed by the CAISO.

10.2.8.2 Third Party Access to Meters.

10.2.8.2.1 Local Access.

If a CAISO Metered Entity desires to grant a third party local access to its revenue quality meters, those meters must be equipped with CAISO approved communications capabilities in accordance with the applicable Business Practice Manuals. The CAISO may set the password and any other security requirements for locally accessing the revenue quality meters of CAISO Metered Entities so as to ensure the security of those meters and their Revenue Quality Meter Data. The CAISO may alter the password and other requirements for locally accessing those meters from time to time as it determines necessary. The CAISO must provide CAISO Metered Entities with the current password and other requirements for locally accessing their revenue quality meters. CAISO Metered Entities must not give a third party local access to its revenue quality meters or disclose to that third party the password to its revenue quality meters without the CAISO's prior approval which shall not unreasonably be withheld. CAISO Metered Entities will be responsible for ensuring that a third party approved by the CAISO to access its revenue quality meters only accesses the data it is approved to access and that the data are only accessed for the purposes for which the access was approved.

10.2.8.2.2 Remote Access.

The CAISO may set the password and any other security requirements for remotely accessing the revenue quality meters of CAISO Metered Entities so as to ensure the security of those meters and their Revenue Quality Meter Data. The CAISO will alter the password and other requirements for remotely accessing those meters from time to time as it determines necessary. The CAISO must provide CAISO Metered Entities with the current password and other requirements for remotely accessing their revenue quality meters.

CAISO Metered Entities must not give a third party remote access to its revenue quality meters or disclose to that third party the password to its revenue quality meters without the CAISO's prior approval which shall not unreasonably be withheld. CAISO Metered Entities will be responsible for ensuring that a third party approved by the CAISO to access its revenue quality meters only accesses the data it is approved to access and that the data are only accessed for the purposes for which the access was approved.

10.2.8.3 Third Party Access Withdrawn.

If, in the reasonable opinion of the CAISO, access granted to a third party by a CAISO Metered Entity in any way interferes or impedes with the CAISO's ability to poll any revenue quality meter, the CAISO may require that CAISO Metered Entity to immediately withdraw any access granted to a third party.

10.2.8.4 RMDAPS Security.

The CAISO will provide any needed information to entities that are permitted to access RMDAPS. The CAISO must maintain the security and integrity of Revenue Quality Meter Data brought into RMDAPS.

10.2.9 Validation, Estimation and Editing of Meter Data.

Subject to any exemption granted by the CAISO, Revenue Quality Meter Data that CAISO Metered Entities provide to the CAISO will be processed using the Validation, Estimation and Editing procedures published in the Business Practice Manuals in order to produce Settlement Quality Meter Data.

10.2.9.1 Obligation to Assist.

At the request of the CAISO, CAISO Metered Entities shall assist the CAISO in correcting or replacing defective data and in detecting and correcting underlying causes for such defects. Such assistance shall be rendered in a timely manner so that the Settlement process is not delayed.

10.2.9.2 Availability of Meter Data.

Subject to any exemption granted by the CAISO, Meter Data of CAISO Metered Entities must be recorded

at 5-minute intervals and will be collected in accordance with the provisions of the applicable Business Practice Manual. The CAISO may also collect Meter Data on demand as provided in the applicable Business Practice Manual.

10.2.9.3 [NOT USED]

10.2.9.4 CAISO Imposed Penalties and Sanctions.

The CAISO shall have the authority to impose penalties and sanctions, including but not limited to Sanctions set forth in Section 37 and the applicable Business Practice Manual and suspension of trading rights, if a CAISO Metered Entity provides fraudulent metering data to the CAISO. Such penalties shall be approved by FERC.

10.2.10 Low Voltage Side Metering.

10.2.10.1 Requirement for CAISO Approval.

CAISO Metered Entities may only install revenue quality meters on the low voltage side of step-up transformers if they have obtained the prior approval of the CAISO in accordance with Section 10.2.10. CAISO Metered Entities that have installed low voltage side metering, whether such installation was before or after the CAISO Operations Date, shall apply the Transformer and Line Loss Correction Factor in accordance with Section 10.2.10.4.

10.2.10.2 Request for Approval.

If a CAISO Metered Entity wishes to install low voltage side metering, it shall submit a written request to the CAISO. That CAISO Metered Entity must:

(a) request approval to apply the Transformer and/or Line Loss Correction Factor to its revenue quality meter or request approval to have the CAISO apply the Transformer and/or Line Loss Correction Factor;

(b) provide detailed reasons to support the request for low side metering;

(c) provide all of the information in relation to the Transformer and/or Line Loss Correction Factor required by the Business Practice Manuals; and

(d) any other information reasonably requested by the CAISO.

10.2.10.3 CAISO's Grounds for Approval.

The CAISO shall approve a request made under Section 10.2.10.2 only if the CAISO is satisfied that adequate accuracy and security of Revenue Quality Meter Data obtained can be assured in accordance with Section 10.2.10. The CAISO's rejection of such a request may be referred to the CAISO ADR Procedures if, after using all reasonable good faith efforts, the CAISO and a CAISO Metered Entity are unable to reach agreement.

10.2.10.4 Application of Transformer and/or Line Loss Correction Factor.

CAISO Metered Entities will apply the Transformer and/or Line Loss Correction Factor as set forth in the Business Practice Manuals. If the CAISO has approved a request from a CAISO Metered Entity for RMDAPS to apply the Transformer and/or Line Loss Correction Factor, RMDAPS will apply the Transformer and/or Line Loss Correction Factor set forth in the Business Practice Manuals. If the CAISO applies the Transformer and/or Line Loss Correction Factor, the CAISO may require the CAISO Metered Entity to pay the reasonable costs incurred by it in applying the Transformer and/or Line Loss Correction Factor

10.2.11 Audit, Testing Inspection and Certification Requirements.

CAISO Metered Entities are subject to CAISO audit, testing and certification requirements for their entire metering system(s), including all relevant communication facilities and instrument transformers. The CAISO will have the right to either conduct any audit or test it considers necessary or to witness such audit or test carried out by the CAISO Metered Entity or a CAISO Authorized Inspector engaged by the CAISO Metered Entity or the CAISO to carry out those audits or tests.

10.2.12 Exemptions.

The CAISO has the authority to grant exemptions from certain CAISO metering standards for a CAISO Metered Entity, as set forth in Section 10.4. A CAISO Metered Entity with a temporary exemption shall provide site specific Revenue Quality Meter Data to the CAISO in accordance with its Meter Service Agreement for CAISO Metered Entities and the CAISO Tariff. A Generating Unit that provides Regulatory Must-Take Generation connected directly to a UDC Distribution System and that sells its entire output to the UDC in which the Generating Unit is located is not subject to the audit, testing or certification requirements of the CAISO.

10.2.13 Maintenance of Metering Facilities.

10.2.13.1 Duty to Maintain Metering Facilities.

CAISO Metered Entities must maintain their Metering Facilities so that those Metering Facilities continue to meet the standards prescribed by the CAISO Tariff and the applicable Business Practice Manuals.

10.2.13.2 Repairs.

If a revenue quality meter of a CAISO Metered Entity requires repairs to ensure that it operates in accordance with the requirements of the CAISO Tariff and the applicable Business Practice Manuals, the CAISO Metered Entity must immediately notify the CAISO of the need for repairing that meter and must ensure that those repairs are completed in accordance with the applicable Business Practice Manual.

During periods for which no Meter Data is available from a meter which has a current Certificate of Compliance, the CAISO will substitute estimated Meter Data for that CAISO Metered Entity using the estimation procedures referred to in Section 10.2.9. That estimated Meter Data will be used by the CAISO in its Settlement and billing process.

10.2.14 Installation of Additional Metering Facilities.

10.2.14.1 CAISO Requirement to Install Additional Metering.

If the CAISO determines that there is a need to install additional Metering Facilities on the CAISO Controlled Grid pursuant to Section 10.2.2, it will notify the relevant CAISO Metered Entity of that need and will process the CAISO Metered Entity's Proposal for Installation in accordance with the applicable Business Practice Manual.

[SHEET NOT USED]

[SHEET NOT USED]

10.2.14.2 CAISO Metered Entities' Election to Install Additional Metering.

In accordance with Section 10.2.2, a CAISO Metered Entity may choose to install additional metering, including Backup Meters. If a CAISO Metered Entity installs such additional metering, such metering must, unless the CAISO agrees otherwise:

(a) be installed and maintained at the CAISO Metered Entity's cost;

(b) be located on the CAISO Metered Entity's side of any primary meter; and

(c) not interfere with the accuracy of any primary meter and, if that primary meter is directly polled by the CAISO, the CAISO's ability to directly poll that meter.

Any Meter Data produced by any such additional metering may be used by the CAISO for Settlement and billing purposes in the event of the failure, or during tests or repairs of, the primary meter provided that such additional metering has a current Certificate of Compliance, the CAISO Metered Entity gives the CAISO prior verbal notice that such meter will be used and the period for which it will be used and, if the primary meter is directly polled by the CAISO, the additional metering must also be capable of being directly polled by the CAISO.

10.3 Metering for Scheduling Coordinator Metered Entities.

10.3.1 Applicability.

The requirements set forth in this Section 10.3 shall apply only to Scheduling Coordinators representing Scheduling Coordinator Metered Entities. The requirements in Section 10.1 also apply to Scheduling Coordinators. If a Scheduling Coordinator Metered Entity is also a Scheduling Coordinator, it shall be treated as a Scheduling Coordinator for the purposes of Section 10 of the CAISO Tariff and any

references to entities that such a Scheduling Coordinator represents shall be deemed to include that Scheduling Coordinator itself.

10.3.2 Responsibilities of Scheduling Coordinators and the CAISO.

10.3.2.1 Duty to Provide Settlement Quality Meter Data.

Scheduling Coordinators shall be responsible for: (i) the collection of Meter Data for the Scheduling Coordinator Metered Entities it represents; (ii) the provision of Settlement Quality Meter Data to the CAISO; and (iii) ensuring that the Settlement Quality Meter Data supplied to the CAISO meets the requirements of Section 10. Scheduling Coordinators shall provide the CAISO with Settlement Quality Meter Data for all Scheduling Coordinator Metered Entities served by the Scheduling Coordinator no later than the day specified in Section 10.3.6. Settlement Quality Meter Data for Scheduling Coordinator Metered Entities shall be either (1) an accurate measure of the actual consumption of Energy by each Scheduling Coordinator Metered Entity in each Settlement Period; (2) for Scheduling Coordinator Metered Entities connected to a UDC Distribution System and meeting that Distribution System's requirement for load profiling eligibility, a profile of that consumption derived directly from an accurate cumulative measure of the actual consumption of Energy over a known period of time and an allocation of that consumption to Settlement Periods using the applicable Approved Load Profile; or (3) an accurate calculation by the Scheduling Coordinator representing entities operating pursuant to Existing Contracts.

10.3.2.2 Format for Data Submission.

Scheduling Coordinators shall submit Settlement Quality Meter Data to the Settlement Quality Meter Data System for the Scheduling Coordinator Metered Entities they represent using one of the CAISO's approved Meter Data Exchange Formats. Subject to any exemption granted by the CAISO, Scheduling Coordinators must ensure that Settlement Quality Meter Data submitted to the CAISO is in intervals of five (5) minutes for Loads and Generators providing Ancillary Services and/or Imbalance Energy, and one (1) hour for other Scheduling Coordinator Metered Entities.

Each Scheduling Coordinator shall submit Settlement Quality Meter Data in kWh values for all of the Scheduling Coordinator Metered Entities that it schedules aggregated by:

(a) LAPs and PNodes, as applicable; and

(b) the relevant PNode for Generating Units.

10.3.2.3 Format for Data Requests.

Scheduling Coordinators may obtain Settlement Quality Meter Data relating to the Scheduling Coordinator Metered Entities they represent by requesting extracts from the CAISO's Settlement Quality Meter Data Systems using the Meter Data request formats as published in the Business Practice Manuals. The CAISO will ensure that such data is made available in a timely manner.

10.3.3 Loss Factors.

Where a Scheduling Coordinator Metered Entity is connected to a UDC's Distribution System, the responsible Scheduling Coordinator shall adjust the Meter Data by an estimated Distribution System loss factor to derive an equivalent CAISO Controlled Grid level measure. Such estimated Distribution System loss factors shall be approved by the relevant Local Regulatory Authority prior to their use.

10.3.4 Load Profile Authorization.

Scheduling Coordinators shall be responsible for obtaining all necessary authorizations of Approved Load Profiles from Local Regulatory Authorities having jurisdiction over the use of profiled Meter Data and shall use Approved Load Profiles in any Settlement process in which load profiles are used to allocate consumption to Settlement Periods.

10.3.5 Communication of Meter Data.

Each Scheduling Coordinator shall submit Settlement Quality Meter Data for Scheduling Coordinator Metered Entities to the CAISO in accordance with Section 11.29.24.1, Section 37.5, and applicable Business Practice Manuals.

10.3.6 Timing of Meter Data Submission.

Scheduling Coordinators shall submit either hourly time-stamped Settlement Quality Meter Data for Scheduling Coordinator Metered Entities or profiled cumulative Settlement Quality Meter Data to the CAISO for each Settlement Period in an Operating Day according to the timelines established in the CAISO Payments Calendar and as provided in the applicable Business Practice Manual.

Scheduling Coordinators must also submit Settlement Quality Meter Data on demand as provided in the applicable Business Practice Manual.

10.3.7 Meter Standards.

Each Scheduling Coordinator, in conjunction with the relevant Local Regulatory Authority, shall ensure that each of its Scheduling Coordinator Metered Entities connected to and served from the Distribution System of a UDC shall be metered by a revenue meter complying with any standards of the relevant Local Regulatory Authority or, if no such standards have been set by that Local Regulatory Authority, the

metering standards set forth in this CAISO Tariff and as further detailed in the Business Practice Manuals.

10.3.8 Access to Meter Data.

The CAISO has complete authority over rights of access to (and has authority to deny access to) its Settlement Quality Meter Data Systems by Scheduling Coordinators and Scheduling Coordinator Metered Entities for Settlement, billing and related purposes. Each Scheduling Coordinator, on behalf of itself and Scheduling Coordinator Metered Entities that it serves or represents, acknowledges this CAISO authority as a condition of access to the CAISO Controlled Grid. Meter Data of a Scheduling Coordinator Metered Entity remains the property of that Scheduling Coordinator Metered Entity and shall be made available to third parties only with its express permission or the permission of its Scheduling Coordinator or as otherwise required by law or provided for in this CAISO Tariff.

10.3.9 Certification of Meters.

Scheduling Coordinators shall ensure that revenue meters and related metering facilities of those Scheduling Coordinator Metered Entities whom they represent are certified in accordance with any certification criteria prescribed by the relevant Local Regulatory Authority or, if no such criteria have been prescribed by that Local Regulatory Authority, certified in accordance with this Section 10. Scheduling Coordinators shall upon request of the CAISO supply promptly copies of all certificates issued by the relevant Local Regulatory Authority. The End Use Meter of a Scheduling Coordinator Metered Entity in place as of the CAISO Operations Date is deemed to be certified as in compliance with this CAISO Tariff and Business Practice Manuals. Once certified, meters for Scheduling Coordinator Metered Entities need not be recertified provided such meters are maintained so as to meet the standards and accuracy requirements prescribed by any relevant Local Regulatory Authority or, if no such standards have been prescribed by that Local Regulatory Authority, such requirements as referred to in the Business Practice Manuals and this Section 10. Recertification is not required by the CAISO upon an election by a Scheduling Coordinator Metered Entity to change its Scheduling Coordinator from which it takes service.

10.3.10 Requirement for Audit and Testing.

10.3.10.1 Audit and Testing by Scheduling Coordinator.

Each Scheduling Coordinator shall at least annually conduct (or engage an independent, qualified entity to conduct) audits and tests of the Metering Facilities of the Scheduling Coordinator Metered Entities that it represents and the Meter Data provided to the Scheduling Coordinator in order to ensure compliance with all applicable requirements of any relevant Local Regulatory Authority. Scheduling Coordinators shall undertake any other actions that are reasonable necessary to ensure the accuracy and integrity of the Settlement Quality Meter Data provided by them to the CAISO.

10.3.10.2 Audit and Testing by CAISO.

Subject to any applicable Local Regulatory Authority requirements, the Metering Facilities and data handling and processing procedures of Scheduling Coordinators and Scheduling Coordinator Metered Entities are subject to audit and testing by the CAISO or a CAISO Authorized Inspector. Subject to any applicable Local Regulatory Authority requirements, the CAISO will have the right to either conduct any audit or test it considers necessary or to witness such audit or test carried out by the Scheduling Coordinator, Scheduling Coordinator Metered Entity or a CAISO Authorized Inspector engaged by the Scheduling Coordinator, Scheduling Coordinator Metered Entity or the CAISO to carry out those audits or tests.

10.3.11 Scheduling Coordinator to Ensure Certification.

If the relevant Local Regulatory Authority has not prescribed any certification criteria for the Metering Facilities of a Scheduling Coordinator Metered Entity, the Scheduling Coordinator representing that Scheduling Coordinator Metered Entity must promptly notify the CAISO in writing that no such criteria have been prescribed. That Scheduling Coordinator will then be responsible for ensuring that the Scheduling Coordinator Metered Entities it represents obtain and maintain Certificates of Compliance in respect of all of the Metering Facilities of those Scheduling Coordinator Metered Entities in accordance with Section 10.3.9. Scheduling Coordinators must engage a CAISO Authorized Inspector to perform the certification of any Metering Facilities that are to be certified under the CAISO Tariff.

10.3.11.1 Confirmation of Certification.

On the written request of the CAISO, each Scheduling Coordinator must give the CAISO written confirmation that the Metering Facilities of each Scheduling Coordinator Metered Entity that it represents are certified in accordance with either the criteria of the relevant Local Regulatory Authority or the criteria prescribed by the CAISO Tariff and Business Practice Manuals within five (5) Business Days of receiving a request from the CAISO.

10.3.11.2 Deemed Certification.

Revenue quality meters of Scheduling Coordinator Metered Entities that are subject to certification and which were installed and operational as of the CAISO Operations Date will be deemed to be certified for the purposes of the CAISO Tariff. Revenue quality meters that have been fully installed as of the CAISO Operations Date but which are not operational as of that date because they were undergoing maintenance or repairs will also be deemed to be certified in accordance with the CAISO Tariff.

10.3.12 [NOT USED]

10.3.13 [NOT USED]

10.3.14 Approval by Local Regulatory Authority of Security and Validation Procedures.

Scheduling Coordinators shall be responsible for obtaining any necessary approval of the relevant Local Regulatory Authority to its proposed security, validation, editing and estimation procedures. The CAISO will not perform any Validation, Estimation and Editing on the Settlement Quality Meter Data it receives from Scheduling Coordinators.

10.3.14.1 UDC and TO Agreements.

Each Scheduling Coordinator shall be responsible for obtaining any necessary consent from the UDCs on whose Distribution Systems or the Participating TOs on whose transmission facilities the Scheduling Coordinator has Scheduling Coordinator Metered Entities as is necessary to give effect to the procedures governing Meter Data validation and security and inspection and testing of metering facilities. Scheduling Coordinators must verify with the relevant UDC and/or Participating TO the identity of each Scheduling Coordinator Metered Entity they represent and must notify the UDC and/or Participating TO of any discrepancies of which they become aware.

10.3.15 [NOT USED]

10.3.16 [NOT USED]

10.3.17 Meter Identification.

If a Scheduling Coordinator Metered Entity is required to identify its revenue quality meters by the relevant:

(a) Local Regulatory Authority; or

(b) UDC,

then the Scheduling Coordinator representing that Scheduling Coordinator Metered Entity must, at the CAISO's request, provide the CAISO with a copy of that information within five (5) Business Days of a request by the CAISO in a format to be prescribed by the CAISO.

If a Scheduling Coordinator Metered Entity is not required by either the relevant Local Regulatory Authority or UDC to identify its revenue quality meters, the Scheduling Coordinator representing that Scheduling Coordinator Metered Entity shall maintain an accurate record of the revenue quality meter of

each of the Scheduling Coordinator Metered Entities that it represents from time to time. The record maintained by Scheduling Coordinators must include the information set out in the applicable Business Practice Manuals. The Scheduling Coordinator must, at the CAISO's request, provide the CAISO with a copy of any information contained in that record within five (5) Business Days of a request by the CAISO in a format to be prescribed by the CAISO.

10.4 Exemptions from Compliance.

10.4.1 Authority to Grant Exemptions.

In addition to the specific exemptions granted under the CAISO Tariff, the CAISO has the authority under the CAISO Tariff to grant exemptions from compliance with certain requirements imposed by the CAISO Tariff.

10.4.2 Guidelines for Granting Exemptions.

The CAISO will use the following guidelines when considering applications for exemptions from compliance with the provisions of Section 10.

(a) Publication of Guidelines

The CAISO will publish on the CAISO Website the general guidelines that it may use when considering applications for exemptions so as to achieve consistency in its reasoning and decision making and to give prospective applicants an indication of whether an application will be considered favorably.

(b) Publication of Exemption Applications

The CAISO will promptly publish on the CAISO Website a description of each application it receives for an exemption.

(c) Publication of Decision

The CAISO will publish on the CAISO Website details of whether the application was approved or rejected by it and, if the CAISO considers it appropriate, the reasons for rejecting the application.

(d) Class Exemptions

In addition to exemptions granted to individual entities, the CAISO may grant exemptions that will apply to a class of entities. The CAISO may grant class exemptions whether or not it has received any application for an exemption. The CAISO will publish details of the class exemptions it has granted on the CAISO Website.

10.4.3 Procedure for Applying for Exemptions.

All applications to the CAISO for exemptions from compliance with the requirements of Section 10 must be made in writing and will be processed by the CAISO in accordance with the provisions of the applicable Business Practice Manual. The CAISO may require the applicant to provide additional information in support of its application. The applicant must provide such additional information to the CAISO within five (5) Business Days of receiving the request for additional information or within such other period as the CAISO may notify to the applicant. If the CAISO makes a request for additional information more than five (5) Business Days after the date on which it received the application, the CAISO will have an additional five (5) Business Days after receiving that additional information in which to consider the application. If the applicant does not provide the additional information requested, the CAISO may refuse the application in which case it will notify the applicant that its application has been rejected for failure to provide the additional information.

10.4.4 Permitted Exemptions.

10.4.4.1 Exemptions from Providing Meter Data Directly to RMDAPS.

The CAISO has the authority under 10.2.6 to exempt CAISO Metered Entities from the requirement to make Meter Data directly available to the CAISO via RMDAPS. The applicable Business Practice Manual sets forth specific exemptions available. In addition, the CAISO may, at its discretion, grant such an exemption where it considers the requirement to install communication links (or related facilities) between the CAISO Metered Entity and CAISO's secure communication system to allow the CAISO to directly poll that CAISO Metered Entity would be unnecessary, impractical or uneconomic.

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10.4.4.2 Exemptions from Meter Standards.

The CAISO has the authority under 10.2.12 to exempt CAISO Metered Entities from the requirement to comply with the meter standards referred to in the CAISO Tariff. The applicable Business Practice Manual sets forth specific exemptions available.

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[SHEET NOT USED]

11.2.1.4 IFM Charges for Energy Exports at Scheduling Points.

For each Settlement Period that the CAISO clears Energy transactions in the IFM, the CAISO shall charge Scheduling Coordinators for the Energy export MWh quantity at individual Scheduling Points scheduled in the Day-Ahead Schedule, an amount equal to the IFM LMP for the applicable Scheduling Point multiplied by the MWh quantity at the individual Scheduling Point scheduled in the Day-Ahead Schedule.

11.2.1.5 IFM Congestion Credit for ETCs, TORs, and Converted Rights.

For all Points of Receipt and Points of Delivery pairs associated with a valid and balanced ETC Self-Schedule, TOR Self-Schedule or Converted Rights Self-Schedule, the CAISO shall not impose any charge or make any payment to the Scheduling Coordinator related to the MCC associated with such Self-Schedules. For each Scheduling Coordinator, the CAISO shall determine the applicable IFM Congestion Credit, which can be positive or negative, as the sum of the products of the quantity scheduled in the Day-Ahead Schedule and the MCC at each eligible Point of Receipt and Point of Delivery associated with the valid and balanced portions of that Scheduling Coordinator's ETC, TOR, and Converted Rights Self-Schedules.

11.2.1.6 Allocation of IFM Marginal Losses Surplus Credit.

On each Settlement Statement, the CAISO shall apply the IFM Marginal Losses Surplus Credit to each Scheduling Coordinator for the period of each Settlement Statement. For each Settlement Period, the IFM Marginal Losses Surplus Credit shall be the product of the IFM Marginal Losses Surplus rate ($/MWh) and the MWh of Measured Demand for the relevant Scheduling Coordinator. The IFM Marginal Losses Surplus rate shall be equal to the total IFM Marginal Losses Surplus ($) divided by the sum of the total MWh of Measured Demand in the CAISO Control Area for the relevant Settlement Period net of any Measured Demand associated with a TOR Self-Schedule subject to the IFM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules as provided in Section 11.2.1.7.

11.2.1.7 IFM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules.

For all Points of Receipt and Points of Delivery pairs associated with a valid and balanced TOR Self-Schedules submitted pursuant to an existing agreement between the TOR holder and the CAISO as specified in Section 17.3.3, the CAISO shall not impose any charge or make any payment to the Scheduling Coordinator related to the MCL associated with such TOR Self-Schedules and will instead impose any applicable losses charges as specified in the existing agreement between the the TOR holder and the CAISO applicable to the relevant TOR. For each Scheduling Coordinator, the CAISO shall determine the applicable IFM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules, which can be positive or negative, as the sum of the products of the quantity scheduled in the Day-Ahead Schedule and the MCL at each eligible Point of Receipt and Point of Delivery associated with the valid and balanced portions of that Scheduling Coordinator's TOR Self-Schedules.

11.2.2 Calculation of Hourly RUC Compensation.

For each Settlement Period and resource, Scheduling Coordinators shall receive RUC Compensation, which is the sum of the RUC Availability Payment as determined pursuant to Section 11.2.2.1 and the RUC Bid Cost Recovery Amount as determined in Section 11.8.3.

11.2.2.1 Settlement of RUC Availability Payment.

Scheduling Coordinators shall receive RUC Availability Payments for all eligible capacity awarded in the RUC process. Resource Adequacy Capacity and capacity from RMR Units Dispatched under its RMR Contract in the DAM are not eligible for RUC Availability Payments. The RUC Availability Payment shall be calculated for each resource based on the product of the RUC Price and the RUC Availability Quantity for the relevant Settlement Period. The RUC Availability Payment amounts are allocated through the RUC Compensation Costs allocation in Section 11.8.6.5.

11.2.2.2 Rescission of RUC Availability Payment.

Rescission of all or a portion of the RUC Availability Payment for a resource as defined in Section 31.5.7 shall be settled in accordance with this Section 11.2.2.2.

11.2.2.2.1 Undispatchable RUC Capacity.

If a Scheduling Coordinator has Undispatchable Capacity that it is obligated to supply to the CAISO during a Settlement Interval, the RUC Availability Payment, if applicable for any non-Resource Adequacy Capacity, for the amount of Energy that cannot be delivered from the Generating Unit, Participating Load, System Unit or System Resource for the Settlement Interval shall be rescinded.

If a Partial Resource Adequacy Resource is providing RUC Capacity from both the non-Resource Adequacy Capacity and the Resource Adequacy Capacity the payment rescission will occur for the non-Resource Adequacy Capacity prior to eliminating any capacity for the Resource Adequacy Capacity of the Partial Resource Adequacy Resource.

11.2.2.2.2 Undelivered RUC Capacity.

For each Settlement Interval in which the total metered output for a Generating Unit, Participating Load, System Unit or System Resource is less than Real-Time Expected Energy by more than the Tolerance Band and less than the RUC Schedule, the RUC Award for that Settlement Interval will be rescinded.

11.2.2.2.3 Allocation of Rescinded RUC Availability Payments Due to Non-Performance.

RUC Availability Payments rescinded due to non-performance shall be allocated to Scheduling Coordinators in the proportion of their Net Negative Uninstructed Deviations to the total Net Negative CAISO Demand Deviation.

11.2.3 IFM Energy Charges and Payments for Metered Subsystems.

11.2.3.1 Gross Energy Settlement for Metered Subsystems.

For Scheduling Coordinators that submit Bids for MSS Operators that have selected gross Energy Settlement, CAISO shall settle Energy, the MSS Demand and MSS Supply, in the Day-Ahead Schedules pursuant to Section 11.2.3.1.1 and 11.2.3.1.2.

11.2.3.1.1 IFM Charges for MSS Demand under Gross Energy Settlement.

The CAISO shall charge Scheduling Coordinators that submit Bids for MSS Operators that have selected or are subject to gross Energy Settlement an amount equal to the product of the MWh quantity of Demand internal to the MSS in its Day-Ahead Schedule at the price at the Default LAP where the MSS LAP is located.

11.2.3.1.2 IFM Payments for MSS Supply under Gross Energy Settlement.

The CAISO shall pay Scheduling Coordinators that submit Bids for MSS Operators that have selected or are subject to gross Energy Settlement an amount equal to the product of the MWh quantity of Supply from the MSS in its Day-Ahead Schedule at the corresponding PNode and the applicable Resource-Specific Settlement Interval LMP at that PNode.

11.2.3.2 Net Energy Settlement for Metered Subsystems.

For Scheduling Coordinators that submit Bids for MSS Operators that have selected net Energy Settlement, the CAISO shall settle the net MSS Demand and MSS Supply in the Day-Ahead Schedulespursuant to Section 11.2.3.2.1 and 11.2.3.2.2.

11.2.3.2.1 IFM Charges for MSS Demand under Net Energy Settlement.

The CAISO shall charge Scheduling Coordinators that submit Bids for MSS Operators that have selected net Energy Settlement an amount equal to the product of the net MSS Demand in the Day-Ahead Schedule and the IFM MSS Price. The net MSS Demand is the quantity of MSS Demand that exceeds MSS Generation for the applicable MSS.

11.2.3.2.2 IFM Payments for MSS Supply Under Net Energy Settlement.

The CAISO shall pay Scheduling Coordinators that submit Bids for MSS Operators that have selected net Energy Settlement an amount equal to the product of the net MSS Supply in the Day-Ahead Schedule and the weighted average price of all IFM LMPs for all applicable PNodes within the relevant MSS. The net MSS Supply is the quantity of MSS Generation that exceeds the MSS Demand for the applicable MSS. The weights used to compute the weighted average LMPs shall be equal to MSS generation scheduled in the Day-Ahead Schedule.

11.2.4 CRR Settlements.

CRR Holders shall be paid or charged for Congestion costs depending on the type of CRRs held by the CRR Holder, the direction of Congestion as measured through the IFM, and the LMP as calculated in the IFM. CRRs shall be funded through the revenues associated with the IFM Congestion Charge, CRR

Charges, and the CRR Balancing Account. The CRR Payments and CRR Charges shall be settled first on a daily basis for each Settlement Period of the DAM. The CAISO shall pro-rate CRR Payments and CRR Charges for each Settlement Period, if there is an insufficiency of funds during that Settlement Period from the IFM Congestion Charge pursuant to Section 11.2.4.1. A monthly true up will then be conducted, on both CRR Payments and CRR Charges in the clearing of the CRR Balancing Account pursuant to Section 11.2.4.4.1 and 11.2.4.4.2.

11.2.4.1 Calculation of the IFM Congestion Charge.

For each Settlement Period of the IFM, the CAISO shall calculate the IFM Congestion Charge as the IFM MCC for all scheduled Demand minus the IFM MCC for all scheduled Supply where the IFM MCC for all scheduled Demand is the sum of the products of the IFM MCC and the MWh of Demand scheduled in the Day-Ahead Schedule at all the applicable PNodes, Scheduling Points and Aggregated Pricing Nodes for the Settlement Period and the IFM MCC for all scheduled Supply is the sum of the products of the IFM MCC and the MWh of Supply scheduled in the Day-Ahead Schedule at all the applicable PNodes and Scheduling Points for the Settlement Period.

11.2.4.1.2 Calculation of IFM Congestion Fund.

For each Settlement Period of the IFM, the CAISO shall determine the IFM Congestion Fund, which shall consist of the funds available to pay CRR Holders in any Settlement Period as follows:

(a) The CAISO shall add to the IFM Congestion Fund the IFM Congestion Charge computed as described in Section 11.2.4.1, minus any IFM Congestion Credits as specified in Section 11.2.1.5;

(b) The CAISO shall add to the IFM Congestion Fund any CRR Charges calculated pursuant to Sections 11.2.4.2.2 and 11.2.4.2.3; and

(c) The CAISO shall add to the IFM Congestion Fund any IFM Congestion Charges associated with Day-Ahead Ancillary Services Awards as provided in Section 11.10.1.1.1.

11.2.4.2 Settlement Calculation for the Different CRR Types.

For the purposes of determining the CRR Payments and CRR Charges based on the various CRR Types, the CAISO shall calculate the Settlement of CRRs as described in this Section 11.2.4.2. When CRR Source or CRR Sink is a LAP, the Load Distribution Factors used in the IFM will be used to calculate the LAP Price at which CRR Payments or CRR Charges will be settled. When CRR Source or CRR Sink is a

Trading Hub the weighting factors used in the IFM and the CRR Allocation and Auction processes will also be used to settle CRR Payments and CRR Charges.

11.2.4.2.1 Point-to-Point CRR Options.

For each CRR Holder, the CAISO shall calculate a CRR Payment for each Point-to-Point CRR Option held by the CRR Holder equal to the product of: 1) the MCC at the CRR Sink minus the MCC at the CRR Source; and 2) the MW quantity of the CRR; if that amount is positive. If the resulting amount is negative, the CAISO shall not assess a Charge for the relevant CRR Holder for the negative amount. The full CRR Payment calculated pursuant to this process shall be subject to pro-ration as described in 11.2.4.4.

11.2.4.2.2 Point-to-Point CRR Obligations.

For each CRR Holder, the CAISO shall calculate a CRR Payment for each CRR Obligation for a Point-to-Point CRR held by the CRR Holder, equal to the product of: 1) the MCC at the CRR Sink minus the MCC at the CRR Source; and 2) the MW quantity of the CRR; if that amount is positive. If the resulting amount is negative, the CAISO shall calculate a CRR Charge for the relevant CRR Holder equal to that negative amount. The full CRR Payment or CRR Charges calculated pursuant to this process shall be subject to pro-ration as described in 11.2.4.4.

11.2.4.2.3 Multi-Point CRR.

For each CRR Holder, the CAISO shall calculate a CRR Payment for each Multi-Point CRR held by the CRR Holder, equal to the sum of the MCCs at each CRR Sink weighted by their associated MWh quantities as specified by the CRR, minus (2) the sum of the MCCs at each CRR Source weighted by their associated MWh quantities as specified by the CRR. If the calculated amount is positive, the CAISO shall calculate a payment for the Multi-Point CRR. If the result of this calculated amount is negative, the CAISO will calculate a CRR Charge for the Multi-Point CRR. The full CRR Payment calculated pursuant to this process shall be subject to pro-ration as described in 11.2.4.4.

11.2.4.3 Payments and Charges for Monthly and Annual Auctions.

The CAISO shall charge CRR Holders for the market clearing price for CRRs obtained through the clearing of the CRR Auction as described in Section 36.13.6. To the extent the CRR Holder purchases a CRR through a CRR Auction that has a negative value, the CAISO shall pay the CRR Holder for taking the applicable CRR. The CAISO shall net all revenue received and payments made through this process and shall add the net remaining seasonal and monthly CRR Auction revenue amounts (either negative or positive amounts) to the CRR Balancing Account for the appropriate month. CRR Auction revenues for each season are allocated uniformly across the three monthly accounts comprising each season.

11.2.4.4 Hourly CRR Settlement.

For each Settlement Period, the IFM Congestion Funds calculated in Section 11.2.4.1.2 will be used to pay CRR Holders that are owed CRR Payments. If the IFM Congestion Fund is sufficient to make the required CRR Payments for the Settlement Period, all CRR Holders shall be paid and charged fully according to their entitlements. If the IFM Congestion Fund is insufficient to make the required CRR Payments, then CRR Payments and CRR Charges shall be pro-rated by a ratio equal to the total hourly amount of IFM Congestion Funds divided by the net of CRR Payments for that Settlement Period. Any surplus revenue for the Settlement Period after making all hourly CRR Payments will go to the CRR Balancing Account for use in the end-of-month clearing of the CRR Balancing Account processes pursuant to Section 11.2.4.4.1. Any CRR Payment shortfalls (or amounts not fully paid) and CRR Charge shortfalls (or amounts not fully charged) for the Settlement Period, will be tracked for further Settlement during the end-of-month clearing process as described in Section 11.2.4.4.1. The hourly Settlement of CRRs for each CRR Holder will be based on the type of CRR holdings as described in Section 11.2.4.2. The CRR Holder's hourly CRR Settlement amount, which may be subject to pro-ration if necessary as described in this Section, will be the net of the holder's CRR Payments for CRR Options or CRR Obligations, and the holder's CRR Charges for CRR Obligations out of these holdings.

11.2.4.4.1 Monthly Clearing of the CRR Balancing Account – Full Funding of CRRs.

At the end of each month, all CRR Payment shortfalls for all CRR Holders shall be paid in full and all CRR Charge shortfalls shall be fully charged through the CRR Balancing Account clearing process.

The net of these CRR Charges and CRR Payment shortfalls shall be added to the CRR Balancing Account for the applicable month. Any surplus or shortfall revenue amounts in the CRR Balancing Account will be distributed to Scheduling Coordinators in an amount equal to (a) the CRR Balancing Account surplus or shortfall amounts, times (b) the ratio of each Scheduling Coordinator's Measured Demand (net of the valid and balanced ETC, TOR or Converted Rights Self-Schedule quantities for which IFM Congestion Credits were provided in the same relevant month) divided by the total Measured Demand for all Scheduling Coordinators for the relevant month.

11.2.4.5 CRR Balancing Account.

The CRR Balancing Account shall accumulate: (1) the seasonal and monthly CRR Auction revenue amounts as described in Section 11.2.4.3 and (2) any surplus revenue or shortfall generated from Hourly CRR Settlements as described in Section 11.2.4.4. Interest accruing due to the CRR Balancing Account shall be at the CAISO's received interest rate and shall be credited to the CRR Balancing Account.

11.2.5 Payment by Out-of Control Area Load Serving Entity to Obtain CRRs Through the CRR Allocation Process.

11.2.5.1 Pursuant to Section 36.9, in addition to other requirements specified therein, an OCALSE will be eligible to participate in the CRR Allocation process if such entity has made a pre-payment to the CAISO and has met the requirements in Section 36.9. The prepayment amount shall equal the MW of CRR requested times the Wheeling Access Charge associated with the Scheduling Point corresponding to the CRR Sink times the number of hours in the period for each requested CRR MW amount. Except as provided in Section 39.9.2, such prepayment will be made three (3) Business Days in advance of the submission of CRR nominations for Monthly CRRs, Seasonal CRRs and Long Term CRRs to the CRR Allocation. Within thirty (30) days following the completion of the CRR Allocation process for Monthly CRRs, Seasonal CRRs and Long Term CRRs, the CAISO shall reimburse such OCALSE the amount of money pre-paid for any CRRs that were not allocated to the entity.

11.2.5.2 Annual Prepayment Option.

For entities that are eligible and elect for the annual prepayment pursuant to Section 36.9.2, the annual prepayment will be due three (3) Business Days in advance of the submission of CRR nominations for Tier LT in the CRR Allocation process. For allocated Long Term CRRs, each of the nine subsequent annual payments must be made at the beginning of the annual CRR Allocation process for the following year.

11.2.5.3 Monthly Prepayment Option.

If the OCALSE qualified for the monthly prepayment option as specified in Section 36.9.2, the OCALSE shall make its payments consistent with the monthly prepayment schedule specified in the applicable Business Practice Manual.

11.2.5.4 Treatment of Prepaid WAC Amounts.

For the amount of CRRs that were allocated to the entity, the CAISO will exempt the Scheduling Coordinator for such entity from the WAC for any Real-Time Interchange Export Schedules at the Scheduling Point corresponding to the sink of each allocated CRR, on an hourly basis for the period for which the CRR is defined, until the pre-paid funds are exhausted. At the end of the period for which the CRR is defined any remaining balance will be allocated to the Participating TOs in accordance with Section 26.1.4.3. To the extent the pre-paid balance amount is exhausted prior to the end of the duration of the awarded CRR, the Scheduling Coordinator designated by the CRR Holder that has been allocated CRRs pursuant to Section 36.9 will be charged for the WAC in accordance with Section 26.1.4.

11.3 [Not Used]

11.4 HASP Settlement of Scheduling Points.

The CAISO shall settle both incremental and decremental Energy at the relevant Scheduling Points including Operational Adjustments for all Non-Dynamic System Resources based on the HASP Intertie LMP in accordance with Section 11.4.1 and 11.4.2. Energy dispatched using HASP Intertie Schedules is accounted as Instructed Imbalance Energy and its costs shall be included in the Real-Time Market Settlements in accordance with Section 11.5.

11.4.1 HASP Settlement for Exports.

For each Settlement Period that the CAISO clears Energy transactions at Scheduling Points in HASP, the settlement for such transactions will be the CAISO HASP Intertie Pre-Dispatch LMP multiplied by the MWh quantity of Export scheduled at the individual Scheduling Point in excess of or less than the Day-Ahead Schedule, respectively.

11.4.2 HASP Settlement for Imports.

For each Settlement Period that the CAISO clears Energy transactions at Scheduling Points for all Non-Dynamic System Resources in HASP, the CAISO shall pay or charge Scheduling Coordinators for each System Resource an amount equal to the HASP Intertie LMP multiplied by the MWh quantity of Import scheduled at the individual Scheduling Point in excess of or less than the Import at that Scheduling Point scheduled in the Day-Ahead Schedule, respectively.

11.5 Real-Time Market Settlements.

The CAISO shall calculate and account for Imbalance Energy for each Dispatch Interval and settle Imbalance Energy in the Real-Time Market for each Settlement Interval for each resource within the CAISO Control Area and all System Resources dispatched in Real-Time. Imbalance Energy consists of IIE and UIE. IIE includes Energy associated with HASP Intertie Schedules. IIE is settled pursuant to Section 11.5.1 and UIE is settled pursuant to Section 11.5.2. In addition, the CAISO shall settle UFE as part of the Real-Time Market Settlements. To the extent that the sum of the Settlements Amounts for IIE and UIE does not equal zero, the CAISO will assess charges or make payments for the resulting differences to all Scheduling Coordinators based on a pro rata share of their Measured Demand for the relevant Settlement Interval. Imbalance Energy due to Exceptional Dispatches, as well as the

allocation of related costs, including Excess Costs Payments is settled as described in Section 11.5.6. The CAISO shall reverse RTM Congestion Charges for valid and balanced ETC and TOR Self-Schedules as described in Section 11.5.7. The CAISO will settle Energy for emergency assistance as described in Section 11.5.8.

11.5.1 Instructed Imbalance Energy Settlements.

For each Settlement Interval, IIE consists of the following types of Energy: (1) Energy dispatched through the Real-Time Market optimization process; (2) Energy from HASP Intertie Schedules as defined in Section 11.4; (3) Residual Imbalance Energy; (4) Minimum Load Energy from units Dispatched in Real-Time; (5) Energy related to Exceptional Dispatches; (6) Energy from Regulation; (7) Standard Ramping Energy; (8) Ramping Energy Deviation; (9) Rerate Energy; (10) Real-Time Self-Schedule Energy; (11) MSS Load following Energy; and (12) Operational Adjustments for the Day-Ahead and Real-Time. Payments and charges for IIE attributable to each resource in each Settlement Interval shall be settled by debiting or crediting, as appropriate, the specific Scheduling Coordinator's IIE Settlement Amount. The IIE Settlement Amounts for the Standard Ramping Energy shall be zero. The IIE Settlement Amounts for Energy dispatched through the Real-Time Market optimization, Minimum Load Energy from units Dispatched in the Real-Time, Energy from Regulation, Ramping Energy Deviation, Rerate Energy, and Real-Time Self-Scheduled Energy shall be calculated as the product of the sum of all of these types of Energy and the Resource-Specific Settlement Interval LMP. For MSS Operators that have elected net Settlement, the IIE Settlement Amounts for Energy dispatched through the Real-Time Market optimization, Minimum Load Energy from System Units dispatched in Real-Time, Energy from Regulation, Ramping Energy Deviation, Rerate Energy, MSS Load following Energy and Real-Time Self-Schedule Energy shall be calculated as the product of the sum of all of these types of Energy and the Real-Time Settlement Interval MSS Price. For MSS Operators that have elected gross Settlement, regardless of whether that entity has elected to follow its Load or to participate in RUC, the IIE for such entities is settled similarly to non-MSS entities as provided in this Section 11.5.1. The remaining IIE Settlement Amounts are determined as follows: (1) IIE Settlement Amounts for the Energy from the HASP Intertie Schedules is settled per Section 11.4; (2) IIE Settlement Amounts for Residual Imbalance Energy are determined pursuant to Section 11.5.5.; and (3) IIE Settlement Amounts for Exceptional Dispatches are settled pursuant to Section 11.5.6.

11.5.1.1 Total IIE Settlement Amount.

The total IIE Settlement Amount ($) per Settlement Interval for each Scheduling Coordinator is the sum of the IIE Settlement Amounts for the Standard Ramping Energy, MSS Load following Energy, Energy Dispatched through the Real-Time Market optimization, the Minimum Load Energy from units Dispatched in the Real-Time, Energy from Regulation, Ramping Energy Deviation, Rerate Energy, Real-Time Self-Schedule Energy, Residual Imbalance Energy, and the portion of IIE Settlement Amounts for Exceptional Dispatches pursuant to Sections 11.5.6.

11.5.1.2 Total IIE Quantity.

The total IIE quantity (MWh) per Settlement Interval for each Scheduling Coordinator is the sum of Standard Ramping Energy, MSS Load following Energy, Energy dispatched through the Real-Time Market optimization, Minimum Load Energy from units Dispatched in the Real-Time, Energy from Regulation, Ramping Energy Deviation, Rerate Energy, Real-Time Self-Schedule Energy, Residual Imbalance Energy and Energy from Exceptional Dispatches.

11.5.2 Uninstructed Imbalance Energy.

Scheduling Coordinators shall be paid or charged a UIE Settlement Amount for each LAP, PNode or Scheduling Point for which the CAISO calculates a UIE quantity. UIE quantities are calculated for each resource that has a Day-Ahead Schedule, Dispatch Instruction, Real-Time Interchange Export Schedule or Metered Quantity. For MSS Operators electing gross Settlement, regardless of whether that entity has elected to follow its Load or to participate in RUC, the UIE for such entities is settled similarly to how UIE for non-MSS entities is settled as provided in this Section 11.5.2. The CAISO shall account for UIE in two categories: (1) Tier 1 UIE is accounted as the quantity deviation from the resource's IIE; and (2) Tier 2 UIE is accounted as the quantity deviation from the resource's Day-Ahead Schedule. For Generating Units, System Units of MSS Operators that have elected gross Settlement, Physical Scheduling Plants, System Resources and all Participating Load, the Tier 1 UIE Settlement Amount is calculated for each Settlement Interval as the product of its Tier 1 UIE quantity and its Resource-Specific Tier 1 UIE Settlement Interval Price as calculated per Section 11.5.2.1, and the Tier 2 UIE Settlement Amount is calculated for each Settlement Interval as the product of its Tier 2 UIE quantity and the simple average of the relevant Dispatch Interval LMPs. For resources within a System Unit of MSS Operators that have elected net Settlement, the Tier 1 UIE Settlement Amount is calculated for each Settlement Interval as the product of its Tier 1 UIE quantity and its Real-Time Settlement Interval MSS Price and the Tier 2 UIE Settlement Amount is calculated for each Settlement Interval as the product of its Tier 2 UIE quantity and the Real-Time Settlement Interval MSS Price. The Tier 2 UIE Settlement Amount for non-Participating Load and MSS Demand under gross Settlement is settled as described in Section 11.5.2.2. For MSS

Operators that have elected net Settlement, the Tier 2 UIE Settlement Amount for Demand of a net MSS Demand is calculated for the Trading Hour as the sum of the product of the hourly Tier 2 UIE quantity and the Real-Time Settlement Interval MSS Price.

11.5.2.1 Resource Specific Tier 1 UIE Settlement Interval Price.

The Resource-Specific Tier 1 UIE Settlement Interval Price is calculated as the resource's total IIE Settlement Amount calculated pursuant to Section 11.5.1.1 for that Settlement Interval divided by its total IIE quantity (MWh) calculated pursuant to Section 11.5.1.2.

11.5.2.2 Hourly Real-Time LAP Price.

The Hourly Real-Time LAP Price will apply to Demand and MSS Demand under net Settlement of Imbalance Energy, except for Demand not settled at the Default LAP as provided in Section 30.5.3.2. The Hourly Real-Time LAP Price is calculated as the weighted average of the hourly average of the Dispatch Interval LMPs for the LAP, using as weights the Real-Time LAP nodal Loads in the relevant Trading Hour.

11.5.2.3 Revenue Neutrality Resulting from Changes in LAP Load Distribution Factors.

Any resulting revenue from changes in the LAP Load Distribution Factors between the Day-Ahead Market and the Real-Time Market shall be allocated to metered CAISO Demand in the corresponding Default LAP.

11.5.3 Unaccounted For Energy (UFE).

For each Settlement Interval, the CAISO will calculate UFE for each utility Service Area for which the IOU or Local Publicly Owned Electric Utility has requested separate UFE calculation and has met the requirements applicable to a CAISO Metered Entity. The UFE will be settled as Imbalance Energy at the Settlement Interval Locational Marginal Price calculated for each utility Service Area for which UFE is calculated separately. UFE attributable to meter measurement errors, load profile errors, Energy theft, and distribution loss deviations will be allocated to each Scheduling Coordinator based on the ratio of its metered CAISO Demand within the relevant utility Service Area for

which UFE is calculated separately to total metered CAISO Demand within that utility Service Area.

11.5.4 Pricing for Imbalance Energy and Allocation of Non-Zero Amounts of the Sum of IIE, UIE and UFE.

11.5.4.1 Application and Calculation of Dispatch Interval LMPs.

Payments to Scheduling Coordinators, including Scheduling Coordinators for MSS Operators that have elected gross Settlement, that supply Imbalance Energy will be based on Resource-Specific Settlement Interval LMPs. The Resource-Specific Settlement Interval LMPs are established using Dispatch Interval LMPs. Dispatch Interval LMPs will apply to Generating Units, System Units for MSS Operators that have elected gross Settlement, Physical Scheduling Plants, Dynamic System Resources, and the Demand response portion of a Participating Load for Settlement of Imbalance Energy. The Dispatch Interval LMP will be calculated at each PNode associated with such resource irrespective of whether the resource at that PNode has received Dispatch Instructions. The Dispatch Interval LMP*s* are then used to calculate a Resource-Specific Settlement Interval LMP and a Resource Specific Tier 1 UIE Settlement Interval Price for each Generating Unit, System Unit or MSS Operator that has elected gross Settlement, Physical Scheduling Plant, Dynamic System Resource, and Participating Load within the CAISO Controlled Grid. Payments to Scheduling Coordinators for MSS Operators that have elected net Settlement that supply Imbalance Energy will be based on the Real-Time Settlement Interval MSS Price.

11.5.4.2 Allocations of Non-Zero Amounts of the sum of IIE, UIE and UFE.

The CAISO will first compute (1) the Real-Time Congestion Offset and allocate it to all Scheduling Coordinators, based on Measured Demand, excluding Demand associated with ETC or TOR Self-Schedules for which a HASP and RTM Congestion Credit was provided as specified in Section 11.5.7; and (2) the Real-Time Marginal Cost of Losses Offset and allocate it to all Scheduling Coordinators based on Measured Demand, excluding Demand associated with TOR Self-Schedules for which a RTM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules was provided as specified in Section 11.5.7.2. For Scheduling Coordinators for MSS Operators regardless of whether the MSS Operator has elected gross or net Settlement, the CAISO will allocate the Real-Time Congestion Offset based on the

MSS Aggregation Net Total Non-ETC/TOR Measured Demand. To the extent that the sum of the Settlement amounts for IIE, UIE, and UFE, less Real-Time Congestion Offset, does not equal zero, the CAISO will assess charges or make payments for the resulting differences to all Scheduling Coordinators, including Scheduling Coordinators for MSS Operators that are not Load following MSSs and have elected gross Settlement, based on a pro rata share of their Measured Demand for the relevant Settlement Interval. For Scheduling Coordinators for MSS Operators that have elected Load following or net Settlement, or both, the CAISO will assess charges or make payments for the resulting non-zero differences of the sum of the Settlement amounts for IIE, UIE, and UFE, less Real-Time Congestion Offset based on their MSS Aggregation Net Measured Demand.

11.5.5 Settlement Amount for Residual Imbalance Energy.

For each Settlement Interval, Residual Imbalance Energy Settlement amounts shall be the product of the MWh of Residual Imbalance Energy for that Settlement Interval and the Bid that led to the Residual Imbalance Energy from the relevant Dispatch Interval in which the resource was dispatched. For MSS Operators the Settlement for Residual Imbalance Energy is conducted in the same manner, regardless of any MSS elections (net/gross Settlement, Load following or opt-in/opt-out of RUC).

11.5.6 Settlement Amounts for IIE from Exceptional Dispatch.

For each Settlement Interval, IIE Settlement Amount from each type of Exceptional Dispatch described in Section 34.9 is calculated as the sum of the products of the relevant IIE quantity for the Dispatch Interval and the relevant Settlement price for the Dispatch Interval for each type of Exceptional Dispatch as further described below. For MSS Operators the settlement for IIE from Exceptional Dispatch is conducted in the same manner, regardless of any MSS elections (net/gross Settlement, Load following or opt-in/opt-out of RUC).

11.5.6.1 Settlement for IIE from Exceptional Dispatches used for System Emergency Conditions, to Avoid Market Interruption, Overgeneration Conditions or to Prevent or Relieve Imminent System Emergencies.

The Exceptional Dispatch Settlement price for incremental IIE that is delivered as a result of an Exceptional Dispatch for System Emergency conditions, to avoid a Market Interruption, to mitigate Overgeneration conditions, or to prevent or relieve an imminent System Emergency, including forced Start-Ups and Shut-Downs, is the higher of the Resource-Specific Settlement Interval LMP, the Energy Bid price or the Default Energy Bid price, if applicable and the Energy that does not have an Energy Bid price, or the negotiated price as applicable to System Resources. Costs for incremental Energy for this type of Exceptional Dispatch are settled in two payments: (1) incremental Energy is first settled at the Resource-Specific Settlement Interval LMP and included in the total IIE Settlement Amount described in Section 11.5.1.1; and (2) second, the incremental Energy Bid Cost in excess of the applicable LMP at the relevant Location is settled pursuant to Section 11.5.6.1.1. The Exceptional Dispatch Settlement price for decremental IIE not associated with an Energy Bid that is delivered as a result of an Exceptional Dispatch instruction to avoid a Market Interruption, or to prevent or relieve a System Emergency is the minimum of the Resource-Specific Settlement Interval LMP, the Energy Bid price, or the negotiated price, if applicable and the Energy that does not have an Energy Bid price. All Energy costs for decremental IIE associated with this type of Exceptional Dispatch are included in the total IIE Settlement Amount described in Section 11.5.1.1.

11.5.6.1.1 Settlement of Excess Cost Payments for Exceptional Dispatches used for Emergency Conditions, to Avoid Market Interruption, and Avoid an Imminent System Emergency.

The Excess Cost Payment for incremental Exceptional Dispatches used for emergency conditions, to avoid Market Interruption, or to avoid an imminent System Emergency is calculated for each resource for each Settlement Interval as the cost difference between the Settlement amount calculated pursuant to

Section 11.5.6.1 for the applicable Exceptional Dispatch at the Resource-Specific Settlement Interval LMP and delivered Exceptional Dispatch quantity at one of the following three costs: (1) the resource's Energy Bid Cost, (2) the Default Energy Bid cost, or (3) the Energy cost at the negotiated price, if applicable, for the relevant Exceptional Dispatch.

IIE Settlement Amount described in Section 11.5.1.1; and (2) second, the incremental Energy Bid costs in excess of the applicable LMP at the relevant Location are settled per Section 11.5.6.2.3. The Exceptional Dispatch Settlement price for decremental IIE for this type of Exceptional Dispatch is the minimum of the Resource-Specific Settlement Interval LMP or the Bid price. Costs for decremental IIE associated with this type of Exceptional Dispatch are settled in two Payments: (1) decremental Energy is first settled at the Resource-Specific Settlement Interval LMP and included in the total IIE Settlement Amount described in Section 11.5.1.1; and (2) second, the decremental Energy Bid costs in excess of the applicable LMP at the relevant Location is settled per Section 11.5.6.2.3.

11.5.6.2.3 Settlement of Excess Cost Payments for Exceptional Dispatches used for Transmission-Related Modeling Limitations.

The Excess Cost Payment for Exceptional Dispatches used for transmission-related modeling limitations as described in Section 34.9.3 is calculated for each resource for each Settlement Interval as the cost difference between the Settlement amount calculated pursuant to Section 11.5.6.2.1 or 11.5.6.2.2 for the applicable Exceptional Dispatch at the Resource-Specific Settlement Interval LMP and one of the following three costs: (1) the resource's Energy Bid Cost, 2) the Default Energy Bid cost, or 3) the Energy cost at the negotiated price, if applicable, for the relevant Exceptional Dispatch.

11.5.6.2.4 Exceptional Dispatches for Non-Transmission-Related Modeling Limitations.

The Exceptional Dispatch Settlement price for incremental IIE that is consumed or delivered as a result of an Exceptional Dispatch to mitigate or resolve Congestion that is not a result of a transmission-related modeling limitation in the FNM as described in Section 34.9.3 is the maximum of the Resource-Specific Settlement Interval LMP, Energy Bid Price or the Default Energy Bid price, if applicable and the Energy that does not have an Energy Bid Price, or the negotiated price as applicable to System Resources. All

decremental IIE associated with this type of Exceptional Dispatch are included in the total IIE Settlement Amount described in Section 11.5.1.1.

11.5.6.2.5 Allocation of Exceptional Dispatch Excess Cost Payments.

11.5.6.2.5.1 Allocation of Exceptional Dispatch Excess Cost Payments to PTOs.

The total Excess Cost Payments calculated pursuant to Section 11.5.6.2.3 for the IIE from Exceptional Dispatches instructed as a result of a transmission-related modeling limitation in the FNM as described in Section 34.9.3 in that Settlement Interval shall be charged to the Participating Transmission Owner in whose PTO Service Territory the transmission-related modeling limitation as described in Section 34.9.3 is located. If the modeling limitation affects more than one Participating TO, the Excess Cost Payments shall be allocated pro-rata in proportion to the Participating TOs' Transmission Revenue Requirements. Costs allocated to Participating TOs under this section shall constitute Reliability Services Costs.

11.5.6.2.5.2 Allocation of Exceptional Dispatch Costs to Scheduling Coordinators.

Excess Cost Payments for the Exceptional Dispatches used for emergency conditions and to avoid Market Interruption and System Emergencies as determined pursuant to Section 11.5.6.1.1 shall be charged to Scheduling Coordinators as follows in a two-step process. First, each Scheduling Coordinator's charge shall be the lesser of:

i. the pro rata share of total Excess Cost Payment based upon the ratio of each Scheduling Coordinator's Net Negative Uninstructed Deviations to the total system Net Negative Uninstructed Deviations; or

ii. the amount obtained by multiplying the Scheduling Coordinator's Net Negative Uninstructed Deviation for each Settlement Interval and a weighted average price. The weighted average price is equal to the total Excess Cost Payments to be allocated divided by the MWh of Exceptional Dispatch Energy associated with the Excess Cost Payment.

Second, any remaining unallocated costs shall be allocated to all Scheduling Coordinators pro-rata based on their Measured Demand. For a Scheduling Coordinator of an MSS Operator that has elected to follow Load, allocation of this second category of Excess Cost Payments will be based on net metered MSS Demand. In addition, to the extent the Exceptional Dispatches are made to resolve congestion internal to the MSS, the Scheduling Coordinator for such an MSS will also be subject to these two categories of Excess Cost Payments.

A Scheduling Coordinator shall be exempt from the first category of the Excess Cost Payment allocation for a Settlement Interval if the Scheduling Coordinator has sufficient incremental Energy Bids from physically available resources in the Real-Time Market for Energy to cover its Net Negative Uninstructed Deviation in the given Settlement Interval and the prices of such Energy Bids do not exceed the applicable maximum Bid level as set forth in Section 39.

11.5.6.3 Settlement for IIE from Exceptional Dispatches for RMR Units.

11.5.6.3.1 Pricing for Exceptional Dispatch of RMR Units.

If the CAISO Dispatches an RMR Unit that has selected Condition 2 of its RMR Contract to Start-Up or provide Energy other than a start-up or energy pursuant to the RMR Contract, the CAISO shall pay as follows:

(a) if the Owner has elected Option A of Schedule G, two times the Start-Up cost specified in Schedule D to the applicable RMR Contract for any Start-Up incurred, and 1.5 times the rate specified in Equation 1a or 1b below times the amount of Energy delivered in response to the Dispatch Instructions;

(b) if the Owner has elected Option B of Schedule G, three times the Start-Up cost specified in Schedule D to the applicable RMR Contract for any Start-Up incurred, and the rate specified in Equation 1a or 1b below times the amount of Energy delivered in response to the Dispatch Instruction.

b) Start-Up Costs for Condition 2 RMR Units providing service outside the RMR Contract, and any additional start-up Cost associated with a Condition 2 RMR Unit providing service under the RMR Contract when the unit's total service has exceeded an RMR Contract Service Limit but neither the RMR Contract Counted MWh, Counted Service Hours or Counted start-ups under the RMR Contract have exceeded the applicable RMR Contract Service Limit, shall be treated similar to costs under Section 11.5.6.2.5.2.

11.5.6.4 Settlement of IIE from Exceptional Dispatches used for Ancillary Services Testing and PreCommercial Operations Testing For Generating Units.

The Exceptional Dispatch Settlement price for incremental IIE that is consumed or delivered as a result of an Exceptional Dispatch for purposes of Ancillary Services testing or pre-commercial operations testing for Generating Units is the maximum of the Resource-Specific Settlement Interval LMP or the Energy Bid Price, if Energy is associated with an Energy Bid. All Energy costs for these types of Exceptional Dispatch will be included in the IIE Settlement Amount described in Section 11.5.1.1.

11.5.6.5 Settlement of IIE from Black Start and Voltage Support.

All IIE Settlement Amounts associated with Black Start and Voltage Support are derived pursuant to Section 11.10.

11.5.6.6 Settlement of IIE from Exceptional Dispatches for HASP and Real-Time ETC and TOR Self-Schedules.

The Exceptional Dispatch Settlement price for IIE from HASP and Real-Time ETC and TOR Self-Schedules shall be the Resource-Specific Settlement Interval LMP. The IIE Settlement Amount for this type of Exceptional Dispatch shall be calculated as the product of the sum of all of these types of Energy and the Resource-Specific Settlement Interval LMP. All Energy costs for these types of Exceptional Dispatches will be included in the IIE Settlement Amount described in Section 11.5.1.1.

11.5.7 HASP and RTM Congestion Credit and Marginal Cost of Losses Credit for Eligible TOR Self-Schedules.

11.5.7.1 HASP and RTM Congestion Credit for ETCs and TORs.

The CAISO shall not apply charges or payments to Scheduling Coordinators related to the MCC associated with all Points of Receipt and Points of Delivery pairs associated with valid and balanced ETC Self-Schedules or TOR Self-Schedules. The balanced portion will based on the difference between: (1) minimum of the metered

CAISO Demand, ETC or TOR Self-Schedule submitted in the HASP, or the Existing Contract maximum capacity as specified in the TRTC Instructions; and (2) the Day-Ahead Schedule. For each Scheduling Coordinator, the CAISO shall determine for each Settlement Interval the applicable HASP and RTM Congestion Credit for Imbalance Energy, which can be positive or negative, as the sum of the product of the relevant MWh quantity and the MCC at each Point of Receipt and Point of Delivery associated with the valid and balanced portions of that Scheduling Coordinator's ETC or TOR Self-Schedules. For all exports and imports settled in the HASP, the CAISO shall use the MWh quantity specified in the HASP Intertie Schedule. For all Demand settled in the Real-Time Market the CAISO shall use the metered CAISO Demand associated with the applicable ETC or TOR. For all Supply settled in the Real-Time Market the CAISO shall use the quantity specified in the Dispatch Instructions.

11.5.7.2 RTM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules.

For all Points of Receipt and Points of Delivery pairs associated with a valid and balanced TOR Self-Schedule submitted to the HASP or RTM pursuant to an existing agreement between the TOR holder and the CAISO as specified in Section 17.3.3, the CAISO shall not impose any charge or make any payment to the Scheduling Coordinator related to the MCL associated with such TOR Self-Schedules and will instead impose any applicable charges for losses as specified in the existing agreement between the TOR holder and the CAISO applicable to the relevant TOR. The balanced portion of the TOR Self-Schedule will based on the difference between: (1) minimum of the metered CAISO Demand or TOR Self-Schedule submitted in the HASP, or the TOR maximum capacity as specified in the TRTC Instructions; and (2) the Day-Ahead Schedule. For each Scheduling Coordinator, the CAISO shall determine for each Settlement Interval the applicable RTM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules for Imbalance Energy, which can be positive or negative, as the sum of the product of the relevant MWh quantity and the MCL at each eligible Points of Receipt and Points of Delivery associated with the valid and balanced portions of that Scheduling Coordinator's TOR Self-Schedules. For all exports and imports settled in the HASP, the CAISO shall use the MWh quantity specified in the HASP Intertie Schedule. For all Demand settled in the Real-Time Market the CAISO shall use the metered CAISO Demand associated with the applicable TOR. For all Supply settled in the Real-Time Market the CAISO shall use the quantity specified in the Dispatch Instructions.

11.5.8 Settlement for Emergency Assistance.

This Section 11.5.8 shall apply to Settlement for emergency assistance provided to or by the CAISO. In any case in which the CAISO has entered into an agreement regarding emergency assistance, which agreement has been accepted by FERC, the provisions of the agreement shall prevail over any conflicting provisions of this Section 11.5.8. Where the provisions of this Section 11.5.8 do not conflict with the provisions of the FERC-accepted agreement, the provisions of this Section 11.5.8 shall apply to the subject emergency assistance.

11.5.8.1 Settlement for Energy Purchased by the CAISO for System Emergency Conditions, to Avoid Market Interruption, or to Prevent or Relieve Imminent System Emergencies, Other than Energy from Exceptional Dispatches.

The Settlement price for Energy that is delivered to the CAISO from a utility in another Control Area as a result of a CAISO request pursuant to Section 42.1.5 or any other provision for

assistance in System Emergency conditions, to avoid a Market Interruption, or to prevent or relieve an imminent System Emergency, other than Energy from an Exceptional Dispatch, shall be either (i) a negotiated price agreed upon by the CAISO and the seller or (ii) a price established by the seller for such emergency assistance in advance, as may be applicable. In the event no Settlement price is established prior to the delivery of the emergency Energy, the default Settlement price shall be the simple average of the relevant Dispatch Interval LMPs at the applicable Scheduling Point, plus all other charges applicable to imports to the CAISO Control Area, as specified in the CAISO Tariff. If the default Settlement price is determined by the seller not to compensate the seller for the value of the emergency Energy delivered to the CAISO, then the seller shall have the opportunity to provide the CAISO with cost support information demonstrating that a higher price is justified. The cost support information must be provided in writing to the CAISO within thirty (30) days following the date of the provision of emergency assistance. The CAISO shall have the discretion to pay that higher price based on the seller's justification of this higher price. The CAISO will provide notice of its determination whether to pay such a higher price within thirty (30) days after receipt of the cost support information. Any dispute regarding the CAISO's determination whether to pay a higher price for emergency assistance based on cost support information shall be subject to the CAISO ADR Procedures. Payment by the CAISO for such emergency assistance will be made in accordance with the Settlement process, billing cycle, and payment timeline set forth in the CAISO Tariff. The costs for such emergency assistance, including the payment of a price based on cost support information, will be settled in two payments: (1) the costs will first be settled at the simple average of the relevant Dispatch Interval LMPs and included in the total IIE Settlement Amount as described in Section 11.5.1.1; and (2) costs in excess of the simple average of the relevant Dispatch Interval LMPs plus other applicable charges will be settled in accordance with Section 11.5.8.1.1. The allocation of the amounts settled in accordance with Section 11.5.1.1 will be settled according to Section 11.5.4.2.

11.5.8.1.1 Settlement and Allocation of Excess Costs Payments for Emergency Energy Purchases, Other than Energy from Exceptional Dispatches, to Scheduling Coordinators

The Excess Cost Payments for emergency Energy purchased in the circumstances specified in Section 11.5.8.1 is calculated for each purchase for each Settlement Interval as the cost difference between the Settlement amount calculated pursuant to Section 11.5.8.1 for the purchase and the simple average of the relevant Dispatch Interval LMPs at the applicable Scheduling Point. The Excess Cost Payments for emergency Energy purchased in the circumstances specified in Section 11.5.8.1 shall be allocated in the same manner as specified in Section 11.5.6.2.5.2 for the allocation of the Excess Cost Payments portion of payments for Exceptional Dispatches for emergency conditions.

11.5.8.2 Settlement for Energy Supplied by the CAISO in Response to a Request for Emergency Assistance.

The Settlement price for emergency Energy that is delivered by the CAISO to a utility in another Control Area in response to a request for emergency assistance shall be the simple average of the relevant Dispatch Interval LMPs at the applicable Scheduling Point, which shall serve as the effective market price for that Energy, plus all other charges applicable to exports from the CAISO Control Area, as specified in the CAISO Tariff and will be included in the total IIE Settlement Amount as described in Section 11.5.1.1 and will be allocated according to Section 11.5.4.2. Such price may be estimated prior to delivery and finalized in the Settlement process. The CAISO will establish a Scheduling Coordinator account, if necessary, for the purchaser for the sole purpose of facilitating the Settlement of such emergency assistance. Payment to the CAISO for such emergency assistance shall be made in accordance with the Settlement process, billing cycle, and payment timeline set forth in the CAISO Tariff.

11.6 [Not Used]

11.7 Additional MSS Settlements Requirements.

11.7.1 MSS Load Following Deviation Penalty.

For MSS Operators that have elected to follow their Load as described in Section 4.9.13.2, the Scheduling Coordinator for a Load following MSS Operator shall pay amounts for: (i) excess MSS Generation supplied to the CAISO Markets and (ii) excess MSS Load relying on CAISO Markets and not served by MSS generating resources. The revenue received from these payments will be used as an off-set to the CAISO's Grid Management Charge. The payments due from a Scheduling Coordinator will be calculated as follows:

11.7.1.1 If the metered Generation resources and imports into the MSS exceed: (i) the metered Demand and exports from the MSS, and (ii) Energy expected to be delivered by the Scheduling Coordinator for the MSS in response to the CAISO's Dispatch Instructions and/or Regulation Set Point

signals issued by the CAISO's AGC by more than the MSS Deviation Band, then the payment for excess Energy outside of the MSS Deviation Band shall be rescinded and Scheduling Coordinator for the MSS Operator will pay the CAISO an amount equal to one hundred percent (100%) of the product of the highest LMP paid to the MSS Operator for its Generation in the Settlement Interval and the amount of the Imbalance Energy that is supplied in excess of the MSS Deviation Band.

11.7.1.2 If metered Generation resources and imports into the MSS are insufficient to meet: (i) the metered Demand and exports from the MSS, and (ii) Energy expected to be delivered by the Scheduling Coordinator for the MSS in response to the CAISO's Dispatch Instructions and/or Regulation Set Point signals issued by the CAISO's AGC by more than the MSS Deviation Band, then the Scheduling Coordinator for the MSS Operator shall pay the CAISO an amount equal to the product of the Default LAP price for the Settlement Interval and two hundred percent (200%) of the shortfall that is outside of the MSS Deviation Band. The payment in the previous sentence is in addition to the charges for the Imbalance Energy that serves the excess MSS Demand that may be applicable under Section 11.5.

11.7.2 The CAISO will assess the Scheduling Coordinator for the MSS the neutrality adjustments and Existing Contracts cash neutrality charges pursuant to Section 11.14 (or collect refunds therefrom) based on the net Measured Demand of the MSS.

11.7.3 If the CAISO is charging Scheduling Coordinators for summer reliability or Demand reduction programs, the MSS Operator may petition the CAISO for an exemption of these charges. If the MSS Operator provides documentation to the CAISO by November 1 of any year demonstrating that the MSS Operator has secured capacity reserves for the following calendar year at least equal to one hundred and fifteen percent (115%), on an annual basis, of the peak Demand responsibility of the MSS Operator, the CAISO shall grant the exemption. Eligible capacity reserves for such a demonstration may include on-demand rights to Energy, peaking resources, and Demand reduction programs. The peak Demand responsibility of the MSS Operator shall be equal to the annual peak Demand Forecast of the MSS Load plus any firm power sales by the MSS Operator, less interruptible Loads, and less any firm

power purchases. Firm power for the purposes of this Section 11.7.3 shall be Energy that is intended to be available to the purchaser without being subject to interruption or curtailment by the supplier except for Uncontrollable Forces or emergency. To the extent that the MSS Operator demonstrates that it has secured capacity reserves in accordance with this Section 11.7.3, the Scheduling Coordinator for the MSS Operator shall not be obligated to bear any share of the CAISO's costs for any summer Demand reduction program or for any summer reliability Generation procurement program pursuant to Section 42.1.8 for the calendar year for which the demonstration is made.

11.7.4 Unless specified otherwise in the MSS agreement(s), if the CAISO is compensating Generating Units for Emissions Costs, and if an MSS Operator charges the CAISO for the Emissions Costs of the Generating Units serving the Load of the MSS, then the Scheduling Coordinator for the MSS shall bear its proportionate share of the total amount of those costs incurred by the CAISO based on the MSS gross Measured Demand excluding out of state exports and the Generating Units shall be made available to the CAISO through the submittal of Energy Bids. If the MSS Operator chooses not to charge the CAISO for the Emissions Costs of the Generating Units serving the Load of the MSS, then the Scheduling Coordinator for the MSS shall bear its proportionate share of the total amount of those costs incurred by the CAISO based on the MSS's net Measured Demand excluding out-of-state exports. For MSS Operators that have elected to follow their Load, and if an MSS Operator chooses not to charge the CAISO for the Emissions Costs of the Generating Units serving that MSS Operator's Load, then that MSS's Scheduling Coordinator for that Load shall bear its proportionate share of the total amount of those costs incurred by the CAISO based on that MSS's Net Negative Uninstructed Deviations with Load Following Energy included in the netting. The MSS Operator shall make the election whether to charge the CAISO for these costs on an annual basis on November 1 for the following calendar year.

11.8 Bid Cost Recovery.

For purposes of determining the Unrecovered Bid Cost Uplift Payments for each Bid Cost Recovery Eligible Resource as determined in Section 11.8.5 and the allocation of Unrecovered Bid Cost Uplift Payments for each Settlement Interval, the

CAISO shall sequentially calculate the Bid Costs, which can be positive (IFM, RUC or RTM Bid Cost Shortfall) or negative (IFM, RUC or RTM Bid Cost Surplus) in the IFM, RUC and the Real-Time Market, as the algebraic difference between the respective IFM, RUC or RTM Bid Cost and the IFM, RUC or RTM Market Revenues, which is netted across the CAISO Markets. In any Settlement Interval a resource is eligible for Bid Cost Recovery payments only if it is On, or in the case of a Participating Load, only if the resource has actually stopped or started consuming pursuant to the Dispatch Instruction. BCR Eligible Resources for different MSS Operators are supply resources listed in the applicable MSS Agreement. All Bid Costs shall be based on mitigated Bids as specified in Section 39.7. In order to be eligible for Bid Cost Recovery, Non-Dynamic Resource-Specific System Resources must provide to the CAISO Revenue Quality Meter Data demonstrating that they have performed in accordance with their CAISO commitments.

11.8.1 CAISO Determination of Self-Commitment Periods.

For the purposes of identifying the periods during which a Bid Cost Recovery Eligible Resource is deemed self-committed and thus ineligible for Start-Up Costs, Minimum Load Costs, IFM Pump Shut-Down Costs and IFM Pumping Costs, the CAISO derives the Self-Commitment Periods as described below. MSS resources designated for Load following are considered to be self-committed if they have been scheduled with non-zero Load following capacity, or are otherwise used to follow Load in the Real-Time. The IFM and RUC Self-Commitment Periods will be available as part of the Day-Ahead Market results provided to the applicable Scheduling Coordinator. The interim RTM Self-Commitment Periods as reflected in the HASP will be available as part of the HASP results for the relevant Trading Hour as provided to the applicable Scheduling Coordinator. The final RTM Self-Commitment Period is determined ex-post for Settlements purposes. ELS Resources committed through the ELC Process described in Section 31.7 are considered to have been committed in the IFM Commitment Period for the applicable Trading Day for the purposes of determining BCR settlement in this section 11.8.

11.8.1.1 IFM Self-Commitment Period.

An IFM Self-Commitment Period for a Bid Cost Recovery Eligible Resource shall consist of one or more sets of consecutive Trading Hours during which the relevant Bid Cost Recovery Eligible Resource has either a Self-Schedule or, except for AS Self-Provision for Non-Spinning Reserve by a Fast Start Unit resources, has a non-zero amount of Self-Provided Ancillary Services. An IFM Self-Commitment Period for a Bid Cost Recovery Eligible Resource may not be less than the relevant Minimum Run Time (MAT), rounded up to the next hour. Consequently, if a Bid Cost Recovery Eligible Resource first self-commits in hour h of the Trading Day, the self-commitment will be extended to hour h + MAT. Two IFM Self-Commitment Periods for a Bid Cost Recovery Eligible Resource may not be apart by less than the relevant Minimum Down Time (MDT) (rounded up to the next hour). Consequently, if a Bid Cost Recovery Eligible Resource has submitted a Self-Schedule or Self-Provided Ancillary Services in hours h and h + n, and n is less than the MDT, the IFM Self-Commitment Period will be extended to the hours in between h

interim Commitment Intervals if an additional Real-Time Market Start-Up at T1 would violate the MDS constraint.

11.8.2 IFM Bid Cost Recovery Amount.

For purposes of determining the IFM Unrecovered Bid Cost Uplift Payments as determined in Section 11.8.5, and the purposes of allocating Net IFM Bid Cost Uplift as described in Section 11.8.6.4 the CAISO shall calculate the IFM Bid Cost Shortfall or the IFM Bid Cost Surplus as the algebraic difference between the IFM Bid Cost and the IFM Market Revenues for each Settlement Interval. The IFM Bid Costs shall be calculated pursuant to Section 11.8.2.1 and the IFM Market Revenues shall be calculated pursuant to Section 11.8.2.2. The Energy subject to IFM Bid Cost Recovery is the actual Energy delivered in the Real-Time that is within the Day-Ahead Schedule for each eligible resource.

11.8.2.1 IFM Bid Cost Calculation.

For each Settlement Interval, the CAISO shall calculate IFM Bid Cost for each Bid Cost Recovery Eligible Resource as the algebraic sum of the IFM Start-Up, IFM Minimum Load Cost, IFM Pump Shut-Down Cost, IFM Energy Bid Cost, IFM Pumping Cost, and IFM AS Bid Cost.

Intervals when the relevant metered Energy in the applicable Settlement Intervals increases from below the Minimum Load Energy and reaches or exceeds the relevant Minimum Load Energy. The Minimum Load Energy is the product of the relevant Minimum Load and the duration of the Settlement Interval.

g) The IFM Start-Up Cost will be qualified if an actual Start-Up occurs earlier than the start of the IFM Commitment Period if the advance start-up is as a result of a Start-Up instruction issued in a RUC or Real-Time Market process subsequent to the IFM, or the advance Start-Up is uninstructed but is still within the same Trading Day and the Bid Cost Recovery Eligible Resource actually stays on until the targeted IFM Start-Up.

11.8.2.1.2 IFM Minimum Load Cost.

The Minimum Load Cost for the applicable Settlement Interval shall be the Minimum Load Cost submitted to the CAISO in the IFM divided by the number of Settlement Intervals in a Trading Hour. For each Settlement Interval, only the IFM Minimum Load Cost in a CAISO IFM Commitment Period is eligible for Bid Cost Recovery. The IFM Minimum Load Cost for any Settlement Interval is zero if: (1) the Settlement Interval is in an IFM Self Commitment Period for the Bid Cost Recovery Eligible Resource; (2) the Bid Cost Recovery Eligible Resource is manually pre-dispatched under an RMR Contract prior to the Day-Ahead Market or the resource is flagged as an RMR Dispatch in the Day-Ahead Schedule for the applicable Settlement Interval; or (3) the Bid Cost Recovery Eligible Resource is determined not actually On during the applicable Settlement Interval. For the purposes of IFM Minimum Load Cost, a Bid Cost Recovery Eligible Resource is determined to not actually be On if the metered Energy in that Settlement Interval is less than the Tolerance Band referenced by the Minimum Load Energy.

11.8.2.1.3 IFM Pump Shut-Down Cost.

For Pumped-Storage Hydro Units and Participating Load only, the IFM Pump Shut-Down Costs for each Settlement Interval shall be equal to the relevant Pump Shut-Down Cost submitted to CAISO in the IFM divided by the number of Settlement Intervals in a Trading

Hour in which shut down is to occur if the unit is committed by the IFM not to pump and actually does not operate in pumping mode in that Settlement Interval (as detected by Meter Data).

11.8.2.1.4 IFM Pumping Bid Cost.

For Pumped-Storage Hydro Units and Participating Load only, the IFM Pumping Bid Cost for the applicable Settlement Interval shall be the Pumping Cost submitted to the CAISO in the IFM divided by the number of Settlement Intervals in a Trading Hour. The Pumping Cost is negative. The Pumping Cost is included in IFM Bid Cost computation for a Pumped-Storage Hydro Unit and Participating Load committed by the IFM to pump or serve Load if it actually operates in pumping mode or serves Load in that Settlement Interval. The IFM Energy Bid Cost for a Participating Load for any Settlement Interval is set to zero for actual Energy consumed in excess of the Day-Ahead Schedule for Demand.

11.8.2.1.5 IFM Energy Bid Cost.

For any Settlement Interval, the IFM Energy Bid Cost for Bid Cost Recovery Eligible resources, except Participating Loads, shall be the integral of the relevant Energy Bid submitted to the IFM, if any, from the Bid Cost Recovery Eligible Resource's Minimum Load up to the relevant MWh scheduled in the Day-Ahead Schedule, divided by the number of Settlement Intervals in a Trading Hour. The IFM Energy Bid Cost for Bid Cost Recovery Eligible Resources, except Participating Loads, for any Settlement Interval is set to zero for any portion of the Day-Ahead Schedule that is not delivered from the otherwise Bid Cost Recovery Eligible Resource that has metered Generation below its Day-Ahead Schedule; any portion of the Day-Ahead Schedule that is actually delivered remains eligible for IFM Energy Bid Cost Recovery.

11.8.2.1.6 IFM AS Bid Cost.

For any Settlement Interval, the IFM AS Bid Cost shall be the product of the IFM upward AS Award from each accepted IFM AS Bid and the relevant AS Bid Price, divided by the number of Settlement Intervals in a Trading Hour.

IFM Market Revenue for a Bid Cost Recovery Eligible Resource is the algebraic sum of: (1) the product of the MWh above the greater of Minimum Load and Self-Scheduled Energy, in the relevant Day-Ahead Schedule in that Trading Hour and the relevant IFM LMP, divided by the number of Settlement Intervals in a Trading Hour; and (2) the product of the IFM AS Award from each accepted IFM AS Bid and the relevant Resource-Specific ASMP, divided by the number of Settlement Intervals in a Trading Hour.

11.8.2.3 IFM Bid Cost Recovery Amounts for Metered Subsystems.

The IFM Bid Cost Recovery for MSS Operators differs based on whether the MSS Operator has elected gross or net Settlement.

11.8.2.3.1 MSS Elected Gross Settlement.

For an MSS Operator that has elected gross Settlement, regardless of other MSS optional elections (Load following or RUC opt-in or out), the IFM Bid Cost and the IFM Market Revenue are calculated similarly to non-MSS resources on an individual resource basis as described in Sections 11.8.2.1 and 11.8.2.2, respectively.

11.8.2.3.2 MSS Elected Net Settlement.

For an MSS Operator that has elected net Settlement, regardless of other MSS optional elections (Load following or RUC opt-in or out), the Energy affected by IFM Bid Cost Recovery is the MSS level net Energy where the MSS Supply exceeds the MSS Demand within the MSS. The IFM Bid Cost Shortfall or Surplus is also settled at the MSS level as opposed to the individual resource level. The IFM Bid Cost as described in Section 11.8.2.1 above and IFM Market Revenue as provided in Section 11.8.2.2 above, of each MSS will be, respectively, the total of the IFM Bid Costs and IFM Market Revenues of all BCR Eligible Resources within the MSS. The IFM Bid Cost Shortfalls and Surpluses for Energy and AS are first calculated separately for the MSS for each Trading Hour of the Trading Day with qualified Start-Up Cost and qualified Minimum Load Cost included in the IFM Bid Cost Shortfalls and Surpluses for Energy calculation. The IFM Bid Cost Shortfall or Surplus of Energy in each Trading Hour is then pro-rated by the MSS's ratio of the net positive MSS Generation Schedule to the gross MSS Generation Schedule of that

Trading Hour. If the MSS CAISO Demand is in excess of the MSS Generation in a given Trading Hour in the Day-Ahead Schedule, the CAISO will set the pro-rating ratio for that Trading Hour to zero. The MSS's overall IFM Bid Cost Shortfall or Surplus is then calculated as the algebraic sum of the pro-rated IFM Bid Cost Shortfall or Surplus for Energy and the IFM Bid Cost Shortfall or Surplus for AS for each Trading Hour.

11.8.3 RUC Bid Cost Recovery Amount.

For purposes of determining the RUC Unrecovered Bid Cost Uplift Payments as determined in Section 11.8.5 and for the purposes of allocating Net RUC Bid Cost Uplift as described in Section 11.8.6.5, the CAISO shall calculate the RUC Bid Cost Shortfall or the RUC Bid Cost Surplus as the algebraic difference between the RUC Bid Cost and the RUC Market Revenues for each Bid Cost Recovery Eligible Resource for each Settlement Interval. The RUC Bid Costs shall be calculated pursuant to Section 11.8.3.1 and the RUC Market Revenues shall be calculated pursuant to Section 11.8.3.2.

11.8.3.1 RUC Bid Cost Calculation.

For each Settlement Interval, the CAISO shall determine the RUC Bid Cost for a Bid Cost Recovery Eligible Resource as the algebraic sum of the RUC Start-Up Cost, RUC Minimum Load Cost and RUC Availability Bid Cost.

g) The RUC Start-Up Cost shall be qualified if an actual Start-Up occurs earlier than the start of the RUC Start-Up, if the relevant Start-Up is still within the same Trading Day and the Bid Cost Recovery Eligible Resource actually stays on until the RUC Start-Up, otherwise the Start-Up Cost is zero for the RUC Commitment Period.

11.8.3.1.2 RUC Minimum Load Cost.

The Minimum Load Cost for the applicable Settlement Interval shall be the Minimum Load Cost of the Generating Bid Cost Recovery Eligible Resource divided by the number of Settlement Intervals in a Trading Hour. For each Settlement Interval, only the RUC Minimum Load Cost in a CAISO RUC Commitment Period is eligible for Bid Cost Recovery. The RUC Minimum Load Cost for any Settlement Interval is zero if: (1) the Bid Cost Recovery Eligible Resource is manually pre-dispatched under an RMR Contract or the resource is flagged as an RMR Dispatch in the Day-Ahead Schedule in that Settlement Interval; (2) the Bid Cost Recovery Eligible Resource is not actually On in the applicable Settlement Interval; or (3) the applicable Settlement Interval is included in an IFM Commitment Period. For the purposes of RUC Minimum Load Cost, a Bid Cost Recovery Eligible Resource is determined to not actually be On if the metered Energy in that Settlement Interval is less than the Tolerance Band referenced by the Minimum Load Energy.

11.8.3.1.3 RUC Availability Bid Cost.

The product of the RUC Award with the relevant RUC Availability Bid price, divided by the number of Settlement Intervals in a Trading Hour. The RUC Availability Bid Cost for a Bid Cost Recovery Eligible Resource for a Settlement Interval is zero if the Bid Cost Recovery Eligible Resource is operating below its RUC Schedule, and also has a negative Uninstructed Imbalance Energy (UIE) magnitude in that Settlement Interval in excess of: (1) 5 MWh divided by the number of Settlement Intervals in the Trading Hour; or (2) three precent (3%) of its maximum capacity divided by the number of Settlement Intervals in a Trading Hour.

11.8.3.2 RUC Market Revenues.

For any Settlement Interval, the RUC Market Revenue for a Bid Cost Recovery Eligible Resource is the RUC Availability Payment as specified in Section 11.2.2.1 divided by the number of Settlement Intervals in a Trading Hour. If the RUC Availability Bid Cost of a BCR Eligible Resource is reduced to zero in a Settlement Interval because of Uninstructed Deviation as stated in Section 11.8.3.1.3, then the RUC Market Revenue for that resource for that Settlement Interval shall also be set to 0 since the resource is subject to rescission of RUC Availability Payments as specified in Section 31.5.7.

11.8.3.3 RUC Bid Cost Recovery for Metered Subsystem.

11.8.3.3.1 MSS Elected Gross Settlement.

For an MSS Operator that has elected gross Settlement, regardless of other MSS optional elections (Load following or RUC opt-in or out), the RUC Bid Cost and the RUC Market Revenue are calculated similarly to non-MSS resources on an individual resource basis as described in Sections 11.8.3.1 and 11.8.3.2, respectively.

11.8.3.3.2 MSS Elected Net Settlement.

For an MSS Operator that has elected net Settlement, regardless of other MSS optional elections (Load following or RUC opt-in or out), the RUC Bid Costs and RUC Market Revenue are calculated on an MSS level, consistent with the Energy Settlement. The RUC Bid Cost Shortfall or Surplus is also settled at the MSS level as opposed to the individual resource level as is done for MSS Operators that have elected gross Settlement.

11.8.4 RTM Bid Cost Recovery Amount.

For purposes of determining the RTM Unrecovered Bid Cost Uplift Payments as determined in Section 11.8.5, and for the purposes of allocation of Net RTM Bid Cost Uplift as described in Section 11.8.6.6 the CAISO shall calculate the RTM Bid Cost Shortfall or the RTM Bid Cost Surplus as the algebraic difference between the RTM Bid Cost and the

RTM Market Revenues for each Settlement Interval. The RTM Bid Costs shall be calculated pursuant to Section 11.8.4.1 and the RTM Market Revenues shall be calculated pursuant to Section 11.8.4.2. The Energy subject to RTM Bid Cost Recovery is the actual Energy delivered in the Real-Time associated with Instructed Imbalance Energy, excluding Standard Ramping Energy, Residual Imbalance Energy, Exceptional Dispatch Energy, Rerate Energy, Ramping Energy Deviation, Regulation Energy and MSS Load following Energy.

11.8.4.1 RTM Bid Cost Calculation.

For each Settlement Interval, the CAISO shall calculate RTM Bid Cost for each Bid Cost Recovery Eligible Resource, as the algebraic sum of the RTM Start-Up Cost, RTM Minimum Load Cost, RTM Pump Shut-Down Cost, RTM Energy Bid Cost, RTM Pumping Cost and RTM AS Bid Cost.

11.8.4.1.1 RTM Start-Up Cost.

For each Settlement Interval of the applicable Real-Time Market Commitment Period, the Real-Time Market Start-Up Cost shall consist of the Start-Up Cost of the Generating Bid Cost Recovery Eligible Resource submitted to the CAISO for the Real-Time Market divided by the number of Settlement Intervals in the applicable Real-Time Market Commitment Period. For each Settlement Interval, only the Real-Time Market Start-Up Cost in a CAISO Real-Time Market Commitment Period is eligible for Bid Cost Recovery. The following rules shall be applied in sequence and shall qualify the Real-Time Market Start-Up Cost in a Real-Time Market Commitment Period:

11.8.4.1.2 RTM Minimum Load Cost.

The RTM Minimum Load Cost is the Minimum Load Cost of the Bid Cost Recovery Eligible Resource submitted to the CAISO for the Real-Time Market divided by the number of Settlement Intervals in a Trading Hour. For each Settlement Interval, only the RTM Minimum Load Cost in a CAISO RTM Commitment Period is eligible for Bid Cost Recovery. The RTM Minimum Load Cost for any Settlement Interval is zero if: (1) the Settlement Interval is included in a RTM Self-Commitment Period for Bid Cost Recovery Eligible Resource; (2) the Bid Cost Recovery Eligible Resource has been manually dispatched under an RMR Contract or the resource has been flagged as an RMR Dispatch in the Day-Ahead Schedule or the Real-Time Market in that Settlement Interval; (3) the Bid Cost Recovery Eligible Resource is not actually On in that Settlement Interval; or (4) that Settlement Interval is included in an IFM or RUC Commitment Period. For the purposes of RTM Minimum Load Cost, a Bid Cost Recovery Eligible Resource is determined to not actually be On if the metered Energy in that Settlement Interval is less than the Tolerance Band referenced by the Minimum Load Energy.

11.8.4.1.3 RTM Pump Shut-Down Cost.

The RTM Pump Shut-Down Cost is the relevant Pump Shut-Down Cost submitted by the Scheduling Coordinator for Pumped-Storage Hydro Units and Participating Load committed by the Real-Time Market to stop pumping and serving Load and actually does not operate in pumping mode or serve Load in that Settlement Interval, divided by the number of Settlement Intervals in a Trading Hour.

11.8.4.1.4 RTM Pumping Bid Cost.

For Pumped-Storage Hydro Units and Participating Load only, the RTM Pumping Bid Cost for the applicable Settlement Interval shall be the Pumping Cost submitted to the CAISO in the HASP or RTH divided by the number of Settlement Intervals in a Trading Hour. The Pumping Cost is negative since it represents the amount the entity is willing to pay to pump or serve Load. The Pumping Cost is included in RTM Bid Cost computation for a Pumped-Storage Hydro Unit and

11.8.4.1.5 RTM Energy Bid Cost.

For any Settlement Interval, the RTM Energy Bid Cost for the Bid Cost Recovery Eligible Resource except Participating Loads shall be computed as the sum of the products of each Instructed Imbalance Energy (IIE) portion, except Standard Ramping Energy, Residual Imbalance Energy, Exceptional Dispatch Energy, Rerate Energy, MSS Load following Energy, Ramping Energy Deviation and Regulating Energy, with the relevant Energy Bid prices, if any, for each Dispatch Interval in the Settlement Interval. The RTM Energy Bid Cost for a Bid Cost Recovery Eligible Resource except Participating Loads for a Settlement Interval is set to zero for any undelivered Real-Time Instructed Imbalance Energy by the Bid Cost Recovery Eligible Resource. Any Uninstructed Imbalance Energy in excess of Instructed Imbalance Energy is also not eligible for Bid Cost Recovery.

11.8.4.1.6 RTM AS Bid Cost.

For each Settlement Interval, the Real-Time Market AS Bid Cost shall be the product of the average Real-Time Market AS Award from each accepted AS Bid submitted in the Settlement Interval for the Real-Time Market, reduced by any relevant Tier-1 No Pay capacity in that Settlement Interval (but not below zero), with the relevant AS Bid price. The average Real-Time Market AS Award for a given AS in a Settlement Interval is the sum of the 15-min Real-Time Market AS Awards in that Settlement Interval, each divided by the number of 15-min Commitment Intervals in a Trading Hour and prorated to the duration of the Settlement Interval (10/15 if the Real-Time Market AS Award spans the entire Settlement Interval, or 5/15 if the Real-Time Market AS Award spans half the Settlement Interval).

11.8.4.2 RTM Market Revenue Calculations.

11.8.4.2.1 For each Settlement Interval in a CAISO Real-Time Market Commitment period, the Real-Time Market Market Revenue for a Bid Cost Recovery Eligible Resource is the algebraic sum of the following:

11.8.4.3 RTM Bid Cost Recovery for Metered Subsystems.

In addition to the exclusions to actual Energy delivered as provided in Section 11.8.4, for MSS resources, the Energy subject to RTM Bid Cost Recovery also excludes Minimum Load Energy if the resource is not committed by the CAISO in the Real-Time. As provided below, the RTM Bid Cost Recovery for MSS Operators differs based on whether the MSS Operator has elected gross or net Settlement; except that the calculation of the RTM Bid Costs and RTM Market Revenues for Ancillary Services will be as provided in Sections 11.8.4.1.6 and 11.8.4.2 and does not vary on the basis of the MSS's election of gross or net Settlement.

11.8.4.3.1 MSS Elected Gross Settlement.

For an MSS Operator that has elected gross Settlement, regardless of other MSS optional elections (Load following or RUC opt-in or out), the RTM Bid Cost and RTM Market Revenue of the Real-Time delivered Instructed Imbalance Energy subject to Bid Cost Recovery is determined for each resource identically to the non-MSS resource following the general principles in Section 11.8.4. The RTM Bid Cost Shortfall or Surplus for Energy and Ancillary Services in total is determined for each Trading Hour of the RTM over the Trading Day by taking the algebraic difference between the RTM Bid Cost and RTM Market Revenue.

11.8.4.3.2 MSS Elected Net Settlement.

For MSS entities that have elected net Settlement regardless of other MSS optional elections (i.e., Load following or not, or RUC opt-in or out), unlike non-MSS resources, the RTM Bid Cost Shortfall or Surplus is treated at the MSS level and not at the resource specific level, and is calculated as the RTM Bid Cost Shortfall or Surplus of all BCR Eligible Resources within the MSS. In calculating the Energy RTM Market Revenue for all the resources within the MSS as provided in Section 11.8.4.2, the CAISO will use the Real-Time Settlement Interval MSS Price. The RTM Bid Cost Shortfall and Surplus for Energy and Ancillary Services are first calculated separately for the MSS for each Settlement Interval of the Trading Day, with qualified Start-Up Cost and qualified Minimum Load Cost included into the RTM Bid Cost

Shortfalls and Surpluses of Energy calculation. The RTM Bid Cost Shortfall or Surplus for Energy for each Settlement Interval is pro-rated by the ratio of the net positive metered Generation to the gross metered Generation of the MSS for that interval. If the MSS metered CAISO Demand is in excess of the MSS Generation in a given Settlement Interval, the CAISO will set the pro-rating ratio for that Settlement Interval to zero. The MSS's overall IFM Bid Cost Shortfall or Surplus is then calculated as the algebraic sum of the pro-rated RTM Bid Cost Shortfalls and Surpluses for Energy and the RTM Bid Cost Shortfalls and Surpluses for AS for each Settlement Interval.

11.8.5 Unrecovered Bid Cost Uplift Payment.

Scheduling Coordinators shall receive an Unrecovered Bid Cost Uplift Payment for a Bid Cost Recovery Eligible Resource, including resources for MSS Operators that have elected gross Settlement, if the net of all IFM Bid Cost Shortfalls and Surpluses calculated pursuant to Section 11.8.2, RUC Bid Cost Shortfalls and Surpluses calculated pursuant to Section 11.8.3, and the RTM Bid Cost Shortfalls and Surpluses calculated pursuant to Section 11.8.4 for that Bid Cost Recovery Eligible Resource over a Trading Day is positive. For MSS Operators that have elected net Settlement, the Unrecovered Bid Cost Uplift Payment is at the MSS level. The MSS IFM, RUC, and RTM Bid Cost Shortfall or Surplus for each market for each Trading Hour is the sum of the IFM, RUC, and RTM Bid Cost Shortfalls and Surpluses for all resources in the MSS. Scheduling Coordinators for MSS Operators that have elected net Settlement will receive an Unrecovered Bid Cost Uplift Payment if the net of all IFM, RUC, and RTM Bid Cost Shortfalls and Surpluses for that MSS over a Trading Day is positive.

11.8.6 System-wide IFM, RUC and RTM Bid Cost Uplift Allocation.

11.8.6.1 Determination of IFM, RUC and RTM Bid Cost Uplift.

For each Settlement Interval, the CAISO shall determine the IFM, RUC and RTM Bid Cost Uplift for purposes of allocating the IFM, RUC and RTM Bid Cost Uplift as described below. In determining the IFM, RUC and RTM Bid Cost Uplifts below, the Unrecovered Bid Cost Uplift Payments for MSS BCR Eligible Resources in Metered Subsystems where the MSS Operator has elected net Settlement will be included on an MSS basis and not on an individual resource basis.

(i) The IFM Bid Cost Uplift shall be the net of the IFM Bid Cost Shortfalls and IFM Bid Cost Surpluses for a Settlement Interval of all Bid Cost Recovery Eligible Resources with Unrecovered Bid Cost Uplift Payments.

(ii) The RUC Bid Cost Uplift shall be the net of the RUC Bid Cost Shortfalls and RUC Bid Cost Surpluses for a Settlement Interval of all Bid Cost Recovery Eligible Resources with Unrecovered Bid Cost Uplift Payments.

(iii) The RTM Bid Cost Uplift shall be the net of the RTM Bid Cost Shortfalls and RTM Bid Cost Surpluses for a Settlement Interval of all Bid Cost Recovery Eligible Resources with Unrecovered Bid Cost Uplift Payments.

11.8.6.2 Sequential Netting of IFM, RUC and RTM Bid Cost Uplift.

For each Settlement Interval, the Net IFM, RUC or Real-Time Market Bid Cost Uplift is determined for the purposes of allocating Net IFM, RUC or Real-Time Market Bid Cost Uplift by the following netting rules applied sequentially:

(i) The Net IFM Bid Cost Uplift, if positive, is reduced to the greater of zero or any positive IFM Bid Cost Uplift offset by Negative Real-Time Market Bid Cost Uplift first and offset by any Negative RUC Bid Cost Uplift.

(i) In the first tier, the hourly Net IFM Bid Cost Uplift is allocated to Scheduling Coordinators in proportion to their non-negative IFM Load Uplift Obligation, but with an IFM Bid Cost Uplift rate not exceeding the ratio of the hourly Net IFM Bid Cost Uplift for the Trading Hour divided by the sum of all hourly Generation scheduled in the Day-Ahead Schedule and IFM upward AS Awards for all Scheduling Coordinators from CAISO-committed Bid Cost Recovery Eligible Resources in that Trading Hour. The IFM Load Uplift Obligation for each Scheduling Coordinator, including Scheduling Coordinators for Metered Subsystems regardless of their MSS optional elections (net/gross Settlement, Load following, RUC opt-in/out), is the difference between the total Demand scheduled in the Day-Ahead Schedule of that Scheduling Coordinator and the scheduled Generation from the Self-Schedules in the Day-Ahead Schedule of that Scheduling Coordinator, plus imports scheduled by that Scheduling Coordinator in its Day-Ahead Schedule, adjusted by any applicable Inter-SC Trades of IFM Load Uplift Obligations.

(ii) In the second tier, Scheduling Coordinators, including Scheduling Coordinators for MSS Operators that have elected both to not follow their Load and gross Settlement, will be charged for an amount equal to any remaining hourly Net IFM Bid Cost Uplift for the Trading Hour in proportion to the Scheduling Coordinator's Measured Demand. Scheduling Coordinators for MSS Operators that have elected to either follow their Load or net Settlement, or both, will be charged for an amount equal to any remaining hourly Net IFM Bid Cost Uplift for the Trading Hour in proportion to their MSS Aggregation Net Measured Demand.

11.8.6.5 Allocation of RUC Compensation Costs.

11.8.6.5.1 Calculation of RUC Compensation Costs.

For each Trading Hour of the RUC, the CAISO shall calculate the RUC Compensation Costs as the sum of the RUC Availability Payment and the hourly Net RUC Bid Cost Uplift.

11.8.6.5.2 Calculation of the Hourly Net RUC Bid Cost Uplift.

For each Trading Hour of the RUC, the hourly Net RUC Bid Cost Uplift is determined as the sum over the

Settlement Intervals in that Trading Hour of the product of any positive Net RUC Bid Cost Uplift remaining in the Settlement Interval after the sequential netting in Section 11.8.6.2 and the application of the uplift ratio as determined in 11.8.6.3. Consistent with Section 31.5.2.2, Scheduling Coordinators for MSS Operators that have opted out of RUC participation, or opt-out of RUC by default as a result of having elected to Load follow, will not be subject to any RUC Bid Cost Uplift allocation. Scheduling Coordinators for MSS Operators that have opted-into RUC, and consequently also are non-Load following and under gross Settlement, will receive the allocation of hourly Net RUC Bid Cost Uplift like all other Scheduling Coordinators.

11.8.6.5.3 Allocation of the RUC Compensation Costs.

(i) In the first tier, the RUC Compensation Costs are allocated to Scheduling Coordinators, based on their Net Negative CAISO Demand Deviation in that Trading Hour. The Scheduling Coordinator shall be charged at a rate which is the lower of (1) the RUC Compensation Costs divided by the Net Negative CAISO Demand Deviation for all Scheduling Coordinators in that Trading Hour; or (2) the RUC Compensation Costs divided by the RUC Capacity, for all Scheduling Coordinators in that Trading Hour. Participating Load shall not be subject to the first tier allocation of RUC Compensation Costs.

(ii) In the second tier, the Scheduling Coordinator shall be charged an amount equal to any remaining RUC Compensation Costs in proportion to the Scheduling Coordinator's metered CAISO Demand in any Trading Hour.

11.8.6.6 Allocation of Net RTM Bid Cost Uplift.

The hourly Net RTM Bid Cost Uplift is computed for the Trading Hour as the product of the uplift ratio in 11.8.6.3 and the sum over all Settlement Intervals of the Trading Hour of any positive Net RTM Bid Cost Uplift after the sequential netting in Section 11.8.6.2. The hourly RTM Bid Cost Uplift is allocated to Scheduling Coordinators, including Scheduling Coordinators for MSS Operators that have elected to not follow their Load and gross Settlement, in proportion to their Measured Demand for the Trading Hour. For Scheduling Coordinators for MSS Operators that have elected to either Load follow or net Settlement, or both, the hourly RTM Bid Cost Uplift is allocated in proportion to their MSS Aggregation Net Measured Demand. Accordingly, each Scheduling Coordinator shall be charged an amount equal to its Measured Demand times the RTM Bid Cost Uplift rate, where the RTM Bid Cost Uplift rate is computed as the Net RTM Bid Cost Uplift amount divided by the sum of Measured Demand across all Scheduling Coordinators for the Trading Hour.

11.9 Inter-SC Trades.

11.9.1 Physical Trades.

Inter-SC Trades of Energy in the Day-Ahead Market will be settled separately from Inter-SC Trades of Energy in the HASP. Both the Day-Ahead and HASP Inter-SC Trades of Energy will be settled on an hourly basis and the two respective Settlement amounts between the two parties for each market shall net to zero. All MWh quantities of Physical Trades submitted to the CAISO for Settlement in the Day-Ahead Market that are confirmed through the Physical Trade post market confirmation as provided in Section 28.1.6.3 shall be settled at the Day-Ahead LMP at the relevant PNode. All MWh quantities of Physical Trades that are reduced during the Physical Trade post market confirmation shall be settled at the relevant Existing Zone (EZ) Generation Trading Hub price. All MWh quantities of Physical Trades

submitted to the CAISO for Settlement in the HASP that are confirmed through the Physical Trade post market confirmation pursuant to Section 28.6.1.3 shall be settled at the simple average of Dispatch Interval LMP at the relevant Pricing Node. All MWh quantities of Physical Trades submitted for Settlement in HASP that are reduced during the Physical Trade post market confirmation shall be settled at the relevant Real-Time price for the EZ Generation Trading Hub.

11.9.2 Inter-SC Trades at Aggregated Pricing Nodes.

Inter-SC Trades of Energy at Aggregated Pricing Nodes in the Day-Ahead Market will be settled separately from Inter-SC Trades at Aggregated Pricing Nodes in the HASP. Both the Day-Ahead and HASP Inter-SC Trades at Aggregated Pricing Nodes will be settled on an hourly basis and the two respective Settlement amounts between the two parties for each market shall net to zero. All MWh quantities of Inter-SC Trades at Aggregated Pricing Nodes submitted to the CAISO for Settlement in the Day-Ahead Market shall be settled at the relevant Day-Ahead Aggregated Pricing Node price such as the Existing Zone (EZ) Generation Trading Hub price or LAP price. All MWh quantities of Inter-SC Trades at Aggregated Pricing Nodes submitted to the CAISO for Settlement in the HASP shall be settled at the relevant Real-Time Aggregated Pricing Node price.

reduce the Ancillary Services Obligation or receive the user rate if it exceeds the Scheduling Coordinator's Ancillary Service obligation).

11.10.1.3.1 Congestion Charges for Real-Time Intertie Ancillary Service Awards from Dynamic System Resources.

Suppliers of Real-Time Ancillary Services Awards at Scheduling Points for Dynamic System Resources are also charged for Congestion if the award is at a congested Scheduling Point. The charge shall be equal to the simple average of the 15 minute Shadow Price of the applicable congested Scheduling Point multiplied by the quantity of the Ancillary Service Award for the Settlement Period.

11.10.1.4 Voltage Support.

The total payments for each Scheduling Coordinator shall be the sum of the short-term procurement payments, based on opportunity cost, as described in Section 8.5.6.2, and the payments under long-term contracts.

11.10.1.5 Black Start.

Quantities. The following quantities shall be used in the Settlement process:

$EnQBS_{ijt}$ = Energy output from Black Start made by Generating Unit i from Scheduling Coordinator j (or Black Start Generator j, as the case may be) for Settlement Period t, pursuant to the CAISO's order to produce.

Prices. The prices used in the Settlement process are those described in the contracts referred to in Section **8.5.6.3**.

Adjustment = penalty described in Section 8.10.7.

Payments. Scheduling Coordinators for owners of Reliability Must-Run Units (or Black Start Generators, as the case may be) shall receive the following payments for Energy output from Black Start

facilities:

$$BSEN_{ijt}=(EnQBS_{ijt}*EnBid_{ijt})+BSSUP_{ijt\text{-}Adjustment}$$

where BSSUPijt is the start-up payment for a Black Start successfully made by Generating Unit i of Scheduling Coordinator j (or Black Start Generator j) in Trading Interval t calculated in accordance with the applicable Reliability Must-Run Contract (or the Interim Black Start Agreement as the case may be).

11.10.2.1 Regulation Service.

Regulation Up Reserve and Regulation Down Reserve charges shall be calculated separately.

11.10.2.1.1 Regulation Down Reserve.

The charges an Scheduling Coordinator must pay for Regulation Down Reserve for each Settlement Period of the Trade Day are based upon the product of Scheduling Coordinator's hourly obligation for Regulation Down Reserve (MW) and the hourly user rate for Regulation Down Reserve ($/MW).

11.10.2.1.2 Hourly User Rate for Regulation Down Reserve.

The hourly User Rate for Regulation Down is the total Regulation Down Cost ($) for each Settlement Period divided by the total Net Procurement of Regulation Down by the CASIO (MW) for each Settlement Period. The CAISO's Regulation Down Reserve Cost is equal to: (i) the revenues paid to the suppliers of the total awarded Regulation Down Reserve capacity in the DAM, HASP, and Real-Time Markets for the Settlement Period, minus, (ii) the payments rescinded in the Settlement Period due to the unavailability of the Regulation Down under any of the provisions of Section 8.10.8 of the Tariff. The Net Procurement of Regulation Down Reserves is equal to: (i) the amount (MW) of total awarded Regulation Down Reserve capacity in the Day-Ahead, HASP, and Real-Time Markets for the Settlement Period, minus, (ii) the Regulation Down Reserve capacity associated with payments rescinded for the Settlement Period pursuant to any of the provisions of Section 8.10.8 of the Tariff.

11.10.2.1.3 Hourly Net Obligation for Regulation Down Reserve.

Each Scheduling Coordinator's hourly net obligation for Regulation Down is determined as follows: the Scheduling Coordinator's metered CAISO Demand multiplied by the Scheduling Coordinator's Ancillary Services Obligation percentage for Regulation Down, reduced by accepted Self-Provided Ancillary Services specified as Regulation Down, plus or minus any Regulation Down Reserve obligations for the hour acquired or sold through Inter-SC Trades of Ancillary Services. The Scheduling Coordinator's Ancillary Services Obligation percentage is the total hourly Real-Time Regulation Down required divided by the hourly metered CAISO Demand.

11.10.2.1.4 Regulation Down Neutrality Adjustment.

For each Settlement Period, the difference between the Regulation Down Cost determined in 11.10.2.1.2 and the total revenue collected from all Scheduling Coordinators in the Regulation Down Charge pursuant to Section 11.10.2.1.1 shall be allocated to all Scheduling Coordinators in proportion to their Regulation Down Obligation quantity.

11.10.2.2 Regulation Up.

The Charges an SC must pay for Regulation Up for each Settlement Period of the Trade Day are based upon the product of SC's hourly obligation for Regulation Up (MW) and the hourly user rate for Regulation Up ($/MW).

11.10.2.2.1 Hourly User Rate for Regulation Up.

The hourly User Rate for Regulation Up is the total Regulation Up Cost ($) for each Settlement Period divided by the total Net Procurement of Regulation Up by the CASIO (MW) for each Settlement Period. The CAISO's Regulation Up Cost is equal to: (i) the revenues paid to the suppliers of the total awarded Regulation Up capacity in the Day-Ahead, HASP, and Real-Time Markets for the Settlement Period, minus, (ii) the payments rescinded in the Settlement Period due to the unavailability of the Regulation Up under any of the provisions of Section 8.10.8 of the Tariff. The Net Procurement of Regulation Up is equal to: (i) the amount (MWs) of total awarded Regulation Up capacity in the Day-Ahead, HASP, and Real-Time Markets for the Settlement Period,, minus, (ii) the Regulation Up capacity associated with payments rescinded for the Settlement Period, pursuant to any of the provisions of Section 8.10.8 of the Tariff.

11.10.2.2.2 Hourly Net Obligation for Regulation Up.

Each Scheduling Coordinator's hourly net obligation for Regulation Up is determined as follows: (a) the Scheduling Coordinator's metered CAISO Demand multiplied by the Scheduling Coordinator's Ancillary Services Obligation percentage for Regulation Up, reduced by accepted Self-Provided Ancillary Services

specified as Regulation Up, plus or minus any Regulation Up Reserve Obligations for the hour acquired or sold through Inter-SC Trades of Ancillary Services. The Scheduling Coordinator's Ancillary Services Obligation percentage for Regulation Up is the total hourly Real-Time Regulation Up divided by the hourly metered CAISO Demand.

HASP, and Real-Time Markets, minus, (ii) the Spinning Reserve capacity associated with payments rescinded pursuant to any of the provisions of Section 8.10.8 of the CAISO Tariff. The amount (MW) of awarded Spinning Reserve capacity includes the amounts (MW) associated with any Regulation Up Reserve capacity used as Spinning Reserve under Section 8.2.3.5 of this Tariff.

11.10.3.2 Hourly Net Obligation for Spinning Reserves.

Each Scheduling Coordinator's hourly net obligation for Spinning Reserves is determined as follows: the Scheduling Coordinator's total Ancillary Services Obligation for Operating Reserve for the hour multiplied by the ratio of the CAISO's total Ancillary Services Obligation for Spinning Reserves in the hour to the CAISO's total Operating Reserve Obligations in the hour (and if negative, multiplied by NOROCAF), reduced by the accepted Self-Provided Ancillary Services for Spinning Reserves, plus or minus any Spinning Reserve Obligations for the hour acquired or sold through Inter-SC Trades of Ancillary Services. The Scheduling Coordinator's total Operating Reserve Obligation for the hour is the sum of five percent (5%) of its Real-Time Demand (except the Demand covered by firm purchases from outside the CAISO Control Area) met by Generation from hydroelectric resources plus seven percent (7%) of its Demand (except the Demand covered by firm purchases from outside the CAISO Control Area) met by Generation from non-hydroelectric resources, plus one hundred percent (100%) of any Interruptible Imports, which can only be submitted as a Self-Schedule in the Day-Ahead Market, and on-demand obligations which it schedules.

11.10.3.3 Spinning Reserve Neutrality Adjustment

For each Settlement Period, the difference between the Spinning Reserve Net Requirement at the hourly Spinning Reserve user rate determined in Section 11.10.3.1 and the total revenue collected from all Scheduling Coordinators in the Spinning Reserve Charge pursuant to Section 11.10.3 shall be allocated to all Scheduling Coordinators in proportion to their Spinning Reserve Obligation quantity. The Spinning Reserve Net Requirement is the Real-Time Spin Requirement net of the sum of Effective Qualified Spin Self-Provision over all Resources.

11.10.4.2 Hourly Net Obligation for Non-Spinning Reserves.

Each Scheduling Coordinator's hourly net obligation for Non-Spinning Reserves is determined as follows: the product of the Scheduling Coordinator's total Ancillary Services Obligation for Operating Reserve for the hour (and if negative, multiplied by NOROCAF) multiplied by the ratio of the CAISO's total Ancillary Services Obligation for Non-Spinning Reserves in the hour to the CAISO's total Operating Reserve obligations in the hour, reduced by the accepted Self-Provided Ancillary Services for Non-Spinning Reserves, plus or minus any Non-Spinning Reserve Obligations for the hour acquired or sold through Inter-SC Trades of Ancillary Services. The Scheduling Coordinator's total Operating Reserve Obligation for the hour is the sum of five percent (5%) of its Real-Time Demand (except the Demand covered by firm purchases from outside the CAISO Control Area) met by Generation from hydroelectric resources plus seven percent (7%) of its Demand (except the Demand covered by firm purchases from outside the CAISO Control Area) met by Generation from non-hydroelectric resources, plus one hundred percent (100%) of any Interruptible Imports, which can only be submitted as a Self-Schedule in the Day-Ahead Market, plus five percent (5%) (if hydro) or seven percent (7%) (if thermal) of any unit-contingent or dynamic imports which it schedules.

11.10.4.3 Non-Spinning Reserve Neutrality Adjustment.

For each Settlement Period, the difference between the Non-Spinning Reserve Net Requirement at the hourly Non-Spinning Reserve user rate determined in Section 11.10.4.1 and the total revenue collected from all Scheduling Coordinators in the Non-Spinning Reserve Charge pursuant to Section 11.10.2.3 shall be allocated to all Scheduling Coordinators in proportion to their Non-Spinning Reserve Obligation quantity. The Non-Spinning Reserve Net Requirement is the Real-Time Non-Spin Requirement net of the sum of Effective Qualified Non-Spin Self-Provision over all Resources.

11.10.5 Negative Operating Reserve Obligation Credit Adjustment Factor (NOROCAF).

In exceptional cases, it may happen that the net total quantity of Operating Reserve Obligations of all Scheduling Coordinators in a Trading Hour after accounting for qualified self provision is negative. In this

case the net negative Operating Reserve Obligation is not usable by the CAISO, since Self-Provided Ancillary Service is qualified before IFM based on CAISO's estimate of firm imports. In such a case, the Negative Operating Reserve Obligations of all Scheduling Coordinators with Negative Operating Reserve Obligation is reduced pro rata. This is done by computing the Negative Operating Reserve Credit

Adjustment Factor (NOROCAF) as the lower of 1 or the ratio of (a) net total quantity of Operating Reserve Obligations of all Scheduling Coordinators with positive Operating Reserve Obligation net of qualified self provision of Operating Reserves, but before any Inter-SC trades of Ancillary Services, and (b) the sum of Negative Operating Reserve Obligations of all Scheduling Coordinators with Negative Operating Reserve Obligation before considering any Self-Provided Ancillary Services or inter-SC trade of AS.

11.10.6 Upward Ancillary Services Neutrality Adjustment.

For each Settlement Period the difference between the upwards Ancillary Service cost and the product of the total Ancillary Service net requirements at the relevant Ancillary Service user rate will be allocated to all Scheduling Coordinators in proportion to their upward Ancillary Service Obligation net of Inter-SC Trades of Ancillary Services. The upwards Ancillary Service cost is the sum of the Regulation Up, Spinning Reserve and Non-Spinning Reserve cost described in Sections 11.10.2.2.1, 11.10.3.1 and 11.10.4.1. The Ancillary Service net requirement is the sum of the Real-Time Regulation Up net requirement in Section 11.10.2.2.3, Spinning Reserve net requirement in Section 11.10.3.3 and Non-Spinning Reserve net requirement in Section 11.10.4.3.

11.10.7 Voltage Support.

The short-term market Voltage Support user rate for Settlement Period t for Zone x shall be calculated as follows:

$$VSSTRate_{xt} = \frac{\sum_{i,j} VSST_{xijt}}{\sum_{j} QChargeVS_{xjt}}$$

$VSST_{xijt}$ = Voltage Support payment to Scheduling Coordinator j in respect of Generating Unit i in Zone x in the short-term market applicable to Settlement Period t.

$QChargeVS_{xjt}$ = charging quantity for Voltage Support for Scheduling Coordinator j for Settlement Period t in Zone x equal to the total metered Demand in Zone x (including exports to neighboring Control Areas and excluding metered Demand inside an MSS) by Scheduling Coordinator j for Settlement Period t.

$QChargeBlackstart_{jt}$ = charging quantity for Black Start for Scheduling Coordinator j for Settlement Period t equal to the total metered Demand (excluding exports to neighboring Control Areas and metered Demand of a MSS) by Scheduling Coordinator j for Settlement Period t.

The Black Start Energy payment user rate for Settlement Period t will be calculated as follows:

$$BSRate_t = \frac{\sum_{i,j} BSEn_{ijt}}{\sum_{j} QChargeBlackstart_{jt}}$$

where $BSEn_{ijt}$ is the CAISO payment to Scheduling Coordinator j for owner of Reliability Must-Run Unit (or to Black Start Generator j, as the case may be) for Generating Unit i providing Black Start Energy in Settlement Period t.

The Black Start Energy user charge for Settlement Period t for Scheduling Coordinator j will be calculated as follows:

$$BSCharge_{jt} = BSRate_t * QChargeBlackStart_{jt}$$

11.10.9 Settlements of Rescission of Payments for Ancillary Services Capacity that is Undispatchable, Unavailable, and Undelivered Capacity.

The rescission of payments for Ancillary Services for Undispatchable, Unavailable, and Undelivered Capacity applies to Ancillary Services that are awarded in the Day-Ahead, HASP or Real-Time Markets and the rescission will be the weighted average of the Ancillary Service Marginal Prices (ASMPs) and Ancillary Services Award amounts for a resource across the Day-Ahead, HASP and Real-Time Markets. For Self-Provided Ancillary Service capacity that becomes Undispatchable Capacity, Unavailable Capacity, or Undelivered Capacity, the rescission of Ancillary Services self-provision in the Day-Ahead, HASP and Real-Time Markets reduces the relevant Scheduling Coordinator's effective Ancillary Services self-provision in the Ancillary Services cost allocation, effectively resulting in a charge back at the relevant Ancillary Services rate. The rescission of payments in this Section 11.10.9 shall not apply to a capacity

payment for any particular Ancillary Service if the Ancillary Service Marginal Price (ASMP) is less than or equal to zero.

11.10.9.1 Rescission of Payments for Undispatchable Ancillary Service Capacity.

If a Scheduling Coordinator has Undispatchable Capacity that it is obligated to supply to the CAISO during a Settlement Interval, the Ancillary Service capacity payment for the amount of Energy that cannot be delivered from the Generating Unit, Participating Load, System Unit or System Resource for the Settlement Interval shall be rescinded; provided, however, that to the extent an Ancillary Service procured in the IFM from a System Resource becomes Undispatchable Capacity due to an Intertie transmission derate before the Operating Hour for which it was procured, in rescinding the Ancillary Service capacity payment, the CAISO shall credit back to the Scheduling Coordinator any Congestion Charge assessed pursuant to Section 11.10.1.1.1, but at the lower of the Day-Ahead and HASP Shadow Price on the corresponding Intertie.

11.10.9.2 Rescission of Payments for Unavailable Ancillary Service Capacity.

Payments to the Scheduling Coordinator representing the Generating Unit, Participating Load, System Unit or System Resource for the Ancillary Service capacity used to supply Uninstructed Imbalance Energy shall not be eliminated to the extent of the deficiency if: (i) the deficiency in the availability of Ancillary Service capacity from the Generating Unit, Participating Load, System Unit or System Resource is attributable to control exercised by the CAISO in that Settlement Interval through AGC operation, an RMR Dispatch Notice, or an Exceptional Dispatch; or (ii) a penalty is imposed under Section 8.10.7 with respect to the deficiency.

In calculating the amount of the payment to be rescinded under Section 8.10.8.2, the CAISO shall reduce the payment for Ancillary Service capacity otherwise payable for the Settlement Interval by the product of the applicable prices and the amount of Ancillary Service capacity from which the Generating Unit, Participating Load, System Unit or System Resource has supplied Uninstructed Imbalance Energy in that Settlement Interval.

11.10.9.3 Rescission of Payments for Undelivered Ancillary Service Capacity.

If the total metered output of a Generating Unit, Participating Load, System Unit or System Resource is insufficient to supply the amount of Instructed Imbalance Energy associated with a Dispatch Instruction issued in accordance with awarded or self-provided Spinning Reserves or awarded or self-provided Non-Spinning Reserves in any Settlement Interval, then the capacity payment associated with the difference between the scheduled amount of each Ancillary Service for which insufficient Energy was delivered and the actual output attributed to the response to the Dispatch Instruction shall be rescinded. However, no capacity payment shall be rescinded if the shortfall in the metered output of the Generating Unit, Participating Load, System Unit, or System Resource is less than a deadband amount published by CAISO on the CAISO Website at least twenty-four hours prior to the Settlement Interval. For any Settlement Interval with respect to which no deadband amount has been published by the CAISO, the deadband amount shall be zero MWh.

11.10.9.4 Allocation of Rescinded Ancillary Services Capacity Payments.

Payments rescinded pursuant to Sections 8.10.8 and 11.10.9 shall be allocated to Scheduling Coordinators in proportion to CAISO Control Area Measured Demand for the same Trading Day. Regulation capacity payments rescinded pursuant to Section 8.10.8.6 shall be allocated to Scheduling Coordinators in proportion to CAISO Control Area metered CAISO Demand for the same Trading Day.

11.11 High Voltage Access Charges and Transition Charges.

High Voltage Access Charges and Transition Charges will be levied in accordance with Section 26.1 of this CAISO Tariff and Appendix F, Schedule 3 of this CAISO Tariff.

11.12 Participating Intermittent Resources.

11.12.1 Uninstructed Energy by Participating Intermittent Resources.

Uninstructed Imbalance Energy associated with deviations by a Participating Intermittent Resource shall be settled as provided in this Section 11.12.1 for every Settlement Period in which such Participating Intermittent Resource meets the scheduling requirements established in the Eligible Intermittent Resources Protocol in Appendix Q. The net Uninstructed Imbalance Energy in each Settlement Interval shall be assigned to a deviation account specific to each Participating Intermittent Resource. The net balance in each deviation account at the end of each calendar month shall be paid (or charged) to the Scheduling Coordinator for the associated Participating Intermittent Resource at the average price specified in Section 34.19.2.5. If the above-referenced scheduling requirements for Participating Intermittent Resources are not met, then charges (payments) for Uninstructed Imbalance Energy during such Settlement Periods shall be determined in accordance with Section 11.5.2.

11.12.2 Allocation of Costs From Participating Intermittent Resources.

The charges (payments) for Uninstructed Imbalance Energy that would have been calculated if the Settlement Interval deviations by each Participating Intermittent Resource were priced at the appropriate Resource Specific Settlement Interval LMP shall be assigned to a monthly balancing account for all Participating Intermittent Resources in the CAISO Control Area. The balance in such account at the end of each month shall be netted against the aggregate payments (charges) by Scheduling Coordinators on behalf of Participating Intermittent Resources. The resulting balance shall be assigned to each Scheduling Coordinator in the same proportion that such Scheduling Coordinator's aggregate Net Negative Uninstructed Deviations in that month bears to the aggregate Net Negative Uninstructed Deviations for all Scheduling Coordinators in the Control Area in that month.

11.12.3 Payment of Forecasting Fee.

A fee to defray the costs of the implementation of the forecasting service for Participating Intermittent Resources shall be assessed to Scheduling Coordinators for Participating Intermittent Resources as specified in Schedule 4 of Appendix F.

11.12.4 Price for Uninstructed Deviations for Participating Intermittent Resources.

Uninstructed Deviations associated with each Participating Intermittent Resource in a Scheduling Coordinator's portfolio shall be settled as provided in Section 34.19.2.5 at the monthly weighted average Dispatch Interval LMP, where the weights are the metered Generation quantities associated with each Dispatch Interval LMP.

11.13 Reliability Must-Run Charges.

The CAISO shall calculate and levy the charges for Reliability Must-Run Contract costs in accordance with Section 41.5 of this CAISO Tariff.

11.14 Neutrality Adjustments.

The CAISO shall be authorized to levy additional charges or make additional payments as special adjustments in regard to:

(a) amounts required to reach an accounting trial balance of zero in the course of the Settlement process in the event that the charges calculated as due from CAISO Debtors are lower than payments calculated as due to the CAISO Creditors for the same Trading Day. These charges will be allocated amongst the Scheduling Coordinators who traded on that Trading Day pro rata to their Measured Demand in MWh of Energy for that Trading Day on a monthly basis. In the event that the charges due from CAISO Debtors are higher than the payments due to CAISO Creditors, the CAISO shall allocate a payment to the Scheduling Coordinators who traded on that Trading Day pro rata to their Measured Demand in MWh of Energy for that Trading Day on a monthly basis; and

(b) awards payable by or to the CAISO pursuant to good faith negotiations or CAISO ADR Procedures that the CAISO is not able to allocate to or to collect from a Market Participant or Market Participants in accordance with Section 13.5.3. These charges will be allocated among Scheduling Coordinators over an interval determined by the CAISO and pro rata based on Measured Demand during that interval.

11.15 Payments Under Section 42 Contracts.

The CAISO shall calculate and levy charges for the recovery of costs incurred under contracts entered into by the CAISO under the authority granted in accordance with Section 42of this CAISO Tariff or any other contract approved by FERC.

11.16 Additional Ancillary Services and RUC Capacity Obligation Rescission of Payments Requirements.

The following provisions apply to the Settlement of rescission of payments for Ancillary Services and RUC Capacity in addition to the provisions of Sections 8.10.8 and 11.10.9 for Ancillary Services and Sections 31.5.7 and 11.2.2.2 for RUC Capacity.

11.16.1 Order of Payment Rescission for Resources with More Than One Capacity Obligation in a Settlement Interval.

If the Generating Unit, Participating Load, System Unit or System Resource is scheduled to provide more than one capacity obligation in a Settlement Interval, the order in which the non-compliant Ancillary Service and RUC Capacity will be apportioned to the various services under Section 8.10.8 is as follows. For Undispatchable Capacity the non-compliant capacity is first apportioned to RUC Capacity and then to any Non-Spinning Reserves. If the amount of Undispatchable Capacity exceeds the amount of Non-Spinning Reserves, then the payment shall be eliminated for Spinning Reserves. For Unavailable Capacity or Undelivered Capacity the non-compliant capacity is first apportioned to any Non-Spinning Reserves. If the amount of non-compliant Ancillary Service capacity exceeds the amount of Non-Spinning Reserves, then the payment shall be eliminated for Spinning Reserves. If the same Ancillary Service is scheduled in the Day-Ahead Market, HASP or Real-Time Market, then the payments shall be rescinded in proportion to the amount of each Ancillary Service scheduled in each market. If the same Ancillary Service is self-provided and Bid, the order of rescission will be first the amount of Ancillary Service amounts submitted in Bids and then the Self-Provided Ancillary Service.

11.16.2 Load Following Metered Subsystems with an Obligation to Provide Ancillary Service Capacity or RUC Capacity in a Settlement Interval.

If a Load following MSS Operator is scheduled to provide Ancillary Service capacity, RUC Capacity, or some combination thereof in a Settlement Interval and if the scheduled capacity or a portion thereof is unavailable for some reason during the Settlement Interval, the non-compliant Ancillary Services and RUC Capacity (i.e., Undispatchable, Unavailable, or Undelivered Capacity) will be not be apportioned to the capacity designated by the MSS Operator as Load following up capacity and Load following down capacity. In determining which of the MSS Operator's capacity obligations were not available in Real-Time, the capacity designated by the MSS Operator as Load following up capacity and Load following down capacity shall be preserved or take precedence over the other capacity obligations.

11.17 Operating and Capital Reserves Account.

Revenues collected to fund the CAISO financial operating reserves shall be deposited in an Operating and Capital Reserves Account until such account reaches a level specified by the CAISO Governing Board. The Operating and Capital Reserves Account shall be calculated separately for each GMC service category (Core Reliability Services – Demand, Core Reliability Services – Energy Export, Energy Transmission Services – Net Energy, Energy Transmission Services – Uninstructed Deviations, Forward Scheduling, Congestion Management, Market Usage, and Settlements, Metering and Client Relations). The allocation factors, reassignments and reallocations specified in Schedule 1, Parts E and F, will be accounted for in the development of the Operating and Capital Reserves Account for each component. If the Operating and Capital Reserves Account as calculated for such service category is fully funded, surplus funds will be considered an offset to the revenue requirement of the next fiscal year.

11.18 Emissions Costs.

11.18.1 Obligation to Pay Emissions Cost Charges.

Each Scheduling Coordinator shall be obligated to pay a charge in accordance with this Section 11.18, which will be used to pay the verified Emissions Costs incurred by an Emissions Eligible Generator during

a CAISO Commitment Period. The CAISO shall levy this administrative charge (the Emissions Cost charge) each month, against all Scheduling Coordinators based upon each Scheduling Coordinator's Control Area Gross Load and Demand within California outside of the CAISO Control Area that is served by exports from the CAISO Control Area. Scheduling Coordinators shall make payment for all Emissions Cost charges in accordance with the CAISO Payments Calendar.

11.18.2 Emissions Cost Trust Account.

All Emissions Cost Charges received by the CAISO shall be deposited in the Emissions Cost Trust Account. The Emissions Cost Trust Account shall be an interest-bearing account separate from all other accounts maintained by the CAISO, and no other funds shall be commingled in it at any time.

11.18.3 Rate for the Emissions Cost Charge.

The rate at which the CAISO will assess the Emissions Cost charge shall be at the projected annual total of all Emissions Costs incurred by Emissions Eligible Generators during CAISO Commitment Period, adjusted for interest projected to be earned on the monies in the CAISO Emissions Cost Trust Account, divided by the sum of the Control Area Gross Load and the projected Demand within California outside of the CAISO Control Area that is served by exports from the CAISO Control Area of all Scheduling Coordinators for the applicable year ("Emissions Cost Demand"). The initial rate for the Emissions Cost charge, and all subsequent rates for the Emissions Cost charge, shall be posted on the CAISO Website.

11.18.4 Adjustment of the Rate for the Emissions Cost Charge.

The CAISO may adjust the rate at which the CAISO will assess the Emissions Cost charge on a monthly basis, as necessary, to reflect the net effect of the following:

(a) the difference, if any, between actual Emissions Cost Demand and projected Emissions Cost Demand;

(b) the difference, if any, between the projections of the Emissions Costs incurred by Emissions Eligible Generators during a CAISO Commitment Period and the actual Emissions Costs incurred by Emissions Eligible Generators during a CAISO Commitment Period as invoiced to the CAISO and verified in accordance with this Section 11.18; and

(c) the difference, if any, between actual and projected interest earned on funds in the CAISO Emissions Cost Trust Account.

The adjusted rate at which the CAISO will assess the Emissions Cost charge shall take effect on a prospective basis on the first day of the next calendar month. The CAISO shall publish all data and calculations used by the CAISO as a basis for such an adjustment on the CAISO Website at least five (5)

Period , the CAISO shall make pro rata payment of such Emissions Costs and shall adjust the rate at which the CAISO will assess the Emissions Cost Charge in accordance with Section 11.18.4. Any outstanding Emissions Costs owed from previous months will be paid in the order of the month in which such costs were invoiced to the CAISO. The CAISO's obligation to pay Emissions Costs is limited to the obligation to pay Emissions Cost Charges received. All disputes concerning payment of Emissions Cost Invoices shall be subject to ISO ADR Procedures, in accordance with Section 13 of this CAISO Tariff.

11.19 FERC Annual Charges.

11.19.1 FERC Annual Charge Recovery Rate.

11.19.1.1 Obligation for FERC Annual Charges.

Each Scheduling Coordinator shall be obligated to pay for the FERC Annual Charges for its use of the CAISO Controlled Grid to transmit electricity, including any use of the CAISO Controlled Grid through Existing Contracts scheduled by the Scheduling Coordinator. Any FERC Annual Charges to be assessed by FERC against the CAISO for such use of the CAISO Controlled Grid shall be assessed against Scheduling Coordinators at the FERC Annual Charge Recovery Rate, as determined in accordance with Section 11.19.1. Such assessment shall be levied monthly against all Scheduling Coordinators based upon each Scheduling Coordinator's metered Demand and exports.

11.19.1.2 Annual Charges Assessment.

Scheduling Coordinators shall pay FERC Annual Charges assessed against them by the CAISO on a monthly or annual basis. Scheduling Coordinators that pay FERC Annual Charges on a monthly basis shall make the payment for such charges within five (5) Business

Days after issuance of the market Invoice or Payment Advice containing the charges. Scheduling Coordinators that must pay FERC Annual Charges on an annual basis shall make the payment for such charges within five (5) Business Days from the Payment Date stated on the Invoice for FERC Annual Charges. The FERC Annual Charges for a given Trading Month that are due monthly will be issued to Scheduling Coordinators twice a month in accordance with the CAISO Payments Calendar in the same Invoice and Payment Advice that contains the market Settlement and Grid Management Charge. The FERC Annual Charges for a given trading month that are due annually will be issued to Scheduling Coordinators twice a month on the same day as the market Invoice and Payment Advice but in a separate Invoice as indicated in Section 11.29.10. Once the final FERC Annual Charge Recovery Rate is received from FERC in the spring or summer of the following year, revised FERC Annual Charges will be calculated and included on a supplemental Invoice or Payment Advice. All Scheduling Coordinators shall make payment for such charges within five (5) Business Days after the CAISO issues such supplemental Invoice.

relevant year. For purposes of this section, an "active Scheduling Coordinator" shall be a Scheduling Coordinator certified by the CAISO in accordance with this CAISO Tariff at the time the CAISO issues a surcharge or credit under this section. The CAISO will issue any surcharges or credits under this section within 60 days of receiving a FERC Annual Charge assessment from the FERC.

11.19.4 Credits and Debits of FERC Annual Charges Collected from Scheduling Coordinators.

In addition to the surcharges or credits permitted under this CAISO Tariff, the CAISO shall credit or debit, as appropriate, the account of a Scheduling Coordinator for any over- or under-assessment of FERC Annual Charges that the CAISO determines occurred due to the error, omission, or miscalculation by the CAISO or the Scheduling Coordinator.

11.20 [Not Used]

11.21 [Not Used]

11.22 Grid Management Charge.

11.22.1 CAISO's Obligations.

11.22.1.1 FERC's Uniform System of Accounts.

The CAISO shall maintain a set of financial statements and records in accordance with the FERC's Uniform System of Accounts.

11.22.1.2 [Not Used]

11.22.2.5.4 Energy Transmission Services Uninstructed Deviations Charge.

The Energy Transmission Services Uninstructed Deviations Charge for each Scheduling Coordinator is calculated using that Scheduling Coordinator's net uninstructed deviations by Settlement Interval. The rate for the Energy Transmission Services Uninstructed Deviations Charge is determined by dividing the GMC costs allocated to this service category, including a specified percentage of the costs for the Settlements, Metering, and Client Relations Charge determined to be in excess of what is recovered by that charge, by the total forecasted net uninstructed deviations by Settlement Interval according to the formula in Appendix F, Schedule 1, Part A of this Tariff.

11.22.2.5.5 Forward Scheduling Charge.

The Forward Scheduling Charge for each Scheduling Coordinator is calculated using the sum of that Scheduling Coordinator's Final Hour-Ahead Schedules, including all awarded Ancillary Services bids, with a value other than 0.03 MW. The Forward Scheduling Charge attributable to Final Hour-Ahead Schedules for Inter-Scheduling Coordinating Energy and Ancillary Service Trades for each Scheduling Coordinator is fifty (50) percent of the standard Forward Scheduling Charge. The rate for the Forward Scheduling Charge is determined by dividing the GMC costs allocated to this service category, including a specified percentage of the costs for the Settlements, Metering, and Client Relations Charge determined to be in excess of what is recovered by that charge, by the total forecasted Final Hour-Ahead Schedules and awarded Ancillary Service bids submitted to the CAISO, according to the formula in Appendix F, Schedule 1, Part A of this Tariff.

11.22.2.5.6 Market Usage Charge.

The Market Usage Charge for each Scheduling Coordinator is calculated using the absolute value of the Scheduling Coordinator's market purchases and sales of Ancillary Services, Supplemental Energy, Instructed Imbalance Energy, and net Uninstructed Imbalance Energy (with uninstructed deviations being netted by Settlement Interval). For a Scheduling Coordinator for a Load following MSS, Instructed Imbalance Energy associated with Load following instructions will not be assessed the Market Usage

Charge for Instructed Imbalance Energy and will be netted with Uninstructed Imbalance Energy for determining the Market Usage Charge for net Uninstructed Imbalance Energy. The rate for the Market Usage Charge is determined by dividing the GMC costs allocated to this service category, including a specified percentage of the costs for the Settlements, Metering, and Client Relations Charge determined to be in excess of what is recovered by that charge, by

the CAISO is permitted to put the adjusted rates into effect without submitting a filing to the FERC are described in Appendix F, Schedule 1, Part D of this Tariff. Appendix F, Schedule 1, Part B of this Tariff sets forth the conditions under which a quarterly adjustment to the Grid Management Charge will be made.

11.22.2.6.1 Credits and Debits of the Grid Management Charge.

In addition to the adjustments permitted under Section 11.29.7.3.3, the CAISO shall credit or debit, as appropriate, the account of a Scheduling Coordinator for any overpayment or underpayment of the Grid Management Charge that the CAISO determines occurred due to error, omission, or miscalculation by the CAISO or the Scheduling Coordinator.

11.22.3 MSS GMC Charges.

If the CAISO is charging Grid Management Charges for Uninstructed Deviations, and the Scheduling Coordinator for a Load-following MSS has Uninstructed Deviations associated with the MSS's resources, then the CAISO will net the Generation and imports into the MSS to match the Demand and exports out of the MSS, and will not assess GMC associated with Uninstructed Deviations for such portion of Energy that is used to match MSS Demand and net exports.

11.22.3.1 If Generation, above the amount to cover Demand and exports, was sold into the CAISO's Real-Time Market, then the Scheduling Coordinator for the MSS will be charged GMC associated with Uninstructed Deviations for this quantity.

11.22.3.2 If insufficient Generation and imports was available to cover Demand and exports, and the Scheduling Coordinator for the MSS purchased Imbalance Energy from the CAISO Markets, then such Scheduling Coordinator will be charged GMC associated with Uninstructed Deviations for this quantity.

11.22.3.3 Only GMC associated with deviations (the Ancillary Services and Real-Time Energy Operations Charge (ASREO)) will be treated on a net basis. GMC for Control Area Services (CAS) will be charged based on Gross Load and exports out of the MSS. The Scheduling Coordinator for the MSS Operator will be assessed the GMC Congestion Management Charge (CONG) in accordance with Section 11.22.2.5. Ancillary Service Bids accepted by the CAISO and Instructed Imbalance Energy, will be assessed the GMC ASREO.

11.24 [NOT USED]

11.25 [NOT USED]

11.26 Wheeling Through and Wheeling Out Transactions.

The CAISO shall calculate, account for and settle charges and payments for Wheeling Through and Wheeling Out transactions in accordance with Section 26.1.4 and Appendix N, Part C of this Tariff.

11.27 Voltage Support and Black Start Charges.

The CAISO shall calculate, account for and settle charges and payments for Voltage Support and Black Start as set out in Sections 11.10.1.4, 11.10.1.5, 11.10.5, 11.10.6, and the SABP Charge Computation Manual –Appendix N, Part G of this CAISO Tariff.

11.28 The CAISO shall calculate, charge and disburse all collected default Interest in accordance with the CAISO Tariff.

11.29 Billing and Payment Process.

The CAISO will calculate for each charge the amounts payable by the relevant Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for each Settlement Period of the Trading Day, and the amounts payable to that Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for each charge for each Settlement Period of that Trading Day and shall arrive at a net amount payable for each charge by or to that Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for each charge for that Trading Day. Each of these amounts will appear in the Initial Settlement Statement T+38BD, Initial Settlement Statement Reissue, Recalculation Settlement Statement and the Recalculation Settlement Statement T+76BD that the CAISO will provide to the relevant Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO.

The components of the Grid Management Charge will be included in the Initial Settlement Statement T+38BD, Initial Settlement Statement Reissue, Recalculation Settlement Statement and the Recalculation Settlement Statement T+76BD with the other types of charges referred to in Section 11, but a separate Invoice for the Grid Management Charge, stating the rate, billing determinant volume, and total charge for each of its components, will be issued by the CAISO to the Scheduling Coordinator.

11.29.1 The billing and payment process shall be based on the issuance of Initial Settlement Statement T+38BD, Initial Settlement Statement Reissue, Recalculation Settlement Statement and the Recalculation Settlement Statement T+76BD for each Settlement Period in each Trading Day.

11.29.2 Payment for the charges referred to in Section 11.1.2 (except for the charges payable under long-term contracts) for each Trading Day in each calendar month shall be made five (5) Business Days after issuance of the Initial Settlement Statement T+38BD for the last day of the relevant calendar month. Payment for adjustments will be made five (5) Business Days after issuance of the Initial Settlement Statement Reissue or Recalculation Settlement Statement for the last day of the relevant month. Payments for FERC Annual Charges will be made in accordance with Section 11.19.

11.29.3 Prepayments.

(a) A Scheduling Coordinator or CRR Holder may choose to pay at an earlier date than the Payment Date specified in the CAISO Payments Calendar by way of prepayment provided it notifies the CAISO by electronic means before submitting its prepayment.

(b) Prepayment notifications must specify the dollar amount prepaid.

(c) Prepayments must be made by Scheduling Coordinators or CRR Holder via Fed-Wire into their CAISO prepayment account designated by the CAISO. The relevant Scheduling Coordinator or CRR Holder shall grant the CAISO a security interest on all funds in its CAISO prepayment account.

(d) On any Payment Date the CAISO shall be entitled to cause funds from the relevant Scheduling Coordinator's or CRR Holder's CAISO prepayment account to be transferred to the CAISO Clearing Account in such amounts as may be necessary to discharge in full that Scheduling Coordinator's or CRR Holder's payment obligation arising in relation to that Payment Date by way of set-off or recoupment.

(e) Any funds held in the relevant Scheduling Coordinator's or CRR Holder's CAISO prepayment account shall be treated as part of that Scheduling Coordinator's or CRR Holder's Financial Security.

(f) Interest (or other income) accruing on the relevant Scheduling Coordinator's or CRR Holder's CAISO prepayment account shall inure to the benefit of that Scheduling Coordinator or CRR Holder and shall be added to the balance of its CAISO prepayment account on a monthly basis.

(g) Funds held in a CAISO prepayment account by a Scheduling Coordinator or CRR Holder may be recouped, offset or applied by the CAISO to any outstanding financial obligations of that Scheduling Coordinator or CRR Holder to the CAISO or to other Scheduling Coordinators or CRR Holders under this CAISO Tariff.

11.29.4 System Failure.

11.29.4.1 At CAISO Debtor's Bank.

If any CAISO Debtor becomes aware that a payment will not, or is unlikely to be, remitted to the CAISO Bank by 10:00 am on the relevant Payment Date for any reason (including failure of the Fed-Wire or any computer system), it shall immediately notify the CAISO, giving full details of the payment delay (including the reasons for the payment delay). The CAISO Debtor shall make all reasonable efforts to remit payment as soon as possible, by an alternative method if necessary, to ensure that funds are received for value no later than 10:00 am on the Payment Date, or as soon as possible thereafter.

11.29.4.2 At the CAISO's Bank.

In the event of failure of any electronic transfer system affecting the CAISO Bank, the CAISO shall use reasonable efforts to establish alternative methods of remitting funds to the CAISO Creditors' Settlement Accounts by close of banking business on that Payment Date, or as soon as possible thereafter. The CAISO shall notify the CAISO Debtors and the CAISO Creditors of occurrence of the system failure and the alternative methods and anticipated time of payment.

11.29.5 General Principles for Production of Settlement Statements.

11.29.5.1 Basis of Settlement.

The basis of each Settlement Statement shall be the debiting or crediting of an account in the name of the relevant Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO in the general ledger set up by the CAISO to reflect all transactions, charges or payments settled by the CAISO.

11.29.5.2 Right to Dispute.

All Scheduling Coordinators, CRR Holders, Black Start Generators or Participating TOs shall have the right to dispute any item or calculation set forth in any Initial Settlement Statement in accordance with this CAISO Tariff.

11.29.5.3 Data Files.

Settlement Statements relating to each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO shall be accompanied by data files of supporting information that includes the following for each Settlement Period of the Trading Day:

(a) the aggregate quantity (in MWh) of Energy supplied or withdrawn by the Scheduling Coordinator Metered Entities represented by the Scheduling Coordinator;

(b) the aggregate quantity (in MW) and type of Ancillary Services capacity provided or purchased;

(c) the relevant prices that the CAISO has applied in its calculations;

(d) details of the scheduled quantities of Energy and Ancillary Services accepted by the CAISO in the Day-Ahead Market and the Hour-Ahead Market;

(e) details of Imbalance Energy and penalty payments;

(f) details of the CRR Payments or CRR Charges, and any payments or charges associated with the CRR Auctions; and

(g) detailed calculations of all fees, charges and payments allocated amongst Scheduling Coordinators and each Scheduling Coordinator's share.

11.29.5.4 Settlement Software.

The CAISO Settlement software shall be audited by an independent firm of auditors competent to carry out audits of such software to determine its consistency with the CAISO Tariff. In any dispute regarding Settlement calculations, a certificate of such firm of auditors that the CAISO software is consistent with the CAISO Tariff shall be prima facie proof that the charges shown in a Settlement Statement have been calculated in a method consistent with the CAISO Tariff. Nothing in this section will be deemed to establish the burden of proof with respect to Settlement calculations in any proceeding.

11.29.6 Calculation in the Event of Lack of Meter Data for the Balancing of Market Accounts.

Settlements shall not be cleared for final processing until the accounting trial balance is zero. In order to publish a Settlement Statement, the CAISO may use estimated, disputed or calculated Meter Data. When actual verified Meter Data is available and all of the disputes raised by Scheduling Coordinators, CRR Holders, Black Start Generators, and Participating TOs during the validation process described in Section 11.29.8 have been determined, the CAISO shall recalculate the amounts payable and receivable by the affected Scheduling Coordinators, CRR Holders, Black Start Generators, and Participating TOs or by all Scheduling Coordinators, CRR Holders, Black Start Generators, and Participating TOs, if applicable, as soon as reasonably practical and shall show any required adjustments as a debit or credit in the next Settlement Statement.

11.29.7 Settlements Cycle.

11.29.7.1 Timing of the Settlements Process.

11.29.7.1.1 Initial Settlement Statement T+38BD.

The CAISO shall provide to each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for validation an Initial Settlement Statement for each Trading Day within thirty-eight (38) Business Days of the relevant Trading Day, covering all Settlement Periods in that Trading Day. Each Initial Settlement Statement will include a statement of:

(a) the amount payable or receivable by the Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for each charge referred to in Section 11 for each Settlement Period in the relevant Trading Day;

(b) the total amount payable or receivable by that Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for each charge for all Settlement Periods in that Trading Day after the amounts payable and the amounts receivable under (a) have been netted off pursuant to Section 11.29; and

(c) the components of each charge in each Settlement Period except for information contained in the Imbalance Energy report referred to in this Section 11.29.7.1.1.

Each Initial Settlement Statement shall also be accompanied by a breakdown of the components of the Imbalance Energy Charge (the Imbalance Energy report).

11.29.7.1.2 Each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO shall have a period of eight (8) Business Days from the issuance of an Initial Settlement Statement during which it may review the Initial Settlement Statement T+38BD and notify the CAISO of any errors. No later than fifty-one (51) Business Days after the Trading Day to which it relates, the CAISO shall issue an Initial Settlement Statement Reissue or a Recalculation Settlement Statement to each Scheduling Coordinator or CRR Holder for that Trading Day.

11.29.7.1.3 Initial Settlement Statement Reissues and Recalculation Settlement Statements.

The CAISO shall provide to each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO an Initial Settlement Statement Reissue or a Recalculation Settlement Statement in accordance with the CAISO Tariff and the CAISO Payments Calendar. The Initial Settlement Statement Reissue or Recalculation Settlement Statement shall be in a format similar to that of the Initial Settlement Statement and shall include the same granularity of information provided in the Initial Settlement Statement as amended following the validation procedure.

11.29.7.1.4 Each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO shall have a period of ten (10) Business Days from the issuance of the Initial Settlement Statement Reissue or Recalculation Settlement Statement during which it may review the Incremental Changes on the Initial Settlement Statement Reissue or Recalculation Settlement Statement and notify the CAISO of any errors. No later than twenty-five (25) Business Days from the date of issuance of the Initial Settlement Statement Reissue or Recalculation Settlement Statement, the CAISO shall issue the 76th Day Recalculation Settlement Statement and shall incorporate any required corrections in a subsequent Initial Settlement Statement.

11.29.7.2 Basis for Billing and Payment.

The Initial Settlement Statement T+38BD, Initial Settlement Statement Reissue, Recalculation Settlement Statement and the Recalculation Settlement Statement T+76BD shall constitute the basis for billing and associated automatic funds transfers in accordance with this CAISO Tariff. The Initial Settlement Statement T+38BD shall constitute the basis for billing and associated automatic funds transfers for all charges in the first

instance. The Initial Settlement Statement Reissue and Recalculation Settlement Statement shall constitute the basis for billing and associated automatic funds transfers for adjustments to charges set forth in the Initial Settlement Statement T+38BD. Each Scheduling Coordinator, CRR Holder, Black Start Generator, and Participating TO shall pay any net debit and shall be entitled to receive any net credit shown in an Invoice or Payment Advice on the Payment Date, whether or not there is any dispute regarding the amount of the debit or credit.

11.29.7.2.1 Elimination of Invoices under $10.00.

Preliminary and final Invoices and Payment Advices due to or from any Market Participant for amounts less than $10.00 will be adjusted to $0.00 and no amount will be due to or from that Market Participant for that Invoice or Payment Advice.

11.29.7.3 Settlement Statement Re-runs and Post Final Adjustments.

The CAISO is authorized to perform Settlement Statement Re-runs following approval of the CAISO Governing Board. A request to perform a Settlement Statement Re-run may be made at any time by a Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO by notice in writing to the CAISO Governing Board. The CAISO Governing Board shall, in considering whether to approve a request for a Settlement Statement Re-run, determine in its reasonable discretion whether there is good cause to justify the performance of a Settlement Statement Re-run.

11.29.7.3.1 If a Settlement Statement Re-run is ordered by the CAISO Governing Board, the CAISO shall arrange to have the Settlement Statement Re-run carried out as soon as is reasonably practicable following the CAISO Governing Board's order, subject to the availability of staff and computer time, compatible software, appropriate data and other resources.

11.29.7.3.2 The cost of a Settlement Statement Re-run shall be borne by the Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO requesting it, unless the Settlement Statement Re-run was needed due to a clerical oversight or error on the part of the CAISO staff.

11.29.7.3.3 Where a Settlement Statement Re-run indicates that the accounts of Scheduling Coordinators, CRR Holders, Black Start Generators, or Participating TOs should be debited or credited to reflect alterations to Settlements previously made under this CAISO Tariff, for those Scheduling Coordinators, CRR Holders, Black Start Generators, or Participating TOs affected by the statement re-run, the CAISO shall

reflect the amounts to be debited or credited in the next subsequent Recalculation Settlement Statement that it issues following the Settlement Statement Re-run to which the provisions of this Section 11 apply.

11.29.7.3.4 Reruns, post closing adjustments and the financial outcomes of CAISO ADR Procedures and any other dispute resolution may be invoiced separately from monthly market activities. The CAISO shall provide a Market Notice at least 30 days prior to such invoicing identifying the components of such Invoice or Payment Advice.

11.29.8 Confirmation and Validation.

11.29.8.1 Confirmation.

It is the responsibility of each Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO to notify the CAISO if it fails to receive a Settlement Statement on the date specified for the publication of such Settlement Statement in the CAISO Payments Calendar. Each Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO shall be deemed to have received its Settlement Statement on the dates specified, unless it notifies the CAISO to the contrary.

11.29.8.2 Validation.

Each Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO shall have the opportunity to review the terms of the Initial Settlement Statement T+38BD that it receives. The Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO shall be deemed to have validated each Initial Settlement Statement unless it has raised a dispute or reported an exception within eight (8) Business Days from the date of issuance. Once validated, an Initial Settlement Statement shall be binding on the Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO to which it relates, unless the CAISO performs a Settlement Statement Re-run pursuant to Section 11.29.7.3.

The notice of dispute, if any, shall state clearly the Trading Day, the issue date of the Initial Settlement Statement, the item disputed, the reasons for the dispute, the amount claimed (if appropriate) and shall be accompanied with all available evidence reasonably required to support the claim.

11.29.8.3 Validation of Initial Settlement Statement Reissue and Recalculation Settlement Statements.

Each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO shall have the opportunity to review the Incremental Changes that appear on the Initial Settlement Statement Reissue and Recalculation Settlement Statement that it receives. The Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO shall be deemed to have validated the Incremental Changes on each Initial Settlement Statement Reissue and Recalculation Settlement Statement unless it has raised a dispute or reported an exception regarding those Incremental Changes within ten (10) Business Days from the date of issuance. Once validated, the Incremental Changes on the Initial Settlement Statement Reissue and Recalculation Settlement Statement shall be binding on the Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO to which it relates, unless the CAISO performs a Settlement Statement Re-run pursuant to Section 11.29.7.3.

The notice of dispute shall state clearly the Trading Day, the issue date of the Initial Settlement Statement Reissue and Recalculation Settlement Statement, the item disputed, the reasons for the dispute, the amount claimed (if appropriate) and shall be accompanied with all available evidence reasonably required to support the claim. The only Recalculation Settlement Statement that cannot be disputed is the one issued on T+59BD.

11.29.8.4 Recurring Disputes or Exceptions.

A Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO may request the CAISO to treat as recurring a dispute or exception raised in accordance with Sections 11.29.8.1 and 11.29.8.2 above, if a dispute or exception would apply to subsequent Initial and the Initial Settlement Statement Reissue and Recalculation Settlement Statements. A request for recurring treatment may be made for any valid reason provided that subsequent Initial Settlement Statements T+38BD, Initial Settlement Statement Reissue and Recalculation Settlement Statements would be affected, including but not limited to, that the disputed calculation will recur, or that a disagreement as to policy will affect

calculations in subsequent Initial Settlement Statement T+38BD, the Initial Settlement Statement Reissue and Recalculation Settlement Statements. If a Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO wishes to request that the CAISO treat a dispute as recurring, it shall, in the notice, clearly indicate that it requests such treatment and set forth in detail the reasons that support such treatment. To the extent possible, the Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO shall state the types of charges and dates to which the dispute will apply, and provide estimates of the amounts that will likely be claimed on each date.

The CAISO shall make a determination on such a request within five (5) Business Days of receipt. To preserve its right to dispute an item, a Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO must continue to raise a dispute or report an exception until it is notified by the CAISO that the CAISO agrees to treat the dispute or exception as recurring. If the CAISO grants a request to treat a dispute or exception as recurring, the dispute raised or exception reported by the Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO shall be deemed to apply to every subsequent Initial Settlement Statement T+38BD, the Initial Settlement Statement Reissue and Recalculation Settlement Statement provided to the Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO from the date that the CAISO grants the request for recurrent treatment until: a) ninety (90) days have elapsed, unless the CAISO indicates a different expiration date on its response to the request, in which case the expiration date shall be as stated by the CAISO in its response or b) the dispute or exception is resolved, whichever is shorter. The CAISO may deny a request that the CAISO treat a dispute as recurring for any valid reason, including because the request is not adequately specific as to the basis for recurring treatment or the subsequent calculations that will be affected.

11.29.8.5 Amendment.

Regarding a dispute related to an Initial Settlement Statement, if the CAISO agrees with the amount claimed, it shall incorporate the relevant data into the Initial Settlement Statement Reissue or Recalculation Settlement Statement. Regarding a dispute related to an Incremental Change in an Initial Settlement Statement Reissue or Recalculation Settlement Statement, the CAISO shall make a determination on the dispute no later than twenty-five (25) Business Days from the issuance of the Initial Settlement Statement Reissue or Recalculation Settlement Statement, and, if the CAISO agrees with the amount claimed, shall incorporate the relevant data into the next Recalculation Settlement Statement issued on T+76BD.

11.29.8.6 CAISO Contact.

If the CAISO does not agree with the amount claimed or if it requires additional information, it shall make reasonable efforts (taking into account the time it received the notice of dispute and the complexity of the issue involved) to contact the relevant Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO to resolve the issue before issuing the Initial Settlement Statement Reissue or Recalculation Settlement Statement. If it is not possible to contact the

relevant party, the CAISO shall issue the Initial Settlement Statement Reissue or Recalculation Settlement Statement without taking into account the dispute notice.

11.29.8.7 Payment Pending Dispute.

Each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO which receives an Invoice or Payment Advice shall pay any net debit and shall be entitled to receive any net credit shown in the Invoice or Payment Advice on the Payment Date, whether or not there is any dispute regarding the amount of the debit or credit. The provisions of Section 13 shall apply to the disputed amount.

11.29.9 Payment Procedures.

11.29.9.1 All Payments to Be Made Through the CAISO.

All Scheduling Coordinators, CRR Holders, Black Start Generators, and Participating TOs shall discharge their obligations to pay the amounts owed by them and shall receive payments of all amounts owed to them under this CAISO Tariff only through the CAISO.

11.29.9.2 CAISO Accounts to be Established.

The CAISO is authorized to establish and maintain bank accounts held in trust for Market Participants and obtain lines of credit and other banking facilities (not exceeding an aggregate amount set by the CAISO Governing Board) necessary for the operation of its Settlement and billing procedures. Unless otherwise specified in this CAISO Tariff the CAISO will recover all costs incurred in connection with these CAISO banking facilities through the appropriate component of the Grid Management Charge. The CAISO shall establish and operate the following accounts:

11.29.9.2.1 A CAISO Clearing Account to and from which all payments are made;

11.29.9.2.2 A CAISO Reserve Account from which any debit balances on the CAISO Clearing Account at the close of banking business on each Business Day shall be settled or reduced in accordance with this CAISO Tariff. The CAISO shall use the Financial Security provided by a Scheduling Coordinator, CRR Holder, or Candidate CRR Holder pursuant to Section 12, if necessary, to clear any debit balances on the CAISO Reserve Account that may arise as a result of that Scheduling Coordinator's or CRR Holder's failure to pay an amount due under this CAISO Tariff;

11.29.9.2.3 A CAISO Surplus Account; and

11.29.9.2.4 Such other accounts as the CAISO deems necessary or convenient for the purpose of efficiently implementing the funds transfer system under this CAISO Tariff. The CAISO shall notify Market Participants of the establishment of such accounts through the CAISO Website and by issuance of a Market Notice.

11.29.9.3 Accounts of the Scheduling Coordinators, CRR Holders, Black Start Generators, and Participating TOs.

Each Scheduling Coordinator, CRR Holder, Black Start Generator, and Participating TO shall establish and maintain a Settlement Account at a commercial bank located in the United States and reasonably acceptable to the CAISO which can effect money transfers via Fed-Wire where payments to and from the CAISO Clearing Account shall be made in accordance with this CAISO Tariff. Scheduling Coordinators, CRR Holders, and Black Start Generators may, but will not be required to, maintain separate accounts for receipts and payments. Each Scheduling Coordinator, CRR Holder, and Black Start Generator shall notify the CAISO of its account details and of any changes to those details in accordance with the provisions of its Scheduling Coordinator Agreement, CRR Entity Agreement, or Interim Black Start Agreement. Participating TOs will notify the CAISO of their Settlement Account details in accordance with Section 2.2.1 of their Transmission Control Agreement and may notify the CAISO from time to time of any changes by giving at least seven (7) days written notice before the new account becomes operational.

11.29.9.4 Declaration of Trust.

All CAISO Accounts established pursuant to Section 11.29.9.2 of this CAISO Tariff shall be opened and operated by the CAISO on trust for Market Participants, in accordance with this CAISO Tariff. Each such account shall be maintained at a bank or other financial institution in California and shall bear a name indicating that it is a trust account.

11.29.9.5 No Co-Mingling.

The CAISO shall not co-mingle any funds standing to the credit of a CAISO Account with its other funds and shall promptly withdraw any amounts paid into a CAISO Account representing amounts paid for the account of the CAISO.

11.29.9.6 Use of Accounts.

11.29.9.6.1 Clearing Account.

(a) Subject to Section 11.29.3 each CAISO Debtor shall remit to the CAISO Clearing Account the amount shown on the Invoice as payable by that CAISO Debtor for value not later than 10:00 am on the Payment Date.

(b) On the Payment Date the CAISO shall be entitled to cause the transfer of such amounts held in a Scheduling Coordinator's or CRR Holder's CAISO prepayment account to the CAISO Clearing Account as provided in Section 11.29.3.

The CAISO shall calculate the amounts available for distribution to CAISO Creditors on the Payment Date and shall give irrevocable instructions to the CAISO Bank to remit from the CAISO Clearing Account to the relevant Settlement Accounts maintained by the CAISO Creditors, the aggregate amounts determined by the CAISO to be available for payment to CAISO Creditors for value by close of business on the Payment Date if no CAISO Debtors are in default. If a CAISO Debtor is in default and until all defaulting amounts have been collected, the CAISO shall make payments as soon as practical within five (5) Business Days of the collection date posted in the CAISO Payments Calendar. If required, the CAISO shall instruct the CAISO Bank to transfer amounts from the CAISO Reserve Account to enable the CAISO Clearing Account to clear.

The CAISO is authorized to instruct the CAISO Bank to debit the CAISO Clearing Account and transfer to the relevant CAISO Account sufficient funds to pay in full the Grid Management Charge falling due on any Payment Date with priority over any other payments to be made on that or on subsequent days out of the CAISO Clearing Account.

11.29.9.6.2 Reserve Account.

The CAISO Reserve Account shall be available to the CAISO for the purpose of providing funds to clear the CAISO Clearing Account in the event that there are insufficient funds in the CAISO Clearing Account to pay CAISO Creditors. If there are insufficient funds in the CAISO Clearing Account to pay CAISO

Creditors and clear the account on any Payment Date, due to payment default by one or more CAISO Debtors, the CAISO shall transfer funds from the CAISO Reserve Account to the CAISO Clearing Account to clear it by close of banking business on that Payment Date pursuant to Section 11.29.13.4.

If the CAISO Reserve Account is drawn upon, the CAISO shall as soon as possible thereafter take any necessary steps against the defaulting Scheduling Coordinator or CRR Holder, including making any calculations or taking any other appropriate action, to replenish the CAISO Reserve Account including drawing on any credit support or other Financial Security provided by the defaulting Scheduling Coordinator, Candidate CRR Holder or CRR Holder pursuant to Section 12 or serving demands on any defaulting Scheduling Coordinator, Candidate CRR Holder or CRR Holder if Financial Security has been exhausted or if no Financial Security is available due to establishment of an Unsecured Credit Limit.

The proceeds of drawings under any line of credit, other credit facility, or other Financial Security of the CAISO Reserve Account shall be held on trust for CAISO Creditors. If the CAISO Reserve Account is replenished as provided for in this Section 11.29.9.6.2, any credits shall be held on trust for all CAISO Creditors.

11.29.9.6.2.1 Replenishing the CAISO Reserve Account Following Payment Default.

If the CAISO has debited the CAISO Reserve Account then:

(a) If, after the CAISO has debited the CAISO Reserve Account on a Payment Date, the CAISO Bank receives a remittance from a CAISO Debtor which has not been (but should have been, if it had been received on a timely basis) credited to the CAISO Clearing Account by 10:00 am on the Payment Date and which required the debiting of the CAISO Reserve Account, such remittance shall be credited to the CAISO Reserve Account.

(b) The proceeds of any enforcement of Financial Security and/or amounts recovered under proceedings shall be credited to the CAISO Reserve Account.

(c) If after taking reasonable action the CAISO determines that the default amount (or any part) and/or Interest cannot be recovered, such amounts shall be deemed to be owing by those Market Participants who were CAISO Creditors on the relevant Payment Date pro rata to the net payments they

received on that Payment Date and shall be accounted for by way of a charge in the next Settlement Statements of those CAISO Creditors. Such charge shall be credited to the CAISO Reserve Account.

11.29.9.6.3 Surplus Account.

The CAISO shall establish and maintain a bank account denominated the CAISO Surplus Account. The CAISO Surplus Account shall include the following:

(a) Any amounts paid to the CAISO in respect of penalties or Sanctions referred to in Section 11.14 shall be credited to the CAISO Surplus Account, subject, however, to Section 11.29.9.6.1(b).

(b) The funds referred to in Section 11.29.9.6.1(a) pertaining to penalties or Sanctions as provided in Section 11.14 shall first be applied towards any expenses, loss or costs incurred by the CAISO except for that portion of those amounts collected pursuant to 37.9.4. Any excess after such application will be credited to the CAISO Surplus Account pursuant to 11.29.9.6.1(a).

(c) The funds referred to in Section 11.29.9.6.1(a) pertaining to default interest referred to in Section 11.29.13.1 shall first be applied towards any unpaid CAISO Creditor balances for the Trading Month in which the default interest was assessed and second to any other unpaid CAISO Creditor balances. Only after all unpaid CAISO Creditor balances are satisfied in full will any excess funds pertaining to default Interest be credited to the CAISO Surplus Account pursuant to Section 11.29.9.6.1(a).

In the event that there are funds in the CAISO Surplus Account in excess of an amount to be determined by the CAISO Governing Board and identified in a Market Notice by the CAISO to Market Participants, the amount of such excess will be distributed to Scheduling Coordinators using the same method of apportioning the refund as the method employed in apportioning the liability for the Grid Management Charge.

11.29.10 Billing and Payment.

The CAISO shall prepare and send to each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO two Invoices or Payment Advices for each calendar month. The first Invoice or Payment Advice will be based on the Initial Settlement Statement T+38BD and the second Invoice or Payment Advice will be based on the Initial Settlement Statement Reissue or Recalculation Settlement Statement(s). Each Invoice or Payment Advice will show amounts which are to be paid by or to each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO, the Payment Date, being the date on which such amounts are to be paid or received and details of the CAISO Clearing Account to which any amounts owed by Scheduling Coordinators, CRR Holder, Black Start Generator or Participating TO are to be paid.

The Invoices or Payment Advices will also include the total charges for each component of the Grid Management Charge, the total charges associated with any Interest for each relevant Trading Month, the FERC Annual Charges due monthly, as well as any disbursements associated with a shortfall receipt distribution.

A separate Invoice for the FERC Annual Charges due annually will be issued by the CAISO to the Scheduling Coordinator in accordance with Section 11.19.1.2.

A separate Invoice for a shortfall allocation will be issued by the CAISO to Scheduling Coordinators in the event of a payment default in accordance with Section 11.29.17.1.

Settlement Statement Reruns, post closing adjustments and the financial outcomes of CAISO ADR Procedures and any other dispute resolution may be invoiced separately from monthly market activities. The CAISO shall provide a Market Notice at least 30 days prior to such invoicing identifying the components of such Invoice or Payment Advice.

11.29.10.1 Emergency Procedures.

11.29.10.2 Use of Estimated Data.

In the event of an emergency or a failure of any of the CAISO software or business systems, the CAISO may use estimated Settlement Statements and Invoices and Payment Advices and may implement any temporary variation of the timing requirements relating to the Settlement and billing process contained in the CAISO Tariff. Details of the variation and the method chosen to produce estimated data, Settlement Statements and Invoices and Payment Advices will be published on the CAISO Website.

11.29.10.3 Payment of Estimated Statements and Invoices.

When estimated Settlement Statements and Invoices or Payment Advices are issued by the CAISO, payments between the CAISO and Market Participants shall be made on an estimated basis and the necessary corrections shall be made by the CAISO as soon as practicable. The corrections will be reflected as soon as practicable in later Settlement Statements and Invoices and Payment Advices issued by the CAISO. Failure to make such estimated payments shall result in the same consequences as a failure to make actual payments.

11.29.10.4 Validation and Correction of Estimated Statements and Invoices.

The CAISO shall use its best efforts to verify the estimated data and to make the necessary corrections as soon as practicable. The corrections will be reflected as soon as practicable in later Settlement Statements and Invoices and Payment Advices issued by the CAISO.

11.29.10.5 Estimated Statements to be Final.

In the event that the CAISO is of the opinion that, despite its best efforts, it is not possible for it to verify the estimated data because actual data is not reasonably expected to become available to the CAISO in the foreseeable future, the CAISO shall consult with the Market Participants in order to develop the most appropriate substitute data including using data provided by Market Participants. Following such determination of substitute data, the CAISO shall send to the relevant Market Participants revised Settlement Statements and Invoices and Payment Advices. The provisions of Section 11.29.8.6 shall apply to payment of revised Invoices issued in accordance with these emergency procedures. Failure to make payments of such revised Invoices shall result in the same consequences as a failure to make actual payments.

11.29.11 Instructions for Payment.

Each Scheduling Coordinator or CRR Holder shall remit to the CAISO Clearing Account the amount shown on the Invoice as payable by that Scheduling Coordinator or CRR Holder for value not later than 10:00 a.m. on the Payment Date.

11.29.12 CAISO's Responsibilities.

On the due date for payment of amounts shown in an Invoice, the CAISO shall ascertain whether all amounts required to be remitted to the CAISO Clearing Account have been credited to it. If any such amount has not been so credited, it shall ascertain which Scheduling Coordinators or CRR Holder have failed to pay the amount owed by them and it may take steps to recover any overdue amount.

11.29.13 Non-payment by a Scheduling Coordinator or CRR Holder.

11.29.13.1 Notification and Interest.

If a Scheduling Coordinator or CRR Holder becomes aware that a payment for which it is responsible will not be remitted to the CAISO Clearing Account on time, it shall immediately notify the CAISO of the fact and the reason for the non-payment. If the Scheduling Coordinator or CRR Holder fails to pay any sum to the CAISO when due and after and the CAISO draws upon any and all available Financial Security provided by the defaulting Scheduling Coordinator or CRR Holder, the Scheduling Coordinator or CRR Holder shall pay Interest on the overdue amount for the period from the Payment Date to the date on which the payment is remitted to the CAISO Clearing Account, together with any related transaction costs incurred by the CAISO. The CAISO shall apply all such Interest payments on the default amount on a pro rata basis to CAISO Creditors in relation to amounts past due in the order of the creation of such debts.

11.29.13.2 Payment Default.

Subject to Section 11.29.13.6, if by 10:00 am on a Payment Date the CAISO, in its reasonable opinion, believes that all or any part of any amount due to be remitted to the CAISO Clearing Account by any Scheduling Coordinator or CRR Holder will not or has not been remitted and there are insufficient funds in the relevant Scheduling Coordinator's or CRR Holder's CAISO prepayment account (the amount of insufficiency being referred to as the "default amount"), the CAISO shall take the following actions to enable the CAISO Clearing Account to clear not later than the close of banking business on the relevant Payment Date.

11.29.13.3 Enforcing the Financial Security of a Defaulting Scheduling Coordinator or CRR Holder.

Subject to Section 11.29.13.6, the CAISO shall make reasonable endeavors to enforce the defaulting Scheduling Coordinator's or CRR Holder's Financial Security (if any) to the extent necessary to pay the default amount. If it is not practicable to obtain clear funds in time to effect payment to CAISO Creditors on the same day the CAISO shall proceed in accordance with 11.29.13.4 or 11.29.17.1 as applicable.

11.29.13.4 Use of CAISO Reserve Account.

If there are funds standing to the credit of the CAISO Reserve Account (including the proceeds of drawings under banking facilities described in Section 11.29.9.6.2) the CAISO shall debit the CAISO Reserve Account with the Default Amount in order to clear the CAISO Clearing Account and effect payment to the CAISO Creditors.

11.29.13.5 Action against a Defaulting Scheduling Coordinator or CRR Holder.

The CAISO shall as soon as possible after taking action under 11.29.13.4 take any steps it deems appropriate against the defaulting Scheduling Coordinator to recover the default amount (and any Interest as set out in Section 11.29.13.3 including enforcing any Financial Security, exercising its rights of recoupment or set-off and/or bringing proceedings against the defaulting Scheduling Coordinator or CRR Holder pursuant to Section 11.29.21.1.

11.29.13.6 Default to be Remedied Promptly.

In the event that the CAISO reasonably believes that an outstanding amount which has not been paid by 10:00 am on the relevant Payment Date, is likely to be paid no later than close of banking business on the next Business Day then the CAISO may, but shall not be obliged to, delay enforcing that CAISO Debtor's Financial Security or taking other measures to recover payment until after the close of banking business on the next Business Day but Interest shall nonetheless accrue pursuant to Section 11.29.13.1.

11.29.13.7 Set-Off.

The CAISO is authorized to recoup, set off and apply any amount to which any defaulting CAISO Debtor is or will be entitled, in or towards the satisfaction of any of that CAISO Debtor's debts arising under the CAISO Settlement and billing process. Each CAISO Creditor and each CAISO Debtor expressly acknowledges the following application of funds: first to the current month's Grid Management Charge, and then as described in 11.29.13.8 unless otherwise specified in accordance with Section 11.29.17.

11.29.13.8 Order of Payments.

Unless otherwise specified in accordance with Section 11.29.17, the CAISO shall apply payments received in respect of amounts owing to CAISO Creditors to repay the relevant debts in the order of the creation of such debts.

11.29.13.9 Interest Accruing while Enforcing the Financial Security.

If the CAISO has debited the CAISO Reserve Account and it subsequently succeeds in enforcing the Financial Security provided by the defaulting Scheduling Coordinator or CRR Holder, the CAISO shall be entitled to withdraw from such Financial Security in addition to the default amount, all costs incurred and Interest accrued to the CAISO as a result of debiting the CAISO Reserve Account from the date of such debit to the date of enforcement of the said Financial Security.

11.29.13.10 Application of Funds Received.

Amounts credited to the CAISO Clearing Account in payment of a default amount (as set out in Section 11.29.9.6.2.1) or as a result of enforcing the defaulting CAISO Debtor's Financial Security shall be applied to the CAISO Reserve Account pursuant to Section 11.29.9.6.2.1 to reduce amounts outstanding under any CAISO banking facilities used to fund the CAISO Reserve Account on the relevant Payment Date and the balance (if any) shall be applied to reimburse pro rata any CAISO Creditors whose payments were reduced pursuant to Section 11.29.17.1.

11.29.14 [NOT USED]

11.29.15 [NOT USED]

11.29.16 Prohibition on Transfers.

The CAISO shall at no time instruct the CAISO Bank to transfer any sum from a CAISO Account to another account (not being a CAISO Account) unless that account is a Settlement Account or the amount is owed to the CAISO under this CAISO Tariff.

11.29.17 Alternative Payment Procedures.

11.29.17.1 Pro Rata Reduction to Payments.

If it is not possible to clear the CAISO Clearing Account on a Payment Date because of an insufficiency of funds available in the CAISO Reserve Account or by enforcing any Financial Security provided by a defaulting Scheduling Coordinator or CRR Holder, the CAISO shall reduce payments to all CAISO Creditors proportionately to the net amounts payable to them on the relevant Payment Date to the extent necessary to clear the CAISO Clearing Account through a shortfall allocation. The CAISO shall account for such reduction in the CAISO ledger accounts as amounts due and owing by the non-paying CAISO Debtor to each CAISO Creditor whose payment was so reduced. The provisions of this section shall not apply to non-payment of any penalty amount that a Scheduling Coordinator or CRR Holder has disputed and FERC has specifically authorized the Scheduling Coordinator or CRR Holder to net its payment to the CAISO by the amount of the penalty in question in accordance with Section 37.9.3, in which case the non-payment amount will be allocated exclusively to the CAISO penalty trust account and not allocated to CAISO Creditors.

11.29.17.2 Payment of Defaulted Receivables.

Collections of defaulted receivables (other than Interest) will be distributed pro rata to CAISO Creditors for the month of default.

(1) If the total collected in that closing related to the past due trade month is less than $5,000, then the funds shall accumulate in an Interest-bearing account until either: (a) the account exceeds $5,000, (b) there have been no distributions from the account for six months, or (c) all defaults for that month have been collected exclusive of any bankruptcy defaults.

(2) If all CAISO Creditors for that trade month have been paid, then the proceeds will be paid pro rata to the CAISO Creditors in the oldest unpaid trade month.

(3) This provision is also applicable to the amounts netted against CAISO Creditor balances related to prior defaulted receivables.

(4) All defaulted receivables disbursed under this Section shall be disbursed in accordance with the timeframes set forth in Section 11.29.9.6.1.

11.29.18 [NOT USED]

11.29.19 Payment Errors.

11.29.19.1 Overpayments.

If for any reason, including the negligence of the CAISO Bank or the CAISO, a CAISO Creditor receives an overpayment on any Payment Date, the CAISO Creditor shall within two (2) Business Days from the date of receipt of the funds into its Scheduling Coordinator or CRR Holder Settlement Account, notify the CAISO of the amount of the overpayment and shall forthwith pay the overpayment into a CAISO Account specified by the CAISO.

11.29.19.2 Repayment of Overpayment.

If prior to a CAISO Creditor notifying the CAISO of the overpayment, the CAISO receives notice (from the CAISO Bank or otherwise) of the overpayment, the CAISO shall within two (2) Business Days notify the recipient of the overpayment. The CAISO shall be responsible for payment to those entitled to the sum which has been overpaid.

11.29.19.3 Overpayment Held In Trust.

Until a CAISO Creditor refunds the overpayment to the CAISO, the CAISO Creditor shall be deemed to hold the amount of such overpayment on trust for any CAISO Creditor which may have been underpaid in consequence of such overpayment, pro rata to the amount of the underpayment.

CAISO Creditors shall be entitled to interest on such amounts, for such period as the CAISO improperly holds or has such amounts under its control.

11.29.20 Defaults.

Each CAISO Creditor shall give notice to the CAISO before instituting any action or proceedings in any court against a CAISO Debtor to enforce payments due to it.

11.29.21 Proceedings to Recover Overdue Amounts.

11.29.21.1 Proceedings Brought by the CAISO.

Without prejudice to the right of any Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO to bring such proceedings as it sees fit in connection with matters related to the recovery of amounts owed to it, the CAISO may bring proceedings against any Scheduling Coordinator or CRR Holder on behalf of those Scheduling Coordinators, CRR Holders, Black Start Generators, or Participating TOs who have indicated to the CAISO their willingness for the CAISO first so to act, for the recovery of any amounts due by that Scheduling Coordinator or CRR Holder, if the CAISO has first reached agreement with the Scheduling Coordinators, CRR Holders, Black Start Generators, or Participating TOs as to the appropriate remuneration, is indemnified to its reasonable satisfaction, and receives such Financial Security as it may reasonably request against all costs, claims, expenses (including legal fees) and liabilities which it will or may sustain or incur in complying with such instructions.

11.29.21.2 Evidence of Unpaid Amount.

The CAISO shall, on request, certify in writing the amounts owed by a CAISO Debtor that remain unpaid and the CAISO Creditors to whom such amounts are owed and shall provide certified copies of the relevant Initial Settlement Statement T+38BD and the Initial Settlement Statement Reissue and Recalculation Settlement Statements, Invoices, Payment Advices, and other documentation on which the CAISO's certificate was based to the CAISO Debtor and the relevant CAISO Creditors. A CAISO certificate given under this Section 11.29.21.2 may be used as prima facie evidence of the amount due by a CAISO Debtor to CAISO Creditors in any legal proceedings.

11.29.22 Data Gathering and Storage.

11.29.22.1 Required Capabilities.

The CAISO shall ensure that the Settlement process shall contain, at a minimum, the following data gathering and storage capabilities:

(a) the accurate, time-sequenced, end-to-end traceability of the Settlements process so that Scheduling Coordinators, CRR Holders and Participating TOs can fully verify their Settlement Statements;

(b) the ability to specify and accept data that is specifically needed for audit trail requirements; and

(c) the archiving of Meter Data, Settlement runs and other information used to prepare Settlement Statements to be consistent with the time frame required to re-run the Settlement process by state laws and the rules of the Local Regulatory Authority.

11.29.22.2 Data Dissemination.

Data shall not be disseminated by the CAISO except as permitted in this CAISO Tariff.

11.29.23 Communications.

The Initial Settlement Statement T+38BD, any Initial Settlement Statement Reissue, the Recalculation Settlement Statements and Invoices, and Payment Advices will be considered issued to CAISO Creditors or CAISO Debtors when released by the CAISO's secure communication system. Communications on a Payment Date relating to payment shall be made by the fastest practical means including by telephone. If there is a failure of a communication system and it is not possible to communicate by electronic means, then the CAISO or CAISO Creditor or CAISO Debtor, as the case may be, shall communicate by facsimile but only if the recipient is first advised by telephone to expect the facsimile. Methods of communication between the CAISO and Market Participants may be varied by the CAISO giving not less than ten (10) days notice to Market Participants on the CAISO's secure communication system.

11.29.24 CAISO Payments Calendar.

11.29.24.1 Preparation.

In September of each year, the CAISO will prepare a draft CAISO Payments Calendar for the following calendar year showing for each Trading Day:

(a) The date by which Scheduling Coordinators are required to provide Settlement Quality Meter Data for all their Scheduling Coordinator Metered Entities for each Settlement Period in the Trading Day;

(b) The date on which the CAISO will issue Initial Settlement Statements and Invoices and Payment Advices to Scheduling Coordinators or CRR Holders, Black Start Generators and Participating TOs for that Trading Day;

(c) The date by which Scheduling Coordinators, CRR Holders, Black Start Generators and Participating TOs are required to notify the CAISO of any disputes in relation to their Initial Settlement Statements pursuant to Section 11.29.8.2;

(d) The date on which the CAISO will issue the Initial Settlement Statement Reissue and Recalculation Settlement Statements for T+51BD, T+59BD and T+76BD, and Invoices and Payment Advices to Scheduling Coordinators, CRR Holders, Black Start Generators and Participating TOs for that Trading Day;

(e) The date and time by which CAISO Debtors are required to have made payments into the CAISO Clearing Account in payment of Invoices for that Trading Day; and

(f) The dates and times on which CAISO Creditors will receive payments from the CAISO Clearing Account of amounts owing to them for that Trading Day.

(g) In relation to Reliability Must-Run Charges and payments, the details set out in paragraph 3 of Appendix N, Part J.

The CAISO will make a draft of the CAISO Payments Calendar available on the CAISO Website to Scheduling Coordinators, CRR Holders, Black Start Generators, Participating TOs and RMR Owners any of which may submit

comments and objections to the CAISO within two weeks of the date of posting of the draft on the CAISO Website. No later than October 31st in each year, the CAISO will publish the final CAISO Payments Calendar for the following calendar year, after considering the comments and objections received from Scheduling Coordinators, CRR Holders, Black Start Generators, Participating TOs and RMR Owners. The final CAISO Payments Calendar will be posted on the CAISO Website, and will show for the period from 1 January to 31 December in the next succeeding year (both dates inclusive), the dates on which Settlement Statements shall be published by the CAISO and the Payment Dates on which the CAISO will pay the Participating TOs the Wheeling revenues allocated to them pursuant to Section 26.1.4.3.

11.29.24.2 Distribution.

Any CAISO Payments Calendar prepared pursuant to this Section 11.29.24 shall be distributed promptly to each Scheduling Coordinator, each Participating TO, the CAISO Bank, the CAISO Audit Committee and the CAISO Governing Board and shall be published on the CAISO Website.

11.29.24.3 Final Calendar Binding.

The final CAISO Payments Calendar shall be binding on the CAISO and on Scheduling Coordinators, CRR Holders, Black Start Generators, Participating TOs and RMR Owners.

11.29.24.4 Calendar Content and Format.

The CAISO may change the content or format of the CAISO Payments Calendar. The CAISO may also produce a summary outline of the Settlement and billing cycles.

11.29.24.5 Update the Final Payments Calendar.

If, as a result of an amendment to the CAISO Tariff approved by FERC, the final CAISO Payments Calendar developed in accordance with Section 11.29.24 is rendered inconsistent with the timing set forth in this CAISO Tariff, the CAISO shall update the final CAISO Payments Calendar to make it consistent with the CAISO Tariff as approved by FERC on the date on which the CAISO Tariff amendment goes into effect. The CAISO shall simultaneously send out a Market Notice to Market Participants that the final CAISO Payments Calendar has been revised.

11.30 Auditing.

All of the data, information, and estimates the CAISO uses to calculate Settlement amounts shall be subject to the auditing requirements of Section 22.1. The CAISO shall calculate these amounts using the software referred to in Section 11.29.5.4 except in cases of system breakdown when it shall apply the procedures set out in 11.29.10.1 (Emergency Procedures).

Uncontrollable Force and/or remedy its inability to perform and resume full performance of its obligations hereunder shall not apply to strikes, lockouts, or labor disputes.

14.4 Market Participant's Indemnity.

Each Market Participant, to the extent permitted by law, shall indemnify the CAISO and hold it harmless against all losses, damages, claims, liabilities, costs or expenses (including legal expenses) arising from any act or omission of the Market Participant except to the extent that they result from the CAISO's default under this CAISO Tariff or gross negligence or intentional wrongdoing on the part of the CAISO or of its officers, directors or employees.

14.5 Limitation on Liability.

14.5.1 Liability for Damages.

Except as provided for in Section 13.3.14, the CAISO shall not be liable in damages to any Market Participant for any losses, damages, claims, liability, costs or expenses (including legal expenses) arising from the performance or non-performance of its obligations under this CAISO Tariff, including but not limited to any adjustments made by the CAISO in Inter-Scheduling Coordinator Trades, except to the extent that they result from gross negligence or intentional wrongdoing on the part of the CAISO.

14.5.2 Exclusion of Certain Types of Loss.

The CAISO shall not be liable to any Market Participant under any circumstances for any consequential or indirect financial loss including but not limited to loss of profit, loss of earnings or revenue, loss of use, loss of contract or loss of goodwill except to the extent that it results from except to the extent that it results from gross negligence or intentional wrongdoing on the part of the CAISO.

14.6 Potomac Economics, Ltd. Limitation Of Liability.

Potomac Economics, Ltd. shall not be liable in damages to any Market Participant for any losses, damages, claims, liability, costs or expenses (including legal expenses) arising from its calculation of reference levels under its Consultant Agreement with the CAISO dated as of September 3, 2002, except to the extent that they result from gross negligence or intentional wrongdoing of Potomac Economics, Ltd.

Participating TO that is the Scheduling Coordinator for the holder of Existing Rights, or from holders of Existing Rights that are Scheduling Coordinators, or that are represented by a Scheduling Coordinator other than the Participating TO. ETC Self-Schedules submitted by Scheduling Coordinators to the CAISO, which include the use of Existing Rights, must be submitted in accordance with Section 16.1 and Section 30. The CAISO may refuse to accept ETC Self-Schedules submitted pursuant to Existing Contracts that do not meet the requirements of the principles, protocols and rules referred to in this Section 16.1.

16.1.3 Existing Contract Dispute Resolution.

The CAISO will, if requested, advise parties to Existing Contracts regarding the operational aspects of any Existing Contract renegotiations that they undertake.

If the parties to an Existing Contract are unable to reach agreement on the changes needed to meet the requirements of this CAISO Tariff, any disputes related thereto shall be addressed using the dispute resolution provisions of the Existing Contract, including any remedies as are provided by law. The rights of the parties to seek changes or to challenge such changes, under the FPA or as otherwise provided by law, are preserved consistent with the terms of the Existing Contract. Unless and until the necessary changes to the Existing Contract are made, all terms and conditions of the Existing Contracts will continue to be honored by the parties to the Existing Contracts.

16.1.4 Conversion of Participating TOs' Rights and Obligations Under Existing Contracts.

Parties who are entitled to transmission service rights under Existing Contracts and who choose to become Participating TOs must, at the time of becoming a Participating TO convert those rights to "Converted Rights" in accordance with Section 4.3.1.6.

16.2 [NOT USED]

16.3 [NOT USED]

16.4 Transmission Rights and Transmission Curtailment Instructions.

16.4.1 Responsibility to Create TRTC Instructions.

Each Participating TO and Existing Rights holder will work with the CAISO to develop the Transmission Rights and Transmission Curtailment ("TRTC") Instructions that allow Existing Contracts to be exercised in a way that: (i) maintains the existing scheduling and curtailment priorities under the Existing Contract; (ii) is minimally burdensome to the CAISO (i.e., creates the least impact on the CAISO's preferred operational policies and procedures); (iii) to the extent possible, imposes no additional financial burden on either the Participating TO or the holder of Existing Rights (beyond that in the Existing Contract); (iv) consistent with the terms of the Existing Contracts, makes as much transmission capacity not otherwise utilized by the holder of Existing Rights available as possible to the CAISO for allocation to Market Participants; (v) is minimally burdensome to the Participating TO and the Existing Rights holder from an operational point of view; and (vi) does not require the CAISO to interpret or underwrite the economics of the Existing Contract. The parties to Existing Contracts will attempt to jointly develop and agree on any TRTC Instructions that will be submitted to the CAISO. The parties to an Existing Contract shall also be responsible to submit to the CAISO any other necessary operating instructions based on their contract interpretations needed by the CAISO to enable the CAISO to perform its duties.

16.4.2 Responsible PTO for Multiple Participating TO Parties to an Existing Contract.

To the extent there is more than one Participating TO providing transmission service under an Existing Contract or there is a set of Existing Contracts which are interdependent from the point of view of submitting instructions to the CAISO involving more than one Participating TO, the relevant Participating TOs will designate a single Participating TO as the responsible PTO and will notify the CAISO accordingly. If no such responsible PTO is designated by the relevant Participating TOs or the CAISO is not notified of such designation, the CAISO shall designate one of them as the responsible PTO and notify the relevant Participating TOs accordingly. The responsible PTO designated pursuant to this section shall have the same responsibility as the Participating TO under this Section 16.4.

16.4.3 Scheduling Coordinator Responsibilities

The Scheduling Coordinator designated by the parties to an Existing Contract as the responsible entity for submitting ETC Self-Schedules for the relevant Existing Contract shall submit ETC Self-Schedules

consistent with the terms and conditions specified in the TRTC Instructions.

16.4.4 Submission of TRTC Instructions.

For each Existing Contract, the Participating TO providing transmission service under the Existing Contract (or the Responsible PTO identified in Section 16.4.2) shall be obligated to submit the TRTC Instructions to the CAISO electronically on behalf of the holders of Existing Rights, unless the parties to the Existing Contract agree otherwise. The Participating TO shall notify the CAISO in writing the identity of the responsible party for submission of the TRTC Instructions as decided by the parties to the Existing Contract and the term of such agreement between the parties to the Existing Contract. The Participating TO shall undertake all obligations with respect to the submission of the TRTC Instructions to the CAISO and any subsequent obligations that follow with respect to the creation, management and updates to the TRTC Instructions. The CAISO is responsible for implementing only one set of TRTC Instructions for each Existing Contract and only those TRTC Instructions that have been received and accepted by the CAISO. The Participating TO shall submit the TRTC Instructions to the CASIO associated with Existing Contracts or sets of interdependent Existing Contracts thirty (30) days prior to the date on which the scheduling or curtailment of the use of the Existing Rights is to change or commence.

16.4.5 TRTC Instructions Content.

TRTC Instructions will include the following information at a minimum and such other information as the CAISO may reasonably require the Participating TO to provide to enable the CAISO to carry out its functions under the CAISO Tariff, Operating Procedures and Business Practice Manuals:

(1) A unique Contract Reference Number for each source and sink combination applicable to the Existing Contract (i.e., the CRN that will be assigned by the CAISO and communicated to the Participating TO that references a single Existing Contract or a set of interdependent Existing Contracts for each source and sink combination);

(2) Whether the instruction can be exercised independent of the CAISO's day-to-day involvement ("Yes/No");

(3) Name of an operational single point of contact for instructions and a 24-hour a day telephone number for the Participating TO contact for Existing Contract issues or the agreed upon party;

(4) Name(s) and number(s) of Existing Contract(s) that are represented by the unique CRN;

(5) The following information as stored in the Master File: (a) the applicable Point(s) of Receipt and Point(s) of Delivery); (b) for each Point of Receipt, the resource names for the physical resources as the eligible sources (eligible physical sources include Generating Units and System Resources), and for each Point of Delivery, the resource names for the physical resources as the eligible sinks (eligible physical sinks include Load PNodes, Custom Load Aggregation Points and System Resources); (c) for each physical source or sink, the maximum Existing Rights capacity (MW) that can be scheduled as an Existing Right under the Existing Contract; and (d) for each physical source and sink, the Scheduling Coordinator(s) and their Business Associate Identification (BAID) that is(are) eligible to submit ETC Self-Schedules utilizing these sources and sinks;

(6) Names of the party(ies) to the Existing Contract(s);

(7) The Scheduling Coordinator BAID that is entitled to the Settlement of reversal of Congestion Charges;

(8) Type(s) of service rights by the holder of the Existing Rights, by type of service (firm, conditional firm, or non-firm), with priorities for firm and conditional firm transmission services and maximum amounts of service rights in MW;

(9) Instructions for the allowable timeframes at which the ETC Self-Schedules and ETC Self-Schedule changes may be submitted to the CAISO, which include whether the

Scheduling Coordinator may submit ETC Self-Schedules or ETC Self-Schedule changes: (a) into the DAM; (b) into the HASP and the RTM; (c) after the close of the bidding into the HASP and the RTM, but before T-20 minutes for that Trading Hour of Trading Day; and (d) at or after T-20 minutes and into the Trading Hour of Trading Day; in addition, the TRTC Instructions may also include any additional comments and restrictions on the submission time of ETC Self-Schedules and ETC Self-Schedule changes;

(10) Term or service period(s) of the Existing Contract(s);

(11) Any special procedures that would require the CAISO to implement curtailments in any manner different from pro rata reduction of the transfer capability of the transmission line; any such TRTC Instructions submitted to the CAISO must be clear, unambiguous, and not require the CAISO to make any judgments or interpretations as to the meaning intent, results, or purpose of the curtailment procedures or the Existing Contract and the section of the Existing Contract that provides this right for reference, otherwise, they will not be accepted by the CAISO;

(12) The forecasted usage patterns for each Existing Contract for the upcoming annual period of the annual CRR release processes as well as for the upcoming monthly period of the monthly CRR release processes, which will consist of hourly MWh data over the whole year for those resources that will use the Existing Contract; this information will be considered by the CAISO in managing its accounting for usage of Existing Rights in the release of CRRs; this information shall not be used by the CAISO to validate ETC Self-Schedules when submitted by Scheduling Coordinators and therefore shall not affect the Existing Rights holder's ability to utilize its rights under the Existing Contract;

(13) Whether or not the Existing Contract provides for the right to self-provide Ancillary Services; and

(14) Specification of any contract requirements in the ETC that warrants special consideration in the implementation of the physical rights under the ETC.

16.4.6 Changes and Updates to TRTC Instructions.

Updates or changes to the TRTC Instructions must be submitted to the CAISO through a revised set of TRTC Instructions by the Participating TO, on an as needed or as required basis determined by the parties to the Existing Contracts. The CAISO will implement the updated or changed TRTC Instructions as soon as practicable but no later than seven (7) days after receiving clear and unambiguous details of the updated or changed instructions under normal conditions. If the CAISO finds the TRTC Instructions to be inconsistent with the CAISO Tariff, the CAISO will notify the Participating TO within forty-eight (48) hours after receipt of the updated or changed TRTC Instructions indicating the nature of the problem and allowing the Participating TO to resubmit the TRTC Instructions as if they were new, updated or changed TRTC Instructions. If the CAISO finds the updated or changed TRTC Instructions to be acceptable, the CAISO will time-stamp the updated TRTC Instructions as received, confirm such receipt to the Participating TO, and indicate the time at which the updated TRTC Instructions take effect if prior to the seven (7) day deadline referred to above. In the event of a System Emergency, the CAISO will implement such submitted changes to the TRTC Instructions as soon as practical.

16.4.7 Treatment of TRTC Instructions.

16.4.7.1 TRTC Instructions Can Be Exercised Independently.

To the extent that the TRTC Instructions can be exercised independently of the CAISO by the parties to the Existing Contract and the results forwarded to the CAISO, the TRTC Instructions shall be exercised by the Participating TOs, and the outcomes shall be forwarded to the CAISO. The determination of whether the TRTC Instructions can be "exercised independently of the CAISO by the parties to the Existing Contract" shall be made using the same procedures described in Section 16.4.8.

16.4.7.2 TRTC Instructions Cannot Be Exercised Independently.

To the extent that the TRTC Instructions cannot be exercised independently of the CAISO and the results forwarded to the CAISO (because, for example, they require iteration with the CAISO's Bid submission and scheduling process, would unduly interfere with the CAISO's management of the Real-Time Market, including curtailments, or would unduly interfere with the ability of the holder of rights to exercise its rights), the TRTC Instructions will be provided to the CAISO for day-to-day implementation. The TRTC Instructions will be provided by the Participating TO to the CAISO for implementation unless the parties to the Existing Contracts otherwise agree that the holder of the Existing Rights will do so. For these TRTC Instructions, the Scheduling Coordinators representing the holders of Existing Rights will submit their Bids to the CAISO for implementation in accordance with the TRTC Instructions. In this case, the CAISO shall act as the scheduling agent for the Participating TO with regard to Existing Rights.

16.4.8 CAISO Role in Existing Contracts.

The CAISO will have no role in interpreting Existing Contracts. The parties to an Existing Contract will, in the first instance, attempt jointly to agree on any TRTC Instructions that will be submitted to the CAISO. In the event that the parties to the Existing Contract cannot agree upon the TRTC Instructions submitted by the parties to the Existing Contract, the dispute resolution provisions of the Existing Contract, if applicable, shall be used to resolve the dispute; provided that, until the dispute is resolved, and unless the Existing Contract specifies otherwise, the CAISO shall implement the Participating TO's TRTC Instructions. If both parties to an Existing Contract are Participating TOs and the parties cannot agree to

the TRTC Instructions submitted by the parties, until the dispute is resolved, and unless the Existing Contract specifies otherwise, the CAISO shall implement the TRTC Instructions of the first Participating TO for which the Existing Contract is an Encumbrance. The CAISO shall not be responsible for resolution of any disputes that arise over the accuracy of the TRTC Instructions consistent with its obligations in Section 16.4.5.

16.4.9 Implementation of TRTC Instructions.

The CAISO shall determine, based on the information provided by the Participating TOs under TRTC Instructions, the transmission capacities that (i) must be reserved for firm Existing Rights at Scheduling Points, (ii) may be allocated for use as CAISO transmission service (i.e., new firm uses), (iii) must be reserved by the CAISO for conditional firm Existing Rights, and (iv) remain for any non-firm Existing Rights for which a Participating TO has no discretion over whether or not to provide such non-firm service.

The CAISO shall coordinate the scheduling of Existing Rights with the scheduling of CAISO transmission service, using the CAISO's Bid submission rules. In doing so, the CAISO shall create an automated day-to-day verification process based on parameters provided by the Participating TO for the Existing Contract to serve as the basis for ETC Self-Schedule validation. The Participating TO will be responsible for: (1) the accuracy of the data files against which the CAISO will validate the ETC Self-Schedule; and (2) providing the data file to the holder of Existing Rights as well as the CAISO.

The CAISO shall recognize that the obligations, terms or conditions of Existing Contracts may not be changed without the voluntary consent of all parties to the contract (unless such contract may be changed pursuant to any applicable dispute resolution provisions in the contract or pursuant to Section 205 or Section 206 of the FPA and the FERC's Rules and Regulations or as otherwise provided by law).

The parties to Existing Contracts shall remain liable for their performance under the Existing Contracts. The CAISO shall be liable in accordance with the provisions of this CAISO Tariff for any damage or injury caused by its non-compliance with the TRTC Instructions submitted to it pursuant to this Section 16.4.

Unless specified otherwise, in the event that the dispute resolution mechanisms prescribed in an Existing Contract, including all recourses legally available under the contract, cannot, in the first instance, result in a resolution of such a dispute, the CAISO ADR Procedures will be used to resolve any disputes between the CAISO and the Participating TO regarding any aspects of the implementation of this Section 16.4, including the reasonableness of a Participating TO's TRTC Instructions or any other decision rules which the Participating TO may submit to the CAISO as part of the TRTC Instructions. The holders of Existing Rights under the Existing Contract shall have standing to participate in the CAISO ADR Procedures.

16.5 Treatment of Existing Contracts for Transmission Service.

The CAISO will accommodate Existing Rights, so that the holders of Existing Rights will receive the same priorities (in scheduling, curtailment, assignment and other aspects of transmission system usage) to which they are entitled under their Existing Contracts.

In addition, Scheduling deadlines and operational procedures associated with Existing Rights will be honored by the CAISO, provided such information is explicitly included in the TRTC Instructions. The CAISO will accommodate and honor Existing Rights as follows:

(1) For Existing Rights that permit schedule changes over Scheduling Points with other Control Areas, the CAISO will reserve transmission capacity equal to the Existing Rights transmission capacity and make a corresponding adjustment in its determination of ATC. For Existing Rights that permit schedule changes after the Market Close of the Day-Ahead Market, the CAISO will reserve transmission capacity equal to the unscheduled ETC amount of transmission capacity for that Scheduling Point.

(2) For Existing Rights within the CAISO Control Area, the CAISO will only set-aside capacity associated with the Existing Rights to the extent that the Scheduling Coordinator submits a valid ETC Self-Schedule in the Day-Ahead Market.

(3) In the HASP, the CAISO will give valid ETC Self-Schedules priority over other non-ETC Day-Ahead Schedules and HASP Bids. In the event of a reduction in capacity on the transmission path associated with the Existing Right, the CAISO will honor the Existing Rights priority in accordance with this Section 16.

(4) When the Existing Contract permits, the CAISO will allow the holder of Existing Rights to make changes to the scheduled amounts of supply after the submission of HASP ETC Self-Schedules in accordance with the TRTC Instructions established for such changes. The CAISO will, as necessary, redispatch non-ETC resources to accommodate valid ETC Self-Schedule changes in Real-Time.

(5) All contractual provisions that have been communicated to the CAISO in writing in accordance with this Section 16 by the parties to the Existing Contracts, shall be honored by the CAISO and the parties to the Existing Contracts and shall be implemented by the CAISO in accordance with the terms and conditions of the relevant Existing Contracts so notified.

16.5.1 System Emergency Exceptions.

As set forth in Section 4.2.1, all Market Participants, including Scheduling Coordinators, Utility Distribution Companies, Participating TOs, Participating Generators, Participating Loads, Control Area Operators (to the extent the agreement between the Control Area Operator and the CAISO so provides), and MSS Operators within the CAISO Control Area and all System Resources must comply fully and promptly with CAISO Dispatch Instructions and operating orders, unless such operation would impair public health or safety. The CAISO will honor the terms of Existing Contracts, provided that in a System Emergency and circumstances in which the CAISO considers that a System Emergency is imminent or threatened, holders of Existing Rights must follow CAISO operating orders even if those operating orders directly conflict with the terms of Existing Contracts, unless such operating orders are inconsistent with the terms of an agreement between the CAISO and a Control Area Operator. In the event of a conflict between the CAISO Tariff and an agreement between the CAISO and a Control Area Operator, the agreement will govern. For this purpose CAISO operating orders to shed Load shall not be considered as an impairment to public health or safety. This section does not prohibit a Scheduling Coordinator from modifying its Bid or re-purchasing Energy in the HASP or Real-Time Market.

16.6 Valid ETC Self-Schedules.

The CAISO will accept a valid ETC Self-Schedule from a Scheduling Coordinator. That Scheduling Coordinator shall be either the holder of Existing Rights or its designee, the Participating TO, (in the case that no Scheduling Coordinator has been so identified by the parties to the Existing Contract, the

Participating TO shall be the Scheduling Coordinator for the holder of the Existing Contract). ETC Self-Schedules submitted by Scheduling Coordinators to the CAISO, which use Existing Rights, must be submitted in accordance with this CAISO Tariff.

16.6.1 Validation of ETC Self-Schedules.

An ETC Self-Schedule is a valid ETC Self-Schedule when the CAISO has determined that the ETC Self-Schedule, submitted to the CAISO pursuant to the requirements for Bids in Sections 30, properly reflects Existing Rights consistent with the TRTC Instructions, is labeled with a unique Existing Contract identifier, and includes balanced sources and sinks, within the ETCs capacity limits.

16.6.3 Treatment of Valid ETC Self-Schedules

The resulting Valid ETC Schedules shall have the following Settlement treatment:

(1) The CAISO will apply the ETC Settlement treatment in Sections 11.2.1.5 and 11.5.7.1.

(2) The CAISO shall base the Marginal Cost of Losses on LMP differentials at the Existing Contract source(s) and sink(s) identified in the valid ETC Self-Schedule.

(3) The holders of Existing Rights will not be entitled to an allocation of revenues from the CAISO, including Access Charge revenue related to those Existing Rights.

(4) Parties with Existing Rights shall continue to pay for Transmission Losses or Ancillary Services requirements in accordance with such Existing Contracts as they may be modified or changed in accordance with the terms of the Existing Contract. The Participating TOs shall continue to provide Transmission Losses and any other Ancillary Services to the holder of the rights under an Existing Contract as may be required by the Existing Contracts. The CAISO will charge Scheduling Coordinators submitting the ETC Self-Schedule for Transmission Losses and Ancillary Services in accordance with the CAISO Tariff and any shortfall or surplus between the CAISO charges and the Existing Rights shall be settled bilaterally between the Existing Contract parties or through the relevant TO Tariff. To enable holders of Existing Rights to determine whether the CAISO's calculations result in any associated shortfall or surplus and to enable the parties to the Existing Contracts to settle the differences bilaterally or through the relevant TO Tariff, the CAISO shall calculate and provide the Scheduling Coordinator's Settlements the amounts paid for the MCL for the amounts MWh submitted with a valid ETC Self-Schedule. Each Participating TO will be responsible for recovering any deficits or crediting any surpluses associated with differences in Transmission Losses and Transmission Loss Requirements and/or Ancillary Services requirements, through its bilateral arrangements or its Transmission Owner's Tariff.

16.6.4 Notification to Scheduling Coordinators of CAISO Determination

After performing validation of the ETC Self-Schedule, and prior to taking any action pursuant to Section 16.6.2, the CAISO will make an automated validation notice available to the Scheduling Coordinator indicating whether the ETC Self-Schedule is valid or invalid. If an ETC Self-Schedule involves more than one Scheduling Coordinator, the complete validation of the chain of ETC Self-Schedules will occur when

the last Scheduling Coordinator submits its ETC Self-Schedule. At that time, the CAISO will make an automated validation notice available to each Scheduling Coordinator registered as associated with the chain of ETC Self-Schedules. The CAISO can accommodate corrections submitted by a Scheduling Coordinator to an ETC Self-Schedule up to Market Close of the Day-Ahead Market as further described in the applicable Business Practice Manual.

16.7 [Not Used]

16.8 [Not Used]

16.9 The HASP.

16.9.1 Scheduling Deadlines.

Those holders of Existing Rights who have Existing Rights as reflected in the TRTC Instructions that allow scheduling after the close of the Day-Ahead Market may submit ETC Self-Schedules for the use of those rights by the deadline for the Market Close for the HASP. Submission of schedule changes beyond the Market Close for the HASP permitted by the ETC will be treated as provided in Section 33.3.

16.10 The CAISO's Real-Time Process.

Consistent with this Section 16, the CAISO will honor those scheduling flexibilities that may be exercised by holders of Existing Rights through their respective Scheduling Coordinators during the CAISO's Real-Time Market to the extent that such flexibilities do not interfere with or jeopardize the safe and reliable operation of the CAISO Controlled Grid or Control Area operations.

16.11 Inter-Control Area Changes to Bids that Rely on Existing Rights.

Changes to ETC Self-Schedules that occur during the CAISO's Real-Time Market that involve changes to CAISO Control Area imports or exports with other Control Areas (that is, inter-Control Area changes to ETC Self-Schedules) will be allowed and will be recorded by the CAISO based upon notification received from the Scheduling Coordinator representing the holder of the Existing Rights. Scheduling Coordinators representing the holder of the Existing Right must notify the CAISO of any such changes to external import/export in submitted ETC Self-Schedules. Scheduling Coordinators representing the holder of the Existing Right must notify the CAISO of Real-Time Market changes to external import/export schedules in submitted ETC Self-Schedules, by telephone. The timing and content of any such notification must be consistent with the TRTC Instructions previously submitted to the CAISO by the Responsible PTO. The CAISO will manually adjust or update the HASP Schedule for the Scheduling Coordinator to conform with the other Control Area's net ETC Self-Schedule in Real-Time, and the notifying Scheduling Coordinator will be responsible for and manage any resulting Energy imbalance. These Imbalance Energy deviations will be priced and charged to the Scheduling Coordinator representing the holder of Existing Rights in accordance with the Real-Time LMP.

17 Transmission Ownership Rights (TORs).

Transmission Ownership Rights represent transmission capacity on facilities that are located within the CAISO Control Area that are either wholly or partially owned by an entity that is not a Participating TO. This Section 17 shall apply to the TORs of Non-Participating TOs. In any case in which (i) the CAISO has entered into a bilateral agreement with a Non-Participating TO regarding its TORs or (ii) a Participating TO has entered into a bilateral agreement with a Non-Participating TO regarding its TORs, which agreement has been accepted by FERC, the provisions of the agreement shall prevail over any conflicting provisions of this Section 17. Where the provisions of this Section 17 do not conflict with the provisions of the FERC-accepted agreement, the provisions of this Section 17 shall apply to the subject TORs.

17.1 Transmission Rights and Transmission Curtailment Instructions.

17.1.1 Responsibility to Create TRTC Instructions.

To enable the CAISO to exercise its responsibilities as Control Area Operator in accordance with Applicable Reliability Criteria, each Non-Participating TO holding a TOR must work with the CAISO to develop the TRTC Instructions that allow the TOR to be accommodated in a way that: (i) maintains the existing scheduling and curtailment priorities of the TOR holder; (ii) is minimally burdensome to the CAISO (i.e., creates the least impact on the CAISO's preferred operational policies and procedures); (iii) to the extent possible, imposes no additional financial burden on the TOR holder (beyond that set forth in an applicable Existing Contract or any other contract pertaining to the TOR); (iv) is minimally burdensome to the TOR holder from an operational point of view; and (v) does not require the CAISO to interpret or underwrite the economics of any applicable Existing Contract. To enable the CAISO to exercise its responsibilities as Control Area Operator in accordance with Applicable Reliability Criteria, the parties holding joint ownership interests and Entitlements in facilities including TORs must attempt to jointly develop and agree on any TRTC Instructions that will be submitted to the CAISO, as provided in Section 17.1.6.

17.1.2 TOR Scheduling Coordinator Responsibilities.

To enable the CAISO to exercise its responsibilities as Control Area Operator in accordance with Applicable Reliability Criteria, each TOR holder must designate a Scheduling Coordinator as the responsible entity for submitting TOR Self-Schedules for the relevant TOR. The designated Scheduling Coordinator shall submit TOR Self-Schedules consistent with the terms and conditions specified in the TRTC Instructions.

17.1.3 Submission of TRTC Instructions.

For each TOR, the Non-Participating TO holding the TOR shall be obligated to submit TRTC Instructions to the CAISO electronically, unless the Non-Participating TO specifies to the CAISO otherwise. The Non-Participating TO shall notify the CAISO in writing the identity of the responsible party for submission of the TRTC Instructions, subject to the terms of any applicable Existing Contract that may specify the responsible party for submission of the TRTC Instructions and the term of such agreement between the parties to the Existing Contract. The Non-Participating TO shall undertake all obligations with respect to the submission of the TRTC Instructions to the CAISO and any subsequent obligations that follow with respect to the creation, management and updates to the TRTC Instructions. The CAISO is responsible for implementing only one set of TRTC Instructions for each TOR and for implementing only those TRTC Instructions that have been received and accepted by the CAISO. The Non-Participating TO shall submit the TRTC Instructions to the CAISO associated with its TORs thirty (30) days prior to the date on which the scheduling or curtailment of the use of the TORs is to change or commence.

17.1.4 TRTC Instructions Content.

TRTC Instructions will include the following information at a minimum and such other information as the CAISO may reasonably require the Non-Participating TO holder of a TOR to provide to enable the CAISO to carry out its functions under the CAISO Tariff, Operating Procedures and Business Practice Manuals:

(1) A unique Contract Reference Number for each source and sink combination applicable to the TOR (i.e., the CRN that will be assigned by the CAISO and communicated to the Non-Participating TO that references a single TOR or a set of interdependent TORs for each source and sink combination);

(2) Whether the instruction can be exercised independent of the CAISO's day-to-day involvement ("Yes/No");

(3) Name of an operational single point of contact for instructions and a 24-hour a day telephone number for the Non-Participating TO contact for TOR issues or the agreed upon party;

(4) Name(s) and number(s) of TOR(s) that are represented by the unique CRN;

(5) The following information, as stored in the Master File: (a) the applicable Point(s) of Receipt and Point(s) of Delivery); (b) for each Point of Receipt, the resource names for the physical resources as the eligible sources (eligible physical sources include Generating Units and System Resources), and for each Point of Delivery, the resource names for the physical resources as the eligible sinks (eligible physical sinks include Load PNodes, Custom Load Aggregation Points and System Resources); (c) for each physical source or sink, the maximum capacity (MW) that can be scheduled as a TOR under the Existing Contract; and (d) for each physical source and sink, the Scheduling Coordinator(s) and their Business Associate Identification (BAID) that is(are) eligible to submit TOR Self-Schedules utilizing these sources and sinks;

(6) Names of the party(ies) holding the TOR(s) and the parties to any agreements applicable to the TORs;

(7) The Scheduling Coordinator BAID that is entitled to the Settlement of reversal of Congestion Charges;

(8) Amount of TORs, in maximum MW, that may be utilized under the relevant TRTC Instructions;

(9) Instructions for the allowable timeframes at which the TOR Self-Schedules and TOR Self-Schedule changes may be submitted to the CAISO, which include whether the Scheduling Coordinator may submit TOR Self-Schedules or TOR Self-Schedule

changes: (a) into the DAM; (b) into the HASP and the RTM; (c) after the close of the bidding into the HASP and the RTM, but before T-20 minutes for that Trading Hour of Trading Day; and (d) at or after T-20 minutes and into the Trading Hour of Trading Day; in addition, the Non-Participating TO may also provide any additional comments and restrictions on the submission time of TOR Self-Schedules and TOR Self-Schedule changes;

(10) Term of ownership interest in the TOR(s) and of any agreements applicable to the TOR(s);

(11) Any special procedures that would require the CAISO to implement curtailments in any manner different than pro rata reduction of the transfer capability of the transmission line; any such instructions submitted to the CAISO must be clear, unambiguous, and not require the CAISO to make any judgments or interpretations as to the meaning, intent, results, or purpose of the curtailment procedures or of any applicable Existing Contract, otherwise, they will not be accepted by the CAISO; and

(12) Whether or not the TOR provides the right to self-provide Ancillary Services.

17.1.5 Changes and Updates to TRTC Instructions.

Updates or changes to the TRTC Instructions must be submitted to the CAISO through a revised set of TRTC Instructions by the Non-Participating TO, on an as needed or as required basis. The CAISO will implement the updated or changed TRTC Instructions as soon as practicable but no later than seven (7) days after receiving clear and unambiguous details of the updated or changed instructions under normal conditions. If the CAISO finds the TRTC Instructions to be inconsistent with the CAISO Tariff, the CAISO will notify the Non-Participating TO within forty-eight (48) hours after receipt of the updated or changed TRTC Instructions indicating the nature of the problem and allowing the Non-Participating TO to resubmit the TRTC Instructions as if they were new, updated or changed TRTC Instructions. If the CAISO finds the updated or changed TRTC Instructions to be acceptable, the CAISO will time-stamp the updated TRTC Instructions as received, confirm such receipt to the Non-Participating TO, and indicate the time at which the updated instructions take effect if prior to the seven (7) day deadline referred to above. In the event of a System Emergency, the CAISO will implement such submitted changes to the TRTC Instructions as soon as practical.

17.1.6 CAISO Role in Accepting TRTC Instructions.

The parties holding joint ownership interests and Entitlements in a facility including a TOR must, in the first instance, attempt jointly to agree on any TRTC Instructions that will be submitted to the CAISO. In the event that the parties holding joint ownership interests and Entitlements in a facility including a TOR cannot agree upon the TRTC Instructions, the dispute resolution provisions of any applicable Existing Contract shall be used to resolve the dispute; provided that, until the dispute is resolved, and unless the applicable Existing Contract specifies otherwise, the CAISO shall implement the Participating TO's TRTC Instructions, if one of the parties holding a joint ownership interest or an Entitlement in the facility is a Participating TO. If no party holding a joint ownership interest or Entitlement in a facility including a TOR is a Participating TO and the parties cannot agree to the TRTC Instructions to be submitted by the parties, until the dispute is resolved, the CAISO

shall implement the TRTC Instructions of the Non-Participating TO with the greatest ownership interest in the TOR. The CAISO shall not be responsible for resolution of any disputes that arise over the accuracy of the TRTC Instructions consistent with its obligations in Section 17.1.4.

17.1.7 Implementation of TRTC Instructions.

The CAISO shall determine, based on the information provided by the Non-Participating TOs under TRTC Instructions, the transmission capacities that must be reserved for TORs at Scheduling Points.

The CAISO shall coordinate the scheduling of TORs with the scheduling of CAISO transmission service, using the CAISO's Bid submission rules. In doing so, the CAISO shall create an automated day-to-day verification process based on parameters provided by the Non-Participating TO for the TOR to serve as the basis for TOR Self-Schedule validation. The Non-Participating TO will be responsible for: (1) the accuracy of the data files against which the CAISO will validate the TOR Self-Schedule; and (2) providing the data file to the CAISO.

The TOR holders shall remain liable for their performance under any applicable Existing Contracts or other agreements pertaining to their TORs. The CAISO shall be liable in accordance with the provisions of this CAISO Tariff for any damage or injury caused by its non-compliance with the TRTC Instructions submitted to it pursuant to this Section 17.1.

Unless specified otherwise, in the event that the dispute resolution mechanisms prescribed in an Existing Contract applicable to a TOR, including all recourses legally available under the contract, cannot, in the first instance, result in a resolution of such a dispute, the CAISO ADR Procedures will be used to resolve any disputes between the CAISO and the Non-Participating TO regarding any aspects of the implementation of this Section 17.1, including the reasonableness of a Non-Participating TO's TRTC Instructions or any other decision rules which the Non-Participating TO may submit to the CAISO as part of the TRTC Instructions. The holders of TORs shall have standing to participate in the CAISO ADR Procedures.

17.2 Treatment of TORs.

The CAISO will accommodate TORs, so that the holders of TORs will receive the same priorities (in

scheduling, curtailment, assignment and other aspects of transmission system usage) to which they are entitled under any applicable Existing Contracts or other agreements pertaining to the operation of their TORs.

In addition, scheduling deadlines and operational procedures associated with TORs will be honored by the CAISO, provided such information is explicitly included in the TRTC Instructions. The CAISO will accommodate and honor TORs as follows:

(1) The CAISO will reserve transmission capacity equal to the TOR transmission capacity and make a corresponding adjustment in its determination of ATC. The CAISO will not limit parallel flow from flowing on TOR transmission capacity consistent with the redispatch provisions of Section 17.2(3), just as the CAISO does not limit TOR Self-Schedules from flowing on non-TOR transmission. There shall be no compensation for parallel flow for either the CAISO or the TOR holder.

(2) In the HASP, the CAISO will give valid TOR Self-Schedules priority over other non-TOR Day-Ahead Schedules and HASP Bids. In the event of a reduction in capacity on the transmission path associated with the TOR, the CAISO will honor the TOR priority in accordance with this Section 17.

(3) The CAISO will allow the holder of a TOR to make changes to the scheduled amounts of supply after the submission of HASP TOR Self-Schedules in accordance with the TRTC Instructions established for such changes. The CAISO will, as necessary, redispatch non-TOR resources to accommodate valid TOR Self-Schedule changes in Real-Time.

(4) The CAISO will allow the holder of a TOR to self-provide Ancillary Services, which will include the ability of the holder of a TOR to import Ancillary Services at Scheduling Points with the CAISO.

(5) The submission of a TOR Self-Schedule change that is authorized pursuant to an applicable existing agreement between the CAISO and the TOR holder shall not affect the application of the IFM Congestion Credit or the HASP and RTM Congestion Credit, and the IFM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules or the RTM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules for a TOR Self-Schedule that satisfies the applicable requirements of Sections 17.4.1 and 17.5.

17.2.1 System Emergency Exceptions.

As set forth in Section 4.2.1, all Market Participants, including Scheduling Coordinators, Utility Distribution Companies, Participating TOs, Participating Generators, Participating Loads, Control Area Operators (to the extent the agreement between the Control Area Operator and the CAISO so provides), and MSS Operators within the CAISO Control Area and all System Resources must comply fully and promptly with the CAISO's Dispatch Instructions and operating orders, unless such operation would impair public health or safety. The CAISO will honor the terms of TORs, provided that in a System Emergency and circumstances in which the CAISO considers that a System Emergency is imminent or threatened, to enable the CAISO to exercise its responsibilities as Control Area Operator in accordance with Applicable Reliability Criteria, holders of TORs must follow CAISO operating orders even if those operating orders directly conflict with the terms of applicable Existing Contracts or any other contracts pertaining to the TORs, unless such operating orders are inconsistent with the terms of an agreement between the CAISO and a Control Area Operator. In the event of a conflict between the CAISO Tariff and an agreement between the CAISO and a Control Area Operator, the agreement will govern. For this purpose CAISO operating orders to shed Load shall not be considered as an impairment to public health or safety. This section does not prohibit a Scheduling Coordinator from modifying its Bid or re-purchasing Energy in the HASP or RTM.

the entire TOR Self-Schedule; (ii) apply the TOR settlement treatment pursuant to Sections 11.2.1.5 and 11.5.7.1 to the valid balanced portions within the capacity limits of the TOR as reflected in the TRTC; and (iii) assess any charges and make any payments consistent with the treatment of ordinary Self-Schedules for the portions in excess of the capacity limits of the TOR as reflected in the TRTC.

17.3.3 Treatment of Valid TOR Self-Schedules

The resulting valid TOR Self-Schedules shall have the following Settlement treatment:

(1) The CAISO will apply the TOR Settlement treatment in Sections 11.2.1.5 and 11.5.7.

(2) The CAISO shall base the Marginal Cost of Losses on LMP differentials at the Points of Receipt and Points of Delivery identified in the valid TOR Self-Schedule; provided, however, that if a specific loss percentage exists in applicable agreement between the TOR holder and the CAISO, the CAISO will apply the IFM and RTM Marginal Cost of Losses Credit as provided in Sections 11.2.1.7 and 11.5.7.2.

(3) The CAISO will assess only charges applicable to Ancillary Services, Imbalance Energy, and Transmission Losses for the use of a TOR and will not assess charges for neutrality, UFE, transmission Access Charges, Minimum Load Costs, or other charges that might otherwise be applicable to the Demand or exports served solely over the TOR. The CAISO will assess charges applicable to Ancillary Services for the use of a TOR only to the extent that the CAISO must procure Ancillary Services for the TOR holder because Ancillary Services are not self-provided by the TOR holder. The CAISO will assess charges applicable to Imbalance Energy for the use of a TOR only if the CAISO must procure Imbalance Energy for the TOR holder.

(4) The holders of TORs will not be entitled to an allocation of revenues from the CAISO, including Access Charge revenues; provided that the Scheduling Coordinator for the TOR holder shall be allocated the applicable amount of IFM Marginal Losses Surplus Credit in accordance with the provisions of Section 11.2.1.6, except for any TOR Self-Schedule that received the IFM Marginal Cost of Losses Credit.

(5) Parties with TORs shall continue to pay for Transmission Losses or Ancillary Services requirements in accordance with any Existing Contracts applicable to those TORs as they may be modified or changed in accordance with the terms of the Existing Contract. Any affected Participating TOs shall continue to provide Transmission Losses and any other Ancillary Services to the holder of a TOR subject to an Existing Contract as may be required by the Existing Contract. As described in Section 17.3.3(3) above, the CAISO will charge Scheduling Coordinators submitting the TOR Self-Schedule the charges applicable to Transmission Losses, Ancillary Services, and Imbalance Energy in accordance with the CAISO Tariff (e.g., the Transmission Losses Charge based on the Marginal Cost of Losses), and any shortfall or surplus between the CAISO charges and the provisions of any applicable Existing Contract shall be settled bilaterally between the Existing Contract parties or through the relevant TO Tariff. To enable holders of TORs to determine whether the CAISO's

calculations result in any associated shortfall or surplus and to enable the parties to the Existing Contracts to settle the differences bilaterally or through the relevant TO Tariff, the CAISO shall calculate and provide the Scheduling Coordinator's Settlements the amounts paid for the MCL for the amounts MWh submitted with a valid TOR Self-Schedule. Each Participating TO will be responsible for recovering any deficits or crediting any surpluses associated with differences in Transmission Losses and Transmission Loss Requirements and/or Ancillary Services requirements, through its bilateral arrangements or its Transmission Owner Tariff.

17.3.4 Notification to Scheduling Coordinators of CAISO Determination.

After performing validation of the TOR Self-Schedule, and prior to taking any action pursuant to 17.6.2, the CAISO will make an automated validation notice available to the Scheduling Coordinator indicating whether the TOR Self-Schedule is valid or invalid. If a TOR Self-Schedule involves more than one Scheduling Coordinator, the complete validation of the chain of TOR Self-Schedules will occur when the last Scheduling Coordinator submits its TOR Self-Schedule. At that time, the CAISO will make an automated validation notice available to each Scheduling Coordinator registered as associated with the chain of TOR Self-Schedules. The CAISO can accommodate corrections submitted by a Scheduling Coordinator to a TOR Self-Schedule up to Market Close of the Day-Ahead Market as further described in the applicable Business Practice Manual.

17.4 The HASP.

17.4.1 Scheduling Deadlines.

Holders of TORs may submit TOR Self-Schedules for the use of those rights by the deadline for the Market Close for the HASP.

17.5 The CAISO's Real-Time Process.

Consistent with this Section 17, the CAISO will honor those scheduling flexibilities that may be exercised by holders of TORs through their respective Scheduling Coordinators during the CAISO's Real-Time Market to the extent that such flexibilities do not interfere with or jeopardize the safe and reliable operation of the CAISO Controlled Grid or Control Area operations.

17.6 Inter-Control Area Changes to Bids that Rely on TORs.

Changes to TOR Self-Schedules that occur during the CAISO's Real-Time Market that involve changes to CAISO Control Area imports or exports with other Control Areas (that is, inter-Control Area changes to TOR Self-Schedules) will be allowed and will be recorded by the CAISO based upon notification received from the Scheduling Coordinator representing the holder of the TOR. The Scheduling Coordinator

20 CONFIDENTIALITY.

20.1 CAISO.

The CAISO shall maintain the confidentiality of all of the documents, data and information provided to it by any Market Participant that are treated as confidential or commercially sensitive under Section 20.2; provided, however, that the CAISO need not keep confidential: (1) information that is explicitly subject to public data exchange pursuant to Section 6 of this CAISO Tariff; (2) information that the CAISO or the Market Participant providing the information is required to disclose pursuant to this CAISO Tariff, or applicable regulatory requirements (provided that the CAISO shall comply with any applicable limits on such disclosure); or (3) information that becomes available to the public on a non-confidential basis (other than as a result of the CAISO's breach of this CAISO Tariff).

20.2 Confidential Information.

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

(a) individual Bids;

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

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

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

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

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

(ii) Demand Forecasts; and

(iii) Information on existing import contracts.

(i) If the FERC, or its staff, during the course of an investigation or otherwise, requests information that is confidential or commercially sensitive. In providing the information to FERC or its staff, the CAISO shall take action consistent with 18 C.F.R. §§ 1b.20 and 388.112, and request that the information be treated as confidential and non-public by the FERC and its staff and that the information be withheld from public disclosure. The CAISO shall provide the requested information to the FERC or its staff within the time provided for in the request for information. The CAISO shall notify an affected Market Participant within a reasonable time after the CAISO is notified by FERC or its staff that a request for disclosure of, or decision to disclose, the confidential or commercially sensitive information has been received, at which time the CAISO and the affected Market Participant may respond before such information would be made public; or

(ii) In order to maintain reliable operation of the CAISO Control Area, the CAISO may share critical operating information, system models, and planning data with other WECC Reliability Coordinators, who have executed the Western Electricity Coordinating Council Confidentiality Agreement for Electric System Data, or are subject to similar confidentiality requirements; or

(iii) In order to maintain reliable operation of the CAISO Control Area, the CAISO may share individual Generating Unit Outage information with the operations engineering and the outage coordination division(s) of other Control Area operators, Participating TOs, MSS Operators and other transmission system operators engaged in the operation and maintenance of the electric supply system whose system is significantly affected by the Generating Unit and who have executed the Western Electricity Coordinating Council Confidentiality Agreement for Electric System Data.

(d) Notwithstanding the provisions of Section 20.2(e), information submitted through Resource Adequacy Plans and Supply Plans in accordance with Section 40 may be provided to:

(i) the Scheduling Coordinator(s) and/or Market Participant(s) involved in a dispute or discrepancy as to whether a resource is properly identified in a Resource Adequacy Plan or a Supply Plan only to the limited extent necessary to identify the disputed transaction and the relevant counterparty or counterparties.

(ii) the regulatory entity, whether the CPUC, other Local Regulatory Authority, or federal agency, with jurisdiction over a Load Serving Entity involved in a dispute or discrepancy as to whether a resource is properly identified in a Resource Adequacy Plan or the Supply Plan, or otherwise identified by the CAISO as exhibiting a potential deficiency in demonstrating compliance with resource adequacy requirements adopted by the CPUC, other Local Regulatory Authority, or federal agency, as applicable. The information provided shall be limited to the particular dispute, discrepancy, or deficiency.

(iii) the California Energy Commission with respect to Demand Forecast information provided to the CAISO under Sections 40.2.2.3 and 40.2.3.3(b) to the extent the CAISO seeks, and the California Energy Commission grants, confidential treatment of such information pursuant to California Public Resources Code Section 25322 and related regulations.

Nothing in this Section 20 shall limit the ability of the CAISO to aggregate data for public release about the adequacy of supply.

20.5 Confidentiality.

The CAISO shall implement and maintain a system of communications with Scheduling Coordinators that includes the strict use of passwords for access to data to ensure compliance with Section 20. Access within the CAISO to such data on CAISO's communications systems, including databases and backup files, shall be strictly limited to authorized CAISO personnel through the use of passwords and other appropriate means.

CAISO Tariff, shall be in writing and shall be deemed properly served, given, or made: (a) upon delivery if delivered in person, (b) five (5) days after deposit in the mail if sent by first class United States mail, postage prepaid, (c) upon receipt of confirmation by return facsimile if sent by facsimile, or (d) upon delivery if delivered by prepaid commercial courier service.

22.4.2 Addresses.

Notices to the CAISO shall be sent to such address as shall be notified by the CAISO to Market Participants from time to time. Notices issued by the CAISO to any Scheduling Coordinator shall be delivered to the address of the Scheduling Coordinator included in the Scheduling Coordinator Application Form. Notices to any Market Participant other than a Scheduling Coordinator shall be delivered by the CAISO to the address given to it by the Market Participant. The CAISO and any Market Participant may at any time change their address for notice by notifying the other party in writing.

22.4.3 Notice of Changes in Operating Procedure and Business Practice Manuals.

The effective date of any change or proposed change in any Operating Procedure or Business Practice Manual shall be established as part of the change management process set forth in Section 22.11 but will be no earlier than at least thirty (30) days from the date of publication of a Market Notice describing the change or proposed change, unless: (1) a different notice period is specified by state or Federal law, (2) the change is reasonably required to address an emergency affecting the CAISO Controlled Grid or its operations, or (3) the change is to a provision of a Business Practice Manual that is necessitated by emergency circumstances specific to that Business Practice Manual. Such circumstances include, but are not limited to, any change necessary to ensure that the Business Practice Manual is consistent with the CAISO Tariff or any applicable law, regulation, NERC or WECC operating policies, guidelines and standards, or FERC order, in which case the CAISO shall give Market Participants as much notice as is reasonably practicable. Any notices issued under this provision shall be delivered in accordance with the procedures set out in Section 22.11.

22.5 Waiver.

Any waiver at any time by the CAISO or any Market Participant of its rights with respect to any default under this CAISO Tariff, or with respect to any other matter arising in connection with this CAISO Tariff, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this CAISO Tariff. Any delay short of the statutory period of limitations in asserting or enforcing any right shall not constitute or be deemed a waiver.

person or federal entity shall incur any liability by failing to comply with a CAISO Tariff provision that is inapplicable to it by reason of being inconsistent with any federal statutes, regulations, or orders lawfully promulgated thereunder; provided, however, that such person or federal entity shall use its best efforts to comply with the CAISO Tariff to the extent that applicable federal laws, regulations, and orders lawfully promulgated thereunder permit it to do so.

(b) If any provision of this CAISO Tariff requiring any person or federal entity to give an indemnity or impose a sanction on any person is unenforceable against a federal entity, the CAISO shall submit to the Secretary of Energy or other appropriate Departmental Secretary a report of any circumstances that would, but for this provision, have rendered a federal entity liable to indemnify any person or incur a sanction and may request the Secretary of Energy or other appropriate Departmental Secretary to take such steps as are necessary to give effect to any provisions of this CAISO Tariff that are not enforceable against the federal entity.

(c) To the extent that the CAISO suffers any loss as a result of being unable to enforce any indemnity as a result of such enforcement being in violation of federal laws or regulations to which it is entitled under the CAISO Tariff under this Section or otherwise, it shall be entitled to recover such loss through the Grid Management Charge.

22.10 CAISO Grid Operations Committee.

The CAISO Grid Operations Committee shall coordinate activities relating to the CAISO Controlled Grid and shall consider suggestions for changes to the CAISO Operating Procedures in accordance with the procedures set out in Article IV, Section 4 of the CAISO's bylaws.

22.11 Operating Procedures and Business Practice Manuals Development and Amendment Process.

The CAISO shall prepare, maintain, promulgate and update the Operating Procedures and Business Practice Manuals. The Operating Procedures and Business Practice Manuals shall be consistent with the CAISO Tariff, and any NERC or WECC operating policies, guidelines and standards, and shall be available on the CAISO website. The CAISO shall establish a stakeholder process as set forth in

Section 22.11.1 and in a Business Practice Manual for BPM change management in order to ensure that all affected parties have an opportunity to comment on and shape the proposed nature of any proposed changes to any Business Practice Manual. Under that process, the CAISO and stakeholders shall consider whether any amendments to the CAISO Tariff are necessary in order to ensure the consistency of the CAISO Tariff and the Business Practice Manuals.

22.11.1 Process for Revisions of Business Practice Manuals.

Revisions of Business Practice Manuals shall be made in accordance with the process set forth in this Section 22.11.1, provided that the details and procedures for submittal and consideration of a BPM Proposed Revision Request (PRR) and other elements of the BPM change management process shall be set forth in a separate Business Practice Manual for BPM change management.

22.11.1.1 BPM Proposed Revision Request Submittal.

A request to make any change to a BPM, including any attachments thereto that are incorporated by reference, and any changes to the BPM PRR must be initiated through a submittal of a BPM PRR, except as provided in Section 22.4.3 or 22.11.1.2.

The following entities may submit a BPM PRR:

(1) Any Market Participant;

(2) Local Regulatory Authority;

(3) CAISO management; and

(4) Any other entity that meets the following qualifications:

(a) The entity must represent a Market Participant in dealings with the CAISO or operate in the CAISO Markets, and

(b) The entity must demonstrate that the entity (or those it represents) is affected by the subject section(s) of the BPM.

BPM PRRs shall be submitted electronically to the CAISO in the form and manner described in the Business Practice Manual for BPM change management. The CAISO shall post each BPM PRR on the CAISO Website and publish a Market Notice of such posting. The BPM PRR shall include a description of the requested revision, the reason for the suggested change, the impacts and benefits of the suggested change, a list of affected BPM sections and subsections, general administrative information, suggested language for the requested revision, and for BPM PRRs submitted by CAISO management, a BPM PRR impact analysis. The CAISO may, as appropriate, prepare an impact analysis for BPM PRRs submitted by other entities eligible to submit BPM PRRs.

22.11.1.2 BPM Proposed Revision Request Processing.

The CAISO shall review the BPM PRR for completeness and shall notify the submitter if the BPM PRR is incomplete, including the reasons for its determination, based upon the timelines provided in the BPM for BPM change management. An incomplete BPM PRR shall not receive further consideration until it is completed. In order to pursue the revision requested, a submitter must submit a completed version of the BPM PRR with the deficiencies corrected. If a submitted BPM PRR is complete or once a BPM PRR is corrected, the CAISO shall post the completed or corrected BPM PRR to the CAISO Website and publish a Market Notice of such posting.

22.11.1.3 BPM PRR Coordinator.

The consideration and disposition of BPM PRRs shall be led by a BPM change management coordinator. The BPM change management coordinator shall be an identified employee of the CAISO with responsibility for ensuring that BPM PRRs are processed and reviewed in accordance with the provisions of the Business Practice Manual for BPM change management. The BPM change management coordinator shall also be responsible for submitting reports to the CAISO Governing Board at each regularly scheduled Board meeting, indicating the status of pending BPM PRRs, including a summary of proposed revisions that have been accepted and the reason for any proposed revision that has been rejected, including the positions of stakeholders, and any decision on appeal as provided in Section 22.11.1.6.

22.11.1.4 Types and Treatment of BPM PRRs.

Each BPM PRR shall be preliminarily classified into one of the following categories by the BPM change management coordinator in consultation with internal CAISO business units, the submitter, and representatives from potentially affected stakeholders for purposes of review in accordance with its scope and significance.

(a) Category A – Clarifications of existing BPM language, grammatical errors, and revisions with minor significance that will be subject to the PRR review and action process described in Section 22.11.1.5 and in a Business Practice Manual, unless urgent or emergency circumstances exist pursuant to Section 22.4.3 or 22.11.1.7;

(b) Category B – Revisions that may be substantial significance, including changes to the CAISO or Market Participants' systems that will be subject to the BPM PRR review and action process described in Section 22.11.1.5 and in a Business Practice Manual, unless urgent or emergency circumstances exist pursuant to Section 22.4.3 or 22.11.1.7. In the case of a proposed change affecting the CAISO's systems, the CAISO will prepare a BPM PRR impact analysis, if not already prepared, in accordance with the procedures set forth in the Business Practice Manual; and

(c) Category C – For revisions that are beyond the scope of the BPM or that may require revisions to the CAISO Tariff, the CAISO will identify additional processes that may need to be undertaken in the consideration of the requested change beyond the BPM PRR process.

22.11.1.5 BPM PRR Review and Action.

Any interested stakeholder or CAISO management may comment on a posted BPM PRR in accordance with the process set forth in the Business Practice Manual for BPM change management. Comments shall be posted to the CAISO Website. Pending BPM PRRs shall be considered by the CAISO at a regularly established monthly public meeting or specially-noticed meeting dedicated to that purpose.

Following any meeting to consider pending BPM PRRs and subject to the standards set forth in Section 22.11.1.4, the BPM change management coordinator shall issue a recommendation for action on each pending BPM PRR and shall publish for public comment a report on the recommendation in accordance with the procedures set forth in the Business Practice Manual for BPM change management. The report shall be sufficiently detailed and shall be published in a timeframe that allows interested stakeholders a meaningful opportunity to provide written comment. The BPM change management coordinator shall, after considering stakeholder comments and all relevant impacts on their business needs, publish a final decision on any BPM PRR after a PRR recommendation report has been discussed at a BPM change management meeting at which comments received on the PRR recommendation report were discussed, in accordance with procedures set forth in the Business Practice Manual for BPM change management.

22.11.1.6 Right to Appeal to CAISO.

Any entity eligible to submit a BPM PRR under Section 22.11.1.1 may, within ten (10) Business Days, appeal in writing the outcome of any BPM PRR to a committee comprising at least three CAISO executives. The CAISO committee shall meet in public at the regularly scheduled monthly BPM PRR meeting or specially-noticed meeting to consider public comment by the appellant and any interested stakeholder. The executive sponsor of a BPM PRR may not sit in review of any appeal of a final decision regarding that same BPM PRR but may participate in and be present during the public discussion of any appeal. The CAISO committee will review the appeal and publish its decision to the appealing party and to the CAISO Website. If not satisfied with the decision on appeal, the appellant may raise concerns it may have with the Board of Governors at the next regularly scheduled Board meeting through the public comment period or through prior letter to the Governing Board.

22.11.1.7 CAISO Expedited Action in Emergency Circumstances.

Notwithstanding the provisions of Section 22.11.1.1, the CAISO may take expedited action to change or clarify a provision of a BPM under emergency circumstances. In addition to the circumstances identified in Section 22.4.3, emergency circumstances exist whenever the CAISO determines in good faith that (i) failure to implement a change or clarification to a BPM on an expedited basis would substantially and adversely affect System Reliability or security or the competitiveness or efficiency of the CAISO Market,

and (ii) there is insufficient time to comply with the BPM PRR procedures set forth in Section 22.11.1. The CAISO shall take reasonable steps to communicate with Market Participants and any other directly-affected entities prior to taking expedited action if practicable. If the CAISO takes expedited action to change or clarify a provision of a BPM in emergency circumstances, the CAISO shall promptly issue a Market Notice and submit a BPM PRR to examine the necessity of the change and its impacts.

22.11.2 Changes to Business Practice Manual for BPM Change Management.

Any changes to the Business Practice Manual for BPM change management shall require CAISO Governing Board approval.

22.12 [Not Used]

22.13 Scheduling Responsibilities and Obligations.

Nothing in this CAISO Tariff is intended to permit or require the violation of Federal or California law concerning hydro-generation and Dispatch, including but not limited to fish release requirements, minimum and maximum dam reservoir levels for flood control purposes, and in-stream flow levels. In carrying out its functions, the CAISO will comply with and will have the necessary authority to give instructions to Participating TOs and Market Participants to enable it to comply with requirements of environmental legislation and environmental agencies having authority over the CAISO in relation to Environmental Dispatch and will expect that submitted Schedules will support compliance with the requirements of environmental legislation and environmental agencies having authority over Generators in relation to Environmental Dispatch. In contracting for Ancillary Services and Imbalance Energy the CAISO will not act as principal but as agent for and on behalf of the relevant Scheduling Coordinators.

ARTICLE III – MARKET OPERATIONS

27 CAISO MARKETS AND PROCESSES.

In the Day-Ahead and Real-Time time frames the CAISO operates a series of procedures and markets that together comprise the CAISO Markets Processes. In the Day-Ahead time frame, the CAISO conducts the MPM-RRD, an Integrated Forward Market (IFM) and the Residual Unit Commitment (RUC) process. In the Real-Time time frame, the CAISO conducts the Market Power Mitigation and Reliability Requirement Determination, the Hour Ahead Scheduling Process (HASP), the Short Term Unit Commitment (STUC), the Real-Time Unit Commitment (RTUC) and the five-minute Real-Time Dispatch (RTD). The CAISO Markets Processes utilize transmission and security constrained unit commitment and dispatch algorithms in conjunction with a full network model to optimally commit, schedule and Dispatch resources and determine marginal prices for Energy, Ancillary Services and RUC Capacity. Congestion Revenue Rights are available and entitle holders of such instruments to a stream of hourly Payments or Charges associated with revenue the CAISO collects or pays from the Marginal Cost of Congestion component of hourly Day-Ahead LMPs. Through the operation of the CAISO Markets Processes the CAISO develops Day-Ahead Schedules, Day-Ahead AS Awards and RUC Schedules, HASP Advisory Schedules, HASP Intertie Schedules and AS Awards, Real-Time AS Awards and Dispatch Instructions to ensure that sufficient supply resources are available in Real-Time to balance Supply and Demand and operate in accordance with Reliability Criteria.

27.1 Locational Marginal Pricing.

The CAISO Markets are based on Locational Marginal Prices as provided below and further provided in Appendix C.

27.1.1 Locational Marginal Prices for Energy.

The LMP for Energy at any PNode is the marginal cost of serving the next increment of Demand at that PNode consistent with existing transmission facility constraints and the performance characteristics of resources. The LMPs calculated in the IFM, the HASP for Scheduling Points, and the RTD are based on Energy Bid Curves. The LMP at any given PNode is comprised of three cost components: the System Marginal Energy Cost (SMEC); Marginal Cost of Losses (MCL); and, Marginal Cost of Congestion (MCC).

27.1.1.3 Marginal Cost of Congestion.

The Marginal Cost of Congestion at a PNode reflects a linear combination of the shadow prices of all binding constraints in the network, each multiplied by the corresponding Power Transfer Distribution Factor (PTDF). The Marginal Cost of Congestion may be positive or negative depending on whether a power injection (*i.e.*, incremental Load increase) at that Location marginally increases or decreases Congestion.

27.2 Load Aggregation Points (LAP).

The CAISO shall create Load Aggregation Points and shall maintain Default LAPs at which all Demand shall Bid and be settled, except as provided in Section 27.2.1 and Section 30.5.3.2.

27.2.1 Metered Subsystems.

The CAISO shall define specific MSS LAPs for each MSS. The MSS LAP shall be made up the PNodes within the MSS that have Load served off of those Nodes. The MSS LAPs have unique Load Distribution Factors that reflect the distribution of the MSS Demand to the network nodes within the MSS. These MSS LAPs are separate from the Default LAPs, and the load distribution factors of the Default LAP do not reflect any MSS Load. As further provided in Sections 11.2.3 and 11.5, Metered Subsystems Demand is settled either at the price at the Default LAP for MSS Operators that have selected gross Settlement and at the price at the applicable MSS LAP for MSS Operators that have selected net Settlement.

27.2.2 Determination of LAP Prices.

27.2.2.1 IFM LAP Prices.

The IFM LAP Price for a given Trading Hour is the weighted average of the individual IFM LMPs at the PNodes within the LAP, with the weights equal to the nodal Demand associated with that LAP that is scheduled by the IFM. The weights used in calculating the Default LAP prices will equal the total Demand scheduled by the IFM in each Default LAP except for the Demand specified in Sections 27.2.1 and 30.5.3.2.

RTUC. In the Day-Ahead MPM-RRD, IFM and RUC processes the SCUC optimizes over the 24 hourly intervals of the next Trading Day. In the RTUC, which runs every 15 minutes, the SCUC optimizes over from four to seven 15-minute intervals comprising a portion of the current or imminent Trading Hour and the entire subsequent Trading Hour. In the HASP, which is a special run of the RTUC that runs once per hour just before the top of the hour, and its associated MPM-RRD process, the SCUC optimizes over seven 15-minute intervals comprising the last 45 minutes of the imminent Trading Hour and the entire subsequent Trading Hour. Following the HASP run of the RTUC, each of the next three runs of the RTUC successively drops one 15-minute interval from the front of the optimization Time Horizon. In the STUC the SCUC optimizes over seventeen fifteen-minute intervals comprising the last 15 minutes of the imminent Trading Hour and the entire next four Trading Hours. The CAISO will also utilize the SCUC algorithm on a two-day-ahead basis to commit Extremely Long Start Resources, for which commitment in the DAM does not provide sufficient time to start-up and be available to supply Energy during the next Trading Day as provided in Section 31.7.

27.4.1.1 Timing of Unit Commitment Instructions

For the Time Horizon of any given CAISO Markets Process, the associated SCUC optimization will typically commit resources having different start-up times, not all of which need to be started up immediately upon completion of that CAISO Markets Process. The CAISO may defer issuing a start-up instruction to a resource that can be started at a later time and still be available to supply Energy at the time the CAISO Markets Process indicated it would be needed. The CAISO shall re-evaluate the need to commit such resources in a subsequent CAISO Markets Process based on the most recent forecasts and other information about system conditions.

27.4.2 Security Constrained Economic Dispatch.

SCED is the optimization engine used to run the RTD to determine the optimal five-minute Dispatch Instructions throughout the Trading Hour consistent with resource and transmission constraints within the CAISO Control Area. The SCED runs every five minutes and utilizes a Time Horizon comprised of up to 13 five-minute intervals, but produces Dispatch Instructions only for the first five-minute interval of that time horizon. The SCED produces LMPs at each PNode that are used for Settlements as described in

Section 11.5.

27.5 Full Network Model.

27.5.1 Description of FNM for CAISO Markets.

The FNM is a representation of the CAISO Control Area that enables the CAISO to conduct power flow analyses to identify transmission constraints for the optimization of the CAISO Markets. External Control Areas and external transmission systems are modeled rightsto the extent necessary to support the commercial requirements of the CAISO Markets. External connections are retained between intertie branches within branch groups. Certain external loops are modeled, which allows the CAISO to increase the accuracy of the congestion management process. Resources are modeled at the appropriate network nodes. The pricing location (PNodes) of a Generating Unit generally coincides with the Node where the relevant revenue quality meter is connected or corrected, to reflect the point at which the Generating Units are connected to the CAISO Controlled Grid. The Dispatch, Schedule and LMP of a Generating Unit refers to a PNode, but the Energy injection is modeled in the FNM for network analysis purposes at the corresponding Generating Unit(s) (at the physical interconnection point), taking into account any losses in the transmission network leading to the point where Energy is delivered to Demand. For the CAISO Markets Processes, the FNM incorporates Transmission Losses and models and enforces all network Constraints, which are reflected in the Day-Ahead Schedules, AS and RUC Awards, HASP Intertie Schedules, Dispatch Instructions and the LMPs resulting from each CAISO market process. For the HASP, STUC, RTUC and the RTD processes, the Real-Time power flow parameters developed from the State Estimator are applied to the FNM.

27.5.2 Metered Subsystems.

The FNM includes a full model of MSS transmission networks used for power flow calculations and congestion management in the CAISO Markets Processes. Network constraints (i.e. circuit ratings, thermal ratings, etc.) within the MSS, or at the its boundaries, shall be monitored but not enforced in the CAISO's FNM. If overloads are observed in the forward markets are internal to the MSS or at the MSS boundaries and are attributable to MSS operations, the CAISO shall communicate such events to the

Scheduling Coordinator for the MSS and coordinate any manual re-dispatch required in Real-Time. If, independent of the CAISO, the Scheduling Coordinator for the MSS is unable to resolve Congestion internal to the MSS or at the MSS boundaries in Real-Time, the CAISO will use Exceptional Dispatch Instructions on Resources that have been Bid into the HASP and RTM to resolve the Congestion. The costs of such Exceptional Dispatch will be allocated to the responsible MSS Operator. Consistent with Section 4.9, the CAISO and MSS Operator shall develop specific procedures for each MSS to determine how network constraints will be handled.

27.5.3 Embedded Control Areas and Adjacent Control Areas.

To the extent sufficient data is available or adequate estimates can be made for the embedded Control Areas and adjacent Control Areas, the FNM will include a full model of embedded Control Areas and adjacent Control Areas used for power flow calculations and congestion management in the CAISO Markets Processes. The CAISO monitors but does not enforce the network constraints for embedded Control Areas or adjacent Control Areas in running the CAISO Markets Processes. The CAISO models the resistive component for transmission losses on embedded Control Areas and adjacent Control Areas but does not allow such losses to determine LMPs.

27.5.4 Accounting for Changes in Topology in FNM.

The CAISO will incorporate into the FNM information received pursuant to Section 24 for transmission expansion and Section 25 for generation interconnection to account for changes to the CAISO Controlled Grid and other facilities located within the CAISO Control Area. This information will be incorporated into the network model data base in which the electrical network model is maintained for use by the State Estimator and which forms the basis for the FNM used by the CAISO Markets. The updated power system network model will be transferred at periodic model update cycle intervals established by the CAISO and incorporated into the FNM for use in the CAISO Markets. The Business Practice Manual for Managing Full Network Model will describe the information to be provided by Market Participants, the process by which the CAISO incorporates this information in the FNM, and operational details of the FNM. If the CAISO becomes aware of a material error or omission in the FNM, it will make a timely correction of the FNM.

27.5.5 Load Distribution Factors.

The CAISO will maintain a library of system-wide Load Distribution Factors for use in distributing Demand scheduled at the Default LAPs. The system Load Distribution Factors are derived from the State Estimator and are stored in the Load Distribution Factor library, and are updated periodically. For IFM the Load Distribution Factor library uses a similar-day methodology for smoothing the most recent Load Distribution Factors. The similar-day methodology uses data separately for each type of day. More recent days are weighted more heavily in the smoothing calculations. The market application then uses

the set of Load Distribution Factors from the library that best represents the Load distribution conditions expected for the market Time Horizon. For the RTM, the State Estimator solution is used as a source for determining Load Distribution Factors. The Load Distribution Factor are also maintained for use for Demand scheduled at Custom LAPs. These custom Load Distribution Factors are not generated from the State Estimator and are fixed quantities representing the characteristics of the Custom LAP.

27.6 State Estimator.

The State Estimator produces a power flow solution based upon the modeled representation of the electrical network and available Real-Time SCADA telemetry. When this solution is applied to the FNM, it provides a reference of system conditions for determining Dispatch Instructions. The State Estimator also provides a reference for Real-Time Load Distribution Factors used to distribute the Real-Time CAISO Forecast of CAISO Demand as well as provide a source of historical data for the LDF library. If the State Estimator is not capable of providing CAISO with a solution to clear the CAISO Markets, the CAISO shall

28 INTER-SC TRADES

28.1 INTER-SC TRADES OF ENERGY

28.1.1 Purpose.

Scheduling Coordinators submit Inter-SC Trades of Energy consistent with the provisions in this Section 28.

28.1.2 Availability of Inter-SC Trades of Energy.

The CAISO allows Inter-SC Trades of Energy at individual PNodes of Generating Units within the CAISO Control Area and at Aggregated Pricing Nodes. The CAISO does not allow Inter-SC Trades of Energy at Scheduling Points. The CAISO allows submission of Inter-SC Trades of Energy in the DAM and the HASP. Inter-SC Trades of Energy submitted for the DAM are settled at the applicable Aggregated Pricing Nodes or PNodes for Generating Units. Inter-SC Trades of Energy submitted in the HASP are settled hourly based on the simple average of the Dispatch Interval LMPs at the applicable Aggregated Pricing Nodes or PNodes of Generating Units in those hours.

28.1.3 Submission of Inter-SC Trades of Energy.

A Scheduling Coordinator may submit Inter-SC Trades of Energy that it intends to have settled based on DAM LMPs at any time during the Day-Ahead Inter-SC Trade Period and may submit Inter-SC Trades of Energy for a particular hour that it intends to have settled based on the simple average of the Dispatch Interval LMPs during that hour at any time during the HASP Inter-SC Trade Period.

28.1.4 Information Requirements.

An Inter-SC Trade of Energy must consist of trades from both Scheduling Coordinators and contain the following information: (i) the Scheduling Coordinator identification from whom the Energy is traded; (ii) the Scheduling Coordinator to whom the Energy is traded; (iii) the location of the Energy trade; (iv) the CAISO Market the trade is to be settled in; (v) the time period over which the bilateral Energy trade will take place, including the start-date and Trading Hour and the end-date and Trading Hour; and (vi) the quantity (MWh) of the Energy traded.

Trades status as the CAISO conducts the pre-market validation to indicate, at a minimum, whether the Physical Trade is currently "valid" or "invalid." These Physical Trade notices are preliminary and subject to change until the final pre-market validation at the close of the HASP Inter-SC Trade Period. A Physical Trade with a "valid" status may be rendered "invalid" due to the actions of the Scheduling Coordinators to that Physical Trade or by other trading activities that are linked to the Generating Unit identified for the relevant Physical Trade whenever the quantities specified in the relevant Inter-SC Trades cannot be supported by the underlying Generating Unit's Bid. Scheduling Coordinators can use these status notices to make modifications to complete or correct invalid Physical Trades. The CAISO performs a final pre-market validation at the close of the HASP Inter-SC Trade Period. Physical Trades that are individually valid are concatenated (daisy chained) with other supporting Physical Trades at the same PNode of the Generating Unit. Once that concatenation is complete, the CAISO will determine whether the concatenated Physical Trades are physically supported by either another Inter-SC Trade of Energy at that same location or the Bid submitted in the relevant CAISO Market for the Generating Unit identified for that Physical Trade, individually and in the aggregate. If a Physical Trade is not adequately physically supported, the quantities in the Physical Trades of that Scheduling Coordinator and its downstream trading counter-parties are reduced on a pro-rata basis until those Physical Trades are valid. In performing physical pre-market validation of Inter-SC Trades of Energy in HASP, the CAISO also considers final Inter-SC Trades of Energy for the DAM in determining whether the HASP Physical Trades are physically supported individually or in the aggregate. Specifically, the CAISO determines whether the Generating Unit's submitted Bid in HASP is greater than or equal to the sum of: (1) final Day-Ahead Inter-SC Trades of Energy at that location and (2) the additional Inter-SC Trades of Energy for the HASP at that location. If the amounts are greater than the Generating Unit's submitted Bids in HASP, the CAISO will adjust down on a prorated basis the HASP Physical Trades. Final Day-Ahead Physical Trades are not adjusted in the HASP pre-market validation. The CAISO does not perform any Settlement on Physical Trade quantities (MWh) that are curtailed during Physical Trade pre-market validation.

28.1.6.3 Physical Trade Post-Market Confirmation.

The CAISO conducts post-market confirmation of Physical Trades that pass pre-market validation in Section 28.1.6.2 after the Market Clearing and the market results are posted to ensure that the Generating Unit has a Schedule that can support all of the Physical Trades. During the post-market confirmation process, the MWh quantity of Physical Trades that passed the CAISO's pre-market validation process may be reduced if the Generating Unit supporting the Physical Trades has a Schedule that is below the quantity of Physical Trades at that Location. The MWh quantities of Physical Trades that are reduced during the post-market confirmation process are settled at the Existing Zone Generation Trading Hub price for the Existing Zone associated with the Generating Unit identified in the Inter-SC Trade of Energy. The portion of Physical Trades that remains intact will be settled at the LMP for the identified PNode for the Generating Unit.

28.1.6.4 Inter-SC Trades of Energy at Aggregated Pricing Nodes.

Inter-SC Trades of Energy at Aggregated Pricing Nodes that are also defined Trading Hubs or LAPs are subject to the general validation procedures in Section 28.1.5 but are not subject to the three-stage physical validation procedures for Physical Trades described in Section 28.1.6 above.

28.2 INTER-SC TRADES OF ANCILLARY SERVICES.

Inter-SC Trades of Ancillary Services enable a Scheduling Coordinator to transfer any fixed quantity of Ancillary Services (MW) to another Scheduling Coordinator. An Inter-SC Trade of AS shall consist of a quantity in MWs traded between two Scheduling Coordinators for a specific hour and for a specific Ancillary Service type. The Inter-SC Trade of AS is a financial trade. The CAISO shall charge and pay the two parties of the trade based on the quantity (MW) of the Ancillary Service Obligation traded times the user rate for the Ancillary Service trades for the Trading Hour. Scheduling Coordinators may submit Inter-SC Trades of Ancillary Services for Regulation Up, Regulation Down, Spinning and Non-Spinning Reserves.

28.2.1 Information Requirements.

An Inter-SC Trade of Ancillary Services shall contain the following information: (i) the Scheduling Coordinator identification for the Scheduling Coordinator from whom the MW amounts of Ancillary Service

is traded; (ii) the Scheduling Coordinator identification for the Scheduling Coordinator to whom the MW amounts of AS is traded; (iii) the type of AS being traded; (iv) the time period over which the trade will take place, including the start-date and time and the end-date and time; and the (v) quantity (MW) of the AS to be traded.

28.2.2 Validation.

The CAISO's validation of Inter-SC Trades of AS will begin upon submission of an Inter-SC Trade of AS. The CAISO shall conduct a final validation for Inter-SC Trades of AS at the end of the HASP Inter-SC Trade Period. The CAISO will validate each submitted Inter-SC Trade of AS to verify that the contents of the submission match the submittal by the counter-party Scheduling Coordinator by type (Regulation-Up, Regulation-Down, Spinning Reserve and Non-Spinning Reserve), quantity (MW), and time period. The CAISO will inform the submitting Scheduling Coordinators regarding the validity of a submitted trade of an AS and will allow the Scheduling Coordinator resubmit the entire Inter-SC Trade of AS if it is not accepted. If only one of the two Scheduling Coordinators successfully submits an Inter-SC Trade of AS, the CAISO will notify both Scheduling Coordinators that the Inter-SC Trade of AS for the specific hour does not match the corresponding Inter-SC Trade of AS. If both Scheduling Coordinators successfully submit the Inter-SC Trade of AS, the CAISO will notify the Scheduling Coordinators that their Inter-SC Trade of AS for the specific hour has been accepted. An Inter-SC Trade of Ancillary Services submitted at a later time, but before the deadline for the submission of the trade for the Trading Hour, renders a previously submitted Inter-SC Trade of AS invalid if it applies to the same hour, same type of AS, and the same Scheduling Coordinators to whom and from whom the AS is traded.

28.2.3 Submission of Inter-SC Trades of Ancillary Services.

Scheduling Coordinators may submit Inter-SC Trades of Ancillary Services at any time during the HASP Inter-SC Trade Period.

specific hour has been accepted. The CAISO will verify that an Inter-SC Trade of IFM Uplift Load Obligation is between different Scheduling Coordinators that are authorized to participate in the CAISO markets during the time period covered by the trade and that the Trading Hour and the quantity of the trade must be greater than or equal to zero. An Inter-SC Trade of IFM Uplift Load Obligation submitted at a later time renders a previously submitted Inter-SC Trade of IFM Uplift Load Obligation invalid if it applies to the same hour and the same Scheduling Coordinators to whom and from whom the net IFM Load Obligation is traded.

28.3.3 Submission of Inter-SC Trades of IFM Load Uplift Obligation.

Scheduling Coordinators may submit Inter-SC Trades of IFM Load Uplift Obligations at any time during the HASP Inter-SC Trade Period.

30.4 Election for Start-Up Costs and Minimum Load Costs.

Scheduling Coordinators for Generating Units and Resource-Specific System Resources may elect on a semi-annual basis either of the two options provided below (the Proxy Cost option or the Registered Cost option) for specifying their Start-Up Costs and Minimum Load Costs to be used for those resources in the CAISO Markets Processes. Unless the Scheduling Coordinator has submitted Start-Up Costs and Minimum Load Costs in accordance with the Registered Cost option, the CAISO will assume the Proxy Cost-based option as the default option.

(1) Proxy Cost Option. This option uses fuel-cost adjusted formulas for Start-Up Costs and Minimum Load Costs based on the resource's actual unit-specific performance parameters. The Start-Up Costs and Minimum Load Costs values utilized in the CAISO Markets Processes will be these formulaic values adjusted for fuel-cost variation on a daily basis as calculated pursuant to a Business Practice Manual. Scheduling Coordinators will not be able to submit Bids containing alternative values for Start-Up Costs and Minimum Load Costs. In the event that the Scheduling Coordinator for a unit does not provide sufficient data for the CAISO to determine the unit's Proxy Costs, the CAISO will assume that the unit's Start-Up Costs and Minimum Load Costs are zero.

(2) Registered Cost Option. Under this option, the Scheduling Coordinator may submit values of its choosing for Start-Up Costs and Minimum Load Costs without regard to the resource's performance parameters or underlying costs. These Start-Up Cost and Minimum Load Cost values utilized in the CAISO Markets Processes will be these pre-specified values and will be fixed for six months in the Master File. Scheduling Coordinators will not be able to submit Bids containing alternative values for Start-Up Costs and Minimum Load Costs.

30.5 Bidding Rules.

30.5.1 General Bidding Rules.

(a) All Energy and Ancillary Services Bids of each Scheduling Coordinator submitted to the DAM for the following Trading Day shall be submitted at or prior to 10:00 a.m. on the day preceding the Trading Day, but no sooner than 7 days prior to the Trading Day. All Energy and Ancillary Services Bids of each Scheduling Coordinator submitted to the HASP for the following Trading Day shall be submitted starting from the time of publication, at 1:00 p.m. on the day preceding the Trading Day, of DAM results for the Trading Day, and ending seventy-five (75) minutes prior to each applicable Trading Hour in the RTM. The CAISO will not accept any Energy or Ancillary Services Bids for the following Trading Day between 10:00 a.m. on the day preceding the Trading Day and the publication, at 1:00 p.m. on the day preceding the Trading Day, of DAM results for the Trading Day;

(b) Bid prices submitted by Scheduling Coordinator for Energy accepted and cleared in the IFM

and scheduled in the Day-Ahead Schedule cannot be decreased. Bid prices for Energy submitted but not scheduled in the Day-Ahead Schedule may be increased or decreased in the HASP. Incremental Bid prices for Energy associated with Day-Ahead AS or RUC Awards in Bids submitted to the HASP may be revised. Scheduling Coordinators may revise ETC Self-Schedules for Supply only in the HASP to the extent such a change is consistent with TRTC Instructions provided to the CAISO by the Participating TO in accordance with Section 16. Scheduling Coordinators may revise TOR Self-Schedules for Supply only in the HASP to the extent such a change is consistent with TRTC Instructions provided to

(d) Bids for Energy or capacity that are submitted to one CAISO Market, but are not accepted in that market are no longer a binding commitment and Scheduling Coordinators may submit Bids in a subsequent CAISO Market at a different price; and

(e) The CAISO shall be entitled to take all reasonable measures to verify that Scheduling Coordinators meet the technical and financial criteria set forth in Section 4.5.1 and the accuracy of information submitted to the CAISO pursuant to this Section 30.

30.5.2 Supply Bids.

30.5.2.1 Common Elements for Supply Bids.

In addition to the resource-specific Bid requirements of this Section, all Supply Bids must contain the following components: Scheduling Coordinator ID Code; Resource ID; Resource Location; PNode or Aggregated Pricing Node as applicable; Energy Bid Curve; Self-Schedule component; Ancillary Services Bid; RUC Availability Bid; the Market to which the Bid applies; Trading Day to which the Bid applies; Priority Type (if any). Supply Bids offered in the CAISO Markets must be monotonically increasing.

30.5.2.2 Supply Bids for Participating Generators.

In addition to the common elements listed in Section 30.5.2.1, Supply Bids for Participating Generators shall contain the following components: Start-Up Bid, Minimum Load Bid, Ramp Rate, Minimum and Maximum Operating Limits; Regulatory Must-Take/Must-Run Generation; Contingency Flag; and Contract Reference Number (if any). Supply Bids for Physical Scheduling Plants and System Units must include the Generation Distribution Factors. If the Scheduling Coordinator has not submitted the Generation Distribution Factors applicable for the Bid, the CAISO will use default Generation Distribution Factors stored in the Master File. All Generation Distribution Factors used by the CAISO will be normalized based on Outage data that is available to the automated market systems. Combined-cycle Generating Units may only be registered under a single Resource ID.

30.5.2.3 Supply Bids for Participating Loads and Aggregated Participating Loads.

In addition to the common elements listed in Section 30.5.2.1, Scheduling Coordinators submitting Supply Bids for Participating Loads, which includes Pumping Load or Pumped-Storage Hydro Units, shall contain

the following components: Pumping Load, Minimum Load Bid, Load Distribution Factor, Ramp Rate, Energy Limit, Pumping Cost, and Pump Shut-Down Costs. Aggregated Participating Loads that choose to submit a Supply Bid may only do so by submitting a Supply Bid as a Generating Unit for the Demand reduction capacity of the Aggregated Participating Load. The CAISO will use Load Distribution Factors the CAISO has created for the Aggregated Participating Load.

30.5.2.4 Supply Bids for System Resources.

In addition to the common elements listed in Section 30.5.2.1, Supply Bids for System Resources shall also contain: the relevant Ramp Rate; Start-Up Costs; and Minimum Load Costs. Start-Up Costs

and Minimum Load Costs for System Resources, except for Resource-Specific System Resources, must be zero. Resource-Specific System Resources may elect the Proxy Cost option or Registered Cost option as provided in Section 30.4. Resource-Specific System Resources are eligible to participate in the Day-Ahead Market on an equivalent basis as Generating Units and are not obligated to participate in RUC or the RTM if the resource did not receive a Day-Ahead Schedule unless the resource is a Resource Adequacy Resource. If the Resource-Specific System Resource is a Resource Adequacy Resource, the Scheduling Coordinator for the resource is obligated to make it available to the CAISO Market as prescribed by Section 40.6. Dynamic Resource-Specific System Resources are also eligible to participate in the HASP and RTM on an equivalent basis as Generating Units. Non-Dynamic Resource-Specific System Resources will be treated like other System Resources in the HASP and RTM. The quantity (in MWh) of Energy categorized as Interruptible Imports (non-firm imports) can only be submitted through Self-Schedules in the Day-Ahead Market and cannot be incrementally increased in the HASP or RTM. Bids submitted to the Day-Ahead Market for ELS Resources will be applicable for two days after they have been submitted and cannot be changed the day after they have been submitted.

30.5.2.4.1 Intertie Block Bids.

Intertie Block Bids must contain the same energy Bid price for all hours of the period for which the Intertie Block Bid is submitted. Intertie Block Bids may only be submitted in the DAM.

30.5.2.5 Supply Bids for Metered Subsystems.

Consistent with the bidding rules specified in this Section 30.5, Scheduling Coordinators that represent MSS Operators may submit Bids for Energy and Ancillary Services, including Self-Schedules and Submissions to Self-Provide an Ancillary Service, to the DAM. All Bids to supply Energy by MSS Operators must identify each Generating Unit on an individual unit basis. The CAISO will not accept aggregated Generation Bids without complying with the requirements of Section 4.9.12 of the CAISO Tariff. All Scheduling Coordinators that represent MSS Operators must submit Demand Bids at the

In the case of Spinning Reserve capacity, the Ancillary Services Bid must also contain: (a) MW of additional capability synchronized to the system, immediately responsive to system frequency, and available within 10 minutes; (b) Bid price of capacity reservation, and (c) an indication whether the capacity reserved would be available to supply Imbalance Energy only in the event of the occurrence of an unplanned Outage, a Contingency or an imminent or actual System Emergency (Contingency Flag). In the case of Spinning Reserve capacity from System Resources, the Ancillary Services Bid must also contain: (a) Interchange ID code of the selling entity, (b) Schedule ID (NERC ID number, and (c) a Contract Reference Number, if applicable.

30.5.2.6.3 Non-Spinning Reserve Capacity.

In the case of Non-Spinning Reserve, the Ancillary Service Bid must also contain: (a) the MW capability available within 10 minutes; (b) the Bid price of the capacity reservation; (c) time of synchronization following notification (min); and (d) an indication whether the capacity reserved would be available to supply Imbalance Energy only in the event of the occurrence of an unplanned Outage, a Contingency or an imminent or actual System Emergency (Contingency Flag). In the case of Non-Spinning Reserve Capacity from System Resources, the Ancillary Services Bid must also contain: (a) Interchange ID code of the selling entity, (b) Schedule ID (NERC ID number); and (c) a Contract Reference Number, if applicable. In the case of Non-Spinning Reserve Capacity from Load within the CAISO Control Area, the Ancillary Service Bid must also contain: (a) a Load identification name and Location Code, (b) Demand reduction available within 10 minutes, (c) time to interruption following notification (min), and (d) maximum allowable curtailment duration (hr). An Aggregated Participating Load may only participate as a Generating Unit offering Non-Spinning Reserve capacity from the Demand reduction capacity of the Aggregated Participating Load through a Bid to provide Non-Spinning Reserve or a Submission to Self-Provide an Ancillary Service for Non-Spinning Reserve.

30.5.2.6.4 For Self-Provided Ancillary Services.

Scheduling Coordinators electing to self-provide Ancillary Services shall supply the information referred to in this Section 30.5 in relation to each Ancillary Service to be self-provided, excluding the capacity price

information, but including the name of the trading Scheduling Coordinator in the case of Inter-Scheduling Coordinator Ancillary Service Trades. The portion of the single Energy Bid that corresponds to the high end of the resource's operating range, shall be allocated to any awarded or self-provided Ancillary Services in the following order from higher to lower capacity: (a) Regulation Up; (b) Spinning Reserve; and (c) Non-Spinning Reserve. For resources providing Regulation Up, the upper regulating limit shall be

used if it is lower than the highest operating limit. The remaining portion of the Energy Bid (i.e. that portion not associated with capacity committed to provide Ancillary Services) shall constitute a Bid to provide Energy.

30.5.2.7 RUC Availability Bids.

Scheduling Coordinators may submit RUC Availability Bids for specific Generating Units in the DAM. Capacity that does not have Bids for Supply of Energy in the IFM will not be eligible to participate in the RUC process. The RUC Availability Bid component a is MW-quantity of non-RA Capacity in $/MW per hour, and $0/MW for RA Capacity.

30.5.3 Demand Bids.

Each Scheduling Coordinator representing Demand, including Non-Participating Load and Aggregated Participating Load, shall submit Bids indicating the hourly quantity of Energy in MWh that it intends to purchase in the IFM for each Trading Hour of the Trading Day. Scheduling Coordinators must submit Demand Bids, including Self Schedules, for CAISO Demand at Load Aggregation Points except as provided in Section 30.5.3.2. Scheduling Coordinators must submit must submit a zero RUC Availability Bid for the portion of their qualified RA Capacity. If submitting Self-Schedules at Scheduling Points for export in the IFM, the Scheduling Coordinator shall indicate whether or not the export is served from Generation from Resource Adequacy Capacity, and if submitting Self-Schedules at Scheduling Points for export in HASP the Scheduling Coordinator shall indicate whether or not the export is served from Generation from Resource Adequacy Capacity or RUC Capacity. The procedure for identifying the non-Resource Adequacy Capacity or non-RUC Capacity is specified in the Business Practice Manuals.

30.5.3.1 Demand Bids Components.

Demand Bids must have the following components: Scheduling Coordinator ID code; a Demand Bid Curve that is a monotonically decreasing staircase function of no more than 10 segments defined by 11 ordered pairs of MW and $/MWh; Location Code for the LAP or PNode, as applicable; and hourly scheduled MWh within the range of the Bid curve, including any zero values, for each Settlement Period of the Trading Day.

30.5.3.2 Exceptions to Requirement for Submission of Demand Bids and Settlement at the LAP.

The following are exceptions to the requirement that Demand Bids be submitted and settled at the LAP:

(a) ETC or TOR Self-Schedules submitted consistent with the submitted TRTC Instructions;

(b) Except for Aggregated Participating Loads, which may only participate as Non-Participating Load, Participating Load Bids for Supply and Demand may be submitted and settled at a PNode; and

(c) Export Bids are submitted and settled at Scheduling Points, which do not constitute a LAP.

level two validation rules, the CAISO shall assign the Bid as invalid and the Scheduling Coordinator must either correct or resubmit the Bid.

Step 3: If the Bid successfully passes validation in Step 2, it will continue through the third level of validation where the Bid will be analyzed based on its contents to identify any missing Bid components that must be either present for the Bid to be valid consistent with the market rules contained in Article III of this CAISO Tariff and as reflected in the Business Practice Manuals. At this stage the Bid will either be automatically modified for correctness and assigned a status of conditionally modified or modified, or if it can be accepted as is, the Bid will be assigned a status of conditionally valid, or valid. Some examples of when a Bid will be automatically modified and assigned a status of modified or conditionally modified Bids, include but are not limited to, extension of: (1) a Self-Schedule to the first Energy Bid point in cases where the total Self-Schedule quantity specified in a Bid is lower than the first Energy Bid quantity of the Energy Bid curve; or (2) an Energy Bid Curve range where the Energy Bid Curve submitted does not cover other commodities such as RUC or Ancillary Services for the same resource. Throughout the Bid evaluation process, the Scheduling Coordinator shall have the ability to view the Bid and may choose to either cancel the Bid, modify and re-submit the Bid, or leave the modified, conditionally modified or valid, conditionally valid Bid as is to be processed in the designated CAISO Market.

30.7.3.2 Master File Data Update.

Except as otherwise prescribed in this tariff, once a day the Master File data is updated with changes to the Master File that were submitted between at least five (5) and up to eleven (11) Business Days in advance, after which all conditional Bids must be re-validated prior to the trading period when the Bid will take effect. After this re-validation takes place, the status of all conditionally modified and conditionally valid Bids may be changed to modified or valid, if the Bid period is for the next relevant DAM.

30.7.3.3 Validation Prior to Market Close and After Master File Update.

Prior to the Market Close of the DAM, after the Master File data has been updated, all Bids must be re-validated using the same process as described in Section 30.7.3.1 to produce either Valid Bids or Modified Bids. Throughout this process the Scheduling Coordinator shall have the ability to view the Bid and may choose to re-submit (at which point the Bid would undergo the Bid validation process described

ramp rate will be used in determination of Dispatch Instructions for the shorter period of the balance of the Trading Day or duration of reported Outage.

(g) If an operational ramp rate is derated in SLIC, the ramp rate will only be to four segments. Ramping capability through Forbidden Regions are not affected by derates entered in SLIC.

(h) For all CAISO Dispatch Instructions of Reliability Must Run resources the operational ramp rate will be the ramp rate declared in the Reliability Must Run Contract Schedule A.

30.11 Format and Validation of Startup and Shutdown Times.

For a Generating Unit, the submitted Start Up time expressed in minutes (min) as a function of down time expressed in minutes (min) must be a staircase function with up to 3 segments defined by a set of 1 to 4 down time and Start Up time pairs. The Start Up time is the time required to start the resource if it is offline longer than the corresponding down time. The last segment will represent the time to start the unit from a cold start and will extend to infinity. The submitted Start Up time function shall be validated as follows:

(a) The first down time must be 0 min.

(b) The down time entries must match exactly (in number, sequence, and value) the corresponding down time breakpoints of the maximum Start Up time function, as registered in the Master File for the relevant resource.

(c) The Start Up time for each segment must not exceed the Start Up time of the corresponding segment of the maximum Start Up time function, as registered in the Master File for the relevant resource.

(d) The Start Up time function must be strictly monotonically increasing, i.e., the Start Up time must increase as down time increases.

For Participating Load, a single Shut Down time in minutes is the time required for the resource to Shut Down after receiving a Dispatch Instruction.

30.12 Format and Validation of Start Up and Shut Down Costs.

For a Generating Unit, the submitted Start-Up Cost expressed in dollars ($) as a function of down time expressed in minutes must be a staircase function with up to three (3) segments defined by a set of 1 to 4 down time and Start-Up Cost pairs. The Start-Up Cost is the cost incurred to start the resource if it is

offline longer than the corresponding down time. The last segment will represent the cost to start the resource from cold Start-Up and will extend to infinity. The submitted Start-Up Cost function shall be validated as follows:

(a) The first down time must be 0 min.

(b) The down time entries must match exactly (in number, sequence, and value) the corresponding down time breakpoints of the Start-Up Cost function, as registered in the Master File for the relevant resource as either the Proxy Cost or Registered Cost.

(c) The Start-Up Cost for each segment must not be negative and must be equal to the Start-Up Cost of the corresponding segment of the Start-Up Cost function, as registered in the Master File for the relevant resource. If a value is submitted in a Bid for the Start-Up Cost, it will be overwritten by the Master File value as either the Proxy Cost or Registered Cost based on the option elected pursuant to Section 30.4. If no value for Start-Up Cost is submitted in a Bid, the CAISO will insert the Master File value, as either the Proxy Cost or Registered Cost based on the option elected pursuant to Section 30.4.

(d) The Start-Up Cost function must be strictly monotonically increasing, i.e., the Start-Up Cost must increase as down time increases.

For Participating Loads, a single Shut Down Cost in dollars ($) is the cost incurred to Shut-Down Cost the resource after receiving a Dispatch Instruction. The submitted Shut-Down Cost must not be negative.

30.13 Format and Validation of Minimum Load Costs.

For a Generating Unit, the submitted Minimum Load Cost expressed in dollars per hour ($/hr) is the cost incurred for operating the unit at minimum load. The submitted Minimum Load Cost must not be negative and must be equal to the Minimum Load Cost under the Proxy Cost option or Registered Cost option, as registered in the Master File for the relevant resource.

For Participating Loads, the submitted Minimum Load Cost ($/hr) is the cost incurred while operating the resource at reduced consumption after receiving a Dispatch Instruction. The submitted Minimum Load Cost must not be negative.

Economic Bids without adjusting Self-Schedules, and adjusts Self-Schedules only if it is not possible to balance Supply and Demand and manage Congestion with available Economic Bids. The Day-Ahead Schedules are binding commitments, including the commitment to Start-Up, if necessary, to comply with the Day-Ahead Schedules. The CAISO will not issue separate Start-Up instructions for Day-Ahead commitments. A resource's status, however, can be modified as a result of additional market processes occurring in HASP, STUC and RTUC. In addition, in Real-Time, resources are required to follow Real-Time Dispatch Instructions.

31.3.1.2 Reduction of LAP Demand.

To the extent the CAISO cannot resolve a non-competitive transmission constraint utilizing effective Economic Bids such that Load at the LAP level in the pre-IFM Pass 2 (ACR) would otherwise be adjusted to relieve the constraint, the CAISO will take the following actions in sequence:

1) Step 1: Schedule the Energy from Self-provided Ancillary Service Bids from capacity that is obligated to offer an Energy Bid under a must-offer obligation such as RMR or Resource Adequacy. Since the otherwise Self-Provided Ancillary Services capacity in question is under a must offer obligation, the associated Energy Bid prices will be either: (a) submitted Energy Bids; or (b) Default Energy Bids to the extent an Energy Bid was not submitted for the Self-Provided Ancillary Services capacity, but not lower than any Energy Bids from the same resource that may have cleared Pre-IFM Pass 1 (ACR).

2) Step 2: In case the measure in Step 1 is insufficient to avoid adjustment of Load at the LAP level, the CAISO will evaluate the validity of the binding transmission constraint and if it is determined that the constraint can be relaxed based on the operating practices, will relax the constraint consistent with operating practices. The CAISO will use the following rules in relaxing the transmission constraints in this step 2:

(a) No constraints on WECC Rated Paths or interties with adjacent Control Areas would be relaxed.

(b) Only the transmission constraints that can be mitigated in the Real-Time Market or Real-Time operation are candidates for constraint relaxation. The criteria used to assess

whether or not the constraint can be mitigated in Real-Time can include, but are not limited to, the following: (1) there is a Submission to Self-Provide an Ancillary Service for Operating Reserves from non-RA Resources or non-RMR Units within the transmission constrained Load pocket constrained by the transmission path in question; provided, however, such Submissions to Self-Provide an Ancillary Service cannot be used in Step 1, but is available in Real-Time; (2) Scheduling Coordinators have submitted Self-

31.3.3 Metered Subsystems.

In clearing the IFM, the CAISO will not enforce constraints within each MSS. The Full Network Model (FNM) includes a full model of MSS transmission networks used for power flow calculations and constraint management in the IFM and RTM. Network constraints (i.e. circuit ratings, thermal ratings, etc.) within the MSS, or at its boundaries, shall be monitored but not enforced in the CAISO's FNM. If overloads are observed in the forward markets are internal to the MSS or at the MSS boundaries and are attributable to MSS operations, the CAISO shall communicate such events to the Scheduling Coordinator for the MSS and coordinate any manual re-dispatch required in Real-Time. If, independent of the CAISO, the Scheduling Coordinator for the MSS is unable to resolve Congestion internal to the MSS or at the MSS boundaries in Real-Time, the CAISO will use Exceptional Dispatch Instructions on Resources that have been Bid into the HASP and RTM to resolve the congestion. Such costs will be allocated pursuant to the provisions specified in Section 11.5.6.2.5.2. The CAISO and MSS Operator shall develop specific procedures for each MSS to determine how network constraints will be handled. Costs associated with internal Congestion and Transmission Losses in the MSS will be the responsibility of the MSS Operator. The Scheduling Coordinator for the MSS shall be responsible for payment of Marginal Losses for transactions at any points of interconnection between the MSS and the CAISO Controlled Grid, and for the delivery of Energy to the MSS or from the MSS in accordance with the CAISO Tariff. For MSS Operators that elect Load following, the CAISO shall exclude the effect of Transmission Losses in the relevant MSS in the CAISO's calculation of loss sensitivity factors used to calculate LMPs.

31.4 Uneconomic Adjustments in the IFM.

All Self-Schedules are respected by SCUC to the maximum extent possible and are protected from curtailment in the Congestion Management process to the extent that there are Economic Bids that can relieve Congestion. If all Economic Bids in the IFM are exhausted, resource Self-Schedules between the resource's Minimum Load and the first Energy level of the first Energy Bid point will be subject to uneconomic adjustments based on the scheduling priorities listed below. Through this process, imports and exports may be reduced to zero, Demand Bids may be reduced to zero, price taker Demand (LAP load) may be reduced, and generation may be reduced to a lower operating (or regulating) limit (or lower

regulating limit plus any qualified Regulation Down Award or Self-Provision of Ancillary Services, if applicable). Any schedules below the Minimum Load level are treated as fixed schedules and are not subject to uneconomic adjustments for Congestion management. The provisions of this section shall apply only to the extent they do not conflict with any MSS Agreement. The scheduling priorities for the IFM from highest priority (last to be adjusted) to lowest priority (first to be adjusted) are as follows:

a) Reliability Must Run (RMR) pre-dispatch reduction;

b) Day-Ahead TOR (balanced demand and supply reduction);

c) Day-Ahead ETCs (balanced demand and supply reduction); Different ETC Priority Levels will be observed based upon global ETC priorities provided to the CAISO by the responsible PTOs;

d) Other Self Scheduled CAISO Demand reduction subject to Section 31.3.1.2, exports explicitly identified in a Resource Adequacy Plan to be served by Resource Adequacy Capacity explicitly identified and linked in a Supply Plan to the exports, and Self-Scheduled exports at Scheduling Points explicitly sourced by non-Resource Adequacy Capacity;

e) Self-Scheduled exports at Scheduling Points not explicitly sourced by non-Resource Adequacy Capacity, except those exports explicitly identified in a Resource Adequacy Plan to be served by Resource Adequacy Capacity explicitly identified and linked in a Supply Plan to the exports as set forth in Section 31.4(d);

f) Day-Ahead Ahead Regulatory Must Run and Regulatory Must Take reduction;

g) Other Self Scheduled Supply reduction; and

h) Economic Demand and Supply Bids.

31.5 Residual Unit Commitment.

The CAISO shall perform the RUC process after the IFM. In the event that the IFM did not commit sufficient resources to meet the CAISO Forecast of CAISO Demand and account for other factors such as Demand Forecast error, as described in the Business Practice Manuals, the RUC shall commit additional resources and identify additional RUC Capacity to ensure sufficient on-line resources to meet Demand for each hour of the next Trading Day. RUC Capacity is selected by a SCUC optimization that uses the same FNM used in the IFM to help ensure the deliverability of Energy from the RUC Capacity.

31.5.1 RUC Participation.

31.5.1.1 Capacity Eligible for RUC Participation.

RUC participation is voluntary for capacity that has not been designated as Resource Adequacy Capacity. Scheduling Coordinators may make such capacity available for participation in RUC by submitting a RUC Availability Bid, provided the Scheduling Coordinator has also submitted an Energy Bid for such Capacity into the IFM. Capacity from Non-Dynamic System Resources that has not been designated Resource Adequacy Capacity is not eligible to participate in RUC. Capacity from resources including System Resources that has been

designated as qualified Resource Adequacy Capacity must participate in RUC. RUC participation is required for Resource Adequacy Capacity to the extent that Resource Adequacy Capacity is not committed following the IFM. System Resources eligible to participate in RUC will be considered on an hourly basis; that is, RUC will not observe any multi-hour block constraints 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 of the CAISO Tariff are binding and the RUC process will model such capacity as capacity that is under a contractual obligation to provide.

31.5.1.2 RUC Availability Bids.

Scheduling Coordinators may only submit RUC Availability Bids for Capacity (above the minimum load) for which they are also submitting an Energy Bid to participate in the IFM. The RUC Availability Bid for the RA Capacity submitted by a Scheduling Coordinator must be $0/MW per hour for the entire RA Capacity. If the Scheduling Coordinator fails to submit a $0/MW per hour for RA Capacity, the CAISO will insert the $0/MW per hour for the full amount of RA Capacity for a given resource. Scheduling Coordinators may submit non-zero RUC Availability Bids for the portion of a resource's Capacity that is not RA Capacity.

31.5.1.3 RMR Resources.

If a resource is determined to have an RMR requirement for any Trading Hour of the next day, either by the MPM-RRD process or by the CAISO through a manual RMR Dispatch Notice, and if any portion of the RMR requirement has not been cleared in the IFM, the entire portion of the RMR requirement will be represented as a RMR Self-Schedule in the RUC.

31.5.2 Metered Subsystem RUC Obligation.

MSS Operators are permitted to make an annual election to opt-in or opt-out of RUC participation. MSS Operators that elect to Load-follow are automatically considered to opt-out of the RUC participation. Prior

penalty point against it for each occurrence; (ii) if the difference in any hour is more than the lesser of five (5) percent or ten (10) MW, but less than the lesser of ten (10) percent or twenty (20) MW, then the Scheduling Coordinator for the MSS will have two (2) penalty points against it for each occurrence; (iii) if the difference in any hour is more than the lesser of ten (10) percent or twenty (20) MW, then the Scheduling Coordinator for the MSS will have five (5) penalty points against it for each occurrence. The maximum penalty points that can be accrued during a single Trading Day for each MSS will be five (5). A total of more than twenty (20) penalty points within twelve (12) consecutive months will require the MSS to opt-in to RUC for the remainder of the CRR Cycle and for the following CRR Cycle. The provisions in this Section 31.5.2.2.2 do not apply to MSS Operator that has elected to Load-follow, and only apply to non-Load-following MSS Operators.

31.5.2.3 MSS Option to Bid RUC Capacity.

The Scheduling Coordinator for the MSS Operator may submit RUC Availability Bids for the capacity of MSS Resources and receive RUC Availability Payments and RUC Cost Compensation for such capacity selected in RUC, subject to the same bidding and operational requirements as any other resources providing RUC capacity. This capability is not affected by the MSS Operator's decision to Opt-In to or Opt-Out of RUC per Sections 31.5.2.1 and 31.5.2.2.

31.5.3 RUC Procurement Target.

The procurement target for RUC in any given Trading Hour will be determined based on the next day's hourly CAISO Forecast of CAISO Demand less the Energy scheduled in the Day-Ahead Schedule, and accounting for other factors, as appropriate, such as Demand Forecast error and estimated incremental HASP Bids including those from Participating Intermittent Resources. The adjustments listed in Sections 31.5.3.1 to 31.5.3.6 will be made to the CAISO Forecast of CAISO Demand to account for the conditions as provided therein. Adjustments may be made on a RUC Zone basis to ensure that RUC results in adequate local capacity procurement. The RUC procurement target-setting procedure is designed to meet the requirements of reliable grid operation without unnecessary over-procurement of RUC Capacity or over-commitment of resources. Additional detail on the process for setting the RUC procurement target is specified in the Business Practice Manuals.

31.5.3.1 CAISO Operator Review & Adjustment

The CAISO Operator reviews the CAISO Forecast of CAISO Demand and all calculated adjustments as provided in Sections 31.5.3.2 through 31.5.3.6. The CAISO Operator shall accept, modify, or reject such adjustments based on Good Utility Practice. If the CAISO Operator determines it must modify or reject adjustments, the CAISO Operator shall log sufficient information as to reason, Operating Hour, and specific modification(s) made to the calculated adjustments.

31.5.3.2 Demand Response Adjustments.

The CAISO shall account for Demand response that is clearly communicated to the CAISO as certain to be curtailed for the next Trading Day only for the two following types of Demand response: 1) Demand response triggered by a staged System Emergency event; and 2) Demand response that is triggered by a price or an event known in advance. If an LSE informs the CAISO of anticipated Demand response prior to Market Close of the DAM, the CAISO Forecast of CAISO Demand used as the RUC procurement target will be reduced accordingly.

31.5.3.3 MSS Adjustment.

As specified in section 31.5.2.1, MSS Operators are permitted to make an annual election to opt-in or opt-out of RUC participation. If the MSS Operator opts-in to the RUC procurement process, the CAISO considers the CAISO's Demand Forecast of the MSS Demand in setting the RUC procurement target. If an MSS Operator opts-out of the RUC procurement process, the CAISO does not consider the CAISO's Demand Forecast of the MSS Demand in setting the RUC procurement target. An MSS Operator that has elected to opt-out of RUC, or has elected to Load follow and therefore has also elected to opt-out of RUC, is required to provide sufficient resources in the Day-Ahead Market, and in the case of a Load following MSS Operator, follow its Load within the MSS Deviation Band. To reflect these options and to prevent committing additional capacity or resources for any differences between the CAISO Demand Forecast for the MSS and the MSS Self-Scheduled quantities in the IFM, the CAISO replaces the CAISO Demand Forecast for such MSS with the quantity of Demand self-scheduled by the Scheduling Coordinator for the MSS in the IFM.

31.5.3.4 Eligible Intermittent Resource Adjustment.

Scheduling Coordinators for Eligible Intermittent Resources may submit Bids, including Self-Schedules, in the Day-Ahead Market and the quantity ultimately scheduled from Eligible Intermittent Resources may differ from the CAISO forecasted deliveries from the Eligible Intermittent Resources. The CAISO may adjust the forecasted Demand either up or down for such differences by RUC Zone in which the Eligible Intermittent Resource resides. To the extent the scheduled quantity for an Eligible Intermittent Resource in the IFM is less then the quantity forecasted by CAISO, the CAISO makes a Supply side adjustment in RUC by using the CAISO forecasted quantity for the Eligible Intermittent Resource as the expected delivered quantity. To the extent the scheduled quantity for an Eligible Intermittent Resource in the IFM is greater than the quantity forecasted by the CAISO, the CAISO makes a Demand side adjustment to the RUC Zone Demand equal to the difference between the Day-Ahead Schedule and the CAISO forecasted quantity.

31.5.3.5 Real-Time Expected Incremental Supply Self-Schedule Adjustment.

In order to avoid over procurement of RUC, the CAISO shall, using a similar-day approach, estimate the HASP Self-Schedules for resources that usually submit HASP Self-Schedules that are greater than their Day-Ahead Schedules. The CAISO Operator may set the length of the Self-Schedule moving average window. Initially this moving average window shall be set by default to seven (7) days; in which case the weekday estimate is based on the average of five (5) most recent weekdays and the weekend estimate is based on the average of the two (2) most recent weekend days. To the extent weather conditions differ significantly from the historical days, additional adjustment may be necessary. After determining the estimate of Real-Time Self-Schedules, using a similar day forecasting approach, the CAISO adjusts the CAISO Forecast of CAISO Demand of a RUC Zone based on the forecasted quantity changes in Supply as a result of Self-Schedules submitted in the RTM. This adjustment for forecasted Real-Time Self-Schedules may result in positive or negative adjustments. Demand adjustments to the CAISO Forecast of CAISO Demand result when there is a net forecast decrease in Real-Time Self-Schedule Supply relative to the

Day-Ahead Schedule Supply. Supply adjustments to the individual resources occur when there is a net forecast increase in Real-Time Self-Schedule Supply relative to the Day-Ahead Schedule Supply of the individual resource.

31.5.3.6 Day-Ahead Ancillary Service Procurement Deficiency Adjustment.

While the CAISO intends to procure one hundred percent (100%) of its forecasted Operating Reserve requirement in the IFM based on the CAISO Forecast of CAISO Demand as specified in Section 8.3.1, the CAISO shall make adjustments to the CAISO Forecast of CAISO Demand used in RUC to ensure sufficient capacity is available or resources committed in cases that the CAISO is unable to procure one hundred percent (100%) of its forecasted Operating Reserve requirement in the IFM; provided, however, that the CAISO shall not procure specific Ancillary Services products in RUC, nor will the RUC optimization consider AS-related performance requirements of available capacity.

31.5.3.7 RUC Zones.

31.5.3.7.1 Use of RUC Zones.

The CAISO shall adjust the CAISO Forecast of CAISO Demand by RUC Zone for the conditions described in Sections 31.5.3.2 through 31.5.3.6. If any adjustments are made throughout the affected RUC Zone, such adjustments will be made consistent with the subset of system LDFs for the Nodes that define the RUC Zone(s). The CAISO will adjust the CAISO Forecast of CAISO Demand of each affected RUC Zone, preserving the LDFs within each RUC Zone, but the relative weighting of the LDFs across the system will deviate from the original LDFs. RUC costs will be pooled together to establish the RUC Compensation Costs. As described in Section 11.8.3, Settlement of RUC Compensation Costs will not be on a RUC Zone basis.

31.5.3.7.2 Designation of RUC Zones.

The CAISO shall define RUC Zones as areas that represent UDC or MSS Service Areas, Local Capacity Areas, or any other collection of Nodes. RUC Zones will be designated by the CAISO as necessary and to the extent that the CAISO has developed sufficient data on historical CAISO Demand and weather

conditions to allow it to perform Demand Forecasts. The mapping of RUC Zones to Nodes shall be static data and shall be maintained in the Master File. The CAISO may add new Nodes to a RUC Zone if new Nodes are added to the FNM. The status of each RUC Zone shall remain active for as long as the CAISO maintains regional forecasting capabilities, but once a RUC Zone is designated the CAISO will only adjust the CAISO Forecast of CAISO Demand as necessary to address RUC procurement constraints and not as a normal course for all CAISO Market functions. The actual RUC Zones used by the CAISO in its operation of RUC are posted on the CAISO Website.

reverse commitments issued through the IFM. If the RUC process cannot find a feasible solution given the resources committed in the IFM, the RUC process will adjust constraints as described in Section 31.5.4 to arrive at a feasible solution that accommodates all the resources committed in the IFM, and any necessary de-commitment of IFM committed units shall be effectuated through an Exceptional Dispatch.

31.5.6 Eligibility for RUC Compensation.

All RUC Capacity is eligible for the RUC Availability Payment except for: (i) RUC Capacity from RMR Units that has been designated as RMR Dispatch and included in RUC as a Self-Schedule; (ii) RA Capacity; and (iii) RUC Capacity that corresponds to the resource's Minimum Load is compensated through the Bid Cost Recovery as described in Section 11.8. Resources not committed in the IFM that are committed in RUC, including RMR Units that were not designated for RMR Dispatches and Resource Adequacy Units, are also eligible for RUC Cost Compensation, which includes Start-Up and Minimum Load Cost compensation, and Bid Cost Recovery, subject to the resource actually following its Dispatch Instructions as verified by the CAISO pursuant to procedures set forth in the Business Practice Manuals.

31.5.7 Rescission of Payments for Undispatchable and Undelivered RUC Capacity.

If capacity committed in RUC provided from a Generating Unit, Participating Load, System Unit or System Resource is Undispatchable Capacity or Undelivered Capacity during the relevant Settlement Interval, then payments will be rescinded as described in this Section 31.5.7 and settled in accordance with Section 11.2.2.2. If the CAISO determines that non-compliance of a Participating Load, Generating Unit, System Unit or System Resource, with an operating order or Dispatch Instruction from the CAISO, or with any other applicable technical standard under the CAISO Tariff, causes or exacerbates system conditions for which the WECC imposes a penalty on the CAISO, then the Scheduling Coordinator of such Participating Load, Generating Unit, System Unit or System Resource shall be assigned that portion of the WECC penalty which the CAISO reasonably determines is attributable to such non-compliance, in addition to any other penalties or sanctions applicable under the CAISO Tariff. The rescission of payments in this Section 31.5.7 shall not apply to a capacity payment for any particular RUC Capacity if the RUC Availability payment is less than or equal to zero.

31.5.7.1 Rescission of Payments for Undispatchable RUC Capacity.

The CAISO shall calculate the Real-Time ability of each Generating Unit, Participating Load, System Unit or System Resource to deliver Energy from or capacity committed in RUC for each Settlement Interval based on its maximum operating capability, actual telemetered output, and Operational Ramp Rate as described in Section 30.10. System Resources that receives an award for RUC Capacity in the Day-Ahead Market are required to electronically tag (E-Tag as prescribed by the WECC) RUC Capacity. If the amounts of RUC Capacity in an electronic tag differ from the amounts of RUC Capacity for the System Resource, the Undispatchable Capacity will equal the amount of the difference, and will be settled in accordance with the provisions of Section 11.2.2.2.1. If the Undispatchable Capacity is capacity committed in RUC and is from a Generating Unit, System Unit or System Resource that is a Resource Adequacy Resource, there is no payment obligation to the CAISO for the Undispatchable RUC Capacity. The CAISO will report the instance of non-compliance by the Resource Adequacy Resource to the appropriate Local Regulatory Authority.

31.5.7.2 Rescission of Payments for Undelivered RUC Capacity.

For each Settlement Interval in which a Generating Unit, Participating Load, System Unit or System Resource fails to supply Energy from capacity committed in RUC in accordance with a Dispatch Instruction, or supplies only a portion of the Energy specified in the Dispatch Instruction, the RUC Availability Payment will be reduced to the extent of the deficiency, in accordance with the provisions of Section 11.2.2.2.2.

31.6 Timing of Day-Ahead Scheduling.

31.6.1 The CAISO may at its sole discretion implement any temporary variation or waiver of the timing requirements of this Section 31 and Section 6.5.3 (including the omission of any step) if any of the following criteria are met:

(i) such waiver or variation of timing requirements is reasonably necessary to preserve System Reliability, prevent an imminent or threatened System Emergency or to retain Operational Control over the CAISO Controlled Grid during an actual System Emergency.

(ii) because of error or delay, the CAISO requires additional time to fulfill its responsibilities ;

(iii) problems with data or the processing of data cause a delay in receiving or issuing Bids or publishing information on the CAISO's secure communication system;

(iv) problems with telecommunications or computing infrastructure cause a delay in receiving or issuing Day-Ahead Schedules or publishing information on the CAISO's secure communication system.

33.2 The HASP Optimization.

After the Market Close for the HASP and RTM for the relevant Trading Hour, the Bids have been validated and the MPM-RRD process has been performed, the HASP optimization determines feasible but non-binding HASP Advisory Schedules for Generating Units for each 15-minute interval of the Trading Hour, as well as binding hourly HASP Intertie Schedules and binding hourly HASP AS Awards from Non-Dynamic System Resources for that Trading Hour. The HASP may also commit resources whose Start-Up Time is within its Time Horizon. The HASP, like the other runs of the RTUC, utilizes the same SCUC optimization and FNM as the IFM, with the FNM updated to reflect changes in system conditions as appropriate, to ensure that HASP Intertie Schedules are feasible. Instead of clearing against Demand Bids as in the IFM, the HASP clears Supply against the CAISO Forecast of CAISO Demand plus submitted Export Bids, to the extent the Export Bids are selected in the MPM-RRD process. The HASP optimization also factors in forecasted unscheduled flow at the interties. The HASP optimization produces Settlement prices for hourly imports and exports to and from the CAISO Control Area reflected in the HASP Intertie Schedule and for the HASP AS Awards for System Resources.

33.3 Treatment of Self-Schedules in HASP.

Scheduling Coordinators may submit Self-Schedules for Supply of Energy to the HASP. This includes Self-Schedules by Participating Load that is submitting Bids as a negative generator. Scheduling Coordinators may not submit Self-Schedules for CAISO Demand in HASP. Scheduling Coordinators may submit Self-Schedules for exports at Scheduling Points. The HASP optimization clears Bids, including Self-Schedules, while preserving all priorities in this process consistent with Section 31.4. The HASP optimization does not adjust submitted Self-Schedules unless it is not possible to balance Supply and the CAISO Forecast of CAISO Demand plus Export Bids and manage Congestion using the available Economic Bids, in which case the HASP performs non-economic adjustments to Self-Schedules. The MWh quantities of Self-Schedules of Supply

that clear in the HASP constitute a feasible Dispatch for the RTM at the time HASP is run, but the HASP results do not constitute a final Schedule for Generating Units because these resources may be adjusted non-economically in the RTD if necessary to manage Congestion and clear Supply and Demand. Self-Schedules submitted for Generation Units that clear in the HASP will be issued HASP Advisory Schedules. Scheduling Coordinators representing Participating Intermittent Resources whose output is being used to satisfy a Resource Adequacy Requirement must submit Self-Schedules in HASP in accordance with the forecast provided by the independent forecast service provider. The submission of a change to an ETC Self-Schedule beyond the deadline specified in Section 16.9.1, that is permitted pursuant to the terms of the applicable ETC, shall not be deemed to be an unbalanced ETC Self-Schedule for the purposes of Settlement, consistent with the ETC and TOR Self-Schedule

Settlement treatment described in Section 11.5.7.

33.4 MPM-RRD for the HASP and the RTM.

After the Market Close of the HASP and RTM, after the CAISO has validated the Bids pursuant to section 30.7, and prior to running the HASP optimization, the CAISO conducts the MPM-RRD process, the results of which will be utilized in the HASP optimization and all RTM processes for the Trading Hour. The MPM-RRD process for the HASP and RTM produces results for each fifteen-minute interval of the Trading Hour and thus may produce up to four mitigated Bids for any given resource for the Trading Hour. A single mitigated Bid for the entire Trading Hour is calculated using the minimum Bid price of the four mitigated Bid curves at each Bid quantity level. The Bids are mitigated only for the Bid quantities that are above the minimum quantity cleared in the CCR across all four 15-minute intervals. For a Condition 1 RMR Unit, if the dispatch level produced through the ACR is greater than the dispatch level produced through the CCR, and for a Condition 2 RMR Unit that is dispatched through the ACR, the resource will be flagged as an RMR Dispatch in the RTM and shall constitute a Dispatch Notice pursuant to the RMR Contract.

33.5 [NOT USED]

33.6 HASP Results.

The CAISO publishes the binding HASP Intertie Schedules and HASP AS Awards for System Resources, as well as HASP Advisory Schedules and HASP AS Awards for internal Generating Units no later than 45 minutes prior to the Trading Hour.

33.7 Ancillary Services in the HASP and the RTUC.

To maintain required Ancillary Services when changes in forecasts of Demand and resource outages occur after the Day-Ahead AS Awards are established, the CAISO utilizes the RTUC runs, including the HASP, to procure additional Ancillary Services needed to meet reliability criteria. The HASP meets the expected need for additional Ancillary Services for the Trading Hour by utilizing the optimal mix of Ancillary Services from System Resources and from Generating Units. Only the AS from System Resources are binding Awards, and these are for the full Trading Hour. Those Generating Units designated in the HASP to provide Ancillary Services for the same Trading Hour are given non-binding

34.9.2 Other Exceptional Dispatch.

The CAISO may also manually dispatch resources in addition to or instead of resources dispatched by the RTM optimization software to: (1) perform Ancillary Services testing; (2) perform pre-commercial operations testing for Generating Units; (3) mitigate for Overgeneration; (4) provide for Black Start; (5) provide for Voltage Support; (6) accommodate TOR or ETC Self-Schedule changes after the Market Close of the HASP; or (7) to reverse a commitment instruction issued through the IFM that is no longer optimal as determined through RUC. If the CAISO dispatches an RMR Unit for Voltage Support, the RMR Unit will be compensated under its RMR Contract and not as an Exceptional Dispatch under the CAISO Tariff.

34.9.3 Transmission-Related Modeling Limitations.

The CAISO may also manually Dispatch resources in addition to or instead of resources dispatched by the RTM optimization software, during or prior to the Real-Time as appropriate, to address transmission-related modeling limitations in the Full Network Model. Transmission-related modeling limitations for the purposes of Exceptional Dispatch, including for settlement of such Exceptional Dispatch as described in Section 11.5.6, shall consist of any FNM modeling limitations that arise from transmission maintenance, lack of voltage support at proper levels as well as incomplete or incorrect information about the transmission network, for which the Participating TOs have primary responsibility. The CAISO shall also manually Dispatch resources under this Section 34.9.3 in response to system conditions including threatened or imminent reliability conditions for which the timing of the Real-Time Market optimization and system modeling are either too slow or incapable of bringing the CAISO Controlled Grid back to reliable operations in an appropriate time-frame based on the timing and physical characteristics of available resources to the CAISO.

34.10 Uneconomic Adjustments in the RTM.

All Self-Schedules are respected by the SCED and SCUC to the maximum extent possible and are protected from curtailment in the Congestion Management process to the extent that there are effective

Economic Bids that can relieve Congestion. If all Economic Bids for the RTM are exhausted, all Self-Schedules between the Minimum Load and the lowest energy level of the first Energy Bid point will be subject to uneconomic adjustments based on assigned scheduling priorities. Through this process, imports and exports may be reduced to zero, Demand may be reduced to zero, and Generation may be reduced to a lower operating (or Regulating) limit (or lower Regulating limit plus any qualified Regulation

Down Award or Self-Provision of Ancillary Services, if applicable). Any schedules below the Minimum Load level are treated as fixed schedules and are not subject to uneconomic adjustments for Congestion management but may be subject to decommitment via an Exceptional Dispatch if necessary as a last resort to relieve Congestion that could not otherwise be managed.

34.10.1 Increasing Supply.

The scheduling priorities as defined in the RTM optimization to meet the need for increasing Supply as reflected from higher to lower priority are as follows:

a) Non-Participating Load reduction, exports explicitly identified in a Resource Adequacy Plan to be served by Resource Adequacy Capacity explicitly identified and linked in a Supply Plan to the exports, or Self-Schedules for exports at Scheduling Points in HASP served by Generation from non-Resource Adequacy Capacity or from non-RUC Capacity;

b) Self-Schedules for exports at Scheduling Points in HASP not offered by Generation from non-Resource Adequacy Capacity or not offered by Generation from non-RUC Capacity, except those exports explicitly identified in a Resource Adequacy Plan to be served by Resource Adequacy Capacity explicitly identified and linked in a Supply Plan to the exports as set forth in Section 34.10.1(a);

c) Contingency-Only Operating Reserve if activated by Operator to provide Energy (as indicated by the Contingency flag and the Contingency condition);

d) Economic Bids submitted in the HASP or RTM.

34.10.2 Decreasing Supply.

The scheduling priorities as defined in the RTM optimization to meet the need for decreasing supply as reflected from higher to lower priority are as follows:

a) Non-Participating Load increase;

b) Reliability Must Run (RMR) Schedule (Day-Ahead manual pre-dispatch or Manual RMR Dispatches or Dispatches that are flagged as RMR Dispatches following the MPM-RRD process);

c) Transmission Ownership Right (TOR) Self-Schedule;

d) Existing Rights (ETC) Self-Schedule;

e) Regulatory Must Run and Regulatory Must Take (RMT) Self-Schedule;

f) Participating Load increase;

g) Day-Ahead Supply Schedule;

h) Self-Schedule submitted in HASP; and

i) Economic Bids submitted in the HASP or RTM.

These dispatch priorities as defined in the RTM optimization may be superseded by operator actions and procedures as necessary to ensure reliable operations.

34.11 Means of Dispatch Communication.

The CAISO dispatches Regulation by AGC to Participating Generators and, for Dynamic System Resources, through dedicated communication links that satisfy the CAISO's standards for external imports of Regulation. The CAISO communicates all other Dispatch Instructions electronically, except that, at the CAISO's discretion, the CAISO may communicate Dispatch Instructions by telephone, or facsimile. Scheduling Coordinators shall confirm the Dispatch Instructions that are communicated orally by repeating them the to CAISO employee providing the Dispatch Instruction. Except in the case of deteriorating system conditions or an actual or threatened System Emergency, and except for Dispatch Instructions for Regulation, the CAISO sends all Dispatch Instructions to the Scheduling Coordinator. The recipient Scheduling Coordinator shall immediately communicate the Dispatch Instruction to the operator

Instruction in accordance with its terms, the resource shall be considered to be non-conforming to the Dispatch Instruction unless the resource has notified the CAISO of an event that prevents it from performing its obligations within 30 minutes of the onset of such event through a SLIC log entry. Notification of non-compliance via the Automated Dispatch System (ADS) will not supplant nor serve as the official notification mechanism to the CAISO. If the resource is considered to be non-conforming as described above, the Scheduling Coordinator for the resource concerned shall be subject to Uninstructed Imbalance Energy as specified in Section 11.5.2 and Uninstructed Deviation Penalties as specified in Section 11.23. This applies whether any Ancillary Service concerned are contracted or self-provided. For a Non-Dynamic System Resource Dispatch Instruction prior to the Trade Hour, the Scheduling Coordinator shall inform the CAISO of its ability to conform to a Dispatch Instruction via ADS. The Non-Dynamic System Resource has the option to accept, partially accept, or decline the Dispatch Instruction, but in any case must respond within the timeframe specified in a Business Practice Manual. The Non-Dynamic System Resource can change its response within the indicated timeframe. If a Non-Dynamic System Resource does not respond within the indicated timeframe, the Dispatch Instruction will be considered declined. A decline of such a Non-Dynamic System Resource for a Dispatch Instruction received at least 40 minutes prior to the Trading Hour will be subject to Uninstructed Deviation Penalties as specific in Section 11.23. A decline of such a Non-Dynamic System Resource for a Dispatch Instruction received less than 40 minutes prior to the Trading Hour will not be subject to Uninstructed Deviation Penalties. A Non-Dynamic System Resource that only partially accepts a Dispatch Instruction is subject to Uninstructed Deviation Penalties for the portion of the Dispatch Instruction that is declined.

34.12 Metered Subsystems.

Scheduling Coordinators that represent MSSs may submit Bids for Supply of Energy to the RTM, irrespective of whether the MSS is a Load following MSS. All Bids submitted for MSS generating resources for the RTM and all Dispatch Instructions shall be generating resource-specific. MSS non-Load following resources are responsible for following Dispatch Instructions. Load following MSS Operators shall provide the CAISO with an estimate of the number of MWs the applicable generating

resource(s) will be generating over the next two hours in 5-minute interval resolution. The Dispatch Instructions for Load-following resources are incorporated with generation estimates provided by MSS Operators. Such MSS Load-following resources can deviate from the Dispatch Instructions in Real-Time to facilitate the following of load without being subject to the Uninstructed Deviation Penalty as further described in Section 11.23 of the CAISO Tariff. The State Estimator will estimate all MSS Load in Real-

(b) Forbidden Operating Regions. Resources can only be ramped through these regions. The SCED shall not Dispatch resources within their Forbidden Operating Regions unless at the maximum applicable ramp rate to clear the Forbidden Operating Region in consecutive Dispatch Intervals. Resources ramping through a Forbidden Operating Region shall not set LMP at its location and cannot provide Ancillary Services and will not be called upon to provide Ancillary Services, unless the resource can cross the Forbidden Operating Region in less than 20 minutes.

(c) Operational Ramp Rates and Start-Up times. The submitted Operational Ramp Rate for resources that are not providing Regulation, and the submitted Regulation Ramp Rate for resources that are providing Regulation shall be used for all Dispatch Instructions. The Ramping Rate for Non-Dynamic System Resources cleared in the HASP will not be observed. Rather the ramp of the Non-Dynamic System Resource respect inter-Control Area ramping conventions established by WECC. Ramp Rates for Dynamic System Resources will be observed like Participating Generators in the RTD. Each Energy Bid shall be Dispatched only up to the amount of Imbalance Energy that can be provided within the Dispatch Interval based on the applicable Operational Ramp Rate or Regulation Ramp Rate. The Dispatch Instruction shall consider the relevant Start-Up time as, if the resource is off-line, the relevant Ramp Rate function, and any prior commitments such as schedule changes across hours and previous Dispatch Instructions. The Start-Up time shall be determined from the Start-Up time function and when the resource was last shut down. The Start-Up time shall not apply if the corresponding resource is on-line or expected to start.

(d) Maximum Number of Daily Start-Ups. The SCED shall not cause a resource to exceed its daily maximum number of start-ups.

(e) Minimum Up and Down time. The SCED shall not start up off-line resources before their minimum down time expires and shall not shut down on-line resources before their minimum up time expires.

(f) Operating (Spinning and Non-Spinning) Reserve. The SCED shall Dispatch Spinning and Non-Spinning Reserve subject to the limitations set forth in Section 34.16.3.

(g) Non-Dynamic System Resources. If Dispatched, each Non-Dynamic System Resource flagged

for hourly pre-dispatch in the next Trading Hour shall be Dispatched to operate at a constant level over the entire Trading Hour. The HASP shall perform the hourly pre-dispatch for each Trading Hour once prior to the Operating Hour. The hourly pre-dispatch shall not subsequently be revised by the SCED and the resulting HASP Intertie Schedules are financially binding and are settled pursuant to section 11.4.

(h) Daily Energy use limitation to the extent that energy limitation is expressed in a resource's Bid. If the Energy Limits are violated for purposes of Exceptional Dispatches for System Reliability, the Bid will be settled as provided in Section 11.5.6.1.

34.16 Ancillary Services in the Real-Time Market.

34.16.1 Requirement to Submit Energy Bids For Awarded or Self-Provided Ancillary Services Capacity.

Scheduling Coordinators for resources that have been awarded or self-provide Regulation Up, Spinning Reserve, or Non-Spinning Reserve capacity must submit an Energy Bid for at least all the awarded or self-provided Ancillary Services capacity.

34.16.2 Dispatch of Self-Provided Ancillary Services.

Where a Scheduling Coordinator has chosen to self-provide the whole of the additional Operating Reserve required to cover any Interruptible Imports which it has submitted through Self-Schedules in the Day-Ahead Market and has identified specific Generating Units, Participating Loads, System Units or System Resources as the providers of the additional Operating Reserve concerned, the CAISO shall Dispatch only the designated Generating Units, Participating Loads, System Units or System Resources in the event of the CAISO being notified that the On Demand Obligation is being curtailed. The Scheduling Coordinator scheduling an Interruptible Import will be responsible for Operating Reserves associated with the Interruptible Import, regardless of whether the Scheduling Coordinator is an LSE or not. For all other Ancillary Services which are being self-provided the Energy Bid shall be used to determine the Dispatch, subject to the limitation on the Dispatch of Spinning Reserve and Non-Spinning Reserve set forth in Section 34.10.

34.16.3 Ancillary Services Requirements for RTM Dispatch.

The following requirements apply to the Dispatch of Ancillary Services in the RTM:

CAISO and each adjacent Control Area Operator shall keep each other informed of situations such as adverse weather conditions, fires, etc., that could affect the reliability of any Interconnection. Each Control Area Operator of the Control Areas in the California area, as defined by the WECC Regional Security Plan, shall keep the CAISO informed of all information required by WECC for use by the Reliability Coordinator.

The CAISO and each adjacent Control Area Operator shall follow all applicable NERC and WECC scheduling procedures. This will include checking the Interconnection schedules for the next Settlement Period prior to the start of the Energy ramp going into that hour. The CAISO and each adjacent Control Area Operator shall check and agree on actual MWh net interchange after the hour for the previous Settlement Period. One Control Area shall change its actual number to reflect that of the other Control Area in accordance with WECC standard procedures.

The CAISO and each adjacent Control Area Operator shall exchange MW, MVar, terminal and bus voltage data with each other on a four second update basis. MWh data for the previous hour shall be exchanged once per hour. All MW and MWh data for both the CAISO Control Area and the adjacent Control Areas must originate from the same metering equipment. All provisions in Sections 4.6.1.1(i) and 4.6.1.1 (ii) refer to information and data obtained from metering used for Control Area operations and not metering used for billing and settlement.

34.18 [NOT USED]

34.19 Pricing Imbalance Energy.

34.19.1 General Principles.

Instructed and Uninstructed Imbalance Energy shall be paid or charged the applicable Resource-Specific Settlement Interval LMP except for hourly pre-dispatched Instructed Imbalance Energy, which shall be settled as set forth in Section 11.5.2. These prices are determined using the Dispatch Interval LMPs. The Dispatch Interval LMPs shall be based on the Bid of the marginal Generating Units, System Units, and Participating Loads dispatched by the CAISO to increase or reduce Demand or Energy output in each Dispatch Interval as provided in Section 34.19.2.1.

The CAISO will respond to the Dispatch Instructions issued by the SCED to the extent practical in the time available and acting in accordance with Good Utility Practice. The CAISO will record the reasons for any variation from the Dispatch Instructions issued by the SCED.

34.19.2 Determining Real-Time LMPs.

34.19.2.1 Dispatch Interval Real-Time LMPs.

34.19.2.2 Computation.

For each Dispatch Interval, the CAISO will compute updated supply and demand curves, using the Generating Units, System Units, Dynamic System Resources and Participating Load Dispatched according to the CAISO's SCED during that time period to meet Imbalance Energy requirements. The RTM transactions will be settled at the Dispatch Interval LMPs in accordance with Section 11.5.

34.19.2.3 Eligibility to Set the Real-Time LMP.

All Generating Units, Participating Loads, Dynamic System Resources, System Units, or COGs subject to the provisions in Section 27.7, with Bids, including Default Energy Bids, that are unconstrained due to Ramp Rates or other temporal constraints are eligible to set the LMP, provided that the Generating Units, Participating Loads, Dynamic System Resources, or System Unit is Dispatched within its submitted Economic Bid range. If a resource is Dispatched beyond its Economic Bid range, the CAISO enforces a resource-specific constraint on the resource due to an RMR or Exceptional Dispatch, or the resource is ramping through a Forbidden Operating Region, the resource will not be eligible to set the LMP.

35 Market Validation and Price Correction.

35.1 Market Validation.

The CAISO shall monitor the market clearing software solutions for the Day-Ahead Market, the RUC process, the Hour-Ahead Scheduling Process, and the Real-Time Market for all market intervals to determine whether prices are calculated accurately, consistent with the provisions of the CAISO Tariff. To the extent reasonably practicable, the CAISO shall correct erroneous prices identified through such monitoring and re-run the relevant CAISO Markets prior to publication of prices on its Open Access Same-Time Information System (OASIS) or provision of prices directly to Market Participants, if applicable.

35.2 Timing of the Price Correction Process.

Prices for each Trading Day shall become subject to the CAISO's price correction process once the CAISO publishes them on its OASIS or provides them directly to Market Participants, if applicable. The price correction process for each Trading Day shall end no later than 1700 hours of the eighth calendar day following that Trading Day. The CAISO may establish an earlier end-time for the price correction process in the applicable Business Practice Manual and may complete the price correction process for any Trading Day earlier than the end-time established in this Section 35 or in the Business Practice Manual. The CAISO shall provide notification on the CAISO Website when it has completed the price correction process for each Trading Day. If the CAISO does not provide such notification, the price correction process will be deemed complete at 1700 hours of the eighth calendar day following that Trading Day, unless an earlier time is established by the applicable Business Practice Manual.

35.3 Finality of Prices Subject to the Price Correction Process.

All prices shall be considered provisional until the CAISO has completed the price correction process regarding them. All prices for each Trading Day shall be considered final for purposes of this Section 35 once the price correction process for that Trading Day has ended, except that the CAISO may adjust, re-run, or otherwise correct such prices after the conclusion of the price correction process to the extent authorized by the provisions of the CAISO Tariff other than this Section 35.

35.4 Scope of Price Corrections.

The CAISO may correct all financially binding prices whenever the CAISO identifies an invalid market solution or invalid prices in an otherwise valid market solution. The circumstances in which the CAISO may determine that an invalid market solution or invalid prices exist include the following: the occurrence of data input failure; the occurrence of hardware or software failure; or a result that is inconsistent with the CAISO Tariff.

35.5 Price Correction Methodology.

The CAISO shall correct prices to conform with the relevant provisions of the CAISO Tariff to the extent such correction is practicable. To the extent such correction is not practicable, the CAISO shall correct prices so that they are as close as reasonably possible to the prices that should have resulted under the relevant provisions of the CAISO Tariff, using the most accurate data available, and in a manner that is consistent with the prevalent system conditions existing at that time. The CAISO shall correct prices using the first applicable and practicable correction method of the following:

(a) The CAISO shall selectively recalculate incorrect financially binding prices when the invalid prices are isolated and can be corrected such that no other financially binding prices are affected by the correction.

(b) If the correction method in Section 35.5(a) is not applicable and practicable, the CAISO shall conduct a market re-run for an invalidated market interval when all market inputs applicable to the market interval to be re-run are either (i) preserved from the original market run, for data that was not the cause of the invalidated price, (ii) corrected, in the case of invalid initial data in the initial market clearing, or (iii) recreated or replicated data using the best available alternate data sources, in the case of missing data in the initial market clearing.

(c) If the correction methods in Sections 35.5(a) and 35.5(b) are not applicable and practicable, the CAISO shall use, in place of prices for the binding interval of an invalidated market solution, replicated prices from binding or advisory intervals from the

validated market solution in which the market conditions were most similar to the market conditions in the invalidated market solution, for the affected interval. In no case will an invalidated Day-Ahead Market solution be replaced with a valid Day-Ahead Market solution from a previous Trading Day. The method set forth in this Section 35.5(c) shall apply in the Day-Ahead Market only when some but not all hourly market intervals within a valid market run are deemed to be invalid and the market is not re-run pursuant to the method set forth in Section 35.5(b), above.

The CAISO shall include details concerning the CAISO's price correction methodology in the applicable Business Practice Manual.

35.6 Weekly Price Correction Report.

The CAISO shall summarize all price corrections that occur within a week in a report that shall be posted on the CAISO Website by the seventh day of the following week. For all price corrections that occur during each week, the price correction report shall specify: (a) which market intervals were affected, (b) which price locations were affected, (c) a brief description of the reason for the price correction, and (d) the method of price corrective action undertaken.

36 Congestion Revenue Rights.

36.1 Overview of CRRs and Procurement of CRRs.

The CAISO distributes CRRs through an allocation and auction process as described in this Section 36. CRR Holders and Market Participants eligible to become CRR Holders can also buy, sell, or trade CRRs bilaterally as described in Section 36.7.

36.2 Types of CRR Instruments.

CRRs can be CRR Obligations or CRR Options. Each CRR is fully specified by its type (CRR Obligation or CRR Option), its CRR Source(s), its CRR Sink(s), its MW quantity, and the Trading Hours for which it is valid. The CRR Source(s) and CRR Sink(s) determine the direction of the CRR, which is from CRR Source(s) to CRR Sink(s).

36.2.1 CRR Obligations.

A CRR Obligation entitles its holder to receive a CRR Payment if the Congestion in a given Trading Hour is in the same direction as the CRR Obligation, and requires the CRR Holder to pay a CRR Obligation charge if the Congestion in a given Trading Hour is in the opposite direction of the CRR. The CRR Payment or CRR Obligation charge is equal to the per-MWh cost of Congestion (which equals the MCC at the CRR Sink minus the MCC at the CRR Source) multiplied by the MW quantity of the CRR.

36.2.2 CRR Options.

A CRR Option entitles its CRR Holder to a CRR Payment if the Congestion is in the same direction as the CRR Option, but requires no CRR Obligation charge if the Congestion is in the opposite direction of the CRR. The CRR Payment is equal to the per-MWh cost of Congestion (which equals the MCC at the CRR Sink minus the MCC at the CRR Source, when this quantity is positive and zero otherwise) multiplied by the MW quantity of the CRR.

36.2.3 Point-to-Point CRRs.

A Point-to-Point CRR is a CRR Option or CRR Obligation defined from a single CRR Source to a single CRR Sink.

36.2.4 Multi-Point CRRs.

A Multi-Point CRR is a CRR Obligation defined by more than one CRR Source and/or more than one CRR Sink, plus a specified distribution of the total MW value of the CRR over the multiple CRR Sources and/or multiple CRR Sinks such that the total MW assigned to all CRR Sources equals the total MW assigned to all CRR Sinks equals the MW value of the CRR. For the allocation of CRRs under this Section 36, an LSE seeking to be allocated a Multi-Point CRR must specify a single CRR Sink in its nomination.

36.2.5 Monthly CRRs.

Monthly CRRs have a term of one month, are differentiated by time of use periods (on-peak and off-peak), and are available through the monthly CRR Allocation and CRR Auction processes in advance of each month.

36.2.6 Seasonal CRRs.

Seasonal CRRs have a term of three months, and are differentiated by the different time of use periods (on-peak and off-peak) for each day within a season. Seasonal CRRs are made available through the annual CRR Allocation and CRR Auction processes conducted each year prior to the year in which the Seasonal CRR applies.

36.2.7 Long Term CRRs.

Long Term CRRs have a term of ten years. Long Term CRRs are seasonal and are differentiated by the different time of use periods (on-peak and off-peak) for each day within a season. When Long Term CRRs are nominated and allocated they apply to the same season and time of use period for each year of the ten-year term and represent binding ten-year commitments by the CRR Holders that hold Long Term CRRs. Long Term CRRs are nominated and allocated to LSEs in Tier LT that is one tier in the sequence of tiers in the annual CRR Allocation process. Long Term CRRs are not available through the CRR Auction.

36.2.8 Full Funding of CRRs.

All CRRs will be fully funded; provided however, that full funding of CRRs will be suspended if a System Emergency as described in Section 7.7.4, an Uncontrollable Force as described in Section 14, or a Participating TO's withdrawal of facilities or Entitlements from the CAISO Controlled Grid as described in Section 36.8.7 leaves the CAISO with inadequate revenues.

36.3 CRR Specifications.

36.3.1 Quantity.

CRRs are distributed and settled in no less than one-tenth of a MW denomination.

36.3.2 Term.

CRRs are Monthly CRRs, Seasonal CRRs, Long Term CRRs or Merchant Transmission CRRs. For CRR purposes, the applicable seasons are conventional calendar quarters as defined in the Business Practice Manual.

36.3.3 On-Peak and Off-Peak Specifications.

CRRs are defined either for on-peak or off-peak hours as specified by the CAISO in the applicable Business Practice Manuals consistent with the WECC standards at the time of the relevant CRR Allocation or CRR Auction.

36.4 FNM for CRR Allocation and CRR Auction.

When the CAISO conducts its CRR Allocation and CRR Auction, the CAISO shall use the most up-to-date DC FNM which is based on the AC FNM used in the Day-Ahead Market. The Seasonal Available CRR Capacity shall be based on the DC FNM, taking into consideration the following, all of which are discussed in the applicable Business Practice Manual: (i) any long-term scheduled transmission Outages, (ii) OTC adjusted for any long-term scheduled derates, and (iii) a downward adjustment due to TOR as determined by the CAISO. The Monthly Available CRR Capacity shall be based on the DC FNM, taking into consideration: (i) any scheduled transmission Outages known at least thirty (30) days in advance of

the start of that month, (ii) adjustments to compensate for the expected impact of Outages that are not required to be scheduled thirty (30) days in advance, including unplanned transmission Outages, (iii) adjustments to restore Outages or derates that were applied for use in calculating Seasonal Available CRR Capacity but are not applicable for the current month, (iv) any new transmission facilities added to the CAISO Controlled Grid that were not part of the DC FNM

used to determine the prior Seasonal Available CRR Capacity and that have already been placed in-service and energized at the time the CAISO starts the applicable monthly process, (v) OTC adjusted for any scheduled derates or Outages for that month, and (vi) a downward adjustment due to TOR as determined by the CAISO. For the first monthly CRR Allocation and CRR Auction for CRR Year One, to account for any planned or unplanned Outages that may occur for the first month of CRR Year One, the CAISO will derate all flow limits, including Transmission Interface limits and normal thermal limits based on statistical factors determined as provided in the Business Practice Manuals.

36.4.1 Transmission Capacity Available for CRR Allocation and CRR Auction.

With the exception of the Tier LT, the CAISO makes available seventy-five percent (75%) of Seasonal Available CRR Capacity for the annual CRR Allocation and CRR Auction processes, and one hundred percent (100%) of Monthly Available CRR Capacity for the monthly CRR Allocation and CRR Auction processes. The CAISO makes available sixty percent (60%) of Seasonal Available CRR Capacity in the Tier LT. Available capacity at Scheduling Points shall be determined in accordance with Section 36.8.4.2 for the purposes of CRR Allocation and CRR Auction of CRRs that have a CRR Source identified at a Scheduling Point. Before commencing with the annual or monthly CRR Allocation and CRR Auction processes, the CAISO may distribute Merchant Transmission CRRs and will model those as fixed injections and withdrawals on the DC FNM to be used in the allocation and auction. These fixed injections and withdrawals are not modified by the Simultaneous Feasibility Test. Similarly, before commencing the annual or monthly CRR Allocation and CRR Auction processes, the CAISO will model any previously allocated Long Term CRRs as fixed injections and withdrawals on the DC FNM to be used in the CRR Allocation and CRR Auction. These fixed injections and withdrawals are not modified by the Simultaneous Feasibility Test, which will ensure no degradation of previously allocated and outstanding Long Term CRRs due to the CRR Allocation and CRR Auction processes. Maintaining the feasibility of allocated Long Term CRRs over the length of their terms also is accomplished through the transmission planning process in Section 24.1.3.

36.4.2 Simultaneous Feasibility.

The annual and monthly CRR Allocation processes release CRRs to fulfill CRR nominations as fully as possible subject to a Simultaneous Feasibility Test. To the extent that nominations are not

simultaneously feasible, the nominations are reduced in accordance with the CRR Allocation optimization formulation until simultaneous feasibility is achieved. The CRR Allocation optimization formulation, detailed in the Business Practice Manuals, reduces nominated CRRs based on effectiveness in relieving overloaded constraints in order to minimize the total MW volume reduction of nominations while achieving simultaneous feasibility. In the event that there are two or more identical nominations for a specific combination of CRR Source and CRR Sink that affect an overloaded constraint, the CRR Allocation optimization formulation cannot distinguish these nominations based on effectiveness and, therefore, the CRR Allocation optimization will award each such Candidate CRR Holder a pro rata share of the CRRs that can be awarded based on each Candidate CRR Holder's nominated MW amounts. In addition to the adjustments in Section 36.4.1, the SFT for each CRR Allocation considers:

a. CRRs representing ETCs, Converted Rights and any TOR capacity that was not captured in the adjustments described in Section 36.4, which the CAISO deems necessary to prevent the Congestion Settlement of ETCs, Converted Rights, and TORs from causing revenue inadequacy of allocated and auctioned CRRs;

b. In the case of the monthly CRR Allocation, the CRRs already released for that month in the annual CRR Allocation and Auction; and,

c. The CRRs allocated in previous CRR Allocation tiers as described in Sections 36.8.3.1 through 36.8.3.6.

In the event that transmission Outages and derates modeled for the monthly CRR Allocation and CRR Auction render previously issued Seasonal CRRs infeasible, the CAISO will increase the transfer capacity on the overloaded facilities just enough to render all Seasonal CRRs issued for the month feasible without creating any additional capacity beyond what is needed for the feasibility of the Seasonal CRRs. The CAISO will announce these adjustments to the market prior to conducting the monthly CRR Allocation and CRR Auction so that Candidate CRR Holders can take these facts into consideration in preparing their nominations and bids.

36.5 Candidate CRR Holder and CRR Holder Requirements.

Any entity that holds or intends to hold CRRs must register and qualify with the CAISO and comply with the other terms of this Section, regardless of whether they acquire CRRs by CRR Allocation, CRR Auction, the Secondary Registration System, or are assigned CRRs for Load Migration.

36.5.1 Creditworthiness Requirements.

All CRR Holders and Candidate CRR Holders must comply fully with all creditworthiness requirements as provided in Section 12 and Section 12.6 and as further developed in the applicable Business Practice Manuals. The amount of available credit for participating in a CRR Auction cannot exceed the entity's Aggregate Credit Limit as provided in Section 12.

36.5.2 Required Training.

CRR Holders and Candidate CRR Holders must attend a training class at least once prior to participating in the CRR Allocations or CRR Auctions. The CAISO may update training requirements annually or on an as-needed basis. Unless granted a waiver by the CAISO, Candidate CRR Holders and CRR Holders shall at all times have in their employment a person that has attended the CAISO's CRR training class and shall notify the CAISO as soon as practicable of a change in such status.

36.6 [NOT USED]

36.7 Bilateral CRR Transactions.

36.7.1 Transfer of CRRs.

36.7.1.1 General Provisions of CRR Transfers.

A CRR Holder may sell or otherwise transfer CRRs in increments of at least a tenth of a MW. Sales or other such transfers must be for at least a full day term consistent with the on-peak or off-peak specification of the CRR. The transferee may be any entity that is a Candidate CRR Holder or a CRR Holder consistent with the CAISO Tariff and the applicable Business Practice Manuals. All CRRs that are so sold or otherwise transferred by the CRR Holder continue to be subject to the relevant terms and conditions set forth in the CAISO Tariff and the applicable Business Practice Manuals.

36.7.1.2 Specific Provisions for Transfer of Long Term CRRs.

A CRR Holder that holds Long Term CRRs may sell or transfer through the Secondary Registration System MW portions and temporal segments of a Long Term CRR corresponding to the current calendar year as well as the calendar year covered by the most recently completed annual CRR Allocation. For such sales or transfers the Long Term CRR will be subject to the same limits on granularity that apply to Seasonal CRRs and Monthly CRRs, as specified in Section 36.7.1. A CRR Holder that holds Long Term CRRs may not transfer or sell through the Secondary Registration System any temporal segment of a Long Term CRR beyond the calendar year covered by the most recently completed annual CRR Allocation. For temporal segments beyond the year covered by the most recently completed annual CRR Allocation, the CRR Holder to whom a Long Term CRR was originally allocated remains the holder of record of the entire Long Term CRR for CAISO Settlement purposes. Allocated Long Term CRRs represent binding ten-year commitments by a CRR Holder that holds Long Term CRRs and may not be terminated or otherwise modified by the CRR Holder prior to the end of the Long Term CRR's ten-year term.

36.7.2 Responsibility of the CAISO.

The CAISO provides Market Participants a Secondary Registration System to facilitate and track CRR bilateral transactions. The bulletin board of the Secondary Registration System enables any entity that wishes to purchase or sell CRRs to post that information.

36.7.3 CRR Holder Reporting Requirement.

CRR Holders must report to the CAISO by way of the Secondary Registration System all bilateral CRR transactions consistent with the terms of this CAISO Tariff and the Business Practice Manuals. Both the transferor and the transferee of the CRRs must register the transfer of the CRR with the CAISO using the Secondary Registration System at least five (5) Business Days prior to the effective date of transfer of revenues associated with a CRR. The CAISO shall not transfer any Settlement related to any CRR until such time that the CRR transfer has been successfully recorded through the SRS and the transferee has met all the creditworthiness requirements as specified in Section 12 and Section 12.6. Both the transferor and transferee shall submit the following information to the Secondary Registration System: (i) the effective start and end dates of the transfer of the CRR; (ii) the identity of the transferor; (iii) the identity of the transferee; (iv) the quantity of CRRs being transferred; (v) the CRR Sources and CRR Sinks of the CRRs being transferred; and (vi) time of use period of the CRR. The transferee must meet all requirements of CRR Holders, including disclosure to the CAISO of all entities with which the transferee is affiliated that are CRR Holders or Market Participants as defined in Section 36.5.

36.8 CRR Allocation.

The CAISO allocates CRRs to Load Serving Entities serving Load internal to CAISO Control Area, including MSS Operators as described in Section 36.10, as well as Qualified OCALSEs. All CRRs allocated under the terms of this Section 36.8 will be CRR Obligations.

36.8.1 Structure of the CRR Allocation Process.

The CAISO conducts an annual CRR Allocation: (i) once a year for the entire year for Seasonal CRRs; and (ii) once a year for the ten-year term of Long Term CRRs. The annual CRR Allocation releases Seasonal CRRs and Long Term CRRs for four seasonal periods. The CAISO also conducts monthly CRR Allocations twelve times a year in advance of each month. Within each annual and monthly CRR Allocation process the CAISO performs distinct allocation processes for each on-peak and off-peak time of use specification. The CRR Allocation process for CRR Year One is a distinct process that differs from subsequent CRR Allocations as described in Sections 36.8.3.1 and 36.8.3.2. Each CRR Allocation procedure is based on nominations to the CAISO by LSEs or Qualified OCALSEs eligible to receive CRRs. The CAISO performs adjustments to the Seasonal and Long Term CRRs allocated to LSEs as necessary to reflect Load Migration between LSEs, as described in Section 36.8.5. A timeline of the CRR Allocation and CRR Auction processes is contained in the BPMs.

36.8.2 Load Eligible for CRRs and Eligible CRR Sinks.

Any entity that wishes to participate in the CRR Allocation process must provide information that demonstrates that it has an obligation to serve load. An LSE's eligibility for allocation of CRRs is measured by the quantity of Load that it serves that is exposed to Congestion Charges for the use of the CAISO Controlled Grid as determined in Sections 36.8.2.1 and 36.8.2.2. An OCALSE's eligibility for allocation of CRRs is also measured by the quantity of load that it serves that is exposed to Congestion Charges for the use of the CAISO Controlled Grid as determined in Section 36.9.3. For LSEs, the information necessary may include, but is not limited to, Settlement Quality Meter Data or relevant documents filed with the California Energy Commission. For OCALSEs, the necessary information may include, but is not limited to, historical tagged Real-Time Interchange Export Schedules and historical load data reflecting the load they serve that is exposed to Congestion Charges for the use of the CAISO Controlled Grid. In addition, each such OCALSE shall support its data submission with a written sworn affidavit by an executive authorized to represent the OCALSE attesting to the accuracy of the data, and the CAISO will have the right to audit the raw data and calculations used to develop the submitted data

set. An LSE serving internal Load is eligible for CRRs up to its Seasonal or Monthly CRR Eligible Quantity, which is derived from its Seasonal or Monthly CRR Load Metric as described in Sections 36.8.2.1 and 36.8.2.2, respectively. Seasonal and Monthly CRR Eligible Quantities for Qualified OCALSEs are determined as provided in Section 36.9.3. These quantities are calculated for each LSE or Qualified OCALSE separately for each combination of season and time of use period for the annual CRR Allocation process, and for each time of use period for each monthly CRR Allocation process, and for each CRR Sink at which the eligible LSE serves Load or the Qualified OCALSE exports Energy from the CAISO Control Area. MSS eligibility for CRRs will account for net or gross MSS Settlement in accordance with Section 4.9.13.1. If the MSS Operator elects net Settlement, LSEs for such MSS Load Operator shall submit CRR Sink nominations at the MSS LAP. If the MSS elects for gross Settlement, LSEs for such MSS Load shall submit CRRs Sink nominations at the applicable Default LAP. Load that is Pumped-Storage Hydro Units but is not Participating Load may be scheduled and settled at a PNode or Custom Load Aggregation Point and therefore LSEs for such Load shall submit CRR Sink nominations at the applicable PNode or Custom Load Aggregation Point. Load that is a Participating Load that is also aggregated is scheduled and settled at a Custom Load Aggregation Point that is customized specifically for such Load and, therefore, LSEs for such Participating Load shall submit CRR Sink nominations at the Custom Load Aggregation Point. Load that is Participating Load is scheduled and settled at an individual PNode, and therefore LSEs for such Load shall submit CRR Sink nominations at the applicable PNode. Load that is non-Participating Load, is not Pumped-Storage Hydro Units, and is not Load associated with ETCs, TORs, or MSS Operators that elects net Settlement, is scheduled and settled

at the Default LAP. Therefore, LSEs for such Load shall submit CRR Sink nominations at their assigned Default LAP or Default LAPs if the Load they serve is located in more than one Default LAP. In tier 3 of the annual process and tier 2 of the monthly process, such LSEs may also submit CRR Sink nominations at a Sub-LAP of their assigned Default LAP. The CAISO will make available, prior to the beginning of the CRR Allocation process, a list of allowable CRR Sinks to be used in the allocation.

36.8.2.1 Seasonal CRR Eligible Quantity.

The CAISO constructs load duration curves by season and time of use periods for the annual CRR Allocation process for each LSE based on the LSE's submission to the CAISO of its historical hourly Load data for the prior year, for each LAP within which the LSE serves Load. An LSE's Seasonal CRR Load Metric for each season and time of use period is the MW level of Load that is exceeded only in 0.5% of the hours based on the LSE's historical Load data. In the event that the LSE has lost or gained net Load through Load Migration during the course of the prior year, the historical Load data will be adjusted to reflect the loss or gain in accordance with the applicable BPM. The CAISO calculates an LSE's Seasonal CRR Eligible Quantity by first subtracting from that LSE's Seasonal CRR Load Metric the quantity of Load served by its TORs, ETCs, and Converted Rights to form the LSE's Adjusted Load Metric, and then multiplying the result by 0.75.

36.8.2.2 Monthly CRR Eligible Quantity.

Each month the CAISO uses the LSE's submitted hourly load forecast data for the relevant month to calculate two load duration curves (one on-peak and one off-peak load duration curve for the applicable month) to form the basis for monthly allocations for each CRR Sink in which the LSE serves Load. Each LSEs submitted hourly forecast data should reflect any Load growth that is not due to Load Migration as well as the effect of net Load Migration for that LSE. The Monthly CRR Load Metric is the MW level of Load that is exceeded only in 0.5% of the hours based on the LSE's submitted load forecast. The CAISO will calculate an LSE's Monthly CRR Eligible Quantity by subtracting from that LSE's Monthly CRR Load Metric the quantity of Load served by its TORs, ETCs, and Converted Rights. In addition the CAISO will adjust the LSE's Monthly CRR Eligible Quantity, if such an adjustment is determined to be necessary pursuant to Section 36.8.6.

36.8.3 CRR Allocation Process.

36.8.3.1 Annual CRR Allocation for CRR Year One.

The annual CRR Allocation process for CRR Year One consists of a sequence of four (4) tiers for each season and time of use period (on-peak and off-peak). Each tier will feature a SFT applied to the CRR nominations submitted by eligible LSEs or Qualified OCALSEs, the results of which are provided by the CAISO to the respective LSEs or Qualified OCALSEs prior to the LSEs or Qualified OCALSEs submitting their nominations to the next tier. Allocations of CRRs in each tier are considered final once they are provided by the CAISO to the respective LSEs or Qualified OCALSEs. After each tier, LSEs or Qualified OCALSEs will have an amount of time as specified in the Business Practice Manual after their receipt of the results of each tier to submit their nominations for the next tier, if there is one. The annual CRR Allocation allows LSEs or Qualifed OCALSEs to submit nominations for Seasonal CRRs up to their Seasonal CRR Eligible Quantities for each season of the relevant year, each time of use CRR Sink as provided in Sections 36.8.3.1.1, 36.8.3.1.2 and 36.8.3.1.4. The annual CRR Allocation also allows LSEs to submit nominations for Long Term CRRs up to twenty percent (20%) of their Adjusted Load Metric for each season, time of use period and each LAP; except that an LSE that demonstrates that more than twenty percent (20%) of its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources is able to submit

nominations for a greater amount as specified in Section 36.8.3.1.3. As provided in Section 36.8.3.1.3.2, the annual CRR Allocation allows a Qualified OCALSE to submit nominations for Long Term CRRs up to fifty percent (50%) of its Adjusted Load Metric for each season, time of use period and Scheduling Point provided that the Qualified OCALSE demonstrates that all of its nominated Long Term CRR Sources are covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources. The annual CRR Allocation for CRR Year One will be conducted in the following sequence of tiers:

36.8.3.1.1 Tier 1. In tier 1, an LSE or a Qualified OCALSE may nominate and the CAISO will allocate to the LSE or Qualified OCALSE Seasonal CRRs up to fifty percent (50%) of its Seasonal CRR Eligible Quantity for each season, time of use period and CRR Sink. An LSE or a Qualified OCALSE can nominate Seasonal CRRs sourced at Trading Hubs in accordance with the LSE's or Qualified OCALSE's verified CRR Sources. In running the SFT the CAISO shall disaggregate the Seasonal CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1. All allocated CRRs that result from such disaggregation will be Point-to-Point CRRs each of whose CRR Source is a Generating Unit PNode that is an element of the Trading Hub.

36.8.3.1.2 Tier 2. In tier 2, an LSE or a Qualified OCALSE may nominate and the CAISO will allocate to the LSE or Qualified OCALSE Seasonal CRRs up to seventy-five percent (75%) of its Seasonal CRR Eligible Quantity for each season, time of use period and CRR Sink, minus the quantity of CRRs allocated to that LSE or Qualified OCALSE in tier 1. An LSE or a Qualified OCALSE can nominate Seasonal CRRs sourced at Trading Hubs in accordance with the LSE's or Qualified OCALSE's verified CRR Sources. In tier 2 an LSE or a Qualified OCALSE with a verified Trading Hub CRR Source may nominate up to seventy-five (75%) of the Adjusted Verified CRR Source Quantity for that Trading Hub, minus the total MW quantity of Point-to-Point CRRs the LSE or Qualified OCALSE was allocated in tier 1 as a result of its tier 1 nomination of CRRs sourced at that Trading Hub. In running the SFT the CAISO shall disaggregate the Seasonal CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1. All allocated CRRs that result from such disaggregation will be Point-to-Point CRRs each of whose CRR Source is a Generating Unit PNode that is an element of the Trading Hub.

36.8.3.1.3 Tier LT. Tier LT will follow tier 2 for CRR Year One. In Tier LT, an LSE or a Qualified OCALSE may nominate Long Term CRRs from the Seasonal CRRs allocated in tiers 1 and 2 as provided in this Section 36.8.3.1. The cleared Point-to-Point CRRs awarded in tier 1 and tier 2 that resulted from disaggregated CRR nominations sourced at a Trading Hub may not be nominated in Tier LT in CRR Year One. Any Point-to-Point CRRs awarded as a result of disaggregated CRR nominations sourced at a Trading Hub, as described in Section 36.8.4.1, must be nominated as Trading Hub CRRs as described in this Section 36.8.3.1.3. In running the SFT the CAISO shall disaggregate the Seasonal CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1. All allocated Long Term CRRs that result from such disaggregation will be Point-to-Point CRRs each of whose CRR Source is a Generating Unit PNode that is an element of the Trading Hub.

36.8.3.1.3.1 Tier LT for LSEs.

The quantity of Seasonal CRRs that an LSE can nominate as Long Term CRRs is limited to twenty percent (20%) of the LSE's Adjusted Load Metric, except that an LSE that can demonstrate that more than twenty percent (20%) of its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources is able to submit nominations for a greater amount as provided in this section. Such demonstrations shall be provided by the requesting LSE to the CAISO through the submission of a written sworn declaration by an executive employee authorized to represent the LSE and attest to the accuracy of the data demonstration. As necessary, the CAISO may request, and such LSE must produce in a timely manner, documents in support of such declaration. If the LSE has demonstrated that more than twenty percent (20%) of its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources, the amount of Long Term CRRs that it may nominate is equal to the minimum of: (i) the sum of the owned resources and long-term procurement arrangements of ten (10) years or more and (ii) fifty percent (50%) of the LSE's Adjusted Load Metric. Subject to the maximum quantities described above in this Section 36.8.3.1.3.1, an LSE can nominate CRRs sourced at a Trading Hub in Tier LT up to the total MW amount of the Point-to-Point CRRs the LSE was allocated in tiers 1 and 2 as a result of its disaggregated tier 1 and 2 nominations of CRRs sourced at

that Trading Hub.

36.8.3.1.3.2 Tier LT for Qualified OCALSEs.

A Qualified OCALSE may submit nominations for Long Term CRRs up to fifty percent (50%) of its Adjusted Load Metric for each season, time of use period and Scheduling Point. The Qualified OCALSE must demonstrate that all of its nominated Long Term CRRs are supported by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources. Such demonstrations shall be provided by the requesting Qualified OCALSE to the CAISO through the submission of a written sworn declaration by an executive employee authorized to represent the Qualified OCALSE attesting to the accuracy of the data demonstration. As necessary, the CAISO may request, and such Qualified OCALSE must produce in a timely manner, documents in support of such declaration.

36.8.3.1.3.3 Tier LT SFT.

After receiving nominations for Long Term CRRs from LSEs and Qualified OCALSEs, the CAISO will run SFTs to ensure the feasibility of the nominated Long Term CRRs for the remaining nine years of the ten-year term of the Long Term CRR. The SFT runs in Tier LT will test the feasibility of only the Long Term CRR nominations and will not include in the analysis those Seasonal CRRs allocated in tiers 1 and 2 that are not nominated as Long Term CRRs. The quantity of Long Term CRRs that can be allocated for any season and time of use period must be feasible for the entire ten-year term of the Long Term CRR. As a result of the Tier LT SFT runs, Long Term CRR nominations may not be fully allocated; however, such a result will not affect the CRR Year One validity of the Seasonal CRR allocated in tiers 1 and 2. The CAISO will inform the nominating entity of the results of the Tier LT SFTs before the deadline for submission of the tier 3 nominations.

36.8.3.1.4 Tier 3. In tier 3, an LSE or a Qualified OCALSE may nominate and the CAISO will allocate to the LSE or Qualified OCALSE Seasonal CRRs up to one hundred percent (100%) of its Seasonal CRR Eligible Quantity for each season, minus the quantity of CRRs allocated to that LSE or Qualified OCALSE in tiers 1 and 2. In tier 3, Sub-LAPs will be eligible CRR Sinks provided that the Sub-LAP is within the nominating LSE's Default LAP. An LSE or a Qualified OCALSE can nominate Seasonal

CRRs sourced at Trading Hubs. In running the SFT the CAISO shall disaggregate the Seasonal CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1. All allocated CRRs that result from such disaggregation will be Point-to-Point CRRs each of whose CRR Source is a Generating Unit PNode that is an element of the Trading Hub. A Qualified OCALSE can only nominate CRRs from its verified CRR Sources as provided in Section 36.8.3.4.

36.8.3.2 Monthly CRR Allocation for CRR Year One.

The monthly CRR Allocation in CRR Year One shall consist of a sequence of two (2) tiers for each time of use period (on-peak and off-peak). The monthly CRR Allocation will distribute Monthly CRRs to each LSE or Qualified OCALSE up to one hundred percent (100%) of its Monthly CRR Eligible Quantity, minus CRRs allocated to that LSE or Qualified OCALSE in the annual CRR Allocation for the relevant month and time of use period. The monthly CRR Allocation for CRR Year One will be conducted as follows:

36.8.3.2.1 Tier 1. In tier 1 of the monthly CRR Allocations, an LSE or a Qualified OCALSE may nominate and the CAISO will allocate to the LSE or Qualified OCALSE Monthly CRRs up to fifty percent (50%) of the difference between its Monthly CRR Eligible Quantity and the quantity of Seasonal CRRs and previously allocated Long Term CRRs that apply to that month and time of use period. An LSE or a Qualified OCALSE can nominate Monthly CRRs sourced at Trading Hubs in accordance with the LSE's or Qualified OCALSE's verified CRR Sources. In running the SFT the CAISO shall disaggregate the Monthly CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1. All allocated CRRs that result from such disaggregation will be Point-to-Point CRRs each of whose CRR Source is a Generating Unit PNode that is an element of the Trading Hub.

36.8.3.2.2 Tier 2. In tier 2 of the monthly CRR Allocations, an LSE or a Qualified OCALSE may nominate and the CAISO will allocate to the LSE or Qualified OCALSE Monthly CRRs up to one hundred percent (100%) of the difference between its CRR Eligible Quantity and the quantity of Seasonal CRRs and previously allocated Long Term CRRs that apply to that month and time of use period, minus the quantity of CRRs the entity was allocated in tier 1 of the CRR Year One monthly CRR Allocation. An LSE or a Qualified OCALSE can nominate Monthly CRRs sourced at Trading Hubs. In running the SFT the CAISO shall disaggregate the Monthly CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1. In tier 2 of the monthly CRR Allocation, Sub-LAPs will be eligible CRR Sinks provided that the Sub-LAP is within the nominating LSE's Default LAP. A Qualfied OCALSE can only nominate CRRs from its verified CRR Sources as provided in Section 36.8.3.4.2.

36.8.3.3 [NOT USED]

36.8.3.4 Source Verification.

Source verification is required for LSE CRR nominations in tiers 1 and 2 of the CRR Year One annual allocation process and in tier 1 of each CRR Year One monthly allocation process. Source verification is required for all Qualified OCALSE CRR nominations in all tiers of all CRR Allocation processes.

36.8.3.4.1 CRR Year One Source Verification for LSEs.

In CRR Year One, nominations for tier 1 and tier 2 of the annual CRR Allocation and tier 1 of the monthly CRR Allocations must be source verified for all LSEs. The CAISO will make available, prior to the beginning of the allocation process, a list of allowable CRR Sources to be used in the allocation. An LSE must demonstrate that it could actually submit Bids, including Self-Schedules and Inter-SC Trades, for Energy from the locations to be nominated as CRR Sources to serve its Load either through ownership of, or contractual rights to receive Energy from, the relevant Generating Units, or a contract to take ownership of power at the relevant source such as a Trading Hub or a Scheduling Point. Source verification will use data for the period beginning January 1, 2006 and ending December 31, 2006 as the basis for verification. Such demonstrations shall be provided by the requesting LSE to the CAISO through the submission of a written sworn declaration by an executive employee authorized to represent the LSE and attest to the accuracy of the data demonstration. As necessary, the CAISO may request, and such LSE must produce in a timely manner, documents in support of such declaration.

36.8.3.4.2 Source Verification for Qualified OCALSEs.

All CRR nominations by Qualified OCALSEs must be source verified. A Qualified OCALSE's source verification will be based on its legitimate need showing as specified in Section 36.9.1.

36.8.3.4.3 Calculation of Verified CRR Source Quantity.

The Verified CRR Source Quantity associated with each verified CRR Source for a particular LSE or Qualified OCALSE will be: (i) for an owned generation resource the PMax of the unit multiplied by the LSE's or Qualified OCALSE's ownership share; (ii) for a contract with a generation resource, the hourly MWh of Energy specified in the contract averaged over all hours of the relevant time of use period, but no

greater than the PMax of the unit; or (iii) for a contract that delivers Energy to a Trading Hub or Scheduling Point, the hourly MWh of energy specified in the contract for delivery from the supplier to the LSE or Qualified OCALSE at the Trading Hub or Scheduling Point, averaged over all hours of the relevant time of use period. Energy contracts submitted by an LSE to demonstrate that the LSE can submit Bids, including Self-Schedules and Inter-SC Trades, for Energy from the nominated CRR Sources to serve its Load must be at least one month in duration. Energy contracts submitted by a Qualified OCALSE to demonstrate that the Qualified OCALSE can submit Bids, including Self-Schedules and Inter-SC Trades, for Energy from the nominated CRR Sources to serve its Load must be at least one month in duration to support nominations of Monthly and Seasonal CRRs, and at least ten (10) years in duration to support nominations of Long Tem CRRs. Nominations of CRRs for which the CRR Source is a Scheduling Point must be source verified in accordance with Section 36.8.4.2.

36.8.3.4.4 Calculation of Adjusted Verified CRR Source Quantity.

For nominations by an LSE and a Qualified OCALSE, except for a Qualified OCALSE's nomination of Long Term CRRs, the CAISO will consider a contract that covers a portion of a season (but not less than one month) to be acceptable verification, with the adjustment described below, for the entire season for which a CRR is nominated. The CAISO will also consider a contract not less than one month in duration that covers portions of two consecutive months to be acceptable verification, with the adjustment described below, for both of the months that are partially covered. In such cases, for a contract that covers only a portion of the season or month for which the LSE or Qualified OCALSE wishes to nominate source-verified CRRs, the CAISO will calculate an Adjusted Verified CRR Source Quantity, which equals the Verified CRR Source Quantity times the ratio of the number of days covered by the contract for a particular month or season to the total number of days in that month or season, consistent with the time of use period of the CRRs being nominated. Contracts submitted by a Qualified OCALSE to support nomination of Long Term CRRs must be at least ten (10) years in duration and cover the entire season of the Long Term CRR being nominated, and therefore the Adjusted Verified CRR Source Quantity calculation does not apply to such nominations.

36.8.3.5 Annual CRR Allocation Beyond CRR Year One.

The annual CRR Allocation for years beyond CRR Year One consists of a sequence of four (4) tiers for each season and time of use period (on-peak and off-peak). Allocations of CRRs in each tier are considered final once they are provided by the CAISO to the respective LSEs or Qualified OCALSEs. After each tier, LSEs or Qualified OCALSEs will have an amount of time as specified in the Business Practice Manual after their receipt of the results of each tier to submit their nominations for the next tier, if there is one. The annual CRR Allocation will allow

LSEs or Qualified OCALSEs to submit nominations up to their Seasonal CRR Eligible Quantities minus the quantity of previously allocated Long Term CRRs for each season of the relevant year, each time of use period and each CRR Sink at which they serve Load. Annual CRR Allocations for years beyond CRR Year One will be conducted in the following sequence of tiers:

36.8.3.5.1 Tier 1 – Priority Nomination Process.

Tier 1 of the annual CRR Allocation in years beyond CRR Year One will be a Priority Nomination Process through which CRR Holders may nominate some of the same CRRs that they were allocated in the immediately previous year. As provided in Section 36.8.3.4.2, nominations by a Qualified OCALSE in the PNP are subject to source verification. In all annual CRR Allocations after CRR Year One, an LSE or a Qualified OCALSE may make PNP nominations up to the lesser of: (1) two-thirds of its Seasonal CRR Eligible Quantity, minus the quantity of previously allocated Long Term CRRs for each season, time of use period and CRR Sink for that year; or, (2) the total quantity of Seasonal CRRs allocated to that LSE in the previous annual CRR Allocation, minus the quantity of previously allocated Long Term CRRs for each season, time of use period and CRR Sink, and minus any reduction for net loss of Load or plus any increase for net gain of Load through retail Load Migration as described in Section 36.8.5.1. In addition, an LSE's or Qualified OCALSE's nomination of any particular CRR Source-Sink combination in the PNP may not exceed the MW quantity of CRRs having that CRR Source and CRR Sink that the LSE or Qualified OCALSE was allocated in the previous annual CRR Allocation for the same season and time of use period, and in the case of an LSE, adjusted for net Load loss or gain resulting from Load Migration as described in Section 36.8.5.2.2. An LSE or a Qualified OCALSE may not nominate CRRs sourced at Trading Hubs in the PNP. CRRs whose CRR Sink is a Sub-LAP are not eligible for nomination in the PNP. A CRR whose CRR Sink is a Custom LAP or PNode is eligible for nomination in the PNP. PNP Eligible Quantities are not affected by secondary transfers of CRRs, except as performed by the CAISO to reflect Load Migration as described in Section 36.8.5. That is, with the exception of transfers to reflect Load Migration: (i) an LSE or a Qualified OCALSE may nominate in the PNP a CRR it was allocated in

the prior annual CRR Allocation even though it transferred that CRR to another party during the year, and (ii) an LSE or a Qualified OCALSE may not nominate in the PNP a CRR that it received through a secondary transfer from another party. CRRs received through a CRR Auction are not eligible for nomination in the PNP. CRRs received as

Offsetting CRRs to reflect Load Migration are not eligible for nomination in the PNP. The maximum quantity of CRRs that an LSE or a Qualified OCALSE may nominate in the PNP is fifty percent (50%) of its Adjusted Load Metric, minus any previously allocated Long Term CRRs that are valid for the term of the CRRs being nominated. The CAISO does not guarantee that all CRR nominations in the PNP will be allocated. The CAISO will conduct an SFT to determine whether all CRR nominations in the PNP are simultaneously feasible. If the SFT determines that all priority nominations are not simultaneously feasible, the CAISO will reduce the allocated CRRs until simultaneous feasibility is achieved.

36.8.3.5.2 Tier LT.

In years subsequent to CRR Year One, Long Term CRRs will be allocated as provided in this section.

36.8.3.5.2.1 Tier L for LSEs.

In Tier LT of CRR Year Two, an LSE may nominate Long Term CRRs from any of the Seasonal CRRs it was allocated in the PNP up to a maximum of thirty percent (30%) of the its Adjusted Load Metric, minus the quantity of previously allocated Long Term CRRs that are valid for that year; except that the LSE may nominate Long Term CRRs in amounts greater than thirty percent (30%) but no more than fifty percent (50%) of its Adjusted Load Metric if the LSE demonstrates that more than thirty percent (30%) of its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources. Such demonstrations shall be provided by the requesting LSE to the CAISO through the submission of a written sworn declaration by an executive employee authorized to represent the LSE and attest to the accuracy of the data demonstration. As necessary, the CAISO may request, and such LSE must produce in a timely manner, documents in support of such declaration. If the LSE has demonstrated that more than thirty percent (30%) of its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources, the amount of Long Term CRRs that it may nominate is equal to the minimum of: (i) the sum of the owned resources and long-term procurement arrangements of ten (10) years or more, minus the quantity of previously allocated Long Term CRRs that are valid for that CRR year, and (ii) fifty percent (50%) of the LSE's Adjusted Load Metric, minus the quantity of previously allocated Long Term CRRs that are valid for that CRR year. In CRR Year Three,

the limit on Long Term CRR nominations will increase by ten percent (10%) to forty percent (40%) of the eligible entity's Adjusted Load Metric but shall not exceed fifty percent (50%) of the Adjusted Load Metric. In CRR Year Three, an LSE may exceed the forty percent (40%) limit on Long Term CRR nominations if it demonstrates that its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources. The amount of Long Term CRRs that it may nominate is equal to the minimum of: (i) the sum of the owned resources and long-term procurement arrangements of ten (10) years or more, minus the quantity of previously allocated Long Term CRRs that are valid for that CRR year, and (ii) fifty percent (50%) of the LSE's Adjusted Load Metric, minus the quantity of previously allocated Long Term CRRs that are valid for that CRR year. In CRR Year Four and all subsequent years, an LSE may nominate Long Term CRRs from any of the Seasonal CRRs allocated in the PNP up to the maximum of fifty percent (50%) of its Adjusted Load Metric, minus the quantity of previously allocated Long Term CRRs that are valid for that year.

36.8.3.5.2.2 Tier LT for Qualified OCALSEs.

A Qualified OCALSE may submit nominations for Long Term CRRs up to the portion of its Adjusted Load Metric for which it has demonstrated coverage by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources, up to a maximum of fifty percent (50%) of its Adjusted Load Metric for each season, time of use period and Scheduling Point, minus the quantity of previously allocated Long Term CRRs that are valid for that CRR year. Such demonstrations shall be provided by the requesting Qualified OCALSE to the CAISO through the submission of a written sworn declaration by an executive employee authorized to represent the Qualified OCALSE and attest to the accuracy of the data demonstration. As necessary, the CAISO may request, and such Qualified OCALSE must produce in a timely manner, documents in support of such declaration. Contracts submitted in support of OCALSE nominations of Long Term CRRs must cover the entire season of the Long Term CRR being nominated.

36.8.3.5.2.3 Tier LT SFT.

After receiving nominations for Long Term CRRs, the CAISO will run SFTs to ensure the feasibility of the

nominated Long Term CRRs for the remaining nine years of the ten (10) year term of the Long Term CRR. The SFT run in Tier LT will test the feasibility of only the Long Term CRR nominations and will not include in the analysis those Seasonal CRRs allocated in the PNP that were not nominated as Long Term CRRs. The quantity of Long Term CRRs that can be allocated for any season and time of use period must be feasible for the entire ten (10) year term of the Long Term CRR. As a result of the Tier LT SFT runs, Long Term CRR nominations may not be fully allocated; however, such a result will not affect the validity of: (i) the Long Term CRRs allocated in previous years, or (ii) the Seasonal CRRs allocated in the PNP. The CAISO will inform nominating eligible entities of the results of the Tier LT SFTs before the deadline for submission of the tier 2 nominations.

36.8.3.5.3 Tier 2. In tier 2 of the annual CRR Allocation, the CAISO will allocate Seasonal CRRs to each LSE and Qualfied OCALSE up to two-thirds of its Seasonal CRR Eligible Quantity for each season, time of use period and CRR Sink, minus the

quantity of: (i) CRRs allocated to that LSE or Qualified OCALSE in tier 1, and (ii) Long Term CRRs previously allocated to it that are valid for the CRR term currently being allocated. An LSE or a Qualified OCALSE can nominate Seasonal CRRs sourced at Trading Hubs. In running the SFT the CAISO shall disaggregate the Seasonal CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1.

36.8.3.5.4 Tier 3. In tier 3 of the annual CRR Allocation, the CAISO will allocate Seasonal CRRs to each LSE or Qualified OCALSE up to one hundred percent (100%) of its Seasonal CRR Eligible Quantity for each season, time of use period and CRR Sink, minus the quantity of: (i) CRRs allocated to that LSE or Qualified OCALSE in tiers 1 and 2, and (ii) Long Term CRRs previously allocated to that eligible entity that are valid for the CRR term currently being allocated. In tier 3 of the annual CRR Allocation, Sub-LAPs will be eligible CRR Sinks provided that the Sub-LAP is within the nominating LSE's Default LAP. An LSE or a Qualified OCALSE can nominate Seasonal CRRs where the CRR Source is a Trading Hub. In running the SFT the CAISO shall disaggregate the Seasonal CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1.

36.8.3.5.5 Alternatives for Renewal of Long Term CRRs and for the Transition of Expiring ETCs and Converted Rights to Long Term CRRs.

Eligible entities may, in the final year of a Long Term CRR, nominate the identical CRR Source, CRR Sink, and MW terms of the expiring Long Term CRR in the PNP conducted that year, subject to any applicable quantity limitations specified in this Section 36. An eligible entity with an Existing Transmission Contract or Converted Rights that expire by the start of the year for which the CRR Allocation process is conducted may participate in the PNP as if its Existing Transmission Contract or Converted Rights sources and sinks were previously allocated Seasonal CRRs, subject to any applicable quantity limitations specified in this Section 36. In either case, if Seasonal CRRs are awarded to an LSE or a Qualified OCALSE in the PNP based on its nomination of its expiring rights, such entity may then nominate those Seasonal CRRs in Tier LT of the same year's annual CRR Allocation process, subject to any applicable quantity limitations specified in this Section 36. Alternatively, CRR Holders of expiring LT CRRs, expiring Existing Transmission Contracts or expiring Converted Rights may bypass the tier 1 Priority Nomination Process and nominate their expiring rights as Long Term CRRs in Tier LT one year

prior to the year of expiration, subject to any applicable quantity limitations specified in this Section 36. This alternative allows the holder of the expiring rights to nominate Long Term CRRs in the first Tier LT SFT in which the capacity corresponding to the expiring rights becomes available for the full nine year period of the Tier LT SFT. For any entity who elects this alternative and obtains an allocated Long Term CRR, the length of the renewed Long Term CRR (or initial Long Term CRR in the case of expiring Existing Transmission Contracts or expiring Converted Rights) will be nine years, corresponding to the years included in the Tier LT SFT.

36.8.3.6 Monthly CRR Allocation Beyond CRR Year One.

The monthly CRR Allocation shall consist of a sequence of two (2) tiers of allocations for each time of use period (on-peak and off-peak). The monthly CRR Allocation will distribute Monthly CRRs and will allow an LSE and a Qualified OCALSE to nominate CRRs up to one hundred percent (100%) of its Monthly CRR Eligible Quantity, minus the total of any Seasonal CRRs allocated in the annual CRR Allocation, and minus any holdings of Long Term CRRs that are valid for the month and time of use of the CRRs being nominated. All CRR nominations by Qualified OCALSEs must be source verified.

36.8.3.6.1 Tier 1. In tier 1 of the monthly CRR Allocations, each LSE or Qualified OCALSE may nominate Monthly CRRs up to fifty percent (50%) of the difference between its Monthly CRR Eligible Quantity and the total of any Seasonal CRRs allocated in the annual CRR Allocation and any holdings of Long Term CRRs that are valid for the month and time of use of the CRRs being nominated. An LSE or a Qualified OCALSE can nominate Monthly CRRs where the CRR Source is a Trading Hub. In running the SFT the CAISO shall disaggregate the Monthly CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1.

36.8.3.6.2. Tier 2. In tier 2 of the monthly CRR Allocations, each LSE or Qualified OCALSE may nominate Monthly CRRs up to one hundred percent (100%) of the difference between its Monthly CRR Eligible Quantity and the total of any Seasonal CRRs allocated in the annual CRR Allocation and any holdings of Long Term CRRs that are valid for the month and time of use of the CRRs being nominated, minus the quantity of CRRs allocated to that LSE or Qualified OCALSE in tier 1 of the current monthly CRR Allocation. In tier 2 of the monthly CRR Allocation, Sub-LAPs will be eligible CRR Sinks, provided

that the Sub-LAP is within the nominating LSE's Default LAP. An LSE or a Qualified OCALSE can nominate Monthly CRRs sourced at Trading Hubs. In running the SFT the CAISO shall disaggregate the Monthly CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1.

36.8.4 Eligible Sources for CRR Allocation.

In the CRR Allocation processes for Seasonal CRRs, Monthly CRRs, and Long Term CRRs, nominated CRR Sources can be either PNodes (including Scheduling Points) or Trading Hubs. An LSE or a Qualified OCALSE may nominate up to one hundred percent (100%) of its Adjusted Verified CRR Source Quantities for Seasonal or Monthly CRRs in the combined tiers of the annual and monthly CRR Allocation processes as provided in this Section. For tiers 1 and 2 of the annual CRR Allocation in CRR Year One, an LSE may nominate CRRs from each of its verified CRR Sources in a quantity no greater than seventy-five percent (75%) of the Adjusted Verified CRR Source Quantity corresponding to each verified CRR Source. The LSE may then use tier 1 of the monthly CRR Allocations in CRR Year One to nominate up to the full one hundred percent (100%) of the Adjusted Verified CRR Source Quantity corresponding to each verified CRR Source. In tiers 1, 2 and 3 of the annual CRR Allocation in each year in which it participates, a Qualified OCALSE may nominate CRRs from each of its verified CRR Sources in a quantity no greater than seventy-five percent (75%) of the Adjusted Verified CRR Source Quantity corresponding to each CRR Source. The Qualified OCALSE may then use tiers 1 and 2 of the monthly CRR Allocations in the same year to nominate up to the full one hundred percent (100%) of the Adjusted Verified CRR Source Quantity corresponding to each verified CRR Source.

36.8.4.1 CRRs with Trading Hub Sources.

For purposes of the CRR Allocation processes the CAISO shall disaggregate CRR nominations with Trading Hub CRR Sources into Point-to-Point CRR nominations each of whose CRR Source is a Generating Unit PNode that is an element of the Trading Hub. In performing this disaggregation the MW quantity of each Point-to-Point CRR nomination will equal the MW quantity of the CRR nomination multiplied by the weighting factor of the corresponding Generating Unit PNode in the defined Trading Hub. The disaggregated, individual Point-to-Point CRRs will be used by the CAISO in conducting the SFTs for the nominated CRRs. In CRR years other than CRR Year One, an LSE may nominate in the PNP any Point-to-Point CRRs it was allocated the previous year as a result of Seasonal CRR nominations with Trading Hubs as CRR Sources, and may then nominate those Seasonal CRRs awarded in the PNP as Long Term CRRs in Tier LT. In CRR Year One, an LSE that was allocated individual Point-to-Point CRRs in tiers 1 and 2 as a result of nominating CRRs sourced at a Trading Hub must nominate CRRs sourced at Trading Hubs in Tier LT in accordance with Section 36.8.3.1.3.1. For Qualified OCALSEs, all nominated CRR Sources must be source verified as specified in Section 36.9.1. Any Long Term CRRs allocated by the CAISO as a result of nominations of CRRs sourced at Trading Hubs will be Point-to-Point CRRs each of whose CRR Sources is a Generating Unit PNode that is an element of the Trading Hub.

36.8.4.2 Import CRRs.

An LSE or a Qualified OCALSE may nominate Seasonal, Monthly or Long Term CRRs whose CRR Source is a Scheduling Point in the annual and monthly CRR Allocation in accordance with this Section.

36.8.4.2.1 Scheduling Points as CRR Sources for LSEs in CRR Year One.

In CRR Year One, in tiers 1 and 2 of the annual CRR Allocation process an LSE may nominate Seasonal CRRs whose CRR Source is a Scheduling Point to the extent that it can demonstrate to the CAISO that, for the verification period stated in Section 36.8.3.4, it owned or was a party to a contract with a System Resource, and that it or the counter-party to the contract had procured appropriate transmission from the applicable transmission provider outside the CAISO to the Scheduling Point. In addition, also in tiers 1

and 2 of the annual CRR Allocation in CRR Year One, all LSEs eligible to nominate CRRs under this Section 36.8 may nominate as CRR Sources, without any verification, shares of the residual import CRR capacity at each Scheduling Point that remains after the completion of the CRR Source verification process. Each LSE's share of the residual import CRR capacity will be calculated as follows. Starting with the total capacity at each Scheduling Point that is available in the DC FNM for the annual CRR Allocation and Auction process, the CAISO will calculate the residual amount of capacity that remains at each Scheduling Point after subtracting the capacity accounted for by those Scheduling Point CRR Sources submitted by LSEs for verification that have been verified. The CAISO will then set aside fifty percent (50%) of this residual amount at each Scheduling Point for the annual CRR Auction, and will allow LSEs to nominate pro rata shares of the other fifty percent (50%) in proportion to their Seasonal CRR Eligible Quantities. In each monthly CRR Allocation during CRR Year One, CRR Source verification will be required in tier 1 as in the annual CRR Allocation process. Following the verification process, the CAISO will calculate and set aside for the monthly CRR Auction fifty percent (50%) of the import capacity that remains at each Scheduling Point after accounting for the verified Scheduling Point CRR Source submissions to the monthly process and the annual CRR Allocation and Auction results for that month, and will allow LSEs to nominate in tier 1 Monthly CRRs with CRR Sources at each Scheduling Point in quantities up to their pro rata shares of the other fifty percent (50%) in proportion to their Monthly CRR Eligible Quantities.

36.8.4.2.2 Scheduling Points as CRR Sources for LSEs Beyond CRR Year One.

In the annual CRR Allocation processes subsequent to CRR Year One, there will be no special provisions regarding CRR Sources at Scheduling Points in

tiers 1 and 2 for LSEs. For tier 3 the CAISO will calculate and set aside for the annual CRR Auction fifty percent (50%) of the import capacity at each Scheduling Point that remains after the tier 1 and tier 2 CRR Allocations and after considering any previously allocated Long Term CRRs that are valid for that month as described in Section 36.4.1. In the monthly CRR Allocation processes subsequent to CRR Year One there will be no special provisions regarding CRR Sources at Scheduling Points in tier 1 for LSEs. For tier 2 the CAISO will calculate and set aside for the monthly CRR Auction fifty percent (50%) of the import capacity that remains at each Scheduling Point after accounting for the annual CRR Allocation and Auction results for that month, any previously allocated Long Term CRRs that are valid for that month, and the results of tier 1 of the monthly CRR Allocation.

36.8.4.2.3 Scheduling Points as CRR Sources for Qualified OCALSEs.

In the annual CRR Allocation process a Qualified OCALSE may nominate CRRs whose CRR Source is a Scheduling Point to the extent it meets the requirements of Section 36.9.1.

36.8.5 Load Migration Between LSEs.

The CAISO shall track Load Migration between LSEs through Load Migration data provided to the CAISO by each UDC, MSS Operator or other entity that provides distribution serve to customers. Load Migration will be reflected in the hourly Load data and load forecasts used by the CAISO to calculate the CRR Load Metrics and Seasonal and Monthly CRR Eligible Quantities for each LSE, in accordance with procedures set forth in the applicable Business Practice Manual. Load Migration will be reflected in appropriate adjustments to each affected LSE's Seasonal and Monthly CRR Eligible Quantities in subsequent annual and monthly CRR Allocations, as well as its PNP Eligible Quantities in the next annual CRR Allocation. LSEs that hold Seasonal CRRs or Long Term CRRs and that lose or gain Load through Load Migration must comply with Section 36.8.5.3 regarding the transfers of current CRR holdings to reflect Load Migration.

36.8.5.1 Tracking of Load Migration by CAISO.

The CAISO will implement all appropriate adjustments due to Load Migration on a monthly basis. In order to enable the CAISO to track Load Migration and determine the appropriate adjustments, each

UDC, MSS Operator, and other entity that provides distribution service to customers will provide to the CAISO the following minimum information on each customer that migrates between LSEs: (i) customer identification information, (ii) information to establish the customer's retail customer class, (iii) the original and new LSEs serving the customer, (iv) the effective date of the Load Migration, and (v) the most recent twelve (12) months of billing data for the customer. Each UDC, MSS Operator and other entity that provides distribution service to customers will also provide to the CAISO the number of customers served by each LSE in each retail customer class as of the start of each month, plus information on the average consumption by customers in each retail customer class. Further details regarding the information to be supplied to the CAISO is set forth in the applicable Business Practice Manual. The CAISO will receive information from each UDC, MSS Operator, and other entity providing distribution service on an ongoing daily basis, and will perform the calculations for any appropriate adjustments due to Load Migration on a monthly basis. New CRRs allocated due to Load Migration in accordance with Section 36.8.5.3 will be made effective on the first day of the first month, following the CAISO's performance of the calculations, in which the Load Migration is effective by the first of the month.

36.8.5.2 Adjustments to CRR Eligible Quantities to Reflect Load Migration.

An LSE who loses or gains net Load through Load Migration in a given year will have its Seasonal CRR Eligible Quantities in the next annual CRR Allocation reduced or increased, respectively, in proportion to the net Load lost or gained through Load Migration. In addition, an LSE that loses Load through Load Migration in a given year will have its PNP Eligible Quantities reduced in proportion to the gross amount of Load lost through Load Migration. An LSE that gains Load through Load Migration in a given year will have its PNP Eligible Quantities increased in proportion to the amount of Load gained through Load Migration.

36.8.5.3 Adjustments to Current CRR Holdings to Reflect Load Migration.

Because in between CRR Allocations each LSE can both lose Load and gain Load between itself and multiple other LSEs, the CAISO will calculate and perform appropriate adjustments to current CRR holdings for each pair of LSEs affected by Load Migration to reflect the net amount of Load that migrated between those two LSEs during each Load Migration tracking period and for each LAP in which the LSEs serve Load. The CAISO will perform such calculations in accordance with the appropriate Business Practice Manual, and will perform the adjustments by creating and allocating equal and opposite sets of new CRRs for each pair of LSEs affected by Load Migration. The net Load gaining LSE of the pair will receive a set of new CRRs that match the CRR Sources and CRR Sinks of all the Seasonal and Long Term CRRs previously allocated to the net Load losing LSE of the pair, in MW quantities proportional to the net amount of the net Load losing LSE's Load that migrated to the net Load gaining LSE of the pair within each LAP in which the LSEs serve Load. The net Load losing LSE of the pair will receive a set of new Offsetting CRRs. After the assignment of Offsetting CRRs, the net Load losing LSE will still hold the CRRs it held before it was assigned the Offsetting CRRs. The Load gaining LSE may nominate its new Seasonal CRRs in the Priority Nomination Process of the next annual CRR Allocation process. The net Load losing LSE may not nominate in the Priority Nomination Process either: (i) the Seasonal CRRs corresponding to the new CRRs allocated to the Load gaining LSE, or (ii) the Offsetting CRRs allocated due to Load Migration. An LSE to which the CAISO allocates new CRRs to reflect Load Migration must be either a Candidate CRR Holder or a CRR Holder and meet all requirements applicable to such entities.

36.8.5.4 Load Migration and Compliance with CAISO Credit Requirements.

To the extent that the credit requirements of an LSE as specified in Section 12 are updated by the allocation of new CRRs to reflect Load Migration, the CAISO will do the following. For new CRRs that result in net charges to the affected LSE over a Settlement period these charges will appear on the LSE's Settlement Statement irrespective whether the LSE has met the updated credit requirement. For new CRRs that result in net payments to the affected LSE over a Settlement period and that LSE has not met the updated credit requirements affected by the allocation of new CRRs to reflect Load Migration, the CAISO shall withhold payment until those updated credit requirements are met. At the end of each Settlement period, if the LSE has not met the updated credit requirements resulting from Load Migration CRR transfers, the CAISO will add any net payments that accrued to the transferred CRRs to the CRR Balancing Account to be included in the end-of-month clearing of the CRR Balancing Account, and those net payments will no longer be recoverable by the LSE. The CAISO may place new allocated CRRs into CRR Auctions if the non-compliance with credit or applicable Financial Security requirements is persistent.

36.8.5.5 Load Migration Adjustment for CRR Year One.

For the CRR Year One CRR Allocation process, the CAISO will account for the cumulative Load Migration that takes place between the beginning of the CRR Year One CRR Allocation process and the first date that the Day-Ahead Market is operational as a single adjustment as described in the Business Practice Manuals.

36.8.5.6 Load Migration Reflected in the Monthly CRR Allocation Process.

An LSE who loses or gains net Load through Load Migration must reflect that loss or gain in the monthly Load forecasts it submits to the CAISO for determining its monthly CRR Eligible Quantities for future monthly CRR Allocations.

36.8.6 Load Forecasts Used to Calculate CRR MW Eligibility.

The CAISO will work closely with appropriate state and Local Regulatory Authorities and agencies to ensure that historical Load data and load forecasts used to establish Seasonal and Monthly CRR Eligible Quantities are consistent with the data and forecasts used to establish resource adequacy requirements.

36.8.7 Long Term CRRs and Participating TO Withdrawals from the CAISO Controlled Grid.

In the event a Participating TO gives the required notice and withdraws facilities or Entitlements from the CAISO Controlled Grid, the CAISO will reconfigure Long Term CRRs as necessary to reflect the CAISO Controlled Grid after the withdrawal. After reconfiguration, the CAISO will run SFTs on the reconfigured Long Term CRRs and, if necessary, reduce some of the reconfigured Long Term CRRs to ensure their feasibility. If the CRR Source and CRR Sink for an allocated Long Term CRR both are located within a departing Participating TO Service Territory, the Long Term CRR would expire on the effective date of the Participating TO's withdrawal.

36.9 CRR Allocation to OCALSEs.

OCALSEs who wish to nominate and be allocated CRR Obligations in the same annual and monthly CRR Allocation processes described in Section 36.8 may do so subject to the provisions of this Section 36.9 and if such OCALSEs are qualified and registered as Candidate CRR Holders or CRR Holders. An OCALSE may participate in the CRR Allocation processes and be allocated CRRs to the extent that: (1) such OCALSE makes a showing of legitimate need for the CRRs nominated as provided by Section 36.9.1; (2) such OCALSE pre-pays or commits to pay the appropriate Wheeling Access Charge in the amount of MWs of CRRs nominated as provided in Section 36.9.2; (3) the external load for which CRRs are nominated will be exposed to CAISO Congestion charges because it is not served by Supply resources other than exports from the CAISO Control Area; (4) the external load for which CRRs are nominated is not served through an ETC, TOR or Converted Rights by which it has been designated as eligible to receive the reversal of Congestion charges; (5) such OCALSE complies with the verification requirements in Section 36.9.4; and (6) the nominated CRRs clear the relevant SFTs. An LSE that participates in the CRR Allocation processes will be subject to the applicable rules governing the tiered structure of these processes. All CRRs allocated under the terms of this Section 36.9 will be CRR Obligations.

36.9.1 Showing of Legitimate Need.

An OCALSE must make a showing to the CAISO of legitimate need to enable the CAISO to verify the CRR Sources it wants to nominate. All CRR nominations by OCALSEs in all CRR years must be source verified based on the showing of legitimate need. The CAISO's verification of legitimate need will be based on demonstration by the OCALSE of an executed Energy contract from a Generating Unit or System Resource that covers the time period of the CRRs nominated, or ownership of such Generating Unit or System Resource. For such CRR Sources the showing of legitimate need must be made for each CRR term for which the OCALSE wants to nominate CRRs in a timely manner prior to the start of the relevant annual or monthly CRR Allocation process. For CRR Sources that will be verified based on generating resources located outside the CAISO Control Area, a Scheduling Point must be nominated as the corresponding CRR Source. Generating resources located outside of the CAISO Control Area to be used by the OCALSE to verify a Scheduling Point as a CRR Source must not be located within the OCALSE's own Control Area. The Verified CRR Source Quantity and Adjusted Verified CRR Source Quantity corresponding to any CRR Source nominated by an OCALSE will be calculated in accordance with Section 36.8.3.4, with the modification that for an OCALSE these quantities will be calculated for each CRR Allocation process in which the Qualified OCALSE wants to participate, consistent with the requirement for ongoing source verification based on a forward showing in conjunction with the OCALSE's annual showing of legitimate need. For a CRR Source that is a Scheduling Point, pursuant to the legitimate need showing requirement, an OCALSE must demonstrate that it has procured the appropriate transmission service from the transmission provider outside the CAISO Control Area to the Scheduling Point that the OCALSE intends to nominate as a CRR Source for the term of the CRR being nominated. Such demonstrations shall be provided by the OCALSE to the CAISO through the submission of a written sworn declaration by an executive employee authorized to represent the OCALSE and attest to the accuracy of the data demonstration. As necessary, the CAISO may request, and such OCALSE must produce in a timely manner, documents in support of such declaration.

36.9.2 Prepayment of Wheeling Access Charges.

36.9.2.1 Prepayment of Wheeling Access Charges for Allocated CRRs.

An OCALSE will be required to prepay relevant Wheeling Access Charges, to be calculated as described in this section and further specified in the Business Practice Manual, for the full term of the Monthly, Seasonal and Long Term CRRs it intends to nominate in order to participate in the CRR Allocation processes and be allocated CRRs. To be eligible for the allocation of Seasonal CRRs or Monthly CRRs the OCALSE must submit the full required prepayment and have it accepted by the CAISO prior to the OCALSE's submission of nominations for the relevant annual or monthly CRR Allocation, except as provided below in Section 36.9.2.2. To be eligible for nominations of Long Term CRRs, the OCALSE must submit the full prepayment and have it accepted by the CAISO prior to the OCALSE's submission of nominations of Long Term CRRs in Tier LT, except as provided below in Section 36.9.2.2. For each MW of Monthly, Seasonal or Long Term CRR to be nominated the nominating OCALSE must prepay one MW of the relevant Wheeling Access Charge, which equals the per-MWh WAC that is associated with the Scheduling Point the OCALSE intends to nominate as a CRR Sink and that is expected at the time the CRR Allocation process is conducted to be applicable for the period of the CRR nominated, times the number of hours comprising the period of the CRR nominated as further specified in the applicable Business Practice Manual.

36.9.2.2 Eligibility for Prepayment of WAC on an Annual or Monthly Basis.

An OCALSE deemed creditworthy pursuant to the requirements of Section 12 may elect to prepay the determined WAC responsibility on a monthly basis for the Seasonal or Long Term CRRs that it seeks to be allocated, provided that such OCALSE has demonstrated a commitment to pay the required WAC for the entire term of the CRRs sought by submitting to the CAISO a written sworn statement by an executive that can bind the entity. In order to be eligible for this option, the OCALSE must submit and the CAISO must accept this sworn statement prior to the applicable CRR Allocation process in which the OCALSE intends to nominate a CRR. An OCALSE choosing to pay on a monthly basis shall make its monthly payments on a schedule specified in the applicable Business Practice Manual. An OCALSE deemed creditworthy pursuant to the requirements of Section 12 may also elect to prepay its determined WAC responsibility associated with an allocated Long Term CRR on an annual basis, provided that such OCALSE has demonstrated a commitment to pay for the entire term of the Long Term CRRs sought by submitting to the CAISO and the CAISO accepting a written sworn statement by an executive that can bind the entity. An OCALSE choosing to pay such WAC obligation on an annual basis shall make its payment each year on a schedule specified in the applicable Business Practice Manual.

36.9.2.3 Refund of Prepaid WAC for Unallocated CRRs.

To the extent that an OCALSE prepays a quantity of the WAC and is not allocated the full amount of CRRs nominated, WAC prepayment for CRRs not allocated will be refunded by the CAISO within thirty (30) days following the completion of the relevant CRR Allocation process.

36.9.3 CRR Eligible Quantities.

The CAISO will calculate the Seasonal and Monthly CRR Eligible Quantities for OCALSEs as described in Section 36.8.2 with the following modifications. The OCALSE must submit two sets of hourly data from which the CAISO will construct load duration curves for determining the Seasonal and Monthly CRR Eligible Quantities. One set of hourly data must reflect the OCALSE's historical hourly exports at the Scheduling Point that is the CRR Sink of the nominated CRRs. The historical hourly exports shall be based on the tagged Real-Time Interchange Export Schedules for the OCALSE. An OCALSE that wishes to nominate multiple Scheduling Points as CRR Sinks in the CRR Allocation process will have

distinct CRR Eligible Quantities for each nominated Scheduling Point, and prior to each annual CRR Allocation process must submit historical hourly export data at each such Scheduling Point from which the CAISO will calculate the associated CRR Eligible Quantities. The second set of hourly data must reflect the prior year's hourly metered load for the end-use customers the OCALSE served outside the CAISO Control Area and that were not served from sources other than exports from the CAISO Control Area. The OCALSE's Seasonal and Monthly CRR Eligible Quantities will be based on the lesser of (1) the total historical hourly export data for all Scheduling Points submitted as CRR Sinks, and (2) the hourly metered load for the external end-use customers served by the OCALSE and that were not served from sources other than exports from the CAISO Control Area. An OCALSE also must demonstrate that it has firm transmission rights pursuant to the tariffs of intervening transmission providers from its Scheduling Point sink to the end-use customers in the OCALSE's Control Area. The OCALSE shall support its data submission and the demonstration of transmission rights to its end-use customers with a sworn affidavit by an executive employee authorized to represent the OCALSE and attest to the accuracy of the data and demonstration. As necessary, the CAISO may request, and such OCALSE must produce in a timely manner, the raw data and calculations used to develop the submitted data set and the demonstration of transmission rights to its end-use customers.

36.9.4 Eligible CRR Sources and Sinks.

Eligible CRR Sources will be the PNodes of the Generating Units or Scheduling Points for which the OCALSE has made a legitimate need showing as described above in Section 36.9.1. Eligible CRR Sinks will be the Scheduling Points for which the CAISO has established Seasonal and Monthly CRR Eligible Quantities as described in Section 36.9.3. An OCALSE nominating CRRs having CRR Sources internal to the CAISO Control Area will be limited to seventy-five percent (75%) of each of its corresponding Adjusted Verified CRR Source Quantities in all tiers of the annual CRR Allocation process in CRR Year One and in subsequent years. An OCALSE nominating CRRs having CRR Sources external to the CAISO Control Area will be limited to seventy-five percent (75%) of each of its corresponding Adjusted Verified CRR Source Quantities in all tiers of the annual CRR Allocation process in CRR Year One. In

CRR years subsequent to CRR Year One, the OCALSE may renew previously allocated CRRs having external CRR Sources, subject to the applicable quantity limitations and other requirements specified in this Section 36.

36.9.5 Priority Nomination Process.

CRRs allocated pursuant to this Section 36.9 shall be eligible for nomination in the Priority Nomination Process to the extent that the requirements of this Section 36.9 are met at the time of the relevant CRR Allocation.

36.10 CRR Allocation to Metered Subsystems.

An MSS Operator that elects gross Settlement may participate in the CRR Allocation processes and be allocated CRR Obligations. An MSS Operator that elects net Settlement may participate in the CRR Allocation processes and be allocated CRRs, except that its Seasonal and Monthly

CRR Eligible Quantities will reflect its net Load and its allocated CRRs will use MSS-LAPs as CRR Sinks. The MSS Operator will be required to submit to the CAISO the appropriate hourly historical net Load data and net Load forecast data from which the CAISO will construct net Load duration curves to determine the Seasonal and Monthly CRR Eligible Quantities.

36.11 CRR Allocation to Merchant Transmission Facilities.

Project Sponsors of Merchant Transmission Facilities who turn such facilities over to CAISO Operational Control and do not recover the cost of the transmission investment through the CAISO's Access Charge or WAC or other regulatory cost recovery mechanism may be allocated, at the Project Sponsor's election, either CRR Options or Obligations that reflect the contribution of the facility to grid transfer capacity as determined below.

36.11.1 Eligibility for Merchant Transmission CRRs.

The Project Sponsor of a Merchant Transmission Facility shall be entitled to receive Merchant Transmission CRRs as determined in accordance with this Section 36.11. A Merchant Transmission CRR allocated through this process is effective for thirty (30) years or for the pre-specified intended life of the Merchant Transmission Facility, whichever is less. Merchant Transmission CRRs represent binding commitments for thirty (30) years or for the pre-specified intended life of the Merchant Transmission Facility, whichever is less. The binding commitment by a CRR Holder that holds Merchant Transmission CRRs may not be terminated or otherwise modified by the CRR Holder prior to the end of the term of the Merchant Transmission CRR.

36.11.2 Procedure for Allocating Merchant Transmission CRRs.

No less than forty-five (45) days prior to the in-service date of a Merchant Transmission Facility, the Project Sponsor of the facility will inform the CAISO of the in-service date of the facility and that the Project Sponsor will be requesting Merchant Transmission CRRs associated with the Merchant Transmission Facility. The CAISO will complete the Merchant CRR Allocation after the in-service date of the facility and will allocate Merchant Transmission CRRs whose payment stream will be retroactive back to the in-service date.

36.11.3 Determination of Merchant Transmission CRRs to be Allocated to a Project Sponsor of a Merchant Transmission Facility.

36.11.3.1 Nominations of Merchant Transmission CRRs.

The Project Sponsor of a Merchant Transmission Facility must submit nominations for Merchant Transmission CRRs at least twenty-one (21) days prior to the in-service date of the facility. The Project Sponsor may nominate up to five individual, Point-to-Point CRRs for each of the two on-peak and off-peak time of use periods. Each of the individual, point-to-point nominations must specify: (i) a single CRR Source location; (ii) a single CRR Sink location, (iii) a MW quantity; (iv) a time of use period (on-peak or off-peak); and (v) a CRR type, either CRR Options or CRR Obligations.

36.11.3.2 Methodology to Determine Merchant Transmission CRRs.

The CAISO shall determine the incremental Merchant Transmission CRRs associated with a Merchant Transmission Facility pursuant to this Section 36.11.3.2. The determination will include an assessment of the simultaneous feasibility of the incremental Merchant Transmission CRRs and all other outstanding CRRs. The CAISO will determine the feasible incremental Merchant Transmission CRRs using a three-step process.

36.11.3.2.1 Step One: the Capability of the Existing Transmission System.

In step one the CAISO will determine the base CRR capability of the system using a Simultaneous Feasibility Test that incorporates as Fixed CRRs all existing encumbrances through the end of the CRR year for which the annual CRR Allocation and Auction process has already been conducted, including encumbrances for the month covered by the most recently conducted monthly CRR Allocation and Auction process. This analysis will determine the extent to which the nominated Merchant Transmission CRRs are feasible on the existing transmission system absent the Merchant Transmission Facility. As a result of this analysis, the CAISO will create temporary test CRR Options to reserve grid capacity that the Project Sponsor of the Merchant Transmission Facility is not eligible to receive. The temporary test CRR Options will have the same CRR Source and CRR Sink pairs as the Merchant Transmission CRR nominations submitted by the Project Sponsor.

36.11.3.2.2 Step Two: Mitigation of Impacts on Existing Encumbrances.

In the second step, the CAISO will add the proposed Merchant Transmission Facility to the DC FNM and run a SFT using the Fixed CRRs. The second step will ensure that the addition of a Merchant Transmission Facility does not negatively impact any existing encumbrances through the end of the CRR year for which the annual CRR Allocation and Auction process for Annual CRRs has already been conducted, including encumbrances for the month covered by the most recently conducted monthly CRR Allocation and Auction process. For any impacts identified in this step the Project Sponsor of the Merchant Transmission Facility will be required to mitigate the impacts for the same period. The mitigation can include having the Project Sponsor of the Merchant Transmission Facility hold counterflow CRRs that maintain the feasibility of the existing encumbrances over the same period.

36.11.3.2.3 Step Three: the Incremental Merchant Transmission CRRs.

In the third step, the CAISO will determine the Merchant Transmission CRRs to be allocated to the Project Sponsor of the Merchant Transmission Facility. The CAISO will determine the capability of the system to award incremental Merchant Transmission CRRs using a DC FNM that incorporates the proposed Merchant Transmission Facility. The CAISO will conduct separate SFTs for each time of use period. For each time of use period, the CAISO will perform a multi-period SFT that simultaneously evaluates two sets of grid conditions. The first set of grid conditions includes all existing encumbrances for the month covered by the most recently conducted CRR Allocation and Auction process for Monthly CRRs including any temporary test CRRs from step one and any counterflow CRRs from step two. The second set of grid conditions models only Transmission Ownership Rights. Each SFT will consider the entire set of Merchant Transmission CRR nominations for the time of use period and will solve to maximize the MWs of Merchant Transmission CRRs to be allocated to the Project Sponsor of the Merchant Transmission Facility, subject to simultaneous feasibility. The nominated Merchant Transmission CRRs that are feasible in the multi-period SFTs for each time of use period will be allocated to the Project Sponsor of the Merchant Transmission Facility.

36.12 [NOT USED]

36.13 CRR Auction.

The CAISO shall conduct CRR Auctions on an annual and monthly basis subsequent to each annual and monthly CRR Allocation process. Candidate CRR Holders may bid to purchase and may acquire CRR Obligations through the CAISO's annual and monthly CRR Auctions in accordance with the provisions of this Section 36.13. CRR Auction results shall be settled as provided in Section 11.2.4.3.

36.13.1 Scope of the CRR Auctions.

The CAISO will conduct a CRR Auction corresponding to and subsequent to the completion of each CRR Allocation process, and prior to the start of the period to which the auctioned CRRs will apply. Each CRR Auction will release CRRs having the same seasons, months and time of use specifications as the CRRs released in the corresponding CRR Allocation. Each CRR Auction will utilize the same DC FNM that was utilized in the corresponding CRR Allocation. For each CRR Auction, the CRRs allocated in the corresponding CRR Allocation will be modeled as fixed injections and withdrawals on the DC FNM and will not be adjusted by the SFT in the CRR Auction process. Thus the CRR Auction will release only those CRRs that are feasible given the results of the corresponding CRR Allocation. CRRs released in a CRR Auction will be indistinguishable from CRRs released in the corresponding CRR Allocation for purposes of settlement and secondary trading. The following additional provisions apply. First, participants in the CRR Auctions will have more choices regarding CRR Sources and CRR Sinks than are eligible for

nomination in the CRR Allocations, as described in Section 36.13.5. Second, to the extent a Market Participant receives CRRs in both a CRR Allocation and the corresponding CRR Auction, the CRRs obtained in the CRR Auction will not be eligible for nomination in the PNP. Third, in CRR Year One the CRR Auction cannot be used by CRR Holders to offer for sale CRRs they acquired in a prior CRR Allocation, CRR Auction or through the Secondary Registration System. In the annual and monthly CRR Auction processes for years following CRR Year One, CRR Holders may offer for sale any CRRs held by such holders, subject to the limitations on sale and transfer of Long Term CRRs specified in Section 36.7.1.2. Merchant Transmission CRRs that are CRR Options may be offered for sale in the annual and monthly CRR Auctions for years following CRR Year One, subject to the same temporal limitations that apply to Long Term CRRs as specified in Section 36.7.1.2.

36.13.2 Responsibilities of the CAISO Prior to Each CRR Auction.

The CAISO shall publish on the CAISO Website a notice of upcoming CRR Auctions at least seven (7) days prior to the CRR Auction. The CAISO will also provide additional information needed by CRR Auction participants in accordance with the provisions of Section 6.5.1.

36.13.3 CRR Holder Creditworthiness.

All Market Participants are eligible to acquire CRRs by participating in the CRR Auction, provided that the Market Participant has met all the CRR Holder requirements described in Section 36.5, the creditworthiness provisions in Section 12 and Section 12.6 and the relevant Business Practice Manual.

36.13.4 Bids in the CRR Auctions.

Bids to purchase CRRs shall be submitted in accordance with the requirements set out in this Section 36.13.4 and as further specified in the applicable Business Practice Manuals. Once submitted to the CAISO, CRR bids may not be cancelled or rescinded by the Market Participant after the CRR Auction is closed. Market Participants may bid for Point-to-Point CRRs and Multi-Point CRRs. Each bid for a Point-to-Point CRR shall specify:

a) The associated month or season and time of use period;

b) The associated CRR Source and CRR Sink;

c) A monotonically non-increasing piecewise linear bid curve in quantities (denominated in tenths of MW) and prices ($/MW).

Each bid for a Multi-Point CRR shall specify:

d) The associated month or season and time-of-use period;

e) The associated CRR Sources and CRR Sinks;

f) For each CRR Source, a monotonically non-decreasing piecewise linear bid curve in quantities (denominated in tenths of MW) and prices ($/MW).

g) For each CRR Sink, a monotonically non-increasing piecewise linear bid curve in quantities (denominated in tenths of MW) and prices ($/MW).

Bid prices in all CRR bids may be negative.

36.13.5 Eligible Sources and Sinks for CRR Auction.

Allowable CRR Sources for CRRs acquired in the CRR Auction will be PNodes, Scheduling Points, Trading Hubs, LAPs, MSS-LAPs and Sub-LAPs. Allowable CRR Sinks for CRRs acquired in the CRR Auction will be PNodes, Scheduling Points, Trading Hubs, LAPs, MSS-LAPs and Sub-LAPs.

36.13.6 Clearing of the CRR Auction.

The SFT used to clear the CRR Auction will utilize the same DC FNM and optimization algorithm as the corresponding CRR Allocation, except that nominations to the CRR Auction will have associated price-quantity bid curves. The CRR Auction SFT will use the bid prices in determining which CRRs to award when not all nominations are simultaneously feasible, will select the set of simultaneously feasible CRRs with the highest total auction value as determined by the CRR bids, and will calculate nodal prices at each PNode of the DC FNM. In the event that there are two or more identical bids for a specific combination of CRR Source and CRR Sink that affect an overloaded constraint, the CRR Auction optimization cannot distinguish these bids based on either effectiveness or price and therefore the CRR Auction optimization will award each CRR bidder a pro rata share of the CRRs that can be awarded based on the bid MW amounts. Based on the nodal prices calculated by the CRR Auction SFT, the CRR Market Clearing Price per MW for a specific CRR will equal the nodal price at the CRR Sink minus the nodal price at the CRR Source. For a Multi-Point CRR the CRR Market Clearing Price will equal the sum over all relevant CRR Sinks of the nodal price at each CRR Sink times that CRR Sink's share of the total MW of the CRR, minus the sum over all relevant CRR Sources of the nodal price at each CRR Source times that CRR Source's share of the total MW of the CRR Market Participants shall pay the associated CRR Market Clearing Prices for all CRRs bought through the CRR Auction.

36.13.7 Announcement of CRR Auction Results.

Within five (5) Business Days after the close of a CRR Auction, the CAISO shall post the results. The results shall include but are not limited to the MW quantity, the CRR Source and CRR Sink for each CRR awarded, the nodal prices calculated by the CRR Auction SFT, and the parties to whom the CRRs were awarded. The CAISO shall not disclose prices specified in any CRR bid.

if such conduct is detected and the other applicable conditions for the imposition of Mitigation Measures are met:

(1) Physical withholding of an Electric Facility, in whole or in part, that is, not offering to sell or schedule the output of or services provided by an Electric Facility capable of serving a CAISO Market. Such withholding may include, but not be limited to: (i) falsely declaring that an Electric Facility has been forced out of service or otherwise become totally or partially unavailable, (ii) refusing to offer Bids for an Electric Facility when it would be in the economic interest, absent market power, of the withholding entity to do so, (iii) declining Bids called upon by the CAISO (unless the CAISO is informed in accordance with established procedures that the relevant resource for which the Bid is submitted has undergone a forced outage or derate), or (iv) operating a Generating Unit in Real-Time to produce an output level that is less than the Dispatch Instruction.

(2) Economic withholding of an Electric Facility, that is, submitting Bids for an Electric Facility that are unjustifiably high (relative to known operational characteristics and/or the known operating cost of the resource) so that: (i) the Electric Facility is not or will not be dispatched or scheduled, or (ii) the Bids will set LMPs.

(3) Uneconomic production from an Electric Facility that is, increasing the output of an Electric Facility to levels that would otherwise be uneconomic in order to cause, and obtain benefits from, a transmission constraint.

(4) Bidding practices that distort prices or uplift charges away from those expected in a competitive market, such as (i) submitting Demand Bids at prices that are unjustifiably low relative to the expected marginal cost of meeting total expected demand resulting in DAM prices that are significantly below competitive levels and DAM clearing demand that is significantly below total expected demand or (ii) registering Start-Up Cost and Minimum Load Cost data or submitting Bid Costs on behalf of an Electric Facility that are unjustifiably high (relative to known operational characteristics and/or the known operating cost of the resource) or misrepresenting the physical operating capabilities of an Electric Facility in uplift payments or prices significantly in excess of actual costs.

39.3.2 Mitigation Measures may also be imposed to mitigate the market effects of a rule, standard, procedure, design feature, or known software imperfection of a CAISO Market that allows a Market Participant to manipulate market prices or otherwise impair the efficient operation of that market, pending the revision of such rule, standard, procedure design feature, or software defect to preclude such manipulation of prices or impairment of efficiency.

Bid. If no rank order is specified for a Generating Unit or Participating Load, then the default rank order of (1) Variable Cost Option, (2) Negotiated Rate Option, (3) LMP Option will be applied.

39.7.1.1 Variable Cost Option.

The Variable Cost option will calculate the Default Energy Bid as Variable Costs plus ten percent (10%). Variable Cost will be comprised of two components: Fuel Cost and Variable Operation and Maintenance Cost. The Fuel Cost portion will be calculated for each Bid segment using the Heat Rate supplied by the resource owner on file in the Master File and the applicable regional natural gas price indices calculated as follows and as specified in the Business Practice Manual. The CAISO will use different gas price indices for the Day-Ahead Market and the Real-Time Market and each gas price index will be calculated using at least two prices from two or more of the following publications: Natural Gas Intelligence, Btu Daily Gas Wire, Platt's Gas Daily and the Intercontinental Exchange. For the Day-Ahead Market, the CAISO will update the gas price index between 00:00 and 03:00 Pacific Time in the Day-Ahead using gas prices published on the prior day, unless gas prices are not published on that day, in which case the CAISO will use the most recently published prices that are available. For the Real-Time Market, the CAISO will update gas price indices between the hours of 19:00 and 22:00 Pacific Time using gas prices published in the Day-Ahead, unless gas prices are not published on that day, in which case the CAISO will use the most recently published prices that are available. The default value for the Variable Operation and Maintenance Cost portion will be $2/MWh. Generating Units that are of the Combustion Turbine or Reciprocating Engine technology will be eligible for a default Variable Operation and Maintenance Cost of $4/MWh. Resource specific values may be negotiated with the Independent Entity charged with calculating the Default Energy Bid.

39.7.1.2 LMP Option.

The CAISO will calculate the LMP Option for the Default Energy Bid as a weighted average of the lowest quartile of LMPs at the Generating Unit PNode in periods when the unit was Dispatched during the preceding ninety (90) days. The weighted average will be calculated based on the quantities Dispatched within each segment of the Default Energy Bid curve. The LMP Option for Default Energy Bids will not be available until 90 days of LMP pricing has occurred. Each Bid segment created under the LMP Option for

Default Energy Bids will be subject to a feasibility test, as set forth in a Business Practice Manual, to determine whether there are a sufficient number of data points to allow for the calculation of an LMP based Default Energy Bid. The feasibility test is designed to avoid excessive volatility of the Default Energy Bid under the LMP Option that could result when calculated based on a relatively small number of prices.

39.7.1.3 Negotiated Rate Option.

39.7.1.3.1 Submission Process

Scheduling Coordinators that elect the Negotiated Rate Option for the Default Energy Bid shall submit a proposed Default Energy Bid along with supporting information and documentation as described in a BPM. Within ten (10) Business Days of receipt, the CAISO or an Independent Entity selected by the CAISO will provide a written response. If the CAISO or Independent Entity accepts the proposed Default Energy Bid, it will become effective within three (3) Business Days from the date of acceptance by the CAISO and remain in effect until: (1) the Default Energy Bid is modified by FERC; (2) the Default Energy

39.7.1.3.2 Informational Filings With FERC

The CAISO shall make an informational filing with FERC of any Default Energy Bids negotiated pursuant to this section, or any temporary Default Energy Bids established pursuant to Section 39.7.1.5, no later than seven (7) days after the end of the month in which the Default Energy Bids were established.

39.7.1.4 Frequently Mitigated Unit Option.

A Frequently Mitigated Unit that is eligible for a Bid Adder may select a fourth Default Energy Bid option, which is equal to the Variable Cost Option plus the Bid Adder as described in Section 39.7.

39.7.1.5 Temporary Default Energy Bid.

If the Scheduling Coordinator does not elect to use any of the other options available pursuant to Section 39.7.1, or if sufficient data do not exist to calculate a Default Energy Bid using any of the available options, the CAISO will first seek to obtain from the Scheduling Coordinator any additional data required for calculating the Default Energy Bid options available pursuant to 39.7.1. If the provision of additional data by a Scheduling Coordinator results in additional or modified Default Energy Bid options pursuant to 39.7.1, the Scheduling Coordinator will have another opportunity to elect one of these options as its temporary Default Energy Bid. If the Scheduling Coordinator does not elect to use any of the other new options available pursuant to Section 39.7.1, or if sufficient data still do not exist to calculate a Default Energy Bid using any of the available options, the CAISO may establish a temporary Default Energy Bid based on one or more of the following: (1) operating cost data, opportunity cost, and other appropriate input from the Market Participant; (2) the CAISO's estimated operating costs of the Electric Facility, taking the best information available to the CAISO; (3) an appropriate average of competitive Bids of one or more similar Electric Facilities; or (4) any of the other options for determining a Default Energy Bid for which data are available.

39.7.1.6 Default Energy Bids for RMR Units.

The available capacity in excess of the Maximum Net Dependable Capacity (MNDC) specified in the RMR Contract up to the Maximum Generation Capacity (PMax) is subject to Local Market Power Mitigation. The Scheduling Coordinator for the RMR Unit must rank order its preferences between the

assessment as provided to the CAISO by the supplier reflecting its triennial filing with FERC for market-based rate authority.

39.8 Eligibility for Bid Adder.

A Scheduling Coordinator submitting Bids for Generating Units is eligible to have a Bid Adder applied to a Generating Unit for the next operating month if the criteria in Section 39.8.1 are met as determined on a monthly basis in the preceding month.

39.8.1 Bid Adder Eligibility Criteria.

To receive a Bid Adder, a Generating Unit must: (i) have a Mitigation Frequency that is greater than eighty (80) percent in the previous 12 months; and (ii) must not have an contract to be a Resource Adequacy Resource for its entire net dependable capacity or be subject to an obligation to make capacity available under this CAISO Tariff. Additionally, the Scheduling Coordinator for the Generating Unit must agree to be subject to the Frequently Mitigated Unit Option for a Default Energy Bid. Run hours are those hours during which a Generating Unit has positive metered output. During the first 12 months after the effective date of this Section, the Mitigation Frequency will be based on a rolling 12-month combination of RMR dispatches and incremental bids dispatched out of economic merit order to manage local congestion from the period prior to the effective date of this Section, which will serve as a proxy for being subject to Local Market Power Mitigation, and a Generating Unit's Local Market Power Mitigation frequency after the effective date of this Section. Generating Units that received RMR dispatches and/or incremental bids dispatched out of economic merit order to manage local Congestion in an hour prior to the effective date of this Section will have that hour counted as a mitigated hour in their Mitigation Frequency. After the first 12 months from the effective date of this Section, the Mitigation Frequency will be based entirely on a Generating Unit being mitigated under the MPM-RRD procedures in Sections 31 and 33.

39.8.2 New Generating Units.

For new Generating Units, with less than 12-months of operation, determination of eligibility for the Bid Adder will be based on data beginning with the first date the Generating Unit participated in the CAISO Markets through the end date of the period for which the Mitigation Frequency is being calculated. The

ARTICLE V – RESOURCE ADEQUACY

40 RESOURCE ADEQUACY DEMONSTRATION FOR ALL SCHEDULING COORDINATORS SCHEDULING DEMAND IN THE CAISO CONTROL AREA.

40.1 Applicability.

A Load Serving Entity, and its Scheduling Coordinator, shall be exempt from this Section 40 during the next Resource Adequacy Compliance Year, if the metered peak Demand of the Load Serving Entity did not exceed one (1) MW during the twelve months preceding the last date on which the Load Serving Entity can make the election in Section 40.1.1 for the next Resource Adequacy Compliance Year. This Section 40 shall apply to all other Load Serving Entities and their respective Scheduling Coordinators. For purposes of Section 40, a Load Serving Entity shall not include any entity satisfying the terms of California Public Utilities Code Section 380(j)(3).

40.1.1 Election of Load Serving Entity Status.

On an annual basis, in the manner and schedule set forth in the Business Practice Manual, the Scheduling Coordinator for a Load Serving Entity, not exempt under Section 40.1, shall inform the CAISO whether each such LSE elects to be either: (i) a Reserve Sharing LSE or (ii) a Modified Reserve Sharing LSE. A Scheduling Coordinator for a Load-following MSS is not required to make an election under this Section. Scheduling Coordinators for Load-following MSSs are subject solely to Sections 40.2.4 and 40.3.

The CAISO may confirm with the CPUC, Local Regulatory Authority, or federal agency, as applicable, the accuracy of the election by the Scheduling Coordinator for any LSE under its respective jurisdiction, or, in the absence of any election by the Scheduling Coordinator, the desired election for any LSE under its jurisdiction. The determination of the CPUC, Local Regulatory Authority, or federal agency will be deemed binding by the CAISO on the Scheduling Coordinator and the LSE. If the Scheduling Coordinator and CPUC, Local Regulatory Authority, or federal agency, as appropriate, fail to make the election on behalf of an LSE in accordance with the Business Practice Manual, the LSE shall be deemed a Reserve Sharing LSE.

40.2 Information Requirements Regarding Resource Adequacy Programs.

40.2.1. Reserve Sharing LSEs.

40.2.1.1 Requirements for CPUC Load Serving Entities Electing Reserve Sharing LSE Status.

(a) The Scheduling Coordinator for a CPUC Load Serving Entity electing Reserve Sharing LSE status must provide the CAISO with all information or data to be provided to the CAISO as required by the CPUC and pursuant to the schedule adopted by the CPUC.

(b) Where the information or data provided to the CAISO under Section 40.2.1.1(a) does not include Reserve Margin(s), then the provisions of Section 40.2.2.1(b) shall apply.

(c) Where the information or data provided to the CAISO under Section 40.2.1.1(a) does not include criteria for determining qualifying resource types and their Qualifying Capacity, then the provisions of Section 40.8 shall apply.

(d) Where the information or data provided to the CAISO under Section 40.2.1.1(a) does not include annual and monthly Demand Forecast requirements, then the provisions of Section 40.2.2.3 shall apply.

(e) Where the information or data provided to the CAISO under Section 40.2.1.1(a) does not include annual and monthly Resource Adequacy Plan requirements, then Section 40.2.2.4 shall apply.

40.2.2 Requirements for Non-CPUC Load Serving Entities Electing Reserve Sharing LSE Status, Including Default Provisions for CPUC Load Serving Entities.

40.2.2.1 Reserve Margin.

(a) The Scheduling Coordinator for a Non-CPUC Load Serving Entity electing Reserve Sharing LSE status must provide the CAISO with the Reserve Margin(s) adopted by the appropriate Local Regulatory Authority or federal agency for use in the annual Resource Adequacy Plan and monthly Resource Adequacy Plans listed as a percentage of the Demand Forecasts developed in accordance with Section 40.2.2.3.

(b) For the Scheduling Coordinator for a Non-CPUC Load Serving Entity for which the appropriate Local Regulatory Authority or federal agency has not established a Reserve Margin(s) or a CPUC Load Serving Entity subject to Section 40.2.1.1(b) that has elected Reserve Sharing LSE status, the Reserve Margin for each month shall be no less than 15% of the LSE's peak hourly Demand for the applicable month, as determined by the Demand Forecasts developed in accordance with Section 40.2.2.3.

40.2.2.2 Qualifying Capacity Criteria

The Scheduling Coordinator for a Non-CPUC Load Serving Entity electing Reserve Sharing LSE status must provide the CAISO with a description of the criteria adopted by the Local Regulatory Authority or federal agency for determining qualifying resource types and the Qualifying Capacity from such resources and any modifications thereto as they are implemented from time to time. The Reserve Sharing LSE may elect to utilize the criteria set forth in Section 40.8.

40.2.2.3 Demand Forecasts.

The Scheduling Coordinator for a Non-CPUC Load Serving Entity or CPUC Load Serving Entity subject to Section 40.2.1.1(b) electing Reserve Sharing LSE status must provide annual and monthly Demand Forecasts on the schedule and in the reporting format(s) set forth in the Business Practices Manual. The annual and monthly Demand Forecasts shall utilize the annual and monthly coincident peak Demand determinations provided by the California Energy Commission for such Load Serving Entity, which will be calculated from the Demand Forecast information submitted to the California Energy Commission by each Reserve Sharing LSE; or (ii) if the

California Energy Commission does not produce coincident peak Demand Forecasts for the Load Serving Entity, the annual and monthly coincident peak Demand Forecasts produced by the CAISO for such Load Serving Entity in accordance with its Business Practice Manual. Scheduling Coordinators must provide data and information, as may be requested by the CAISO, necessary to develop or support the Demand Forecasts required by this Section.

40.2.2.4 Annual and Monthly Resource Adequacy Plans.

The Scheduling Coordinator for a Non-CPUC Load Serving Entity or a CPUC Load Serving Entity subject to Section 40.2.1.1(b) electing Reserve Sharing LSE status must provide annual and monthly Resource Adequacy Plans for such Load Serving Entity, on a schedule and in the reporting format(s) set forth in the Business Practice Manual. The annual Resource Adequacy Plan must, at a minimum, set forth the Local Capacity Area Resources, if any, procured by the Load Serving Entity as described in Section 40.3. The monthly Resource Adequacy Plan should identify all resources, including Local Capacity Area Resources, the Load Serving Entity will rely upon to satisfy the applicable month's peak hour Demand of the Load Serving Entity as determined by the Demand Forecasts developed in accordance with Section 40.2.2.3 and applicable Reserve Margin. Resource Adequacy Plans must utilize the Net Qualifying Capacity requirements of Section 40.4.

40.2.3 Modified Reserve Sharing LSEs.

40.2.3.1 Reserve Margin.

(a) The Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status must provide the CAISO with the Reserve Margin(s) adopted by the CPUC, Local Regulatory Authority, or federal agency, as appropriate, for use in the annual Resource Adequacy Plan and monthly Resource Adequacy Plans listed as a percentage of the Demand Forecasts developed in accordance with Section 40.2.3.3.

(b) For the Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status for which the CPUC, Local Regulatory Authority, or federal agency, as appropriate, has not established a Reserve Margin, the Reserve Margin shall be no less than fifteen percent (15%) of the applicable month's peak hour Demand of the Load Serving Entity, as determined by the Demand Forecasts developed in accordance with Section 40.2.3.3.

40.2.3.2 Qualifying Capacity

The Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status must provide the CAISO with a description of the criteria for determining qualifying resource types and the Qualifying Capacity from such resources and any modifications thereto as they are implemented from time to time. The Modified Reserve Sharing LSE may elect to utilize the criteria set forth in Section 40.8.

40.2.3.3 Demand Forecasts.

(a) The Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status must provide annual and monthly Demand Forecasts on the schedule and in the reporting format(s) set forth in the Business Practice Manual. The annual and monthly Demand Forecasts shall utilize the annual and monthly coincident peak Demand determinations provided by the California Energy Commission for such Load Serving Entity, which will be calculated from Demand Forecast data submitted to the California Energy Commission by each Modified Reserve Sharing LSE; or (ii) if the California

Energy Commission does not produce coincident peak Demand Forecasts for the Load Serving Entity, the annual and monthly coincident peak Demand Forecasts produced by the CAISO for such Load Serving Entity in accordance with its Business Practice Manual. Scheduling Coordinators must provide data and information, as may be requested by the CAISO, to develop or support the Demand Forecast required by this Section 40.2.3.3

(b) The Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status must submit, on the schedule and in the reporting format set forth in the Business Practice Manual, hourly Demand Forecasts for each Trading Hour of the next Trading Day for each Modified Reserve Sharing LSE represented. The Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status must provide data or supporting information, as requested by the CAISO, for the Demand Forecasts required by this Section 40.2.3.3(b) for each Modified Reserve Sharing LSE served by the Scheduling Coordinator and a description of the criteria upon which the Demand Forecast was developed, and any modifications thereto as they are implemented from time to time.

40.2.3.4 Annual and Monthly Resource Adequacy Plans.

The Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status must provide annual and monthly Resource Adequacy Plans, on a schedule and in the reporting format(s) set forth in the Business Practice Manual, for each Modified Reserve Sharing LSE served by the Scheduling Coordinator. The annual Resource Adequacy Plan must, at a minimum, set forth the Local Capacity Area Resources, if any, procured by the Modified Reserve Sharing LSE as described in Section 40.3. The monthly Resource Adequacy Plan must identify the resources the Modified Reserve Sharing LSE will rely

upon to satisfy its forecasted monthly Demand and Reserve Margin as set forth in Section 40.2.3.1, for the relevant reporting period and must utilize the Net Qualifying Capacity requirements of Section 40.4.

40.2.4 Load-Following MSS.

A Scheduling Coordinator for a Load-following MSS must provide an annual Resource Adequacy Plan that sets forth, at a minimum, the Local Capacity Area Resources, if any, procured by the Load-following MSS as described in Section 40.3. The annual Resource Adequacy Plan shall utilize the annual coincident peak Demand determination provided by the California Energy Commission for such Load-following MSS using Demand Forecast data submitted to the California Energy Commission by the Load-following MSS, or, if the California Energy Commission does not produce coincident peak Demand Forecasts for the Load-following MSS, the annual coincident peak Demand Forecast produced by the CAISO for such Load-following MSS in accordance with its Business Practice Manual using Demand Forecast data submitted to the CAISO by the Load-following MSS.

40.3 Local Capacity Area Resource Requirements Applicable to Scheduling Coordinators for All Load Serving Entities.

40.3.1 Local Capacity Technical Study.

On an annual basis, pursuant to the schedule set forth in the Business Practice Manual, the CAISO will, perform, and publish on the CAISO Website the Local Capacity Technical Study. The Local Capacity Technical Study shall identify Local Capacity Areas, determine the minimum amount of Local Capacity Area Resources in MW that must be available to the CAISO within each identified Local Capacity Area, and identify the Generating Units within each identified Local Capacity Area. The CAISO shall collaborate with the CPUC, Local Regulatory Authorities within the CAISO Control Area, federal agencies, and Market Participants to ensure that the Local Capacity Technical Study is performed in accordance with this Section 40.3 and to establish for inclusion in the Business Practice Manual other parameters and assumptions applicable to the Local Capacity Technical Study and a schedule that provides for: (i) reasonable time for review of a draft Local Capacity Technical Study, (ii) reasonable time for Participating TOs to propose operating solutions, and (iii) release of the final Local Capacity Technical Study no later

than 120 days prior to the date annual Resource Adequacy Plans must be submitted under this Section 40.

40.3.1.1 Local Capacity Technical Study Criteria.

The Local Capacity Technical Study will determine the minimum amount of Local Capacity Area Resources needed to address the Contingencies identified in Section 40.3.1.2. In performing the Local Capacity Technical Study, the CAISO will apply those methods for resolving Contingencies considered appropriate for the performance level that corresponds to a particular studied Contingency, as provided for in the version of the WECC Reliability Criteria, NERC/WECC Planning Standard I.A, in effect as of the date that the Local Capacity Technical Study is commenced to the extent such application will not result in a violation of Reliability Criteria adopted by the CAISO in accordance with Section 5.1.5 of the Transmission Control Agreement.

40.3.1.2 Local Capacity Technical Study Contingencies.

The Local Capacity Technical Study shall assess the following Contingencies:

Contingency Component(s)	Reference Notes
NERC/WECC Performance Level A – No Contingencies	
NERC/WECC Performance Level B – Loss of a single element 1. Generator (G-1) 2. Transmission Circuit (L-1) 3. Transformer (T-1) 4. Single Pole (dc) Line 5. G-1 system readjusted L-1	 1 1 1,2 1
NERC/WECC Performance Level C – Loss of two or more elements 3. L-1 system readjusted G-1 3. G-1 system readjusted T-1 or T-1 system readjusted G-1 3. L-1 system readjusted T-1 or T-1 system readjusted L-1 3. G-1 system readjusted G-1 3. L-1 system readjusted L-1 4. Bipolar (dc) Line 5. Two circuits (Common Mode) L-2 9. SLG fault (stuck breaker or protection failure) for Bus section WECC-S3. Two generators (Common Mode) G-2	
D – Extreme event – loss of two or more elements Any B1-4 system readjusted (Common Mode) L-2 All other extreme combinations D1-14.	3

NOTES 1 System must be able to readjust to a safe operating zone in order to be able to support the loss of the next system element that would constitute a Contingency. Manual readjustment is the time required for an operator to take all actions necessary to prepare the system for the next Contingency. Under CAISO Grid Planning Standards, this time must be less than 30 minutes. However, if remote capability does not exist and a person must be dispatched in the field to perform switching, an exemption may be approved for small Local Capacity Areas as described in approved operating procedures and the approved operating procedure will be assumed in the performance of the studies under this Section. The involuntary interruption of Load shall not constitute an action for readjustment after a Category B event. 2 A thermal or voltage criterion violation resulting from a transformer Outage may not be cause for a Local Capacity Area reliability requirement if the violation is considered marginal (e.g., acceptable loss of facility life or low voltage), otherwise, such a violation will necessitate creation of a requirement. 3 Evaluate for risks and consequence, per NERC/WECC standards. No voltage collapse or dynamic instability allowed.	

40.3.2 Allocation of Local Capacity Area Resource Obligations.

The CAISO will allocate responsibility for Local Capacity Area Resources to Scheduling Coordinators for Load Serving Entities in the following sequential manner:

(a) The responsibility for the aggregate Local Capacity Area Resources required for all Local Capacity Areas within each TAC Area as determined by the Local Capacity Technical Study will be allocated to all Scheduling Coordinators for Load Serving Entities that serve Load in the TAC Area in accordance with the Load Serving Entity's proportionate share of the LSE's TAC Area Load at the time of the CAISO's annual coincident peak Demand set forth in the annual peak Demand Forecast for the next Resource Adequacy Compliance Year as determined by the California Energy Commission. Expressed as a formula, the allocation of Local Area Capacity Resource obligations will be as follows: ($\sum$ Local Capacity Area MW in TAC Area from the Local Capacity Technical Study) * (LSE Demand in TAC Area at CAISO annual coincident peak Demand)/(Total TAC Area Demand at the time of CAISO annual coincident peak Demand). This will result in a MW responsibility for each Load Serving Entity for each TAC Area in which the LSE serves Load. The LSE may meet its MW

responsibility, as assigned under this Section, for each TAC Area in which the LSE serves Load by procurement of that MW quantity in any Local Capacity Area in the TAC Area.

(b) For Scheduling Coordinators for Non-CPUC Load Serving Entities, the Local Capacity Area Resource obligation will be allocated based on Section 40.3.2(a) above.

(c) For Scheduling Coordinators for CPUC Load Serving Entities, the CAISO will allocate the Local Capacity Area Resource obligation based on an allocation methodology, if any, adopted by the

CPUC. However, if the allocation methodology adopted by the CPUC does not fully allocate the total sum of each CPUC Load Serving Entity's proportionate share calculated under Section 40.3.2(a), the CAISO will allocate the difference to all Scheduling Coordinators for CPUC Load Serving Entities in accordance with their proportionate share calculated under 40.3.2(a). If the CPUC does not adopt an allocation methodology, the CAISO will allocate Local Capacity Area Resources to Scheduling Coordinators for CPUC Load Serving Entities based on Section 40.3.2(a).

Once the CAISO has allocated the total responsibility for Local Capacity Area Resources, the CAISO will inform the Scheduling Coordinator for each LSE of the LSE's specific allocated responsibility for Local Capacity Area Resources in each TAC Area in which the LSE serves Load.

40.3.3 Procurement of Local Capacity Area Resource Obligations by Load Serving Entities.

Nothing in this Section 40 obligates any Scheduling Coordinator to demonstrate on behalf of a Load Serving Entity that the Load Serving Entity has procured Local Capacity Area Resources to satisfy capacity requirements for each Local Capacity Area identified in the technical study. Scheduling Coordinators for Load Serving Entities may aggregate responsibilities for procurement of Local Capacity Area Resources. If a Load Serving Entity has procured Local Capacity Area Resources that satisfy generation capacity requirements for Local Capacity Areas, the Scheduling Coordinator for such Load Serving Entity shall include this information in its annual and monthly Resource Adequacy Plan(s).

40.3.4 Procurement of Local Capacity Area Resources by the CAISO.

The CAISO may procure Local Capacity Area Resources, pursuant to applicable provisions of the CAISO Tariff, including any mechanism incorporated into the CAISO Tariff specifically to permit procurement of Local Capacity Area Resources by the CAISO, to the extent:

(a) a Scheduling Coordinator representing a Load Serving Entity serving Load in the TAC Area in which the Local Capacity Area is located fails to demonstrate in an annual Resource Adequacy Plan procurement of the Load Serving Entity's share of Local Capacity Area Resources, as determined in Section 40.3.2, in which case the CAISO may procure Local Capacity Area

Resources to remedy the deficiency; provided that the CAISO shall not procure Local Capacity Area Resources to remedy the deficiency of the Load Serving Entity unless in the aggregate a deficiency in the Local Capacity Area exists that results in the failure to comply with the Reliability Criteria applied in the Local Capacity Technical Study, after assessing the effectiveness of Generating Units under Reliability Must-Run Contracts, if any, and all Resource Adequacy Resources reflected in all submitted annual Resource Adequacy Plans and any supplements thereto, as may be permitted by the CPUC, Local Regulatory Authority, or federal agency and provided to the CAISO in accordance with Section 40.7, whether or not such Resource Adequacy Resources are located in the applicable Local Capacity Area; or

(b) the Local Capacity Area Resources specified in the annual Resource Adequacy Plans of all Scheduling Coordinators fail to permit or ensure compliance in one or more Local Capacity Areas with the Reliability Criteria applied in the Local Capacity Technical Study,

regardless of whether such resources satisfy, for the deficient Local Capacity Area, the minimum amount of Local Capacity Area Resources identified in the Local Capacity Technical Study and after assessing the effectiveness of Generating Units under Reliability Must-Run Contracts, if any, and all Resource Adequacy Resources reflected in all submitted annual Resource Adequacy Plans, whether or not such Resource Adequacy Resources are located in the applicable Local Capacity Area, in which case the CAISO will procure Local Capacity Area Resources in the Local Capacity Area in an amount and location sufficient to permit or ensure compliance with the Reliability Criteria applied in the Local Capacity Technical Study.

The cost of CAISO procurement under this Section shall be allocated in accordance with Section 11.20. To the extent the cost of CAISO procurement under this Section is allocated to a Scheduling Coordinator on behalf of a Load Serving Entity, that Scheduling Coordinator will receive credit toward its Local Capacity Area Resource obligation for the Load Serving Entity's pro rata share of the procured Local Capacity Area Resources. Whether or not the share of the Local Capacity Area Resources procured by the CAISO under this Section may count towards satisfaction of a Load Serving Entity's Reserve Margin shall be determined by the CPUC, Local Regulatory Authority, or federal agency with jurisdiction over the Load Serving Entity, unless the CPUC, Local Regulatory Authority, or federal agency has failed to establish a Reserve Margin, in which case the CAISO will assign the Load Serving Entity's share of the Local Capacity Area Resources towards satisfaction of its Reserve Margin pursuant to Sections 40.2.1.1(b), 40.2.2.1(b), and 40.2.3.1(b). For each Scheduling Coordinator that is allocated the cost of CAISO procurement under this Section on behalf of an LSE, the CAISO will provide information, including the quantity of capacity procured in MW, necessary to allow the CPUC, Local Regulatory Authority, or federal agency with jurisdiction over the LSE on whose behalf costs were allocated to determine whether the LSE should receive credit toward its Reserve Margin for the CAISO's procurement under this Section.

40.3.4.1 Factors for Procuring Local Capacity Area Resources.

The CAISO shall procure Local Capacity Area Resources under Section 40.3.4 considering the

effectiveness of the capacity at meeting the Reliability Criteria, set forth in 40.3.1, in the Local Capacity Area and the costs associated with the capacity. The CAISO is permitted to procure a Generating Unit or Participating Load resource even where only a portion of capacity of the Generating Unit or Participating Load resource is needed to meet the Reliability Criteria applied in the Local Capacity Technical Study for the Local Capacity Area.

40.3.4.2 Local Capacity Area Procurement Report.

Within ninety (90) days of any initial procurement of Local Capacity Area Resources by the CAISO for any Resource Adequacy Compliance Year, the CAISO shall publish a report on the CAISO Website showing the Local Capacity Area Resources procured under Section 40.3.4, the megawatts of capacity procured, the duration of the procurement, the reason(s) for the procurement, and all payments in dollars, itemized for each Local Capacity Area. The CAISO will provide a Market Notice regarding the availability of this report, and shall update the report within ninety (90) days of any Local Capacity Area Resource that is procured after the posting of the report.

40.4 General Requirements on Resource Adequacy Resources.

40.4.1 Designation of Eligible Resources and Determination of Qualifying Capacity.

The CAISO shall use the criteria provided by the CPUC or Local Regulatory Authority to determine and verify, if necessary, the Qualifying Capacity of all Resource Adequacy Resources; however, to the extent a resource is listed by one or more Scheduling Coordinators in their Resource Adequacy Plans, which apply the criteria of more than one Local Regulatory Authority that leads to conflicting Qualifying Capacity values for that resource, the CAISO will accept the methodology that results in the highest Qualifying Capacity value. Only if the CPUC, Local Regulatory Authority, or federal agency has not established any Qualifying Capacity criteria, or chooses to rely on the criteria in this CAISO Tariff, will the provisions of Section 40.8 apply.

40.4.2 Net Qualifying Capacity Report.

The CAISO shall produce an annual report posted to the CAISO Website on the schedule set forth in the Business Practice Manual that sets forth the Net Qualifying Capacity of all Participating Generators. All other Resource Adequacy Resources may be included in the annual report under Section 40.4.2 upon

their request. The Net Qualifying Capacity of any resource included in the annual report, once posted to the CAISO Website, shall not be reduced by the CAISO for the next Resource Adequacy Compliance Year. Any change proposed to be made to a Net Qualifying Capacity value for a resource included in a prior annual report shall be explained, and any test results or analyses underlying the change provided, to the Scheduling Coordinator upon request at least fifteen (15) days prior to the posting on the CAISO Website of the annual report. Any disputes as to the CAISO's determination regarding Net Qualifying Capacity shall be subject to the CAISO ADR Procedures.

40.4.3 General Qualifications for Supplying Net Qualifying Capacity.

Resource Adequacy Resources included in a Resource Adequacy Plan submitted by a Scheduling Coordinator on behalf of a Load Serving Entity serving Load in the CAISO Control Area must:

(1) Be available for testing by the CAISO to validate Qualifying Capacity and determine Net Qualifying Capacity for the next Resource Adequacy Compliance Year;

(2) Provide any information requested by the CAISO to apply the performance criteria to be adopted by the CAISO pursuant to Section 40.4.5;

(3) Submit Bids into the CAISO Markets as required by this CAISO Tariff;

(4) Be in compliance, as of the date that the CAISO performs any testing or otherwise determines Net Qualifying Capacity for the next Resource Adequacy Compliance Year, with the criteria for Qualifying Capacity established by the CPUC, relevant Local Regulatory Authority, or federal agency and provided to the CAISO; and

(5) Be subject to Sanctions for non-performance as specified in the CAISO Tariff.

40.4.4. Reductions for Testing.

In accordance with the procedures specified in the Business Practice Manual, the Generating Unit of a Participating Generator or other Generating Units, System Units or Loads of Participating Loads included in a Resource Adequacy Plan submitted by a Scheduling Coordinator on behalf of a Load Serving Entity can have its Qualifying Capacity reduced, for purposes of the Net Qualifying Capacity annual report under Section 40.4.2 for the next Resource Adequacy Compliance Year, if a CAISO testing program determines that it is not capable of supplying the full Qualifying Capacity amount.

40.4.5 Reductions for Performance Criteria.

No later than 12 months after the effective date of this Section 40, the CAISO will issue a report outlining a proposal with respect to performance criteria for Resource Adequacy Resources. The CAISO will collaborate with the CPUC and other Local Regulatory Authorities to develop the performance criteria to be submitted to FERC. The Scheduling Coordinator for a Resource Adequacy Resource shall provide or make available to the CAISO, subject to the confidentiality provisions of this CAISO Tariff, all documentation requested by the CAISO to determine, develop or implement the performance criteria, including, but not limited to, NERC Generating Availability Data System data.

40.4.6 Reductions for Deliverability.

40.4.6.1 Deliverability Within the CAISO Control Area.

In order to determine Net Qualifying Capacity from Resource Adequacy Resources subject to this Section 40.4, the CAISO will determine that a Resource Adequacy Resource is available to serve the aggregate of Load by means of a deliverability study. Documentation explaining the CAISO's deliverability analysis will be posted on the CAISO Website. The deliverability study will be performed annually and shall focus on peak Demand conditions. The results of the deliverability study shall be incorporated into the Net Qualifying Capacity annual report under Section 40.4.2 and will be effective for the next Resource Adequacy Compliance Year. To the extent the deliverability study shows that the Qualifying Capacity is not deliverable to the aggregate of Demand under the conditions studied, the Qualifying Capacity of the Resource Adequacy Resource will be reduced on a MW basis for the capacity that is undeliverable.

40.4.6.2 Deliverability of Imports.

40.4.6.2.1 Available Import Capability Assignment Process.

For Resource Adequacy Plans covering any period after December 31, 2007, total Available Import Capability will be assigned on an annual basis for a one-year term to Load Serving Entities serving Load in the CAISO Control Area and other Market Participants through their respective Scheduling Coordinators, as described by the following sequence of steps. However, should the CPUC modify by decision its compliance period from January to December of the calendar year to May through April of the calendar year, the CAISO shall extend the effectiveness of the assignment for Resource Adequacy Compliance Year 2008 through April 2009.

Step 1: Determination of Maximum Import Capability on Interties into the CAISO Control Area: The CAISO shall establish the Maximum Import Capability for each Intertie into the CAISO Control Area, and will post those values on the CAISO Website in accordance with the schedule and process set forth in the Business Practice Manual.

Step 2: Determination of Available Import Capability by Accounting for Existing Contracts and Transmission Ownership Rights Held by Out-of-CAISO Control Area LSEs: For each Intertie, the Available Import Capability will be determined by subtracting from the Maximum Import Capability established in Step 1 for each Intertie the import capability on each Intertie associated with (i) Existing Contracts and (ii) Transmission Ownership Rights held by load serving entities that do not serve Load within the CAISO Control Area. The remaining sum of all Intertie Available Import Capability is the Total Import Capability. Total Import Capability shall be used to determine the Load Share Quantity for each Load Serving Entity that serves Load within the CAISO Control Area.

Step 3: Determination of Existing Contract Import Capability by Accounting for Existing Contracts and Transmission Ownership Rights Held by In-CAISO Control Area LSEs: From the Available Import Capability remaining on each Intertie after Step 2 above, Existing Contracts and Transmission Ownership Rights held by Load Serving Entities that serve Load within the CAISO Control Area shall be reserved for the holders of such commitments and will not be subject to reduction under any subsequent steps in this Section. The import capability reserved pursuant to this Step 3 is the Existing Contract Import Capability.

Step 4: Assignment of Pre-RA Import Commitments: From the Available Import Capability remaining on each Intertie after reserving Existing Contract Import Capability under Step 3 above, the CAISO will assign to Load Serving Entities serving Load within the CAISO Control Area Pre-RA Import Commitment Capability on a particular Intertie based on Pre-RA Import Commitments in effect (where a supplier has an obligation to deliver the Energy or make the capacity available) at any time during the Resource Adequacy Compliance Year for which the Available Import Capability assignment is being performed. The Pre-RA Import Commitment will be assigned to the Intertie selected by the Load Serving Entity during the Resource Adequacy Compliance Year 2007 import capability assignment process, which was required to be based on the Intertie upon which the Energy or capacity from the Pre-RA Import Commitment had been primarily scheduled or, for a Pre-RA Import

Commitment without a scheduling history at the time of the Resource Adequacy Compliance Year 2007 import capability assignment process, the primary Intertie upon which the Energy or capacity was anticipated to be scheduled. To the extent a Pre-RA Import Commitment was not presented during the Resource Adequacy Compliance Year 2007 import capability assignment process, the Load Serving Entity shall select the Intertie upon which the Pre-RA Import Commitment is primarily anticipated to be scheduled during the term of the Pre-RA Import Commitment and that selection shall be utilized in future annual Available Import Capability assignment processes. If a Pre-RA Import Commitment submitted on behalf of a LSE with Existing Contract Import Capability is assigned under this Section to the same Intertie on which the LSE holds Existing Contract Import Capability, the Pre-RA Import Commitment will be assumed to deliver over the Existing Contract Import Capability until exhausted, unless the LSE can demonstrate otherwise.

To the extent a particular Intertie becomes over requested with Pre-RA Import Commitments due to either Pre-RA Import Commitments not included in the Resource Adequacy Compliance Year 2007 import capability assignment process or changes in system conditions that decrease the Maximum Import Capability of the Intertie, such that the MW represented in all Pre-RA Import Commitments utilizing the Intertie exceed the Intertie's Available Import Capability in excess of that reserved for Existing Contracts and Transmission Ownership Rights under Steps 2 and 3, the Pre-RA Import Commitments will be assigned Pre-RA Import Commitment Capability, based on the Import Capability Load Share Ratio of each Load Serving Entity submitting Pre-RA Import Commitments on the particular Intertie. To the extent this initial assignment of Pre-RA Import Commitment Capability has not fully assigned the Available Import Capability of the particular over requested Intertie, the remaining Available Import Capability on the over requested Intertie will be assigned until fully exhausted based on the Import Capability Load Share Ratio of each Load Serving Entity whose submitted Pre-RA Import Commitment has not been fully satisfied by the previous Import Capability Load Share Ratio assignment iteration. The Available Import Capability assigned pursuant to this Step 4 is the Pre-RA Import Commitment Capability.

Step 5: Assignment of Remaining Import Capability Limited by Load Share Quantity: The Total Import Capability remaining after Step 4 will be assigned only to Load Serving Entities serving Load within the CAISO Control Area that have not received Existing Contract Import Capability and Pre-RA Import Commitment Capability under Steps 3 and 4, that exceed the Load Serving Entity's Load Share Quantity. Only the MW quantity of any Pre-RA Import Commitment Capability assigned to Existing Contract Import Capability under Step 4 that exceeds the Existing Contract Import Capability on the particular Intertie will be counted for purposes of this Step 5. This Total Import Capability will be assigned until fully exhausted to those Load Serving Entities eligible to receive an assignment under this Step based on each Load Serving Entity's Import Capability Load Share Ratio up to, but not in excess of, its Load Share Quantity. The quantity of Total Import Capability assigned to the Load Serving Entity under this Step is the Load Serving Entity's Remaining Import Capability. This Step 5 does not assign Remaining Import Capability on a specific Intertie.

Step 6: CAISO Posting of Assigned and Unassigned Capability: Following the completion of Step 5, the CAISO will post to the CAISO Website, in accordance with the schedule set forth in the Business Practice Manual the following information:

a. The Total Import Capability;

b. The quantity in MW of Existing Contracts and Transmission Ownership Rights assigned to each Intertie, distinguishing between Existing Contracts and Transmission Ownership Rights held by Load Serving Entities within the CAISO Control Area and those held by load serving entities outside the CAISO Control Area;

c. The aggregate quantity in MW, and identity of the holders, of Pre-RA Import Commitments assigned to each Intertie; and

d. The aggregate quantity in MW of Available Import Capability after Step 4, the identity of the Interties with Available Import Capability, and the MW quantity of Available Import Capability on each such Intertie.

Step 7: CAISO Notification of LSE Assignment Information: Following the completion of Step 5, in accordance with the schedule set forth in the Business Practice Manual, the CAISO will notify the Scheduling Coordinator for each Load Serving Entity of:

a. The Load Serving Entity's Import Capability Load Share;

b. The Load Serving Entity's Load Share Quantity; and

c. The amount of, and Intertie on which, the Load Serving Entity's Existing Contract Import Capability and Pre-RA Import Commitment Capability, as applicable, has been assigned; and

d. The Load Serving Entity's Remaining Import Capability.

Step 8: Transfer of Import Capability: In accordance with the schedule set forth in the Business Practice Manual, a Load Serving Entity shall be allowed to transfer some or all of its Remaining Import Capability to any other Load Serving Entity or Market Participant. The CAISO will accept transfers among LSEs and Market Participants only to the extent such transfers are reported to the CAISO, in accordance with the schedule set forth in the Business Practice Manual and through the CAISO's Import Capability Transfer Registration Process, by the entity receiving the Remaining Import Capability who must set forth (1) the name of the counter-parties, (2) the MW quantity, (3) term of transfer, and (4) price on a per MW basis. The CAISO will post to the CAISO Website by August 8, 2007 for Resource Adequacy Compliance Year 2008 and for subsequent Resource Adequacy Compliance Years in accordance with the schedule set forth in the Business Practice Manual the information on transfers of Remaining Import Capability received under this Step 8.

Step 9: Initial Scheduling Coordinator Request to Assign Remaining Import Capability by Intertie: In accordance with the schedule set forth in the Business Practice Manual, the Scheduling Coordinator for each Load Serving Entity or Market Participant shall notify the CAISO of its request to assign its post-trading Remaining Import Capability on a MW basis per available Intertie. Total requests for assignment of Remaining Import Capability by a Scheduling Coordinator cannot exceed the sum of

the post-traded Remaining Import Capability of its Load Serving Entities. The CAISO will honor the requests to the extent an Intertie has not been over requested. If an Intertie is over requested, the requests for Remaining Import Capability on that Intertie will be assigned based on each Load Serving Entity's Import Capability Load Share Ratio in the same manner as set forth in Step 4. A Market Participant without an Import Capability Load Share will be assigned the Import Capability Load Share equal to the average Import Capability Load Share of those Load Serving Entities from which it received transfers of Remaining Import Capability.

Step 10: CAISO Notification of Initial Remaining Import Capability Assignments and Unassigned Capability: In accordance with the schedule set forth in the Business Practice Manual, the CAISO will:

a. Notify the Scheduling Coordinator for each Load Serving Entity or Market Participant of the Load Serving Entity or Market Participant's accepted request(s) for assigning Remaining Import Capability under Step 9; and

b. Publish on the CAISO Website aggregate unassigned Available Import Capability, if any, the identity of the Interties with unassigned Available Import Capability, and the MW quantity of Available Import Capability, on each such Intertie.

Step 11: Secondary Scheduling Coordinator Request to Assign Remaining Import Capability by Intertie: To the extent Remaining Import Capability remains unassigned as disclosed by Step 10, in accordance with the schedule set forth in the Business Practice Manual, Scheduling Coordinators for Load Serving Entities or Market Participants shall notify the CAISO of their requests to assign any remaining Remaining Import Capability on a MW per available Intertie basis. The CAISO will honor the requests to the extent an Intertie has not been over requested. If an Intertie is over requested, the requests on that Intertie will be assigned based on each Load Serving Entity or Market Participant's Import Capability Load Share Ratio, as used in Steps 4 and 9.

Step 12: Notification of Secondary Remaining Import Capability Assignments and Unassigned Capability: In accordance with the schedule set forth in the Business Practice Manual, the CAISO will:

a. Notify the Scheduling Coordinator for each Load Serving Entity or Market Participant of the Load Serving Entity or Market Participant's accepted request(s) for assigning Remaining Import Capability under Step 11; and

b. Publish on the CAISO Website unassigned aggregate Available Import Capability, if any, the identity of the Interties with Available Remaining Import Capability, and the MW quantity of Availability Import Capability on each such Intertie.

Step 13: Requests for Balance of Year Unassigned Available Import Capability: To the extent total Available Import Capability remains unassigned as disclosed by Step 12, Scheduling Coordinators for Load Serving Entities or Market Participants may notify the CAISO at any time, except as limited herein, of a request for unassigned Available Import Capability on a specific Intertie on a per MW basis. Each request must include the identity of Load Serving Entity or Market Participant on whose behalf the request is made. The CAISO will accept only two (2) requests per calendar week from any Scheduling Coordinator on behalf of a single Load Serving Entity or other Market Participant. The CAISO will honor requests in priority of the time requests from Scheduling Coordinators were received until the Intertie is fully assigned and without regard to any Load Serving Entity's Load Share Quantity. Any honored request shall be for the remainder of the Resource Adequacy Compliance Year; however, any notification by the CAISO of acceptance of the request in accordance with this Section after the 20th calendar day of any month shall not be permitted to be included in the Load Serving Entity's Resource Adequacy Plan submitted in the same month as the acceptance.

The CAISO shall provide an electronic means, either through the Import Capability Transfer Registration Process or otherwise, of notifying the Scheduling Coordinator of the time the request was deemed received by the CAISO and, within seven (7) days of receipt of the request, whether the request was honored. If honored, it shall be the responsibility of the Scheduling Coordinator and its Load Serving Entity to notify the CPUC or applicable Local Regulatory Authority of the acceptance of the request for unassigned Available Import Capability. If the request is not honored because the Intertie requested was fully assigned, the request will be deemed rejected and the Scheduling Coordinator, if it still seeks to obtain unassigned Available Import Capability, will be required to submit

a new request for unassigned Available Import Capability on a different Intertie. The CAISO will update on its website the list of unassigned Available Import Capability by Intertie in accordance with the schedule set forth in the Business Practice Manual.

This multi-step process for assignment of Total Import Capability does not guarantee or result in any actual transmission service being assigned and is only used for determining the import capability that can be credited towards satisfying the Reserve Margin of a Load Serving Entity under this Section 40. Upon the request of the CAISO, Scheduling Coordinators must provide the CAISO with information on Pre-RA Import Commitments and any transfers or sales of assigned Total Import Capability.

40.4.6.2.2 Bilateral Import Capability Transfers and Registration Process.

40.4.6.2.2.1 Eligibility Registration for Bilaterial Import Capability Transfers.

To be eligible to engage in any bilateral assignment, sale, or other transfer of Remaining Import Capability under Step 8 of Section 40.4.6.2.1 or Section 40.4.6.2.2.2 or Existing Contract Import Capability, and Pre-RA Import Commitment Capability under Section 40.6.2.2.2, a Load Serving Entity or other Market Participant must provide the CAISO through the Import Capability Transfer Registration Process the following information:

a. Name of the Load Serving Entity or Market Participant

b. E-mail contact information

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

posted to the CAISO Website under this Section is accurate and up to date.

40.4.6.2.2.2 Reporting Process for Bilateral Import Capability Transfers.

This Section shall apply to all transfers of Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability other than that provided for in Step 8 of Section 40.4.6.2.1. Any Load Serving Entity or other Market Participant that has obtained Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability may assign, sell, or otherwise transfer such Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability in MW increments. The import capability subject to each transfer shall remain on the Intertie assigned pursuant to Section 40.4.6.2.1.

The Scheduling Coordinator for the Load Serving Entity or Market Participant receiving the transferred Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability must report the transfer to the CAISO through the CAISO's Import Capability Transfer Registration Process by providing the following information:

a. Identity of the counter-party(ies);

b. The MW quantity;

c. The Intertie on which the Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability was assigned;

d. The term of the transfer;

e. Price on a per MW basis; and

f. Whether the import capability assignment being transferred is Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability.

The CAISO will promptly post to the CAISO Website the information on transfers received under this Section except for the information received pursuant to subpart f of this Section. On a quarterly basis, the CAISO shall also report to FERC the transfer information received under this Section and Step 8 of Section 40.4.6.2.1. Transfer information received in accordance with this Section after the 20th calendar

day of any month shall not be permitted to be included in the Load Serving Entity's Resource Adequacy Plan submitted in the same month as the transfer submission.

40.4.6.2.2.3 Other Import Capability Information Postings.

The CAISO will post to the CAISO Website on a monthly basis in accordance with the schedule set forth in the Business Practice Manual, for each Intertie, the holder and that holder's quantity in MW of import capability assigned on the particular Intertie as of the reporting date.

The CAISO will also post to the CAISO Website following submission of the annual Resource Adequacy Plans under Sections 40.2.1.1, 40.2.2.4, 40.2.3.4, and 40.2.4, for each Intertie, by a "yes" or "no" designation, whether each holder of import capability assigned on the particular Intertie has fully included the assigned import capability in the holder's annual Resource Adequacy Plans.

40.4.7 Submission of Supply Plans.

Scheduling Coordinators representing Resource Adequacy Resources supplying Resource Adequacy Capacity shall provide the CAISO with annual and monthly Supply Plans, on the schedule set forth in the Business Practices Manual verifying their agreement to provide Resource Adequacy Capacity during the next Resource Adequacy Compliance Year or relevant month, as applicable. The Supply Plan must be in the form of the template provided on the CAISO Website, which shall include an affirmative representation by the Scheduling Coordinator submitting the Supply Plan that the CAISO is entitled to rely on the accuracy of the information provided in the Supply Plan to perform those functions set forth in this Section 40. The CAISO shall be entitled to take reasonable measures to validate the accuracy of the information submitted in Supply Plans under this Section.

40.5 Requirements Applicable to Modified Reserve Sharing LSEs Only.

40.5.1 Day Ahead Scheduling and Bidding Requirements.

(1) Scheduling Coordinators on behalf of Modified Reserve Sharing LSEs serving Load within the CAISO Control Area for whom they submit Demand Bids shall submit into the IFM a Self-Schedule or Bid equal to 115% of the hourly Demand Forecasts for each Modified Reserve Sharing LSE it represents for each Trading Hour for the next Trading Day. Subject to Section 40.5.5, the resources included in a Self-Schedule or a Bid in each Trading Hour to satisfy 115% of the Modified Reserve Sharing LSE's hourly Demand Forecasts will be deemed Resource Adequacy Resources and (a) shall be those resources listed in the Modified Reserve Sharing LSE's monthly Resource Adequacy Plan and (b) shall include all Local Capacity Area Resources listed in the Modified Reserve Sharing LSE's annual Resource Adequacy Plan, if any, except to the extent the Local Capacity Area Resources, if any, are unavailable due to any Outages or reductions in capacity reported to the CAISO in accordance with this CAISO Tariff.

i. A Local Capacity Area Resource that has not fully submitted a Bid or Self-Schedule for all of its Resource Adequacy Capacity will be subject to the CAISO's optimization for the remainder of its capacity, which must be Bid into the Day-Ahead Market; however, to the extent the Generating Unit providing Local Capacity Area Resource capacity constitutes a Use-Limited Resource under Section 40.6.4, the provisions of Section 40.6.4 will apply.

ii. If the Resource Adequacy Resource submits a Bid for Ancillary Services, the Energy Bid associated with the Bid for Ancillary Services will be optimized by the CAISO. However, pursuant to Section 8.6.2, to the extent the Local Capacity Area Resource self-provides Ancillary Services and local Constraints result is in a solution in the MPM-RRD that involves Load

reduction, then Self-Provided AS from the Local Capacity Area Resource will be converted into Ancillary Service Bids at the minimum Bid price for Ancillary Services as prescribed in Section 39.6.1.5.

iii. Resource Adequacy Resources must participate in the RUC to the extent that the resource has not submitted a Self-Schedule or already committed to provide Energy or capacity in the IFM. Resource Adequacy Resources will be required to offer into RUC and will be considered based on a $0 RUC Availability Bid.

iv. Capacity from Resource Adequacy Resources selected in RUC will not be eligible to receive a RUC Availability Payment.

(2) Resource Adequacy Resources of Modified Reserve Sharing LSEs that do not clear in the IFM or are not committed in RUC shall have no further offer requirements in HASP or Real-Time, except under System Emergencies as provided in this CAISO Tariff.

(3) Resource Adequacy Resources committed by the CAISO must maintain that commitment through Real-Time. In the event of a Forced Outage on a Resource Adequacy Resource committed in the Day-Ahead Market to provide Energy, the Scheduling Coordinator for the Modified Reserve Sharing LSE will have up to the next HASP bidding opportunity, plus one hour, to replace the lesser of: (i) the committed resource suffering the Forced Outage, (ii) the quantity of Energy committed in the Day-Ahead Market, or (iii) 107% of the hourly forecast Demand.

40.5.2 Demand Forecast Accuracy.

On a monthly basis, the CAISO will review Meter Data to evaluate the accuracy or quality of the hourly Day-Ahead Demand Forecasts submitted by the Scheduling Coordinator on behalf of Modified Reserve Sharing LSEs. If the CAISO determines, based on its review, that one or more Demand Forecasts materially under-forecasts the Demand of the Modified Reserve Sharing LSEs for whom the Scheduling Coordinator schedules, after accounting for weather adjustments, the CAISO will notify the Scheduling Coordinator of the deficiency and will cooperate with the Scheduling Coordinator and Modified Reserve Sharing LSE(s) to revise its Demand Forecast protocols or criteria. If the material deficiency affects ten (10) hourly Demand Forecasts

over a minimum of two (2) non-consecutive Business Days within a month, the CAISO may: (i) inform State of California authorities including, but not necessarily limited to the California Legislature, and identify the Modified Reserve Sharing LSE(s) represented by the Scheduling Coordinator and (ii) assign to the Scheduling Coordinator responsibility for all Tier 1 RUC charges as specified in Section 11.8.6.5 to address the uncertainty caused by the Scheduling Coordinator's deficient hourly Demand Forecasts until the deficiency is addressed.

40.5.3 Requirement to Make Resources Available During System Emergencies.

Scheduling Coordinators for Modified Reserve Sharing LSEs that are MSS Operators shall make resources available to the CAISO during a System Emergency in accordance with the provisions of their Metered Subsystem Agreement. Scheduling Coordinators for all other Modified Reserve Sharing LSEs shall make available to the CAISO upon a warning or emergency notice of an actual or imminent System Emergency all resources that have not submitted a Self-Schedule or Economic Bid in the IFM that were listed in the Modified Reserve Sharing LSE's monthly Resource Adequacy Plan that are physically capable of operating without violation of any applicable law.

40.5.4 Consequence of Failure to Meet Scheduling Obligation.

(1) If the Scheduling Coordinator for the Modified Reserve Sharing LSE fails to submit a Self-Schedule or submit Bids equal to 115% of its hourly Demand Forecasts for each Trading Hour for the next Trading Day in the IFM and RUC, the Scheduling Coordinator will be charged a capacity surcharge of three times the price of the relevant Day-Ahead Hourly LAP LMP in the amount of the shortfall. To the extent the Scheduling Coordinator for the Modified Reserve Sharing LSE schedules imports on one or more Scheduling Points in an aggregate megawatt amount greater than its aggregate import deliverability allocation under Section 40.4.6.2, the quantity of megawatts in excess of its import deliverability allocation will not count toward satisfying the Modified Reserve Sharing LSE's scheduling obligation, unless it clears the Day-Ahead Market.

(2) If the Scheduling Coordinator for the Modified Reserve Sharing LSE cannot fulfill its obligations under Section 40.5.1(3), the Scheduling Coordinator for the Modified Reserve Sharing LSE will be charged a capacity surcharge of two times the average of the six (6) Settlement

Interval LAP prices for the hour in the amount of the shortfall. Energy scheduled in the HASP will not net against, or be used as a credit to correct, any failure to fulfill the Day-Ahead IFM hourly scheduling and RUC obligation in Section 40.5.1(1).

(3) Any Energy surcharge received by the CAISO pursuant to this Section 40.5.4 shall be allocated to Scheduling Coordinators representing other Load Serving Entities in proportion to each such Scheduling Coordinator's Measured Demand during the relevant Trading Hour(s) to the aggregate CAISO Measured Demand during the relevant Trading Hour(s).

40.5.5 Substitution of Resources.

Subject to the provisions of this Section 40.5, the Scheduling Coordinator for a Modified Reserve Sharing LSE may substitute for its Resource Adequacy Resources listed in its monthly Resource Adequacy Plan provided:

1) Substitutions must occur no later than the close of the IFM; and

2) Resources eligible for substitution are either imports or capacity from non-Resource Adequacy Resources or Resource Adequacy Resources with additional available capacity defined as Net Qualifying Capacity in excess of previously sold Resource Adequacy Capacity; however a Local Capacity Area Resource may be substituted only with capacity from non-Resource Adequacy Resources located in the same Local Capacity Area.

40.6 Requirements Applicable to Scheduling Coordinators for Reserve Sharing LSEs and Resources Providing Resource Adequacy Capacity to Reserve Sharing LSEs.

This Section 40.6 does not apply to Resource Adequacy Resources of Load-following MSSs and those entities that participate in the Modified Reserve Sharing LSE program under Section 40.5. Scheduling Coordinators supplying Resource Adequacy Capacity shall make the Resource Adequacy Capacity listed in the Scheduling Coordinator's monthly Supply Plans under Section 40.4.7 available to the CAISO each hour of each day of the reporting month in accordance with this Section 40.6.

40.6.1 Day-Ahead Availability.

Scheduling Coordinators supplying Resource Adequacy Capacity shall make the Resource Adequacy Capacity, except for that subject to Section 40.6.4, available Day-Ahead to the CAISO as follows:

(1) Resource Adequacy Resources physically capable of operating must submit Economic Bids or Self-Schedules for their Resource Adequacy Capacity into the IFM and RUC.

(2) Resource Adequacy Resources that are Extremely Long-Start Resources must make themselves available to the CAISO by complying with the Extremely Long-Start Commitment Process under Section 31.7 or otherwise committing the ELS Resource upon instruction from the CAISO, if physically capable.

(3) Any inter-temporal constraints such as Minimum Run Times must not be more restrictive than those pre-specified in the Master File limitations or as otherwise required by this CAISO Tariff or by Good Utility Practice.

(4) Resource Adequacy Resources that do not submit Self-Schedules or Economic Bids reflecting all of their Resource Adequacy Capacity will be subject to the CAISO's optimization for the remainder of their Resource Adequacy Capacity Bids into the Day-Ahead Market. If the Resource Adequacy Resource submits a Bid for Ancillary Service(s), the Energy Bid associated with the Bid for Ancillary Services will be optimized by the CAISO.

(5) Resource Adequacy Resources must participate in the RUC to the extent that the resource has available Resource Adequacy Capacity that is not reflected in a Self-Schedule is already committed to provide Energy or capacity in the IFM. Resource Adequacy Resources will be subject to RUC and will be optimized at a zero dollar RUC Availability Bid.

(6) Capacity from Resource Adequacy Resources selected in RUC will not be eligible to receive a RUC Availability Payment.

40.6.2 Real-Time Availability.

Resource Adequacy Resources that have been committed by the CAISO in the Day-Ahead Market or the RUC for part of their Resource Adequacy Capacity or have submitted a Self-Schedule for part of their Resource Adequacy Capacity must remain available to the CAISO through Real-Time, including capacity reflected in the Day-Ahead Schedule and any remaining capacity, for the scheduled and non-scheduled portions of their Resource Adequacy Capacity, subject to the provisions of Section 40.6.4.

40.6.3 Additional Availability Requirements for Short Start Units and Dynamic System Resources.

Short Start Units and Dynamic System Resources, unless a Dynamic System Resource is demonstrated to be incapable of meeting the definition of a Short Start Unit based on physical operating characteristics, that supply Resource Adequacy Capacity not committed under Section 40.6.1, and therefore are subject to Section 40.6.2, and Use–Limited Resources subject to Section 40.6.4 to the extent consistent with their applicable use plan, must submit Economic Bids or Self-Schedules for the Resource Adequacy Capacity into the Real-Time Market.

The CAISO may waive these availability obligations for Short Start Units and Dynamic System Resources that have not submitted a Self-Schedule or otherwise been selected in the IFM or RUC based on the procedure to be published on the CAISO Website.

40.6.4 Additional Availability Requirements for Use-Limited Resources.

40.6.4.1 Registration of Use-Limited Resources.

Scheduling Coordinators for Use-Limited Resources, other than for hydroelectric Generating Units and Participating Load, including Pumping Load, must provide the CAISO an application in the form specified on the CAISO Website requesting registration of a specifically identified resource as a Use-Limited Resource. This application shall include specific operating data and supporting documentation including, but not limited to;

1) a detailed explanation of why the resource is subject to operating limitations;
2) historical data to show attainable MWhs for each 24-hour period during the preceding year, including, as applicable, environmental restrictions for NOx, SOx, or other factors; and
3) further data or other information as may be requested by the CAISO to understand the operating characteristics of the unit.

Within five (5) Business Days after receipt of the application, the CAISO will respond to the Scheduling Coordinator as to whether or not the CAISO agrees that the facility is eligible to be a Use-Limited Resource. If the CAISO determines the facility is not a Use-Limited Resource, the Scheduling Coordinator may challenge that determination in accordance with the CAISO ADR Procedures.

40.6.4.2 Use Plan.

The Scheduling Coordinator shall provide for the following Resource Adequacy Compliance Year a proposed annual use plan for each Use-Limited Resource that is a Resource Adequacy Resource. The proposed annual use plan will delineate on a month-by-month basis the total MWhs of Generation, total run hours, expected daily supply capability (if greater than four hours) and the daily Energy limit, operating constraints, and the timeframe for each constraint. The CAISO will have an opportunity to discuss the proposed annual use

plan with the Scheduling Coordinator and suggest potential revisions to meet reliability needs of the system. The Scheduling Coordinator shall then submit its final annual use plan. Scheduling Coordinators for Use-Limited Resources must submit the proposed and final annual use plans in accordance with the schedule set forth in the Business Practice Manual. The Scheduling Coordinator will be able to update the projections made in the annual use plan in the monthly Resource Adequacy Plans. Hydroelectric Generating Units and Pumping Load will be able to update use plans intra-monthly as necessary to reflect evolving hydrological and meteorological conditions. The annual use plan

must reflect the potential operation of the Use-Limited Resource at a level no less than the minimum criteria set forth by the Local Regulatory Authority for qualification of the resource.

40.6.4.3 Bidding Requirements on Use-Limited Resources.

40.6.4.3.1 Non-Hydro and Dispatchable Use-Limited Resources.

Use-Limited Resources, other than those subject to the provisions of 40.6.4.3.2, must submit a Supply Bid or Self-Schedule for their Resource Adequacy Capacity in the Day-Ahead Market whenever the Use-Limited Resources are physically capable of operating in accordance with their operating criteria, including environmental or other regulatory requirements. Use-Limited Resources will also provide a daily Energy limit as part of their Day-Ahead Market offer to enable the CAISO to schedule them for the period in which they are capable of providing the Energy. To the extent that the daily Energy limit has been reached through Self-Schedules, no further action will be taken by the CAISO, unless rescheduling of the Energy is necessary for System Reliability. Use-Limited Resources will attempt to reschedule the Energy in recognition of the System Reliability concern, to the extent that the change is possible without violating a Use-Limited Resource's operating criteria.

40.6.4.3.2 Hydro and Non-Dispatchable Use-Limited Resources.

Hydroelectric Generating Units, Pumping Load, and Non-Dispatchable Use-Limited Resources shall submit Self-Schedules or Bids in the Day-Ahead Market for their expected available Energy or their expected as-available Energy, as applicable, in the Day-Ahead Market and HASP. Such resources shall also revise their Self-Schedules or submit additional Bids in HASP based on the most current information available regarding expected Energy deliveries. Hydroelectric Generating Units, Pumping Load, and Non-Dispatchable Use-Limited Resources will not be subject to commitment in the RUC process. The CAISO will retain discretion as to whether a particular resource should be considered a Non-Dispatchable Use-Limited Resource, and this decision will be made in accordance with the provisions of Section 40.6.4.1.

40.6.4.3.3 Availability of Use-Limited Resources During System Emergencies.

All Use-Limited Resources remain subject to Section 7.7.2.3 regarding System Emergencies to the extent the Use-Limited Resource is owned or controlled by a Participating Generator.

40.6.4.3.4 Availability of Intermittent Resources.

Any Eligible Intermittent Resource that provides Resource Adequacy Capacity may, but is not required to, submit Bids in the Day-Ahead Market.

40.6.5 Additional Availability Requirements for System Resources.

In the IFM, the multi-hour block constraints of a System Resource, other than a System Resource capable of submitting a Dynamic Schedule, are honored in the optimization. Multi-hour block System Resources that are not capable of submitting a Dynamic Schedule and are Resource Adequacy Resources must be capable of hourly selection by the CAISO in RUC if not fully committed in the IFM. If selected in the RUC, the System Resource must be dispatchable in those hours in the HASP and Real Time Market. For existing System Resources with a call-option that expires prior to the completion of the IFM, such System Resources listed on a Resource Adequacy Plan must be reported to the CAISO for consideration in the Extremely Long-Start Commitment Process.

40.6.5.1 Additional Availability Requirements for Dynamic Resource-Specific System Resources.

A Dynamic Resource-Specific System Resource that supplies Resource Adequacy Capacity, and is not otherwise a Use-Limited Resource under Section 40.6.4, will be subject to either Section 40.6.3 as a Short Start Unit or Section 40.6.7 as a Long Start Unit based upon the Dynamic Resource-Specific System Resource's registered physical operating characteristics.

40.6.6 Availability Requirements for Partial Resource Adequacy Resources.

Only that output of a Partial Resource Adequacy Resource that is designated by a Scheduling Coordinator as Resource Adequacy Capacity in its monthly or annual Supply Plan shall have an availability obligation to the CAISO. Exports being supported by non-Resource Adequacy Capacity from a Partial Resource Adequacy Resource that becomes unavailable or unusable shall be considered as an export of non-Resource Adequacy Capacity based on the pro-rata allocation of derated capacity of the Partial Resource Adequacy Resource as follows:

a. Resource Adequacy Capacity – [(Resource Adequacy Capacity/PMax Capacity of Resource Adequacy Resource) x MW Derate or Outage]; or

b. [1- (Resource Adequacy Capacity/PMax Capacity of Resource Adequacy Resource)] x De-rated PMax].

40.6.7 Availability Requirements for Long Start Units.

40.6.7.1 Release of Long Start Units.

Long Start Units not committed in the Day-Ahead Market will be released from any further obligation to submit Self-Schedules or Bids for the relevant Operating Day. Scheduling Coordinators for Long Start Units are not precluded from self-committing the unit after the Day-Ahead Market and submitting a Self-Schedule for Wheeling-Out in the HASP, unless precluded by terms of their contracts.

40.6.7.2 Obligation of Long Start Units to Offer Remaining Capacity in Real-Time.

Long Start Units that have been committed by the CAISO in the Day-Ahead Market or the RUC for part of their Resource Adequacy Capacity or have submitted a Self-Schedule for part of their Resource Adequacy Capacity must remain available to the CAISO through Real-Time for the full value of their Resource Adequacy Capacity.

40.6.8 Use of Default Energy Bids.

Prior to completion of the Day-Ahead Market, the CAISO will determine if dispatchable Resource Adequacy Capacity from Resource Adequacy Resources has not been reflected in a Bid and will insert a Default Energy Bid for any dispatchable Resource Adequacy Capacity that is not reflected in a Bid into the CAISO Day-Ahead Market and for which the CAISO has not received notification of an Outage. In addition, the CAISO will determine if all dispatchable Resource Adequacy Capacity from Short Start Units, not otherwise selected in the IFM or RUC, is reflected in a Bid into the HASP and will insert a Default Energy Bid for any remaining dispatchable Resource Adequacy Capacity for which the CAISO has not received notification of an Outage.

40.6.9 Availability Requirements for Grandfathered Firm Liquidated Damages Contracts.

Resource Adequacy Capacity represented by a Firm Liquidated Damages Contract and relied upon by a Scheduling Coordinator in a monthly or annual Resource Adequacy Plan shall be submitted as a Self-Schedule or Bid in the Day-Ahead IFM to the extent such scheduling right exists under the Firm Liquidated Damages Contract.

40.6.10 Exports of Energy from Resource Adequacy Capacity.

Resource Adequacy Capacity may be utilized to serve an Export Bid. An Export Bid may be submitted into the CAISO Markets and be cleared by the Energy being provided by Resource Adequacy Capacity.

40.6.11 Curtailment of Exports in Emergency Situations.

At its sole discretion, the CAISO may curtail exports from Resource Adequacy Capacity to prevent or alleviate a System Emergency. An Export Bid or a Self-Schedule to provide exports included in a binding Schedule accepted in the IFM or HASP will not be distinguished from a Demand Bid or Self-Schedule to serve Load within the CAISO Control Area included in a binding Schedule accepted in the IFM or HASP for purposes of curtailment under this Section, except as consistent with Good Utility Practice.

40.6.12 Participating Loads.

Participating Loads included in a Resource Adequacy Plan and Supply Plan, if the Scheduling Coordinator for the Participating Loads is not the same as that for the Load Serving Entity, will be dispatched by the CAISO in accordance with the terms and conditions established by the CPUC or the Local Regulatory Authority.

40.7 Compliance.

The CAISO will evaluate whether each annual and monthly Resource Adequacy Plan submitted by a Scheduling Coordinator on behalf of a Load Serving Entity demonstrates Resource Adequacy Capacity sufficient to satisfy the Load Serving Entity's (i) allocated responsibility for Local Capacity Area Resources under Section 40.3.2 and (ii) applicable Demand and Reserve Margin requirements. If the CAISO determines that a Resource Adequacy Plan does not demonstrate Local Capacity Area Resources sufficient to meet its allocated responsibility under Section 40.3.2, compliance with applicable Demand and Reserve Margin requirements, or compliance with any other resource adequacy requirement in this Section 40 or adopted by the CPUC, Local Regulatory Authority, or federal agency, as applicable, the CAISO will notify the relevant Scheduling Coordinator, CPUC, Local Regulatory Authority, or federal agency with jurisdiction over the relevant Load Serving Entity, or in the case of a mismatch between Resource Adequacy Plan(s) and Supply Plan(s), the relevant Scheduling Coordinators, in an attempt to resolve any deficiency in accordance with the procedures set forth in the Business Practice Manual. The notification will include the reasons the CAISO believes a deficiency exists. If the deficiency relates to the demonstration of Local Capacity Area Resources in a Load Serving Entity's annual Resource Adequacy Plan, and the CAISO does not provide a written notice of resolution of the deficiency as set forth in the Business Practices Manual, the Scheduling Coordinator for the Load Serving Entity may demonstrate that the identified deficiency is cured by submitting a revised annual Resource Adequacy Plan within thirty (30) days of the beginning of the Resource Adequacy Compliance Year. For all other identified deficiencies, at least ten (10) days prior the effective month of the relevant Resource Adequacy Plan, the Scheduling Coordinator for the Load Serving Entity shall (i) demonstrate that the identified deficiency is cured by

submitting a revised Resource Adequacy Plan or (ii) advise the CAISO that the CPUC, Local Regulatory Authority, or federal agency, as appropriate, has determined that no deficiency exists. In the case of a mismatch between Resource Adequacy Plan(s) and Supply Plan(s), if resolved, the relevant Scheduling Coordinator(s) must provide the CAISO with revised Resource Adequacy Plan(s) or Supply Plans, as applicable, at least ten (10) days prior to the effective month. If the CAISO is not advised that the deficiency or mismatch is resolved at least ten (10) days prior to the effective month, the CAISO will use the information contained in the Supply Plan to set the obligations of Resource Adequacy Resources under this Section 40 and/or to assign any costs incurred under this Section 40.

40.7.1 Other Compliance Issues.

Scheduling Coordinators representing Generating Units, System Units or System Resources supplying Resource Adequacy Capacity that fail to provide the CAISO with an annual or monthly Supply Plan, as applicable, as set forth in Section 40.7, shall be subject to Section 37.6.1. Further, Scheduling Coordinators representing Generating Units, System Units or System Resources supplying Resource Adequacy Capacity that fail to provide the CAISO with information required for the CAISO to determine Net Qualifying Capacity shall not be eligible for inclusion in the Net Qualifying Capacity annual report under Section 40.4.2 for the next Resource Adequacy Compliance Year and may be subject to Sanctions under Section 37.6.1.

40.7.2 Penalties for Non-Compliance.

The failure of a Resource Adequacy Resource or Resource Adequacy Capacity to be available to the CAISO in accordance with the requirements of this Section 40 and the failure to operate a Resource Adequacy Resource by placing it online or in a manner consistent with a submitted Bid or Default Energy Bid shall be subject to the Sanctions set forth in Section 37.2. However, any failure of the Resource Adequacy Resource to satisfy any obligations prescribed under this Section 40 during a Resource Adequacy Compliance Year for which Resource Adequacy Capacity has been committed to a Load Serving Entity shall not limit in any way, except as otherwise established under Section 40.4.5 or requirements of the CPUC, Local Regulatory Authority, or federal agency, as applicable, the ability of the

Load Serving Entity to whom the Resource Adequacy Capacity has been committed to use such Resource Adequacy Capacity for purposes of satisfying the resource adequacy requirements of the CPUC, Local Regulatory Authority, or federal agency, as applicable. In addition, a Reserve Sharing LSE shall not be subject to any sanctions, penalties, or other compensatory obligations under this Section 40 on account of a Resource Adequacy Resource's satisfaction or failure to satisfy its obligations under this Section 40.

40.8 CAISO Default Qualifying Capacity Criteria.

40.8.1 Applicability.

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

40.8.1.2 Nuclear and Thermal.

Nuclear and thermal Generating Units, other than Qualifying Facilities with effective contracts under the Public Utility Regulatory Policies Act addressed in Section 40.8.1.8 below, must be a Participating Generator or a System Unit. The Qualifying Capacity of nuclear and thermal units, other than Qualifying Facilities addressed in Section 40.8.1.8, will be based on net dependable capacity defined by NERC Generating Availability Data System information.

40.8.1.3 Hydro.

Hydroelectric Generating Units, other than Qualifying Facilities with contracts under the Public Utility Regulatory Policies Act, must be either Participating Generators or System Units. The Qualifying Capacity of a pond or Pumped-Storage Hydro Unit, other than a QF, will be determined based on net dependable capacity defined by NERC GADS minus variable head derate based on an average dry year reservoir level. The Qualifying Capacity of a pond or Pumped-Storage Hydro Unit that is a QF will be determined based on historic performance during the hours of noon to 6:00 p.m., using a three-year rolling average.

The Qualifying Capacity of all run-of-river hydro units, including Qualifying Facilities, will be based on net dependable capacity defined by NERC GADS minus an average dry year conveyance flow, stream flow, or canal head derate. As used in this section, average dry year reflects a one-in-five year dry hydro scenario (for example, using the 4th driest year from the last 20 years on record).

40.8.1.4 Unit-Specific Contracts.

Unit-specific contracts with Participating Generators or System Units will qualify as Resource Adequacy Capacity subject to the verification that the total MW quantity of all contracts from a specific unit do not exceed the total Net Qualifying Capacity (MW) consistent with the Net Qualifying Capacity determination for that unit.

40.8.1.5 Contracts with Liquidated Damage Provisions.

Firm Energy contracts with liquidated damages provisions, as generally reflected in Service Schedule C of the Western Systems Power Pool Agreement or the Firm LD product of the Edison Electric Institute pro forma agreement, or any other similar firm Energy contract that does not require the seller to source the Energy from a particular unit, and specifies a delivery point internal to the CAISO Control Area entered into before October 27, 2005 shall be eligible to count as Qualifying Capacity until the end of 2008. A Scheduling Coordinator, however, cannot have more than 25% of its portfolio of Qualifying Capacity met by contracts with liquidated damage provisions for 2008.

40.8.1.6 Wind and Solar.

As used in this Section, wind units are those wind Generating Units without backup sources of Generation and solar units are those solar Generating Units without backup sources of Generation. Wind and solar units, other than Qualifying Facilities with effective contracts under the Public Utility Regulatory Policies Act, must be Participating Intermittent Resources or subject to availability provisions of Section 40.6.4.3.4.

The Qualifying Capacity of all wind or solar units, including Qualifying Facilities, for each month will be based on their monthly historic performance during that same month during the hours of noon to 6:00 p.m., using a three-year rolling average. For wind or solar units with less than three years operating history, all months for which there is no historic performance data will utilize the monthly average production factor of all units (wind or solar, as applicable) within the TAC Area in which the Generating Unit is located.

40.8.1.7 Geothermal.

Geothermal Generating Units, other than Qualifying Facilities addressed in Section 40.8.1.8, must be Participating Generators or System Units. The Qualifying Capacity of geothermal units, other than Qualifying Facilities addressed in Section 40.8.1.8, will be based on NERC GADS net dependable capacity minus a derate for steam field degradation.

40.8.1.8 Treatment of Qualifying Capacity for Qualifying Facilities.

Qualifying Facilities must be subject to an effective Participating Generator Agreement or QF Participating Generator Agreement or must be System Units, unless they have a PURPA contract. Except for hydro, wind, and solar Qualifying Facilities addressed pursuant to Sections 40.8.1.3 and 40.8.1.6, the Qualifying Capacity of Qualifying Facilities under PURPA contracts, will be based on historic monthly Generation output during the hours of noon to 6:00 p.m. (net of Self-provided Load) during a three-year rolling average.

40.8.1.9 Participating Loads.

The Qualifying Capacity of Participating Loads shall be the average reduction in Demand over a three-year period on a per Dispatch basis or, if the Load does not have three years of performance history, based on comparable evaluation data using similar programs. Loads of Participating Loads must be available at least 48 hours, and if the Loads can only be dispatched for a maximum of two hours per event, then only 0.89 percent of a Scheduling Coordinator's portfolio may be made up of such Loads.

40.8.1.10 Jointly-Owned Facilities.

A jointly-owned facility must be either a Participating Generator or a System Unit. The Qualifying Capacity for the entire facility will be determined based on the type of resource as described elsewhere in this Section 40.8.1. In addition, the Scheduling Coordinator must provide the CAISO with a demonstration of its entitlement to the output of the jointly-owned facility's Qualified Capacity and an explanation of how that entitlement may change if the facility's output is restricted.

40.8.1.11 Facilities under Construction.

The Qualifying Capacity for facilities under construction will be determined based on the type of resource as described elsewhere in this Section 40.8. In addition, the facility must have been in commercial operation for no less than one month to be eligible to be included as a Resource Adequacy Resource in a Scheduling Coordinator's monthly Resource Adequacy Plan.

40.8.1.12 System Resources.

40.8.1.12.1 Dynamic System Resources.

Dynamic System Resources shall be treated similar to resources within the CAISO Control Area, except with respect to the deliverability screen under Section 40.4.6.1. However, eligibility as a Resource Adequacy Resource is contingent upon a showing by the Scheduling Coordinator that the Dynamic System Resource has secured transmission through any intervening Control Areas for the Operating Hours that cannot be curtailed for economic reasons or bumped by higher priority transmission and that the Load Serving Entity for which the Scheduling Coordinator is submitting Demand Bids has an allocation of import capacity at the import Scheduling Point under Section 40.4.6.2 that is not less than the Resource Adequacy Capacity provided by the Dynamic System Resource.

40.8.1.12.2 Non-Dynamic System Resources.

For Non-Dynamic System Resources, the Scheduling Coordinator must demonstrate that the Load Serving Entity for which the Scheduling Coordinator is scheduling Demand has an allocation of import capacity at the import Scheduling Point under Section 40.4.6.2 that is not less than the Resource Adequacy Capacity from the Non-Dynamic System Resource. The Scheduling Coordinator must also demonstrate that the Non-Dynamic System Resource is covered by Operating Reserves, unless unit contingent, in the sending Control Area. Eligibility as Resource Adequacy Capacity is contingent upon a showing by the Scheduling Coordinator of the System Resource that it has secured transmission through any intervening Control Areas for the Operating Hours that cannot be curtailed for economic reasons or bumped by higher priority transmission. With respect to Non-Dynamic System Resources, any inter-temporal constraints, such as multi-hour run blocks, must be explicitly identified in the monthly Resource Adequacy Plan, and no constraints may be imposed beyond those explicitly stated in the plan.

41. Procurement of RMR.

41.1 Procurement of Reliability Must-Run Generation by the CAISO.

A Reliability Must-Run Contract is a contract entered into by the CAISO with a Generator which operates a Generating Unit giving the CAISO the right to call on the Generator to generate Energy and, only as provided in this Section 41.1, or as needed for Black Start or Voltage Support required to meet local reliability needs, or to procure Ancillary Services from Potrero or Hunter's Point power plants to meet operating criteria associated with the San Francisco local reliability area, to provide Ancillary Services from the Generating Units as and when this is required to ensure that the reliability of the CAISO Controlled Grid is maintained.

41.2 The CAISO will, subject to any existing power purchase contracts of a Generating Unit, have the right at any time based upon CAISO Controlled Grid technical analyses and studies to designate a Generating Unit as a Reliability Must-Run Unit. A Generating Unit so designated shall then be obligated to provide the CAISO with its proposed rates for Reliability Must-Run Generation for negotiation with the CAISO. Such rates shall be authorized by FERC or the Local Regulatory Authority, whichever authority is applicable.

41.3 In addition to the Local Capacity Technical Study under 40.3.1, the CAISO may perform additional technical studies, as necessary, to ensure compliance with Reliability Criteria. The CAISO will then determine which Generating Units it requires to continue to be Reliability Must-Run Units, which Generating Units it no longer requires to be Reliability Must-Run Units and which Generating Units it requires to become the subject of a Reliability Must-Run Contract which had not previously been so contracted to the CAISO. None of the Generating Units owned by Local Publicly Owned Electric Utilities are planned to be designated as Reliability Must-Run Units by the CAISO as of the CAISO Operations Date but are expected to be operated in such a way as to maintain the safe and reliable operation of the interconnected transmission system comprising the CAISO Control Area. However, in the future, Local Publicly Owned Electric Utilities may contract with the CAISO to provide Reliability Must-Run Generation.

42 Assurance of Adequate Generation and Transmission to meet Applicable Operating and Planning Reserve.

42.1 Generation Planning Reserve Criteria.

Generation planning reserve criteria shall be met as follows:

42.1.1.On an annual basis, the CAISO shall prepare a forecast of weekly Generation capacity and weekly peak Demand on the CAISO Controlled Grid. This forecast shall cover a period of twelve months and be posted on the CAISO Website and the CAISO may make the forecast available in other forms at the CAISO's option.

42.1.2 If the forecast shows that the Applicable Reliability Criteria can be met during peak Demand periods, then the CAISO shall take no further action.

42.1.3 If the forecast shows that the Applicable Reliability Criteria cannot be met during peak Demand periods, then the CAISO shall facilitate the development of market mechanisms to bring the CAISO Controlled Grid during peak periods into compliance with the Applicable Reliability Criteria (or such more stringent criteria as the CAISO may impose). The CAISO shall solicit Bids in the form of Ancillary Services, short-term Generation supply contracts of up to one (1) year with Generators, and Load curtailment contracts giving the CAISO the right to reduce the Demands of those parties that win the contracts when there is insufficient Generation capacity to satisfy those Demands in addition to all other Demands. The curtailment contracts shall provide that the CAISO's curtailment rights can only be exercised after all available Generation capacity has been fully utilized unless the exercise of such rights would allow the CAISO to satisfy the Applicable Reliability Criteria at lower cost, and the curtailment rights shall not be exercised to stabilize or otherwise influence prices for power in the Energy markets.

42.1.4 If Ancillary Services, short-term Generation supply contracts or curtailment contracts are required to meet Applicable Reliability Criteria, the CAISO shall select the Bids that permit the satisfaction of those Applicable Reliability Criteria at the lowest cost.

42.1.5 Notwithstanding the foregoing, if the CAISO concludes that it may be unable to comply with the Applicable Reliability Criteria, the CAISO shall, acting in accordance with Good Utility Practice, take such steps as it considers to be necessary to ensure compliance, including the negotiation of

contracts through processes other than competitive solicitations. These steps can include the negotiation of contracts for Generation or Ancillary Services on a Real-Time basis.

42.1.6 The CAISO may, in addition to the required annual forecast, publish a forecast of the peak Demands and Generation resources for two or more additional years. This forecast would be for information purposes to allow Market Participants to take appropriate steps to satisfy the Applicable Reliability Criteria, and would not be used by the CAISO to determine whether additional resources are necessary.

42.1.7 In fulfilling its requirement to ensure that the applicable Generation planning reserve criteria are satisfied, the CAISO shall rely to the maximum extent possible on market forces.

42.1.8 Except where and to the extent costs incurred by the CAISO for any contract entered into under Section 42.1.5 are recovered from Scheduling Coordinators pursuant to Sections 11.5.8, 11.10 or 42.1.9, all costs incurred by the CAISO in any Trading Hour shall be charged to each Scheduling Coordinator pro rata based upon the same proportion as the Scheduling Coordinator's Measured Demand bears to the total Measured Demand served in that hour.

42.1.9 Costs incurred by the CAISO pursuant to any contract entered into under this Section for resources to meet any portion of the anticipated difference between forward schedules and the real-time deviations from those schedules shall be charged to each Scheduling Coordinator pro rata based upon the same proportion as the Scheduling Coordinator's obligation for RUC Availability Payments.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

California Independent System Operator Corporation	)	Docket No. ER06-615- _____

CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION MODIFICATIONS TO MARKET REDESIGN AND TECHNOLOGY UPGRADE TARIFF

VOLUME 2

August 3, 2007

Attachment A3 – Appendix A Clean Sheets

FOR AUGUST 3, 2007 MRTU FILING

CAISO TARIFF APPENDIX A

Master Definitions Supplement

Appendix A **Master Definition Supplement**

ACA	Adjacent Control Area
Access Charge	A charge paid by all Utility Distribution Companies, Small Utility Distribution Companies, and MSS Operators with Gross Load in a Participating TO Service Territory, as set forth in Article II. The Access Charge includes the High Voltage Access Charge, the Transition Charge and the Low Voltage Access Charge. The Access Charge will recover the Participating TO's Transmission Revenue Requirement in accordance with Appendix F, Schedule 3.
ACE	Area Control Error
ACR	All Constraints Run
Adjacent Control Area (ACA)	A Control Area that is tightly interconnected with the CAISO Control Area, but also has direct interconnections with other Control Areas, possibly including other ACAs, such that power flows in one Control Area significantly affect power flows in the other Control Area.
Adjusted Load Metric	A Load Serving Entity's Load Metric minus the megawatts of Load served using Existing Transmission Contracts, Converted Rights, and Transmission Ownership Rights.
Adjusted Verified CRR Source Quantity	The MW amount eligible for nomination by an LSE or Qualified OCALSE in a verified tier of the CRR Allocation process, determined by reducing a Verified CRR Source Quantity to account for circumstances where the ownership or contract right to a generating resource is effective only for a portion of a particular season or month for which CRRs are being nominated.
Administrative Price	The price set by the CAISO in place of a Locational Marginal Price when, by reason of a System Emergency, the CAISO determines that it no longer has the ability to maintain reliable operation of the CAISO Controlled Grid relying solely on the economic Dispatch of Generation. This price will remain in effect until the CAISO considers that the System Emergency has been contained and corrected.

ADR	Alternative Dispute Resolution
ADS	Automated Dispatch System
Adverse System Impact	The negative effects due to technical or operational limits on conductors or equipment being exceeded that may compromise the safety and reliability of the electric system.
Affected System	An electric system other than the CAISO Controlled Grid that may be affected by the proposed interconnection, including the Participating TOs' electric systems that are not part of the CAISO Controlled Grid.
Affected System Operator	The entity that operates an Affected System.
Affiliate	An entity, company or person that directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with the subject entity, company, or person.
AGC	Automatic Generation Control
Aggregated Participating Load	An aggregation of two or more Participating Load Locations, created by the CAISO in consultation with the relevant Participating Load, for the purposes of enabling participating of the Participating Load in the CAISO Markets like Generation by submitting Supply Bids when offering Curtailable Demand and as non-Participating Load by submitting Demand Bids to consume in the Day-Ahead Market only.
Aggregated Pricing Node (Aggregated PNode)	A Load Aggregation Point, Trading Hub or any group of Pricing Nodes as defined by the CAISO.
Alert, Warning or Emergency (AWE) Notice	A CAISO operations communication issued to Market Participants and the public, under circumstances and in a form specified in CAISO Operating Procedures, when the operating requirements of the CAISO Controlled Grid are marginal because of Demand exceeding forecast, loss of major Generation sources, or loss of transmission capacity that has curtailed imports into the CAISO Control Area, or if

	insufficient Bids for the Supply of Energy and Ancillary Services have been submitted in the HASP for the CAISO Control Area.
All Constraints Run (ACR)	The second optimization run of the MPM-RRD process through which all known transmission Constraints are enforced.
Ancillary Service Award or AS Award	The notification by the CAISO indicating that a Bid to supply an Ancillary Service has been selected to provide such service in the DAM, HASP, or RTM.
Ancillary Service Bid or AS Bid	The Bid component that indicates the quantity in MW and a price in dollars per MW for a specific Ancillary Service, including Regulation Up, Regulation Down, Spinning Reserve and Non-Spinning Reserve, that a Scheduling Coordinator is offering to supply in a CAISO Market from a Generating Unit or System Resource, and only for Non-Spinning Reserve from the Load of a Participating Load.
Ancillary Service Bid Cost or AS Bid Cost	An amount equal to the product of the AS Award from each accepted AS Bid, reduced by any applicable No Pay capacity, and the relevant AS Bid price.
Ancillary Service Marginal Price (ASMP)	The marginal cost of providing an Ancillary Service in the relevant resource Location ($/MW).

Ancillary Service Obligation or AS Obligation	A Scheduling Coordinator's hourly obligation for Regulation Down, Regulation Up, Spinning Reserves, and Non-Spinning Reserves calculated pursuant to Section 11.10.2.1.3, 11.10.2.2.2, 11.10.3.2, and 11.10.4.2, respectively.
Ancillary Service Provider	A Participating Generator or Participating Load that is certified to provide an Ancillary Service.
Ancillary Service Regional Limit	A maximum or a minimum, or both a maximum and a minimum, amount of (or boundary of) Ancillary Services to be obtained within an AS Region. Limits can be expressed as either megawatt amounts or percentages.
Ancillary Service Region or AS Region	The System Region, the Expanded System Region, or any Sub-Region identified by the CAISO for procurement of Ancillary Services.
Ancillary Services (AS)	Regulation, Spinning Reserve, Non-Spinning Reserve, Voltage Support and Black Start together with such other interconnected operation services as the CAISO may develop in cooperation with Market Participants to support the transmission of Energy from Generation resources to Loads while maintaining reliable operation of the CAISO Controlled Grid in accordance with WECC standards and Good Utility Practice.
Ancillary Service Schedule or AS Schedule	The notification by the CAISO indicating that a Submission to Self-Provide an Ancillary Service has been selected to provide such service in the DAM, HASP, or RTM.
Annual Peak Demand Forecast	A Demand Forecast of the highest Hourly Demand in a calendar year, in MW.

Applicable Reliability Criteria The Reliability Standards and reliability criteria established by NERC and WECC and Local Reliability Criteria, as amended from time to time, including any requirements of the NRC.

Approved Credit Rating With respect to whether security must be posted for payment of the Grid Management Charge:

(a) A short-term taxable commercial paper debt rating of not less than any one of the following: (i) A1 by Standard and Poor's Corporation; (ii) F1 by Fitch Ratings; or (iii) P1 by Moody's Investors Service. This rating shall be an issuer, or counterpart rating, without the benefit of credit enhancement.

(b) A short-term tax exempt commercial paper debt rating of not less than any one of the following: (i) A1 by Standard and Poor's Corporation; (ii) V1 by Fitch Ratings; or (iii) VMIG1 by Moody's Investors Service. This rating shall be an issuer, or counterparty rating, without the benefit of credit enhancement.

With respect to whether security must be posted for payment of all charges other than the Grid Management Charge:

(c) A short-term tax exempt commercial paper debt rating of not less than any one of the following: (i) A2 by Standard and Poor's Corporation; (ii) F2 by Fitch Ratings; or (iii) P2 by Moody's Investors Service. This rating shall be an issuer, or counterparty rating, without the benefit of credit enhancement.

(d) A short-term tax exempt commercial paper debt rating of not less than any one of the following: (i) A2 by Standard and Poor's Corporation; (ii) V2 by Fitch Ratings; or (iii) VMIG2 by Moody's Investors Service. This rating shall be an issuer, or counterparty

rating, without the benefit of credit enhancement.

(e) A long-term debt rating of not less than any one of the following: (i) A- by Standard and Poor's Corporation; (ii) A- by Fitch Ratings; or (iii) A3 by Moody's Investors Service. This rating shall be an issuer, or counterparty rating, without the benefit of credit enhancement.

With respect to whether security must be posted for payment of all charges:

(f) A federal agency shall be deemed to have an Approved Credit Rating if its financial obligations under the CAISO Tariff are backed by the full faith and credit of the United States.

(g) A California state agency shall be deemed to have an Approved Credit Rating if its financial obligations under the CAISO Tariff are backed by the full faith and credit of the State of California.

(h) Another credit rating approved by the CAISO Governing Board.

Approved Load Profile	Local Regulatory Authority approved Load profiles applied to cumulative End-Use Meter Data in order to allocate consumption of Energy to Settlement Periods.
Approved Maintenance Outage	A Maintenance Outage which has been approved by the CAISO through the CAISO Outage Coordination Office.
Area Control Error (ACE)	The sum of the instantaneous difference between the actual net Interchange and the scheduled net Interchange between the CAISO Control Area and all interconnected Control Areas, taking into account the effects of the CAISO Control Area's frequency bias, correction of meter error, and time error correction obligations.
AS	Ancillary Services
ASMP	Ancillary Service Marginal Price

ATC	Available Transfer Capacity
Automated Dispatch System (ADS)	The CAISO systems application to communicate Dispatch Instructions to Scheduling Coordinators.
Automatic Generation Control (AGC)	Generation equipment that automatically responds to signals from the CAISO's EMS control in Real-Time to control the Power output of Generating Units within a prescribed area in response to a change in system frequency, tie-line loading, or the relation of these to each other, so as to maintain the target system frequency and the established Interchange with other Control Areas within the predetermined limits.
Available Import Capability	The Maximum Import Capability of an Intertie into the CAISO Control Area in MW deliverable to the CAISO Control Area based on CAISO study criteria minus the sum in MW of all Existing Contracts and Transmission Ownership Rights over that Intertie held by load serving entities that do not serve Load within the CAISO Control Area.
Available Transfer Capacity (ATC)	The available capacity of a given transmission path, in MW after allocation of rights associated with Existing Contracts and

	Transmission Ownership Rights, to that path's Operating Transfer Capability established consistent with CAISO and WECC transmission capacity rating guidelines.
AWE Notice	Alert, Warning or Emergency Notice
Backup CAISO Control Center	The CAISO Control Center located in Alhambra, California.
Backup Meter	A redundant revenue quality meter which is identical to and of equal accuracy to the primary revenue quality meter connected at the same metering point which must be certified in accordance with the CAISO Tariff.
BAID	Business Associate Identification
Balancing Account	An account set up to allow periodic balancing of financial transactions that, in the normal course of business, do not result in a zero balance of cash inflows and outflows.
Base Case	The base case power flow, short circuit, and stability data bases used for the Interconnection Studies.
Base Load	The maximum consumption of a Participating Load as bid in the CAISO Markets by Scheduling Coordinators.
BCR	Bid Cost Recovery
Bid	An offer for the Supply or Demand of Energy or Ancillary Services, including Self-Schedules, submitted by Scheduling Coordinators for specific resources, conveyed through several components that apply differently to the different types of service offered to or demanded from any of the CAISO Markets.
Bid Adder	A dollar amount added to the Bid of a Frequently Mitigated Unit.
Bid Cost Recovery (BCR)	The CAISO settlements process through which eligible resources recover their Bid Costs.
Bid Cost Recovery Eligible Resources (BCR Eligible Resources)	Those resources eligible to participate in the Bid Cost Recovery as specified in Section 11.8, which include Generating Units, System Units, System Resources, and Participating Loads.

Bid Costs	The costs for resources manifested in the Bid components submitted, which include the Start-Up Cost, Minimum Load Cost, Energy Bid Cost, Pump Shut-Down Cost, Pumping Cost, Ancillary Services Bid Cost and RUC Availability Payment.
Black Start	The procedure by which a Generating Unit self-starts without an external source of electricity thereby restoring a source of power to the CAISO Control Area following system or local area blackouts.
Black Start Generator	A Participating Generator in its capacity as party to an Interim Black Start Agreement with the CAISO for the provision of Black Start services, but shall exclude Participating Generators in their capacity as providers of Black Start services under their Reliability Must-Run Contracts.
BPM	Business Practice Manual
BPM PRR	Business Practice Manual Proposed Revision Request
Bulk Supply Point	A Utility Distribution Company or Small Utility Distribution Company metering point.
Business Associate	Any entity with whom the CAISO interacts related to the CAISO

	Markets.
Business Associate Identification (BAID)	Identification characters assigned to each Business Associate by the CAISO.
Business Day	Monday through Friday, excluding federal holidays and the day after Thanksgiving Day.
Business Practice Manual Proposed Revision Request (BPM PRR)	A request to make any change to a BPM, including any attachments thereto, as described in Section 22.11.1.
Business Practice Manuals (BPMs)	A collection of documents made available by the CAISO on the CAISO Website that contain the rules, polices, procedures and guidelines established by the CAISO for operational, planning, accounting and settlement requirements of CAISO Market activities, consistent with the CAISO Tariff.
CAISO	The California Independent System Operator Corporation, a state chartered, California non-profit public benefit corporation that operates the transmission facilities of all Participating TOs and dispatches certain Generating Units and Loads.
CAISO Account	The CAISO Clearing Account, the CAISO Reserve Account or such other trust accounts as the CAISO deems necessary or convenient for the purpose of efficiently implementing the funds transfer system under the CAISO Tariff.
CAISO ADR Procedures	The procedures for resolution of disputes or differences set out in Section 13.
CAISO Alternative Dispute Resolution Committee (CAISO ADR Committee)	The Committee appointed by the CAISO ADR Committee pursuant to Article IV, Section 3 of the CAISO bylaws to perform functions assigned to the CAISO ADR Committee in the ADR process in Section 13.
CAISO Audit Committee	A committee of the CAISO Governing Board appointed pursuant to Article IV, Section 5 of the CAISO bylaws to (1) review the CAISO's annual independent audit (2) report to the CAISO Governing Board on such audit, and (3) monitor compliance with the CAISO Code of Conduct.

CAISO Authorized Inspector	A person authorized by the CAISO to certify, test, inspect and audit meters and Metering Facilities in accordance with the procedures established by the CAISO pursuant to Section 10.
CAISO Bank	The bank appointed by the CAISO from time to time for the purposes of operating the Settlement process.
CAISO Clearing Account	The account in the name of the CAISO with the CAISO Bank to which payments are required to be transferred for allocation to CAISO Creditors in accordance with their respective entitlements.

CAISO Code of Conduct	For employees, the code of conduct for officers, employees and substantially full-time consultants and contractors of the CAISO as set out in exhibit A to the CAISO bylaws; for Governors, the code of conduct for governors of the CAISO as set out in exhibit B to the CAISO bylaws.
CAISO Commitment Period	The portion of a Commitment Period that is not a Self-Commitment Period.
CAISO Control Center	The control center established by the CAISO pursuant to Section 7.1.
CAISO Controlled Grid	The system of transmission lines and associated facilities of the Participating TOs that have been placed under the CAISO's Operational Control.
CAISO Creditor	A Business Associate to which amounts are payable under the terms of the CAISO Tariff and agreements with the CAISO.
CAISO Debtor	A Business Associate that is required to make a payment to the CAISO under the CAISO Tariff and agreements with the CAISO.
CAISO Demand	Power delivered to Load internal to CAISO Control Area.
CAISO Documents	The CAISO Tariff, CAISO bylaws, and any agreement entered into between the CAISO and a Scheduling Coordinator, a Participating TO or any other Market Participant pursuant to the CAISO Tariff.
CAISO Emissions Cost Trust Account	The CAISO Account established pursuant to Section 11.18.2.
CAISO Forecast of CAISO Demand	The forecast of CAISO Demand made by the CAISO for use in the CAISO Markets.
CAISO Governing Board	The Board of Governors established to govern the affairs of the CAISO.
CAISO IFM Commitment Period	The portion of a Commitment Period in the IFM that is not a Self-Commitment Period.
CAISO Invoice	The invoices issued by the CAISO to the Responsible Utilities or Reliability Must Run Owners based on the Revised Estimated Reliability Must Run Invoice and the Revised Adjusted RMR Invoice.

CAISO Markets Any of the markets administered by the CAISO under the CAISO Tariff, including, without limitation, the DAM, HASP, RTM, Transmission, and Congestion Revenue Rights.

CAISO Markets Processes The MPM-RRD, IFM, RUC, STUC, RTUC, and RTD. HASP is an hourly run of the RTUC.

CAISO Memorandum Account The memorandum account established by each California IOU pursuant to California Public Utilities Commission Order D. 96-08-038 date August 2, 1996 which records all CAISO startup and development costs incurred by that California IOU.

CAISO Metered Entity (a) any one of the following entities that is directly connected to the CAISO Controlled Grid:

i. a Generator other than a Generator that sells all of its Energy (excluding any Energy consumed by auxiliary load equipment electrically connected to that Generator at the same point) and Ancillary Services to the Utility Distribution Company or Small Utility Distribution Company in whose Service Area it is located;

ii. MSS Operator; or

iii. Utility Distribution Company or Small Utility Distribution Company; and

(b) any one of the following entities:

i. a Participating Generator;

ii. a Participating TO in relation to its Tie Point Meters with other TOs or Control Areas;

iii. a Participating Load;

iv. a Participating Intermittent Resource; or

v. a utility that requests that Unaccounted for Energy for its Service Area be calculated separately, in relation to its meters at points of connection of its Service Area with the systems of other utilities.

CAISO Operations Date March 31, 1998.

CAISO Outage Coordination Office The office established by the CAISO to coordinate Maintenance Outages in accordance with Section 9.3.

CAISO Payments Calendar	A calendar published by the CAISO showing the dates on which Settlement Statements will be published by the CAISO and the Payment Dates by which Invoices issued under the CAISO Tariff must be paid.
CAISO Protocols	The rules, protocols, procedures and standards promulgated by the CAISO (as amended from time to time) to be complied with by the CAISO, Scheduling Coordinators, Participating TOs and all other Market Participants in relation to the operation of the CAISO Controlled Grid and the participation in the markets for Energy and Ancillary Services in accordance with the CAISO Tariff.
CAISO Register	The register of all the transmission lines, associated facilities and other necessary components that are at the relevant time being subject to the CAISO's Operational Control.
CAISO Reserve Account	The account established for the purpose of holding cash deposits which may be used in or towards clearing the CAISO Clearing Account.
CAISO Protocols	The rules, protocols, procedures and standards promulgated by the CAISO (as amended from time to time) to be complied with by the CAISO, the CAISO Scheduling Coordinators, Participating TOs and all other Market Participants in relation to the operation of the CAISO Controlled Grid and the participation in the markets for Energy and Ancillary Services in accordance with the CAISO Tariff.
CAISO Security Amount	The level of security provided in accordance with Section 12. by a Scheduling Coordinator Applicant who does not have an Approved Credit Rating. The CAISO Security Amount may be separated into two components: (i) the level of security required to secure payment of the Grid Management Charge; and (ii) the level of security required to secure payment of all charges other than the Grid Management Charge.
CAISO Surplus Account	The account established by the CAISO pursuant to Section 11.29.9.6.3.
CAISO Tariff	The California Independent System Operator Corporation Operating Agreement and Tariff, dated March 31, 1997, as it may be modified from time to time.
CAISO Website	The CAISO internet home page at http://www.caiso.com or such other internet address as the CAISO shall publish from time to time.
Candidate CRR Holder	An entity that is registered and qualified by the CAISO to participate in the CRR Allocation, the CRR Auction, or

	the Secondary Registration System to become a CRR Holder and is a party to a fully executed CRR Entity Agreement, and therefore must comply with the requirements for Candidate CRR Holders under the CAISO Tariff.
CCR	Competitive Constraints Run
Certificate of Compliance	A certificate issued by the CAISO which states that the Metering Facilities referred to in the certificate satisfy the certification criteria for Metering Facilities contained in the CAISO Tariff.
C.F.R.	Code of Federal Regulations.
Charge Code	A numeric identifier used to specify Settlement calculations in the Business Practice Manual.
Clean Bid	A valid Bid submitted by a Scheduling Coordinator that requires no modification, a Default Modified Bid, or a Generated Bid deemed to be acceptable for submission to the CAISO Market applications.
Clustering	The process whereby a group of Interconnection Requests is studied together, instead of serially, for the purpose of conducting the Interconnection System Impact Study.
COG	Constrained Output Generator
Commercial Operation	The status of a Generating Unit at a Generating Facility that has commenced generating electricity for sale, excluding electricity generated during Trial Operation.
Commercial Operation Date	The date on which a Generating Unit at a Generating Facility commences Commercial Operation as agreed to by the applicable Participating TO and the Interconnection Customer pursuant to Appendix E to the Standard Large Generator Interconnection Agreement.
Commitment Interval	The fifteen minute period of time for which the CAISO commits units through the Real-Time Unit Commitment process.
Commitment Period	The consecutive Time Periods within a Trading Day with an “On” Commitment Status.
Commitment Status	The “On” or “Off” state for each unit in each Time Period.

Competitive Constraints Run (CCR)	The first optimization run of the MPM-RRD process through which all pre-designated competitive constraints are enforced.
Condition 1 RMR Unit	A resource operating pursuant to Condition 1 of its RMR Contract.
Condition 2 RMR Unit	A resource operating pursuant to Condition 2 of its RMR Contract.
Congestion	A characteristic of the transmission system produced by a binding constraint to the optimum economic dispatch to meet Demand such that the LMP, exclusive of Marginal Cost of Losses, at different Locations of the transmission system is not equal.
Congestion Charge	A charge attributable to the Marginal Cost of Congestion at a given pricing PNode.
Congestion Management	The alleviation of Congestion in accordance with applicable CAISO procedures, the CAISO Tariff, and Good Utility Practice.
Congestion Management Charge	The component of the Grid Management Charge that provides for the recovery of the CAISO's costs of operating the Congestion Management process including, but not limited to, the management and operation of Congestion markets, taking Congestion Revenue Rights, Transmission Ownership Rights, and Existing Contracts into account, and determining the price for mitigating Congestion for flows on Congested paths.
Congestion Revenue Right (CRR)	A CRR Obligation or CRR Option.
Connected Entity	A Participating TO or any party that owns or operates facilities that are electrically interconnected with the CAISO Controlled Grid.
Constrained Output Generator (COG)	A Generating Unit that, due to operational characteristics, can only be dispatched in one of two states: either turned completely Off, or turned On and run at a fixed capacity level.
Constraints	Physical and operational limitations on the transfer of electrical power through transmission facilities.
Contingency	A potential Outage that is unplanned, viewed as possible or eventually probable, which is taken into account when considering approval of other requested Outages or while operating the CAISO Control Area.
Contingency Flag	The daily Bid component that indicates that the Spinning Reserves and Non-Spinning Reserves being offered in the CAISO Market are

	Contingency Only reserves.
Contingency Only	A resource providing Operating Reserve capacity that may be Dispatched by the CAISO only in the event of a Contingency or System Emergency.
Contract Reference Number (CRN)	The Bid component that indicates the specific contract identification number issued by the CAISO to Scheduling Coordinators transactions under Existing Contracts or TORs.
Control Area	An electric power system (or combination of electric power systems) to which a common AGC scheme is applied in order to: i) match, at all times, the power output of the Generating Units within the electric power system(s), plus the Energy purchased from entities outside the electric power system(s), minus Energy sold to entities outside the electric power system, with the Demand within the electric power system(s); ii) maintain scheduled interchange with other Control Areas, within the limits of Good Utility Practice; iii) maintain the frequency of the electric power system(s) within reasonable limits in accordance with Good Utility Practice; and iv) provide sufficient generating capacity to maintain operating reserves in accordance with Good Utility Practice.
Control Area Gross Load	For the purpose of calculating and billing Minimum Load Costs, Emission Costs, and Start-Up Costs, Control Area Gross Load is all Demand for Energy within the CAISO Control Area. Control Area Gross Load shall <u>not</u> include Energy consumed by: (a) generator auxiliary Load equipment that is dedicated to the production of Energy and is electrically connected at the same point as the Generating Unit (e.g., auxiliary Load equipment that is served via a distribution line that is separate from the switchyard to which the Generating Unit is connected will not be considered to be electrically connected at the same point); and (b) Load that is isolated electrically from the CAISO Control Area (*i.e.*, Load that is not synchronized with the CAISO Control Area).
Control Area Operator	The person responsible for managing the Real-Time operations of a Control Area.

Converted Rights	Those transmission service rights as defined in Section 4.3.1.6.
Core Reliability Services - Demand Charge	A component of the Grid Management Charge that provides for the recovery of the CAISO's costs of providing a basic, non-scalable level of reliable operation for the CAISO Control Area and meeting regional and national reliability requirements. The formula for determining the Core Reliability Services – Demand Charge is set forth in Appendix F, Schedule 1, Part A of this Tariff.
Core Reliability Services – Energy Export Charge	A component of the Grid Management Charge that provides for the recovery of the CAISO's costs of providing a basic, non-scalable level of reliable operation for the CAISO Control Area and meeting regional and national reliability requirements. The formula for determining the Core Reliability Services – Energy Exports Charge is set forth in Appendix F, Schedule 1, Part A of this Tariff.
CPUC	The California Public Utilities Commission, or its successor.
CPUC Load Serving Entity	Any entity serving retail Load in the CAISO Control Area under the jurisdiction of the CPUC, including an electrical corporation under section 218 of the California Public Utilities Code, an electric service provider under section 218.3 of the California Public Utilities Code, and a community choice aggregator under section 331.1 of the California Public Utilities Code.
Critical Protective System	Facilities and sites with protective relay systems and Remedial Action Schemes that the CAISO determines may have a direct impact on the ability of the CAISO to maintain system security and over which the CAISO exercises Operational Control.
CRN	Contract Reference Number
CRR	Congestion Revenue Rights
CRR Allocation	The process of nominations and awards held monthly and annually through which the CAISO will distribute CRRs to Candidate CRR Holders.
CRR Annual Cycle	Time period covered by all the CRRs released in an annual CRR Allocation and Auction process.

CRR Auction	The annual and monthly market process that will follow CRR Allocation through which the CAISO makes CRRs available to Candidate CRR Holders that submit offers to purchase CRRs.
CRR Balancing Account	The financial account held by the CAISO for CRRs that is administered in accordance with Section 11.2.4.
CRR Charge	The charge assessed by the CAISO on the holder of a CRR Obligation when Congestion is in the opposite direction of the CRR Source to CRR Sink specification as described in Section 11.2.4.
CRR Entity Agreement	An agreement between the CAISO and a Candidate CRR Holder or CRR Holder that must be fully executed in order for such an entity to participate in the CRR Allocation, CRR Auction, or Secondary Registration System, a *pro forma* version of which is set forth in Appendix B.11.

CRR Holder	A Candidate CRR Holder that has acquired CRR(s) either through the CRR Allocation, the CRR Auction, or through a transaction registered in the Secondary Registration System.
CRR Load Metric	The Seasonal CRR Load Metric or Monthly CRR Load Metric.
CRR Obligation	A financial instrument that entitles the holder to a CRR Payment when Congestion is in the direction of the CRR Source to CRR Sink specification and imposes on its holder a CRR Charge when Congestion is in the opposite direction of the CRR Source to CRR Sink specification as described in Section 11.2.4.
CRR Option	A financial instrument that entitles its holder to a CRR Payment when Congestion is in the direction of the CRR Source to CRR Sink specification.
CRR Payment	A payment from the CAISO to a CRR Holder as specified in Section 11.2.4.
CRR Sink	A PNode or a Trading Hub specified as the point of withdrawal for a Congestion Revenue Right.
CRR Source	A PNode or a Trading Hub specified as the point of receipt for a Congestion Revenue Right.
CRR Term	Set of hours for which a given CRR is effective, based on the CRR specifications in Section 36.3, which is either the season multiplied by the time-of-use specifications or the month multiplied by the time-of-use specifications.
CRR Year Four	The fourth period of time for which the CAISO conducts an annual CRR Allocation, as defined in the Business Practice Manual.
CRR Year One	The first period of time for which the CAISO conducts an annual CRR Allocation, as defined in the Business Practice Manuals.
CRR Year Three	The third period of time for which the CAISO conducts an annual CRR Allocation, as defined in the Business Practice Manual.
CRR Year Two	The second period of time for which the CAISO conducts an annual CRR Allocation, as defined in the Business Practice Manual.

Curtailable Demand	Demand from a Participating Load or Aggregated Participating Load that can be curtailed at the direction of the CAISO in the Real-Time Dispatch of the CAISO Controlled Grid. Scheduling Coordinators with Curtailable Demand may offer it to the CAISO to meet Non-Spinning Reserve or Imbalance Energy.
Custom Load Aggregation Point (Custom LAP)	An aggregation of Load PNodes created by the CAISO based on a set of custom LDFs submitted by a Scheduling Coordinator, at which such Scheduling Coordinator may submit a single Bid and settle Demand consistent with the CAISO Tariff rules, and for which the Scheduling Coordinator is required to submit to the CAISO Meter Data for the nodal Load represented in such aggregation.
DAM	Day-Ahead Market
Day 0	The Trading Day to which the Settlement Statement or Settlement calculation refers. For example “Day 41” shall mean the 41st day

	after that Trading Day and similar expressions shall be construed accordingly.
Day-Ahead	The twenty-four hour time period prior to the Trading Day.
Day-Ahead Inter-SC Trade Period	The period commencing seven (7) days prior to the applicable Trading Day and ending at 12:00 p.m. noon on the day prior to that Trading Day, during which time the CAISO will accept Inter-SC Trades of Energy for the DAM from Scheduling Coordinators.
Day-Ahead Market (DAM)	A series of processes conducted in the Day-Ahead that includes the Market Power Mitigation-Reliability Requirement Determination, the Integrated Forward Market and the Residual Unit Commitment.
Day-Ahead Schedule	A Schedule issued by the CAISO one day prior to the target Trading Day indicating the levels of Supply and Demand for Energy cleared through the IFM and scheduled for each Settlement Period, for each PNode or Aggregated Pricing Node, including Scheduling Points of that Trading Day.
Default Energy Bid	The Energy Bid Curve used in Local Market Power Mitigation pursuant to Section 39.
Default LAP	The LAP defined for the TAC Area at which all Bids for Demand shall be submitted and settled, except as provided in Sections 27.2.1 and 30.5.3.2.
Default Modified Bid	A Bid that is submitted by a Scheduling Coordinator and is deemed valid and qualifies for modification under the provisions of Section 40.

Deliverability Assessment	An evaluation by the Participating TO, CAISO or a third party consultant for the Interconnection Customer to determine a list of facilities, the cost of those facilities, and the time required to construct these facilities, that would ensure a Large Generating Facility could provide Energy to the CAISO Controlled Grid at peak load, under a variety of severely stressed conditions, such that the aggregate of Generation in the local area can be delivered to the aggregate of Load on the CAISO Controlled Grid, consistent with the CAISO's reliability criteria and procedures.
Delivery Network Upgrades	Transmission facilities at or beyond the Point of Interconnection, other than Reliability Network Upgrades, identified in the Interconnection Studies to relieve constraints on the CAISO Controlled Grid.
Delivery Point	The point where a transaction between Scheduling Coordinators is

	deemed to take place. It can be either the Generation input point, a Demand Take-Out Point, or a transmission bus at some intermediate location.
Demand	The instantaneous amount of Power that is delivered to Loads and Scheduling Points by Generation, transmission or distribution facilities. It is the product of voltage and the in-phase component of alternating current measured in units of watts or standard multiples thereof, e.g., 1,000W=1kW, 1,000kW=1MW, etc.
Demand Bid	The Bid component in a Bid submitted in the DAM that indicates the MWh of Energy the Scheduling Coordinator is willing to purchase, the price at which it is willing to purchase the specified Energy and the applicable Trading Hours for the next day.
Demand Forecast	An estimate of Demand over a designated period of time.
Department of Market Monitoring	The department of the CAISO established under Appendix P.1.
Direct Access End-User	An Eligible Customer located within the Service Area of a Utility Distribution Company who purchases Energy and Ancillary Services through a Scheduling Coordinator.
Dispatch	The activity of controlling an integrated electric system to: i) assign specific Generating Units and other sources of supply to effect the supply to meet the relevant area Demand taken as Load rises or falls; ii) control operations and maintenance of high voltage lines, substations, and equipment, including administration of safety procedures; iii) operate interconnections; iv) manage Energy transactions with other interconnected Control Areas; and v) curtail Demand.
Dispatch Instruction	An instruction by the CAISO for an action with respect to specific

	equipment, or to a resource for increasing or decreasing its Energy Supply or Demand from the Day-Ahead Schedule, RUC Schedule, and Day-Ahead AS Award to a specified Dispatch Operating Point pertaining to Real-Time operations.
Dispatch Interval	The Time Period, which may range between five (5) and thirty (30) minutes, over which the Real-Time Dispatch measures deviations in Generation and Demand, and selects Ancillary Service and supplemental energy resources to provide balancing Energy in response to such deviations. The Dispatch Interval shall be five (5) minutes. Following a decision by the CAISO Governing Board, the CAISO may, by seven (7) days' notice published on the CAISO Website, increase or decrease the Dispatch Interval within the range of five (5) to thirty (30) minutes.
Dispatch Interval LMP	The price of Imbalance Energy determined at each Dispatch Interval in accordance with Section 11.5.4.
Dispatch Operating Point	The expected operating point of a resource that has received a Dispatch Instruction. The resource is expected to operate at the Dispatch Operating Point after completing the Dispatch Instruction, taking into account any relevant Ramp Rate and time delays. Energy expected to be produced or consumed above or below the Day-Ahead Schedule in response to a Dispatch Instruction constitutes Instructed Imbalance Energy. For resources that have not received a Dispatch Instruction, the Dispatch Operating Point defaults to the corresponding Day-Ahead Schedule.
Distribution System	The distribution assets of an IOU or Local Publicly Owned Electric Utility.
Distribution Upgrades	The additions, modifications, and upgrades to the Participating TO's electric systems that are not part of the CAISO Controlled Grid. Distribution Upgrades do not include Interconnection Facilities.
Dynamic Resource-	A Dynamic System Resource that is

Specific System Resource	a specific generation resource outside the CAISO Control Area.
Dynamic Schedule	A telemetered reading or value which is updated in Real-Time and which is used as a schedule in the CAISO Energy Management System calculation of Area Control Error and the integrated value of which is treated as a schedule for Interchange accounting purposes.
Dynamic System Resource	A System Resource that has satisfied the CAISO's contractual and operational requirements for submitting a Dynamic Schedule, and for which a Dynamic Schedule has been submitted, including a Dynamic Resource-Specific System Resource.
E&P Agreement	Engineering & Procurement Agreement
ECA	Embedded Control Area
Economic Bid	A Bid that includes quantity (MWh) and price ($) for specified Trading Hours.
EDI	Electronic Data Interchange
EEP	Electrical Emergency Plan
ELC Process	Extremely Long-Start Commitment Process
Electrical Emergency Plan (EEP)	A plan to be developed by the CAISO in consultation with Utility Distribution Companies to address situations when Energy reserve margins are forecast to be below established levels.

Electric Facility	An electric resource, including a Generating Unit, System Unit, or a Participating Load.
Electronic Data Interchange (EDI)	The routine exchange of business documented on electronic media such as purchase orders, invoices and remittance. The format of the data is based on an industry-approved format such as those published by the ANSI ASC X12 committee.
Eligible Customer	(i) any utility (including Participating TOs, Market Participants and any power marketer), Federal power marketing agency, or any person generating Energy for sale or resale; Energy sold or produced by such entity may be Energy produced in the United States, Canada or Mexico; however, such entity is not eligible for transmission service that would be prohibited by Section 212(h)(2) of the Federal Power Act; and (ii) any retail customer taking unbundled transmission service pursuant to a state retail access program or pursuant to a voluntary offer of unbundled retail transmission service by the Participating TO.
Eligible Intermittent Resource	A Generating Unit that is powered solely by 1) wind, 2) solar energy, or 3) hydroelectric potential derived from small conduit water distribution facilities that do not have storage capability.
ELS Resource	Extremely Long-Start Resource
Embedded Control Area (ECA)	A Control Area that has direct interconnections exclusively with the CAISO Control Area, and no other Control Area.
Emissions Costs	The mitigation fees, excluding capital costs, assessed against a Generating Unit by a state or federal agency, including air quality districts, for exceeding applicable NOx emission limitations.
Emissions Eligible Generator	A Generator with a Generating Unit that is a BCR Eligible Resource.
EMS	Energy Management System

Encumbrance	A legal restriction or covenant binding on a Participating TO that affects the operation of any transmission lines or associated facilities and which the CAISO needs to take into account in exercising Operational Control over such transmission lines or associated facilities if the Participating TO is not to risk incurring significant liability. Encumbrances shall include Existing Contracts and may include: (1) other legal restrictions or covenants meeting the definition of Encumbrance and arising under other arrangements entered into before the CAISO Operations Date, if any; and (2) legal restrictions or covenants meeting the definition of Encumbrance and arising under a contract or other arrangement entered into after the CAISO Operations Date.
End-Use Customer or End-User	A consumer of electric power who consumes such power to satisfy a Load directly connected to the CAISO Controlled Grid or to a Distribution System and who does not resell the power.
End-Use Meter	A metering device collecting Meter Data with respect to the Energy consumption of an End-User.

End-Use Meter Data	Meter Data that measures the Energy consumption in respect of End-Users gathered, edited and validated by Scheduling Coordinators and submitted to the CAISO in Settlement quality form.
Energy	The electrical energy produced, flowing or supplied by generation, transmission or distribution facilities, being the integral with respect to time of the instantaneous power, measured in units of watt-hours or standard multiples thereof, e.g., 1,000 Wh=1kWh, 1,000 kWh=1MWh, etc.
Energy Bid	A Demand Bid or an Energy Supply Bid.
Energy Bid Cost	An amount equal to the integral of the Energy Bid for resources that have been selected through the IFM or RTM, above PMin.
Energy Bid Curve	The Bid component that indicates the prices and related quantity at which a resource offers Energy in a monotonically increasing (decreasing for Participating Load) staircase function, consisting of no more than 10 segments defined by 11 pairs of MW operating points and $/MWh, which may be different for each Trading Hour of the applicable Bid time period. If the resource has Forbidden Operating Regions, each Forbidden Operating Region must be reflected as a single, separate Energy Bid Curve segment.
Energy Export	For purposes of calculating the Grid Management Charge, Energy included in an interchange Schedule submitted to the CAISO, or dispatched by the CAISO, to serve a Load located outside the CAISO's Control Area, whether the Energy is produced by a Generator in the CAISO Control Area or a resource located outside the CAISO's Control Area.
Energy Limit	The Bid component that indicates the maximum and minimum daily Energy limits for the Generating Unit.
Energy Management System (EMS)	A computer control system used by electric utility dispatchers to monitor the real-time performance of the various elements of an electric system and to control Generation and transmission facilities.
Energy Supply Bid	The quantity (MWh) and a price ($) at or above which a resource has agreed to sell the next increment of Energy for a specified interval of time.
Energy Transmission	The component of the Grid Management Charge that provides, in

Services Net Energy Charge	conjunction with the Energy Transmission Services Uninstructed Deviations Charge, for the recovery of the CAISO's costs of providing reliability on a scalable basis, i.e., a function of the intensity of the use of the transmission system within the Control Area and the occurrence of system outages and disruptions. The formula for determining the Energy Transmission Services Net Energy Charge is set forth in Appendix F, Schedule 1, Part A of this Tariff.
Energy Transmission Services Uninstructed Deviations Charge	The component of the Grid Management Charge that provides, in conjunction with the Energy Transmission Services Net Energy Charge, for the recovery of the CAISO's costs of providing reliability on a scalable basis, in particular for the costs associated with balancing transmission flows that result from uninstructed deviations. The formula for determining the Energy Transmission Services Uninstructed Deviations Charge is set forth in Appendix F, Schedule 1, Part A of this Tariff.
Engineering & Procurement (E&P) Agreement	An agreement that authorizes the Participating TO to begin engineering and procurement of long lead-time items necessary for the establishment of the interconnection in order to advance the implementation of the Interconnection Request.
Entitlements	The right of a Participating TO obtained through contract or other means to use another entity's transmission facilities for the transmission of Energy.
Environmental Dispatch	Dispatch designed to meet the requirements of air quality and other environmental legislation and environmental agencies having authority or jurisdiction over the CAISO.
E-Tag	An electronic tag associated with an Interchange schedule in accordance with the requirements of WECC.
ETC	Existing Transmission Contracts
ETC Self-Schedule	Self-Schedules submitted by Scheduling Coordinators pursuant to Existing Rights as reflected in the TRTC Instructions.
Exceptional Dispatch	A Dispatch Instruction issued to avoid a Market Interruption for the purposes specified in Section 34.9. Energy from Exceptional Dispatches shall not set any Dispatch Interval LMP.

Excess Cost Payments	The payments made by the CAISO for costs associated with Exceptional Dispatches for 1) emergency conditions, to avoid Market Interruption and avoid an imminent System Emergency as provided in Section 11.5.6.1.1; 2) transmission-related modeling limitations as provided in Section 11.5.6.2.3; 3) Condition 2 RMR Units as provided in Section 11.5.6.3.2; and 4) emergency Energy as provided in Section 11.5.8.1.1.
Existing Contract Import Capability	The quantity of Available Import Capability reserved for Existing Contracts and Transmission Ownership Rights held by Load Serving Entities that serve Load within the CAISO Control Area under Step 3 of Section 40.4.6.2.

Existing High Voltage Facility	A High Voltage Transmission Facility of a Participating TO that was placed in service on or before the TAC Transition Date described in Section 4.2 of Schedule 3 of Appendix F.
Existing QF Contract	An agreement for the sale of capacity, Energy, and/or Ancillary Services by a Participating Generator to an electric utility from a Qualifying Facility that became effective on or prior to December 20, 1995 or, in the case of a Participating Generator employing landfill gas technology, on or prior to December 31, 1996.
Existing Rights	The transmission service rights and obligations of non-Participating TOs under Existing Contracts, including all terms, conditions, and rates of the Existing Contracts, as they may change from time to time under the terms of the Existing Contracts.
Existing Transmission Contracts (ETC) or Existing Contracts	The contracts which grant transmission service rights in existence on the CAISO Operations Date (including any contracts entered into pursuant to such contracts) as may be amended in accordance with their terms or by agreement between the parties thereto from time to time.
Existing Zone	A region formerly referred to as NP15, SP15, or ZP26 prior to implementation of the CAISO LMP market design.
Existing Zone Generation Trading Hub	Trading Hubs specifically developed to represent the average price paid to generation resources within Existing Zones.
Expanded System Region	The System Region and Inter-tie Scheduling Points with interconnected Control Areas.
Expected Energy	Integrated Energy in a Settlement Interval that includes scheduled Energy and Dispatch Instructions for Imbalance Energy as determined by RTM applications.
Export Bid	A Demand Bid submitted to a CAISO Market at a Scheduling Point.
Extremely Long-Start Commitment Process (ELC Process)	The CAISO process for Unit Commitment for Extremely Long-Start Resources, as set forth in Section 31.7.

Extremely Long-Start Resource (ELS Resource)	A Generating Unit that has a Start-Up Time greater than 18 hours or a System Resource that is either: 1) a non-Resource-Specific System Resource with contractual limitations that require the Energy be transacted (i.e., committed) prior to the publishing time of the Day-Ahead Market results (1300 hours on the day before the Trading Day) or 2) a Resource-Specific System Resource that has a Start-Up Time greater than 18 hours.
Facility Study	An engineering study conducted by a Participating TO to determine required modifications to the Participating TO's transmission system, including the cost and scheduled completion date for such modifications that will be required to provide needed services.
Facility Study Agreement	An agreement between a Participating TO and either a Market Participant, Project Sponsor, or identified principal beneficiaries pursuant to which the Market Participants, Project Sponsor, and identified principal beneficiaries agree to reimburse the Participating TO for the cost of a Facility Study.

Fast Start Unit	A Generating Unit that has a Start-Up Time less than two hours and can be committed in the RTUC and STUC.
Feasibility Index	A test used to evaluate whether a supplier or set of suppliers is pivotal in relieving congestion on a transmission path for the

	purposes of determining if a path is deemed to be competitive.
Fed-Wire	The Federal Reserve Transfer System for electronic funds transfer.
FERC	The Federal Energy Regulatory Commission or its successor.
FERC Annual Charge Recovery Rate	The rate to be paid by Scheduling Coordinators for recovery of FERC Annual Charges assessed against the CAISO for transactions on the CAISO Controlled Grid.
FERC Annual Charges	Those charges assessed against a public utility by the FERC pursuant to 18 C.F.R. § 382.201 and any related statutes or regulations, as they may be amended from time to time.
FERC Annual Charge Trust Account	An account to be established by the CAISO for the purpose of maintaining funds collected from Scheduling Coordinators for FERC Annual Charges and disbursing such funds to the FERC.
Final Approval	A statement of consent by the CAISO Control Center to initiate a scheduled Outage.
Final Invoice	The invoice due from a Reliability Must Run Owner to the CAISO at termination of the Reliability Must Run Contract.
Final Settlement Statement	The restatement or recalculation of the Preliminary Settlement Statement by the CAISO following the issue of that Preliminary Settlement Statement.
Financial Security	Any of the types of financial instruments listed in Section 12 that are posted by a Market Participant, CRR Holder or Candidate CRR Holder.
Financial Security Amount	The level of Financial Security posted in accordance with Section 12 by a Market Participant, Candidate CRR Holder or CRR Holder.
Firm Liquidated Damages Contract	A contract utilizing or consistent with Service Schedule C of the Western Systems Power Pool Agreement or the Firm Liquidated Damages product of the Edison Electric Institute pro forma agreement, or any other similar firm Energy contract that does not require the seller to source the Energy from a particular unit, and specifies a delivery point internal to the CAISO Control Area.

Fixed CRRs	Congestion Revenue Rights that are used in the running of an SFT to represent known encumbrances on the transmission system and which may include some or all of the following: previously allocated or awarded Monthly, Seasonal, Long Term, and Merchant Transmission CRRs, Existing Transmission Contracts, and Converted Rights.
FNM	Full Network Model
Forbidden Operating Region	A pair of lower and higher operating levels between which a resource cannot operate stably. The Forbidden Operating Regions lie between a resource's minimum operating limit and maximum operating limit and cannot overlap.
Forced Outage	An Outage for which sufficient notice cannot be given to allow the Outage to be factored into the Day-Ahead Market, HASP or RTM bidding processes.
Forecast Fee	The charge imposed on a Participating Intermittent Resource pursuant to the terms of Appendix F, Schedule 4.
Forward Scheduling Charge	The component of the Grid Management Charge that provides for the recovery of the CAISO's costs, including, but not limited to the costs of providing the ability to Scheduling Coordinators to submit a Bid for Energy and Ancillary Services and the cost of processing accepted Ancillary Services Bids. For purposes of the Forward

	Scheduling Charge, a schedule is represented by each final HASP Schedule with a value other than 0 MW submitted to the scheduling infrastructure/scheduling application system (Import, Export, Load, Generation, Inter-SC Trades, and Ancillary Services, including self-provided Ancillary Services) submitted to the CAISO's Markets. The formula for determining the Forward Scheduling Charge is set forth in Appendix F, Schedule 1, Part A of this Tariff.
FPA	Parts II and III of the Federal Power Act, 16 U.S.C. § 824 et seq., as they may be amended from time to time.
Frequently Mitigated Unit	A Generating Unit that is eligible for a Bid Adder pursuant to Section 39.8.
Full Network Model (FNM)	A computer-based model that includes all CAISO Control Area transmission network (Load and Generating Unit) busses, transmission constraints, and Intertie busses between the CAISO Control Area and interconnected Control Areas. The FNM models the transmission facilities internal to the CAISO Control Area as elements of a looped network and models the CAISO Control Area Interties with interconnected Control Areas in a radial fashion.
GADS	Generating Availability Data System
GDF	Generation Distribution Factor
Generated Bid	A post-market Clean Bid generated by the CAISO in accordance with the provisions of Section 40 or other applicable provisions of the CAISO Tariff when a Bid is not submitted by the Scheduling Coordinator and is required for a resource adequacy requirement, an Ancillary Services Award, a RUC Award or a Day-Ahead Schedule.
Generation	Energy delivered from a Generating Unit.

Generation Distribution Factor (GDF)	The Bid template component that indicates the proportions of how the Bid is distributed for the resources participating in Physical Scheduling Plants or System Units,
Generating Facility	An Interconnection Customer's Generating Unit(s) used for the production of electricity identified in the Interconnection Request, but shall not include the Interconnection Customer's Interconnection Facilities.
Generating Facility Capacity	The net capacity of the Generating Facility and the aggregate capacity of the Generating Facility where it includes multiple energy production devices.
Generating Unit	An individual electric generator and its associated plant and apparatus whose electrical output is capable of being separately identified and metered or a Physical Scheduling Plant that, in either

	case, is: (a) located within the CAISO Control Area; (b) connected to the CAISO Controlled Grid, either directly or via interconnected transmission, or distribution facilities; and (c) that is capable of producing and delivering net Energy (Energy in excess of a generating station's internal power requirements).
Generator	The seller of Energy or Ancillary Services produced by a Generating Unit.
GMC	Grid Management Charge
Good Utility Practice	Any of the practices, methods, and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods, and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety, and expedition. Good Utility Practice is not intended to be any one of a number of the optimum practices, methods, or acts to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region
Grid Management Charge (GMC)	The CAISO monthly charge on all Scheduling Coordinators that provides for the recovery of the CAISO's costs listed in Section 11.22.2 through the eight service charges described in Section 11.22.2.5 calculated in accordance with the formula rate set forth in Appendix F, Schedule 1, Part A of this Tariff. The eight charges that comprise the Grid Management Charge consist of: 1) the Core Reliability Services - Demand Charge, 2) the Core Reliability Services – Energy Exports Charge, 3) the Energy Transmission Services Net Energy Charge, 4) the Energy Transmission Services Uninstructed Deviations Charge, 5) the Forward Scheduling Charge, 6) the Congestion Management Charge, 7) the Market Usage Charge, and 8) the Settlements, Metering, and Client Relations Charge.
Gross Load	For the purposes of calculating the transmission Access Charge

	Gross Load is all Energy (adjusted for distribution losses) delivered transmission facilities or directly connected to the Distribution System of a Utility Distribution Company or Metered Subsystem Operator located in a Participating TO Service Territory. Gross Load shall exclude Load with respect to which the Wheeling Access Charge is payable and the portion of the Load of an individual retail customer of a Utility Distribution Company, Small Utility Distribution Company or Metered Subsystem Operator that is served by a Generating Unit that: (a) is located on the customer's site or provides service to the customers site through arrangements as authorized by Section 218 of the California Public Utilities Code; (b) is a qualifying small power production facility or qualifying cogeneration facility, as those terms are defined in the FERC's regulations implementing Section 201 of the Public Utility Regulatory Policies Act of 1978; and (c) secures Standby Service from a Participating TO under terms approved by a Local Regulatory Authority or FERC, as applicable, or can be curtailed concurrently with an outage of the Generating Unit serving the Load. Gross Load forecasts consistent with filed Transmission Revenue Requirements will be provided by each Participating TO to the CAISO.
HASP	Hour-Ahead Scheduling Process
HASP Advisory Schedule	The non-binding output of the HASP as it pertains to the Real-Time Market.
HASP and RTM Congestion Credit	A credit provided to Scheduling Coordinators to offset any HASP and RTM Congestions Charges that would otherwise be applied to the valid and balanced portions of any ETC or TOR Self-Schedules in the HASP and the Real-Time Market as provided in Section 11.5.7.
HASP AS Award	Awards for Imports of Ancillary Services established through the HASP.

HASP Bid	A Bid received in HASP that can be used in the MPM-RRD conducted in HASP, the RTUC, STUC, or the RTD.
HASP Inter-SC Trade Period	The period commencing at midnight (0000 hours) on the applicable Trading Day and ending at forty-five (45) minutes prior to the start of the applicable Operating Hour, during which time the CAISO will accept from Scheduling Coordinators Inter-SC Trades of Energy for the HASP, Inter-SC Trades of Ancillary Services, and Inter-SC Trades of IFM Load Uplift Obligations.
HASP Intertie LMP	The average of four (4) 15-minute interval LMPs over a Trading Hour.
HASP Intertie Schedule	The binding output of the HASP including accepted Bids for imported Energy or Ancillary Services and associated LMPs and ASMPs.
High Voltage Access Charge (HVAC)	The Access Charge applicable under Section 26.1 to recover the High Voltage Transmission Revenue Requirements of each Participating TO in a Transmission Access Charge Area.
High Voltage Transmission Facility	A transmission facility that is owned by a Participating TO or to which a Participating TO has an Entitlement that is represented by a

	Converted Right, that is under the CAISO Operational Control, and that operates at a voltage at or above 200 kilovolts, and supporting facilities, and the costs of which are not directly assigned to one or more specific customers.
High Voltage Transmission Revenue Requirement (HVTRR)	The portion of a Participating TO's Transmission Revenue Requirement associated with and allocable to the Participating TO's High Voltage Transmission Facilities and Converted Rights associated with High Voltage Transmission Facilities that are under the CAISO Operational Control.
High Voltage Utility Specific Rate	A Participating TO's High Voltage Transmission Revenue Requirement divided by such Participating TO's forecasted Gross Load.
High Voltage Wheeling Access Charge	The Wheeling Access Charge associated with the recovery of a Participating TO's High Voltage Transmission Revenue Requirements in accordance with Section 26.1.
Host Control Area	The Control Area in which a System Resource subject to this CAISO Tariff is connected to the electric grid. The Host Control Area may, or may not, be directly interconnected with the CAISO Control Area.
Hour-Ahead Scheduling Process (HASP)	The process conducted by the CAISO beginning at seventy-five minutes prior to the Trading Hour through which the CAISO conducts the following activities: 1) accepts Bids for Supply of Energy, including imports, exports and Ancillary Services imports to be supplied during the next Trading Hour that apply to the MPM-RRD, RTUC, STUC, and RTD; 2) conducts the MPM-RRD on the Bids that apply to the RTUC, STUC, and RTD; and 3) conducts the RTUC for the hourly pre-dispatch of Energy and Ancillary Services.
Hourly Demand	The average of the instantaneous Demand integrated over a single clock hour, in MWh.
Hourly Real Time LAP Price	The load deviation weighted average of the hourly average of the Dispatch Interval LMPs for the LAP in the relevant Trade Hour used for the settlement of UIE.

HVAC	High Voltage Access Charge
HVTRR	High Voltage Transmission Revenue Requirement
Hydro Spill Generation	Hydro-electric Generation in existence prior to the CAISO Operations Date that: i) has no storage capacity and that, if backed down, would spill; ii) has exceeded its storage capacity and is spilling even though the generators are at full output; iii) has inadequate storage capacity to prevent loss of hydro-electric Energy either immediately or during the forecast period, if hydro-electric Generation is reduced; or iv) has increased regulated water output to avoid an impending spill.
ICAOA	Interconnected Control Area Operating Agreement
Identification Code	An identification number assigned to each Scheduling Coordinator by the CAISO.
IFM	Integrated Forward Market
IFM Bid Cost	The sum of a BCR Eligible Resource's IFM Start-Up Cost, IFM Minimum Load Cost , IFM Pump Shut-Down Cost, IFM Pumping Cost, IFM Energy Bid Cost, and IFM AS Bid Cost.
IFM Bid Cost Shortfall	For each Settlement Interval, for any BCR Eligible Resource, the positive amount resulting from the difference between the IFM Bid Cost and the IFM Market Revenue.
IFM Bid Cost Surplus	For each Settlement Interval, for any BCR Eligible Resource, the negative amount resulting from the difference between the IFM Bid Cost and the IFM Market Revenue.
IFM Bid Cost Uplift	The system-wide net of the IFM Bid Cost Shortfalls and IFM Bid Cost Surpluses for a Settlement Interval of all BCR Eligible Resources with Unrecovered Bid Cost Uplift Payments. This

	amount will be netted according to Section 11.8.6.2 to calculate the Net IFM Bid Cost Uplift before allocation to Scheduling Coordinators.
IFM Commitment Period	A Commitment Period determined by the IFM.
IFM Congestion Charge	The Congestion Charge calculated by the CAISO for each Settlement Period of the IFM as the IFM MCC for Demand minus the IFM MCC for Supply.
IFM Congestion Credit	A credit provided to Scheduling Coordinators to offset any IFM Congestions Charges that would otherwise be applied to the valid and balanced portions of any ETC, TOR or Converted Rights Self-Schedule in the IFM as provided in Section 11.2.1.5.
IFM Congestion Fund	The funds the CAISO shall have available in each Settlement Period from which the CAISO will pay CRR Holders for the CRR(s) they hold in any Settlement Period, which shall determined as provided in Section 11.2.4.1.2.
IFM Load Uplift Obligation	The obligation of a Scheduling Coordinator to pay its share of unrecovered IFM Bid Costs paid to resources through Bid Cost Recovery.
IFM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules	A credit provided to Scheduling Coordinators pursuant to Section 17.3.3 to offset any IFM Marginal Cost of Losses that would otherwise be applied to the valid and balanced portions of any TOR Self-Schedule in the IFM as provided in Section 11.2.1.5.
IFM Marginal Losses Surplus	For each Settlement Period of the IFM the CAISO, the IFM Marginal Losses Surplus is the difference between: (1) the Net Hourly Energy Charge; and (2) the total IFM Congestion Charges which do not include Congestion Charges Credits collected by the CAISO as specified in Section 11.2.1.5.
IFM Marginal Losses Surplus Credit	The amount of money distributed to Scheduling Coordinators in the allocation of IFM Marginal Losses Surplus in proportion to Scheduling Coordinator's Measured Demand in accordance with Section 11.2.1.6.

IFM Market Revenue	The amount received by BCR Eligible Resource from Energy scheduled and Ancillary Services awarded in the IFM for the purposes of Bid Cost Recovery, as calculated pursuant to Section 11.8.2.2.
IFM MSS Price	Either (1) The IFM LAP price for the MSS when the MSS scheduled internal Demand exceeds the MSS scheduled internal Supply; or (2) the weighted average of the IFM LMPs for all applicable PNodes within the relevant MSS when MSS scheduled internal Supply exceeds MSS scheduled internal Demand where weighting factors for computing the weighted average are based on the scheduled Supply at the corresponding PNodes.
IFM Pumping Bid Cost	For the applicable Settlement Interval, the Pumping Cost submitted to the CAISO in the IFM divided by the number of Settlement Intervals in a Trading Hour as further provided in Section 11.8.2.1.4.
IFM Self-Commitment Period	A Time Period determined by the CAISO pursuant to the rules in Section 11.8.1.1 for the purposes of deriving any Bid Cost Recovery amounts, related to the IFM.
IIE	Instructed Imbalance Energy
IIE Settlement Amount	The payment due a Scheduling Coordinator for positive Instructed Imbalance Energy or the charge assessed on a Scheduling Coordinator for negative Instructed Imbalance Energy, as calculated pursuant to Section 11.5.1.
Imbalance Energy	The deviation of Supply or Demand from Day-Ahead Schedule, positive or negative, as measured by metered Generation, metered Load, or Real-Time Interchange schedules.
Import Bid	A Supply Bid submitted to a CAISO Market at a Scheduling Point.
Import Capability Load Share	A Load Serving Entity's proportionate share of the forecasted Resource Adequacy Compliance Year coincident peak Demand for the CAISO Control Area relative to the total coincident peak Demand for the CAISO Control Area as determined by the California Energy Commission.

Import Capability Load Share Ratio	A Load Serving Entity's Import Capability Load Share divided by the sum of the Import Capability Load Shares of all Load Serving Entities with unfulfilled requests for Available Import Capability on a particular Intertie.
Import Capability Transfer Registration Process	The electronic means by which Load Serving Entities and Market Participants must register with the CAISO any bilateral transfers of Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability.
Incremental Change	The change in dollar value of a specific charge type from the Preliminary Settlement Statement to the Final Settlement Statement including any new charge types or Trading Day charges appearing for the first time on the Final Settlement Statement.
Independent Entity	The entity, not affiliated with the CAISO or any Market Participant, that assists the CAISO in the determination of reference prices.
Independent System Operator (ISO)	See California Independent System Operator Corporation
Initial Settlement Statement Reissue	The reissue of an Initial Settlement Statement T+38BD by the CAISO on the fifty-first (51st) Business Day from the relevant Trading Day (T+51BD) if T+51BD falls on a calendar day that is on or before the day the Invoice or Payment Advice for the bill period containing the relevant Trading Day is scheduled to publish.
Initial Settlement Statement T+38BD	A Settlement Statement generated by the CAISO for the calculation of Settlements for a given Trading Day, which is published on the thirty-eight Business Day from the relevant Trading Day (T+38BD) and is prior to the Invoice or Payment Advice published for the relevant bill period.

In-Service Date	The date upon which the Interconnection Customer reasonably expects it will be ready to begin use of the Participating TO Interconnection Facilities to obtain back feed power.
Instructed Imbalance Energy (IIE)	The portion of Imbalance Energy resulting from Dispatch Instructions and HASP Intertie Schedules.
Integrated Forward Market (IFM)	The pricing run conducted by the CAISO using SCUC in the Day-Ahead Market, after the MPM-RRD process, which includes Unit Commitment, Ancillary Service procurement, Congestion Management and Energy procurement based on Supply and Demand Bids.
Interchange	Imports and exports between the CAISO Control Area and other Control Areas.

Interconnected Control Area Operating Agreement (ICAOA)	An agreement entered into between the CAISO and a Control Area Operator of a Control Area interconnected to the CAISO Control Area to govern operation of their interconnected electric systems, a *pro forma* version of which has been accepted by FERC as a CAISO rate schedule in 87 FERC ¶ 61,231 (1999).
Interconnection	Transmission facilities, other than additions or replacements to existing facilities that: i) connect one system to another system where the facilities emerge from one and only one substation of the two systems and are functionally separate from the CAISO Controlled Grid facilities such that the facilities are, or can be, operated and planned as a single facility; or ii) are identified as radial transmission lines pursuant to contract; or iii) produce Generation at a single point on the CAISO Controlled Grid; provided that such interconnection does not include facilities that, if not owned by the Participating TO, would result in a reduction in the CAISO's Operational Control of the Participating TO's portion of the CAISO Controlled Grid.
Interconnection Agreement	A contract between a party requesting interconnection and the Participating TO that owns the transmission facility with which the requesting party wishes to interconnect.
Interconnection Customer	Any entity, including a Participating TO or any of its Affiliates or subsidiaries, that proposes to interconnect its Generating Facility with the CAISO Controlled Grid.
Interconnection Customer's Interconnection Facilities	All facilities and equipment, as identified in Part A of the Standard Large Generator Interconnection Agreement, that are located between the Generating Facility and the Point of Change of Ownership, including any modification, addition, or upgrades to such facilities and equipment necessary to physically and electrically interconnect the Generating Facility to the CAISO Controlled Grid. Interconnection Customer's Interconnection Facilities are sole use facilities.
Interconnection Facilities	The Participating TO's Interconnection Facilities and the

	Interconnection Customer's Interconnection Facilities. Collectively, Interconnection Facilities include all facilities and equipment between the Generating Facility and the Point of Interconnection, including any modification, additions or upgrades that are necessary to physically and electrically interconnect the Generating Facility to the CAISO Controlled Grid. Interconnection Facilities are sole use facilities and shall not include Distribution Upgrades, Stand Alone Network Upgrades or Network Upgrades.
Interconnection Facilities Study	A study conducted by the Participating TO(s), CAISO, or a third party consultant for the Interconnection Customer to determine a list of facilities (including the Participating TO's Interconnection Facilities, Network Upgrades, and Distribution Upgrades), the cost of those facilities, and the time required to interconnect the Generating Facility with the CAISO Controlled Grid. The scope of the study is defined in Section 8 of the Standard Large Generator Interconnection Procedures.
Interconnection Facilities Study Agreement	The form of agreement accepted by FERC and posted on the CAISO Website for conducting the Interconnection Facilities Study.
Interconnection Feasibility Study	A preliminary evaluation conducted by the Participating TO(s), CAISO, or a third party consultant for the Interconnection Customer of the system impact and cost of interconnecting the Generating Facility to the CAISO Controlled Grid, the scope of which is described in Section 6 of the Standard Large Generator Interconnection Procedures.
Interconnection Feasibility Study Agreement	The form of agreement accepted by FERC and posted on the CAISO Website for conducting the Interconnection Feasibility Study.
Interconnection Handbook	A handbook, developed by the Participating TO and posted on the Participating TO's web site or otherwise made available by the Participating TO, describing technical and operational requirements for wholesale generators and loads connected to the Participating TO's portion of the CAISO Controlled Grid, as such handbook may be modified or superseded from time to time. Participating TO's standards contained in the Interconnection Handbook shall be deemed consistent with Good Utility Practice and Applicable

	Reliability Criteria. In the event of a conflict between the terms of the LGIP and the terms of the Participating TO's Interconnection Handbook, the terms in the LGIP shall apply.
Interconnection Request	An Interconnection Customer's request, in the form of Part 1 to the Standard Large Generator Interconnection Procedures, in accordance with Section 25.1.
Interconnection Service	The service provided by the Participating TO and CAISO associated with interconnecting the Interconnection Customer's Generating Facility to the CAISO Controlled Grid and enabling it to receive electric Energy and capacity from the Generating Facility at the Point of Interconnection, pursuant to the terms of the Standard Large Generator Interconnection Agreement, the Participating TO's TO Tariff, and the CAISO Tariff.
Interconnection Study	Any of the following studies: the Interconnection Feasibility Study, the Interconnection System Impact Study, and the Interconnection Facilities Study described in the Standard Large Generator Interconnection Procedures.
Interconnection System Impact Study	An engineering study conducted by the Participating TO(s), CAISO, or a third party consultant for the Interconnection Customer that evaluates the impact of the proposed interconnection on the safety and reliability of the CAISO Controlled Grid and, if applicable, an Affected System. The study shall identify and detail the system impacts that would result if the Generating Facility were interconnected without project modifications or system modifications, focusing on the Adverse System Impacts identified in the Interconnection Feasibility Study, or to study potential impacts, including but not limited to those identified in the Scoping Meeting as described in the Standard Large Generator Interconnection Procedures.
Interconnection System Impact Study Agreement	The form of agreement accepted by FERC and posted on the CAISO Website for conducting the Interconnection System Impact Study.
Interest	Interest shall be calculated in accordance with the methodology specified for interest on refunds in the regulations of FERC at 18 C.F.R. §35.19(a)(2)(iii) (1996). Interest on delinquent amounts shall be

	calculated from the due date of the bill to the date of payment, except as provided in Section 11.29.13.1. When payments are made by mail, bills shall be considered as having been paid on the date of receipt.
Interim Black Start Agreement	An agreement entered into between the CAISO and a Participating Generator (other than a Reliability Must-Run Agreement) for the provision by the Participating Generator of Black Start capability and Black Start Energy on an interim basis until the introduction by the CAISO of its Black Start auction (or until terminated earlier by either party in accordance with its terms).
Intermediary Control Area	Any Control Area between a Host Control Area and the CAISO Control Area. An Intermediary Control Area may, or may not, be directly interconnected with the CAISO Control Area.
Interruptible Imports	Non-firm Energy sold by a Generator or resource located outside the CAISO Controlled Grid which by contract can be interrupted or reduced at the discretion of the seller. Interruptible Imports must be submitted through Self-Schedules in the Day-Ahead Market.
Inter-SC Trade	A trade between Scheduling Coordinators of Energy, Ancillary Services, or IFM Load Uplift Obligation in accordance with the CAISO Tariff.
Intertie	A Scheduling Point at a point of interconnection between the CAISO Control Area and an interconnected Control Area.
Intertie Block Bid	A Bid from a System Resource in the DAM that offers the same quantity of Energy, RUC Availability, or Ancillary Services across multiple, contiguous hours of the Trading Day.
Invoice	A document published as a result of an invoicing run pursuant to the CAISO Payments Calendar in which a Business Associate's current net financial obligation is a positive Settlement amount.
IOU	An investor owned electric utility.
ISO	Independent System Operator

LAP	Load Aggregation Point
LAP Price	The marginal price for a particular LAP, calculated as a weighted average of the nodal LMPs at the associated PNodes pursuant to Section 27.2.2.
Large Generating Facility	A Generating Facility having a Generating Facility Capacity of more than 20 MW.
LDF	Load Distribution Factor
LFDP	Load Following Deviation Penalty
LGIA	Standard Large Generator Interconnection Agreement
LGIP	Standard Large Generator Interconnection Procedures
Line Loss Correction Factor	The line loss correction factor as set forth in the Technical Specifications.
LMP	Locational Marginal Price
LMPM	Local Market Power Mitigation
LMP Option	A method of calculating Default Energy Bids based on Locational Marginal Prices.
Load	An end-use device of an End-Use Customer that consumes Power. Load should not be confused with Demand, which is the measure of Power that a Load receives or requires.
Load Aggregation Point (LAP)	A set of Pricing Nodes as specified in Section 27.2 that are used for the submission of Bids and Settlement of Demand.

Load Distribution Factor (LDF)	A number that reflects the relative amount of Load at each PNode within a Load Aggregation Point. Load Distribution Factors determine how the aggregated Load at a given LAP is distributed to the associated power system Nodes. The sum of all Load Distribution Factors for a single Load Aggregation Point equals one.
Load Following Deviation Penalty (LFDP)	The penalty assignable to an MSS Operator for deviations from Expected Energy outside the MSS Deviation Band.
Load Metric	A Load Serving Entity's level of Load in megawatts for a defined time period that is exceeded in only 0.5% of the hours of that time period based on historical or forecast Load data.
Load Migration	The transfer of the responsibility to serve Load from one Load Serving Entity to another.
Load Serving Entity (LSE)	Any entity (or the duly designated agent of such an entity, including, e.g. a Scheduling Coordinator), including a load aggregator or power marketer, that (a) (i) serves End Users within the CAISO Control Area and (ii) has been granted authority or has an obligation pursuant to California state or local law, regulation, or franchise to sell electric energy to End Users located within the CAISO Control Area; (b) is a federal power marketing authority that serves End Users; or (c) is the State Water Resources Development System commonly known as the State Water Project of the California Department of Water Resources.
Load Share Quantity	The product of Total Import Capability and Import Capability Load Share.

Load Shedding	The systematic reduction of system Demand by temporarily decreasing the Supply of Energy to Loads in response to transmission system or area capacity shortages, system instability, or voltage control considerations.
Local Capacity Area	Transmission constrained area as defined in the study referenced in Section 40.3.1.
Local Capacity Area Resources	Resource Adequacy Capacity from a Generating Unit listed in the technical study or Participating Load that is located within a Local Capacity Area capable of contributing toward the amount of capacity required in a particular Local Capacity Area.
Local Capacity Technical Study	The study performed by the CAISO pursuant to Section 40.3.
Local Furnishing Bond	Tax-exempt bonds utilized to finance facilities for the local furnishing of electric energy, as described in section 142(f) of the Internal Revenue Code, 26 U.S.C. § 142(f).
Local Furnishing Participating TO	Any Tax-Exempt Participating TO that owns facilities financed by Local Furnishing Bonds.

Local Market Power Mitigation (LMPM)	The mitigation of market power that could be exercised by an entity when it is needed for local reliability services due to its location on the grid and a lack of competitive supply at that location pursuant to Section 39.7.
Local Publicly Owned	A municipality or municipal corporation operating as a public utility

Electric Utilities	furnishing electric services, a municipal utility district furnishing electric services, a public utility district furnishing electric services, an irrigation district furnishing electric services, a state agency or subdivision furnishing electric services, a rural cooperative furnishing electric services, or a joint powers authority that includes one or more of these agencies and that owns Generation or transmission facilities, or furnishes electric services over its own or its members' electric Distribution System.
Local Regulatory Authority (LRA)	The state or local governmental authority, or the board of directors of an electric cooperative, responsible for the regulation or oversight of a utility.
Local Reliability Criteria	Reliability Criteria unique to the transmission systems of each of the Participating TOs established at the later of: (1) CAISO Operations Date, or (2) the date upon which a New Participating TO places its facilities under the control of the CAISO.
Location	A reference to either a PNode or an Aggregated Pricing Node.
Location Code	The code assigned by the CAISO to Generation input points, and Demand Take-Out Points from the CAISO Controlled Grid, and transaction points from trades between Scheduling Coordinators. This will be the information used by the CAISO Controlled Grid, and transaction points for trades between Scheduling Coordinators. This will be the information used by the CAISO to determine the location of the input, output, and trade points of Energy Schedules. Each Generation input and Demand Take-Out Point will have a designated Location Code identification.
Locational Marginal Price (LMP)	The marginal cost ($/MWh) of serving the next increment of Demand at that PNode consistent with existing transmission facility constraints and the performance characteristics of resources.
Long Start Unit	A Generating Unit that requires between five and 18 hours to Start-Up and synchronize to the grid.
Long Term Congestion Revenue Right (Long Term CRR)	A Congestion Revenue Right differentiated by season and time-of-use period (on-peak and off-peak) with a term of ten years.

Low Voltage Access Charge (LVAC)	The Access Charge applicable under Section 26.1 to recover the Low Voltage Transmission Revenue Requirement of a Participating TO.
Low Voltage Transmission Facility	A transmission facility owned by a Participating TO or to which a Participating TO has an Entitlement that is represented by a Converted Right, which is not a High Voltage Transmission Facility, that is under the CAISO Operational Control.
Low Voltage Transmission Revenue Requirement (LVTRR)	The portion of a Participating TO's TRR associated with and allocable to the Participating TO's Low Voltage Transmission Facilities and Converted Rights associated with Low Voltage Transmission Facilities that are under the CAISO Operational Control.
Low Voltage Wheeling Access Charge	The Wheeling Access Charge associated with the recovery of a Participating TO's Low Voltage Transmission Revenue Requirement in accordance with Section 26.1.
LRA	Local Regulatory Authority
LSE	Load-Serving Entity
LVAC	Low Voltage Access Charge
LVTRR	Low Voltage Transmission Revenue Requirement
Maintenance Outage	A period of time during which an Operator (i) takes its transmission facilities out of service for the purposes of carrying out routine planned maintenance, or for the purposes of new construction work or for work on de-energized and live transmission facilities (e.g., relay maintenance or insulator washing) and associated equipment; or (ii) limits the capability of or takes its Generating Unit or System Unit out of service for the purposes of carrying out routine planned maintenance, or for the purposes of new construction work.
Marginal Cost of Congestion (MCC)	The component of LMP at a PNode that accounts for the cost of congestion, as measured between that Node and a Reference Bus.

Marginal Cost of Losses (MCL)	The component of LMP at a PNode that accounts for the marginal real power losses, as measured between that Node and a Reference Bus.
Marginal Losses	The transmission system marginal real power losses that arise from changes in demand at a Node which are served by changes in generation at a Reference Bus.
Market Behavior Rules	Those rules established by FERC under Docket No. EL01-118.
Market Clearing	The act of conducting any of the process used by the CAISO to

	determine LMPs, Day-Ahead Schedules, RUC or AS Awards, HASP Intertie Schedules and Dispatch Instructions based on Supply Bids and Demand Bids or CAISO Demand Forecast.
Market Clearing Price	The price in a market at which supply equals demand. All demand prepared to pay at least this price has been satisfied and all supply prepared to operate at or below this price has been purchased.
Market Close	The time after which the CAISO is no longer accepting Bids for its CAISO Markets which: 1) for the DAM is 10:00 A.M. Pacific Time of the Day-Ahead; and 2) for the HASP and the RTM is approximately seventy-five minutes prior to the Operating Hour.
Market Interruption	The disruption of the normal operations of a CAISO Market.
Market Intervention	An action taken by the CAISO to override or augment the operation of a CAISO Market.
Market Manipulation	Has the meaning set forth in Section 37.7.
Market Monitoring Unit	The component of the CAISO organization (currently the “Department of Market Monitoring”) that is assigned responsibility in the first instance for the functions of a Market Monitoring Unit, as that term is used in Docket No. EL01-118.
Market Notice	An electronic notice issued by the CAISO that the CAISO posts on the CAISO Website and provides by e-mail to those registered with the CAISO to receive CAISO e-mail notices.
Market Participant	An entity, including a Scheduling Coordinator, who either: (1) participates in the CAISO Markets through the buying, selling, transmission, or distribution of Energy, Capacity, or Ancillary Services into, out of, or through the CAISO Controlled Grid; or (2) is a CRR Holder or Candidate CRR Holder.

Market Power Mitigation - Reliability Requirement Determination (MPM-RRD)	The two-optimization run process conducted in both the Day-Ahead Market and the HASP that determines the need for the CAISO to employ market power mitigation measures or Dispatch RMR Units.
Market Surveillance Committee (MSC)	The committee established under Appendix P.2.
Market Usage Charge	The component of the Grid Management Charge that provides for the recovery of the CAISO's costs, including, but not limited to the costs for processing Bids, maintaining the Open Access Same-Time Information System, monitoring market performance, ensuring generator compliance with market rules as defined in the CAISO Tariff and the Business Practice

	Manuals, and determining LMPs. The formula for determining the Market Usage Charge is set forth in Appendix F, Schedule 1, Part A of this Tariff.
Master File	A file containing information regarding Generating Units, Loads and other resources, or its successor.
Material Modification	A modification that has a material impact on the cost or timing of any Interconnection Request or any other valid interconnection request with a later queue priority date.
Maximum Daily Start-Ups	The maximum number of times a Generating Unit can be started up within one day, due to environmental or physical operating constraints.
Maximum Import Capability	A quantity in MW determined by the CAISO for each Intertie into the CAISO Control Area to be deliverable to the CAISO Control Area based on CAISO study criteria.
Maximum Net Dependable Capacity (MNDC)	A term defined in and used in association with an RMR Contract.
Maximum Operating Limit (MOL_{max})	The lower of the maximum allowable output when the resource is operating or the upper bound of the Regulating Range if the resource is providing Regulation service.
MCC	Marginal Cost of Congestion
MCL	Marginal Cost of Losses
MDT	Minimum Down Time
Measured Demand	The metered CAISO Demand plus Real-Time Interchange Export Schedules.
Medium Start Unit	A Generating Unit that requires between two and five hours to Start-Up and synchronize to the grid.
Merchant Transmission CRRs	Incremental CRRs that are created by the addition of a Merchant Transmission Facility. Merchant Transmission CRRs are effective for thirty (30) years or for the pre-specified intended life of the facility, whichever is less.

Merchant Transmission Facility	A transmission facility or upgrade that is part of the CAISO Controlled Grid and whose costs are paid by a Project Sponsor that does not recover the cost of the transmission investment through the CAISO's Access Charge or WAC or other regulatory cost recovery mechanism.
Meter Data	Energy usage data collected by a metering device or as may be otherwise derived by the use of Approved Load Profiles.
Meter Data Exchange Format	The formats for submitting Meter Data to the CAISO which will be published by the CAISO on the CAISO Website or available on request.
Metered Control Area Load	For purposes of calculating and billing the Grid Management Charge, Metered Control Area Load is: (a) all metered Demand for Energy of Scheduling Coordinators for the supply of Loads in the CAISO's Control Area, plus (b) all Energy for exports by Scheduling Coordinators from the CAISO Control Area; less (c) Energy associated with the Load of a retail

	customer of a Scheduling Coordinator, Utility Distribution Company, Small Utility Distribution Company or Metered Subsystem that is served by a Generating Unit that: (i) is located on the same site as the customer's Load or provides service to the customer's Load through arrangements as authorized by Section 218 of the California Public Utilities Code; (ii) is a qualifying small power production facility or qualifying cogeneration facility, as those terms are defined in FERC's regulations implementing Section 201 of the Public Utility Regulatory Policies Act of 1978; and (iii) the customer secures Standby Service from a Participating TO under terms approved by a Local Regulatory Authority or FERC, as applicable, or the customer's Load can be curtailed concurrently with an outage of the Generating Unit.
Metered Quantities	For each Direct Access End-User, the actual metered amount of MWh and MW; for each Participating Generator the actual metered amounts of MWh, MW, MVAr and MVArh.
Metered Subsystem Agreement (MSS Agreement)	A negotiated agreement between the CAISO and an MSS Operator regarding the operation of an MSS in relation to the CAISO entered into pursuant to Section 4.9, which MSS Agreement will incorporate the provision of Section 4.9, unless otherwise agreed.

Metered Subsystem (MSS)	A geographically contiguous system located within a single zone which has been operating as an electric utility for a number of years prior to the CAISO Operations Date as a municipal utility, water district, irrigation district, state agency or federal power marketing authority subsumed within the CAISO Control Area and encompassed by CAISO certified revenue quality meters at each interface point with the CAISO Controlled Grid and CAISO certified revenue quality meters on all Generating Units or, if aggregated, each individual resource and Participating Load internal to the system, which is operated in accordance with a MSS Agreement described in Section 4.9.1.
Metering Facilities	Revenue quality meters, instrument transformers, secondary circuitry, secondary devices, meter data servers, related communication facilities and other related local equipment.
Meter Points	Locations on the CAISO Controlled Grid at which the CAISO requires the collection of Meter Data by a metering device.
Meter Service Agreement for CAISO Metered Entities (MSA CAISOME)	An agreement entered into between the CAISO and a CAISO Metered Entity consistent with the provisions of Section 10, a *pro forma* version of which is set forth in Appendix B.6.
Meter Service Agreement for Scheduling Coordinators (MSA SC)	An agreement entered into between the CAISO and a Scheduling Coordinator consistent with the provisions of Section 10, a *pro forma* version of which is set forth in Appendix B.7.

Minimum Down Time (MDT)	The minimum amount of time that a Generating Unit must stay off-line after being shut down, due to physical operating constraints.
Minimum Load	The minimum sustained operating level of a resource at which it can operate at a continuous sustained level.
Minimum Load Bid	The Bid component that indicates the Minimum Load Cost for the Generating Unit or Participating Load, specified by a non-negative number in dollars per hour, which applies for the entire Trading Day for which it is submitted.
Minimum Load Costs	The costs a Generating Unit or a Participating Load incurs operating at Minimum Load.
Minimum Load Energy	The product of the relevant Minimum Load and the duration of the Settlement Interval.
Minimum Operating Limit (MOL_{min})	The greater of the Minimum Load or the lower bound of the Regulating Range if the resource offers Regulation service.
Minimum Run Time	The minimum amount of time that a Generating Unit must stay on-line after being started-up prior to being shut down, due to physical operating constraints.
Mitigation Frequency	The percent of the Generating Unit's run hours where the unit had one or more Bid segments mitigated under the CAISO Local Market Power Mitigation.
Mitigation Measures	The CAISO market power mitigation measures under the CAISO Tariff.
MNDC	Maximum Net Dependable Capacity
Modified Reserve Sharing LSE	A Load Serving Entity whose Scheduling Coordinator has informed the CAISO in accordance with Section 40.1 of its election to be a Modified Reserve Sharing LSE.
MOL_{max}	Maximum Operating Limit
MOL_{min}	Minimum Operating Limit

Monthly Available CRR Capacity	The upper limit of network capacity that will be used in the monthly CRR Allocation and monthly CRR Auctions calculated by using OTC adjusted for Outages, derates, and Transmission Ownership Rights for the relevant month in accordance with Section 36.4.
Monthly CRR	A Congestion Revenue Right whose term is one calendar month in length and distributed in the monthly CRR Allocation and monthly CRR Auction.

Monthly CRR Eligible Quantity	The MW quantity of CRRs a CRR Holder or Candidate CRR Holder is eligible to nominate for the relevant month in a monthly CRR Allocation.
Monthly CRR Load Metric	The MW level of Load on a Load Serving Entity's load duration curve that is exceeded only 0.5% of the time in the relevant month based on Demand Forecast data.
MORC	Minimum Operating Reliability Criteria
MPM-RRD	Market Power Mitigation-Reliability Requirement Determination
MSA CAISOME	Metered Service Agreement for CAISO Metered Entities
MSA SC	Metered Service Agreement for Scheduling Coordinators
MSC	Market Surveillance Committee
MSS	Metered Subsystem
MSS Aggregation	Either (1) a Metered Subsystem or (2) a collection of Metered Subsystems represented by a single MSS Aggregator.
MSS Aggregation Net Measured Demand	The sum of the net metered CAISO Demand from all the Net-Load MSSs in the MSS Aggregation plus any exports out of the CAISO Control Area from the MSS Aggregation. Net metered CAISO Demand of a MSS is defined as the algebraic difference between the CAISO Demand and Generation internal to the MSS.
MSS Aggregation Net Non-ETC/TOR Measured Demand	The sum of the net metered non-ETC/TOR CAISO Demand from all of the non-ETC/TOR Net-Load MSSs in the MSS Aggregation plus any non-ETC/TOR exports out of the CAISO Control Area from the MSS Aggregation. Net metered non-ETC/TOR CAISO Demand of an MSS is defined as the algebraic difference between the non-ETC/TOR CAISO Demand and the non-ETC/TOR Generation within the MSS.
MSS Aggregator	An entity that has executed an agreement with the CAISO that enables it to represent individual MSS Operators in the CAISO Markets on an aggregated basis, which agreement has been accepted by FERC.

MSS Aggregator CRR Entity Agent Agreement	An agreement between the CAISO and an MSS Aggregator by which the MSS Aggregator commits to act as agent for aggregation of MSS Operators in the CRR Allocation, CRR Auction, and Secondary Registration System process, a *pro forma* version of which is set forth in Appendix B.12.
MSS Demand	CAISO Demand specified in an MSS Agreement as being within the MSS.
MSS Deviation Band	The amount by which a Load following MSS Operator can deviate from Expected Energy without incurring a Load Following Deviation Penalty, equal to three percent (3%) of an MSS Operator's metered Demand in the MSS and exports from the MSS, adjusted for Forced Outages and any CAISO directed firm Load Shedding for the MSS's portfolio as a whole.
MSS Operator	An entity that owns an MSS and has executed a MSS Agreement.
MSS Supply	Supply specified in an MSS Agreement as supplying an MSS.
Multi-Point CRR	A CRR Obligation specified according to one or more CRR Sources and one or more CRR Sinks and a flow from the CRR Source(s) to the CRR Sink(s), provided that at least the CRR Sink or the CRR Source identifies more than one point.
Municipal Tax Exempt Debt	An obligation the interest on which is excluded from gross income for federal tax purposes pursuant to Section 103(a) of the Internal Revenue Code of 1986 or the corresponding provisions of prior law without regard to the identity of the holder thereof. Municipal Tax Exempt Debt does not include Local Furnishing Bonds.
Must-Take/Must-Run Generation	The Bid component that identifies Generating Units that are Regulatory Must-Take Generation or Regulatory Must-Run Generation.

Native Load	Load required to be served by a utility within its Service Area pursuant to applicable law, franchise, or statute.
Negative Operating Reserve Obligation Credit Adjustment Factor (NOROCAF)	The adjustment factor specified in Section 11.10.5.
Negotiated Rate Option	A method of calculating Default Energy Bids based on a negotiation with the CAISO or the Independent Entity.
NERC	The North American Electric Reliability Corporation or its successor.
NERC Generating Availability Data System (GADS)	The NERC standard for determination of generation resource net dependable capacity.

Net Hourly Energy Charge	Total Charges to all Demand minus total Payments to all Supply both based on the product of MWh amounts specified in all Day-Ahead Schedules and the relevant LMPs at the applicable PNodes or Aggregated Pricing Node.
Net IFM Bid Cost Uplift	The amount of IFM-related Bid Costs resulting from the sequential netting in Section 11.8.6.2 and allocated to Scheduling Coordinators in accordance with Section 11.8.6.4.
Net-Load MSS	An MSS with positive net metered CAISO Demand of the MSS within the MSS Aggregation.
Net Negative CAISO Demand Deviation	The difference between metered CAISO Demand and the total CAISO Demand scheduled in the Day-Ahead Schedule, if positive.
Net Negative Uninstructed Deviation	The real-time change in Generation or Demand associated with underscheduled Demand (i.e., Demand that appears unscheduled in Real-Time) and overscheduled Generation (i.e., Generation that is scheduled in the DAM and does not appear in Real-Time), which are netted for each Settlement Interval, apply to a Scheduling Coordinator's entire portfolio, and include Demand, Generation, imports and exports.
Net Procurement	The awarded amount (MWs) of a given Ancillary Service in the Day-Ahead, HASP, and Real-Time Markets, minus, (ii) the amount of that Ancillary Service associated with payments rescinded pursuant to any of the provisions of Section 8.10.2.
Net Qualifying Capacity	Qualifying Capacity reduced, as applicable, based on: (1) testing and verification; (2) application of performance criteria; and (3) deliverability restrictions. The Net Qualifying Capacity determination shall be made by the CAISO pursuant to the provisions of this CAISO Tariff and the applicable Business Practice Manual.
Net RTM Bid Cost Uplift	The amount of RTM-related Bid Costs resulting from the sequential netting in Section 11.8.6.2 and allocated to Scheduling Coordinators in accordance with Section 11.8.6.6.
Net RUC Bid Cost Uplift	The amount of RUC-related Bid Costs resulting from the sequential netting in Section 11.8.6.2 and allocated to

	Scheduling Coordinators in accordance with Section 11.8.6.5.
Net Scheduled QF	A Qualifying Facility identified in a QF PGA operated as a single unit such that the Energy scheduled with the CAISO is the net value of the aggregate electrical net output of the Qualifying Facility and the Self-provided Load.
Network Upgrades	The additions, modifications, and upgrades to the CAISO Controlled Grid required at or beyond the Point of Interconnection to accommodate the interconnection of the Large Generating Facility to the CAISO Controlled Grid. Network Upgrades shall consist of Delivery Network Upgrades and Reliability Network Upgrades.
New High Voltage Facility	A High Voltage Transmission Facility of a Participating TO that is placed in service after the beginning of the TAC Transition Period described in Section 4 of Schedule 3 of Appendix F, or a capital addition made and placed in service after the beginning of the TAC Transition Period described in Section 4.2 of Schedule 3 of Appendix F to an Existing High Voltage Facility.
New Participating TO	A Participating TO that is not an Original Participating TO.
New Responsible Utility	A Responsible Utility that executes a TCA after April 1, 1998.
Node	A point in the Full Network Model representing a physical location within the CAISO Control Area or the CAISO Controlled Grid, which includes the Load and Generating Unit busses in the CAISO Control Area and at the Intertie busses between the CAISO Control Area and interconnected Control Areas.
Nomogram	A set of operating or scheduling rules which are used to ensure that simultaneous operating limits are respected, in order to meet NERC and WECC Reliability Standards and operating criteria.

Non-CPUC Load Serving Entity	Any entity serving retail Demand in the CAISO Control Area not within the jurisdiction of the CPUC, including (i) a local publicly owned electric utility under section 9604 of the California Public Utilities Code and (ii) any federal entities, including but not limited to federal power marketing authorities, that serve retail Load.
Non-Dispatchable Use Limited Resource	A Use-Limited Resource that cannot be increased or curtailed at the direction of the CAISO in the Real-Time Dispatch of the CAISO Control Area to Supply or consume Energy, such as certain Qualifying Facilities.
Non-Dynamic Resource-Specific System Resource	A Non-Dynamic System Resource that is a specific generation resource outside the CAISO Control Area.

Non-Dynamic System Recourse	A System Resource that is not capable of submitting a Dynamic Schedule, or for which a Dynamic Schedule has not be submitted, which may be a Non-Dynamic Resource-Specific System Resource.
Non-Participating TO	A TO that is not a party to the Transmission Control Agreement or, for the purposes of Section 16.1, Tariff the holder of transmission service rights under an Existing Contract that is not a Participating TO.
Non-Spinning Reserve	The portion of generating capacity that is capable of being synchronized and Ramping to a specified load in ten minutes (or Load that is capable of being interrupted in ten minutes) and that is capable of running (or being interrupted).
Non-Spinning Reserve Cost	The revenues paid to the suppliers of the total awarded Non-Spinning Reserve capacity in the Day-Ahead Market, HASP, and Real-Time Market, minus, (ii) the payments rescinded due to either the failure to conform to CAISO Dispatch Instructions or the unavailability of the Non-Spinning Reserves under Section.
Non-Spinning Reserve Obligation	The obligation of a Scheduling Coordinator to pay its share of costs incurred by the CAISO in procuring Non-Spinning Reserve.
No Pay	The rescission of a payment made for provision of Spinning Reserve and/or Non-Spinning Reserve when, subsequent to the AS Award for such Ancillary Service and payment, the Ancillary Service becomes Undispatchable Capacity, Unavailable Capacity, Undelivered Capacity, or, in certain circumstances, unsynchronized capacity.
NOROCAF	Negative Operating Reserve Obligation Credit Adjustment Factor
NRC	The Nuclear Regulatory Commission or its successor.
NRC Standards	The reliability standards published by the NRC from time to time.
OASIS	Open Access Same-Time Information System

OCALSE	Out-of-Control Area Load Serving Entity
Off	A unit is Off when it is offline or in the process of starting up or shutting down.
Offsetting CRR	One of the pair of new equal and opposite CRRs created and allocated by the CAISO to reflect Load Migration between two LSEs pursuant to the provisions in Section 36.8.5 of this Appendix, which is allocated to the Load losing LSE and is opposite in direction to the corresponding CRR previously allocated to that LSE and is denominated in a MW quantity that reflects the net amount of Load Migration between the two LSEs.
On	A unit is On when it is online, synchronized with the grid, and available for Dispatch.
Open Access Same-Time Information System (OASIS)	The electronic posting system for transmission access data that the CAISO maintains on the CAISO Website that allows all Market Participants to view the data simultaneously.
Information System (OASIS)	CAISO maintains on the CAISO Website that allows all transmission customers to view the data simultaneously.
Operating Day	The day when the Real-Time Market runs and Energy is supplied to Load.
Operating Hour	The hour during the day when the Real-Time Market runs and Energy is supplied to Load.
Operating Procedures	Procedures governing the operation of the CAISO Controlled Grid as the CAISO may from time to time develop, and/or

	procedures that Participating TOs currently employ which the CAISO adopts for use.
Operating Reserve	The combination of Spinning and Non-Spinning Reserve required to meet WECC and NERC Reliability Standards and requirements for reliable operation of the CAISO Control Area.
Operating Reserve Obligation	The obligation of a Scheduling Coordinator to pay its share of costs incurred by the CAISO in procuring Operating Reserves.
Operating Reserve Ramp Rate	A single number included in Ancillary Service Bids and Submissions to Self-Provide Ancillary Services for Spinning Reserve and Non-Spinning Reserve that represent the Ramp Rate of a resource used in the procurement of Operating Reserve capacity.
Operating Transfer Capability	The maximum capability of a transmission path to transmit real power, expressed in MW, at a given point in time.
Operational Adjustment	The difference between the Energy scheduled in the Control Area check-out process for Non-Dynamic System Resources and the sum of Dispatch Interval IIE.
Operational Control	The rights of the CAISO under the Transmission Control Agreement and the CAISO Tariff to direct Participating TOs how to operate their transmission lines and facilities and other electric plant affecting the reliability of those lines and facilities for the purpose of affording comparable non-discriminatory transmission access and meeting Applicable Reliability Criteria.
Operational Ramp Rates	A staircase function of up to 4 segments (in addition to Ramp Rate segments needed for modeling Forbidden Operating Regions). Operational Ramp Rates are submitted with Energy Bid data.
Operator	The operator of facilities that comprise the CAISO Controlled Grid or a Participating Generator.

Optional Interconnection Study	A sensitivity analysis based on assumptions specified by the Interconnection Customer in the Optional Interconnection Study Agreement.
Optional Interconnection Study Agreement	The form of agreement accepted by FERC and posted on the CAISO Website for conducting the Optional Interconnection Study.
Order No. 888	The final rule issued by FERC entitled "Promoting Wholesale Competition through Open Access Non- discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities," 61 Fed. Reg. 21,540 (May 10, 1996), FERC Stats. & Regs., Regulations Preambles [1991-1996] ¶ 31,036 (1996), Order on Rehearing, Order No. 888-A, 78 FERC ¶ 61,220 (1997), as it may be amended from time to time
Order No. 889	The final rule issued by FERC entitled "Open Access Same-Time Information System (formerly Real Time Information Networks) and Standards of Conduct," 61 Fed. Reg. 21,737 (May 10, 1996), FERC Stats. & Regs., Regulations Preambles [1991-1996] ¶ 31,035 (1996), Order on Rehearing, Order No. 889-A, 78 FERC ¶ 61,221 (1997), as it may be amended from time to time.
Original Participating TO	A Participating TO that was a Participating TO as of January 1, 2000.
Outage	Disconnection, separation or reduction in capacity, planned or forced, of one or more elements of an electric system.
Out-of-Control Area Load Serving Entity (OCALSE)	An entity serving end-users located outside the CAISO Control Area and that has been granted authority or has an obligation pursuant to Federal, State or local law, or under contracts to provide electric service to such end-users located outside the CAISO Control Area.
Overgeneration	A condition that occurs when total Supply exceeds total Demand in the CAISO Control Area.
Partial Resource Adequacy Resource	A Resource Adequacy Resource that has capacity that is designated by its Scheduling Coordinator as Resource Adequacy Capacity in its monthly or annual Resource Adequacy Plan and has a related availability obligation to the CAISO, but

	also has capacity that is not committed to meet a resource adequacy obligation in the CAISO Control Area.
Participating Generator	A Generator or other seller of Energy or Ancillary Services through a Scheduling Coordinator over the CAISO Controlled Grid from a Generating Unit with a rated capacity of 1 MW or greater, or from a Generating Unit providing Ancillary Services and/or submitting Energy Bids through an aggregation arrangement approved by the CAISO, which has undertaken to be bound by the terms of the CAISO Tariff, in the case of a Generator through a Participating Generator Agreement.
Participating Generator Agreement (PGA)	An agreement between the CAISO and a Participating Generator, a *pro forma* version of which is set forth in Appendix B.2.
Participating Intermittent Resource	One or more Eligible Intermittent Resources that meets the requirements of the technical standards for Participating Intermittent Resources adopted by the CAISO and published on the CAISO Website.
Participating Load	An entity, including an entity with Pumping Load, providing Curtailable Demand, which has undertaken in writing by execution of a Participating Load Agreement to comply with all applicable provisions of the CAISO Tariff, as they may be amended from time to time.
Participating Load Agreement (PLA)	An agreement between the CAISO and a Participating Load, a *pro forma* version of which is set forth in Appendix B.4.

Participating TO (PTO)	A party to the Transmission Control Agreement whose application under Section 2.2 of the Transmission Control Agreement has been accepted and who has placed its transmission assets and Entitlements under the CAISO's Operational Control in accordance with the Transmission Control Agreement. A Participating TO may be an Original Participating TO or a New Participating TO.
Participating TO Service Territory	The area in which an IOU, a Local Public Owned Electric Utility, or federal power marketing authority that has turned over its transmission facilities and/or Entitlements to CAISO Operational Control is obligated to provide electric service to Load. A PTO Service Territory may be comprised of the Service Areas of more than one Local Publicly Owned Electric Utility, if they are operating under an agreement with the CAISO for

	aggregation of their MSS and their MSS Operator is designated as the Participating TO.
Participating TO's Interconnection Facilities	All facilities and equipment owned, controlled, or operated by the Participating TO from the Point of Change of Ownership to the Point of Interconnection as identified in Part A to the Standard Large Generator Interconnection Agreement, including any modifications, additions or upgrades to such facilities and equipment. Participating TO's Interconnection Facilities are sole use facilities and shall not include Distribution Upgrades, Stand Alone Network Upgrades or Network Upgrades.
Path 15 Upgrade	The upgraded transmission facilities on Path 15 that have been turned over to CAISO Operational Control.
Payment Advice	A document published as a result of an invoicing run pursuant to the CAISO Payments Calendar in which a Business Associate's current net financial obligation is a negative Settlement Amount.
Payment Date	The date by which invoiced amounts are to be paid under the terms of the CAISO Tariff.
PGA	Participating Generator Agreement
Physical Scheduling Plant	A group of two or more related Generating Units, each of which is individually capable of producing Energy, but which either by physical necessity or operational design must be operated as if they were a single Generating Unit and any Generating Unit or Units containing related multiple generating components which meet one or more of the following criteria: i) multiple generating components are related by a common flow of fuel which cannot be interrupted without a substantial loss of efficiency of the combined output of all components; ii) the Energy production from one component necessarily causes Energy production from other components; iii) the operational arrangement of related multiple generating components determines the overall physical efficiency of the combined output of all components; iv) the level of coordination required to schedule individual generating components would cause the CAISO to incur scheduling costs far in excess of the benefits of having scheduled such individual components separately; or v) metered output is available only for the combined output of related multiple generating

	components and separate generating component metering is either impractical or economically inefficient.
Physical Trade	An Inter-SC Trade of Energy at an individual PNode of Generating Units that is submitted to the CAISO for Settlement through the CAISO Market and is subject to physical validation.
PLA	Participating Load Agreement
PMax	The maximum normal capability of the Generating Unit. PMax should not be confused as an emergency rating of the Generating Unit.
PMS	Power Management System
PNode	Pricing Node
PNP	Priority Nomination Process
PNP Eligible Quantity	The maximum MW quantity of CRRs an LSE is eligible to nominate in the Priority Nomination Process of the CRR Allocation.
POD	Point(s) of Delivery
Point of Change of Ownership	The point, as set forth in Part A to the Standard Large Generator Interconnection Agreement, where the Interconnection Customer's Interconnection Facilities connect to the Participating TO's Interconnection Facilities.
Point of Demarcation	For a Net Scheduled QF, the point (1) where the electrical conductors from the Net Scheduled QF contact an electric utility system or the CAISO Controlled Grid; or (2) if dedicated utility distribution facilities are employed, where the dedicated facilities contact the electric utility system or the CAISO Controlled Grid.
Point of Interconnection	The point, as set forth in Part A to the Standard Large Generator Interconnection Agreement, where the Interconnection Facilities connect to the CAISO Controlled Grid.
Point(s) of Delivery or Withdrawal (POD or Point(s) of Withdrawal)	Point(s) within the CAISO Control Area where Energy and Ancillary Services are made available to a receiving party under this CAISO Tariff.

Point(s) of Receipt or Injection (POR or Point(s) or Injection)	Point(s) within the CAISO Control Area where Energy and Ancillary Services are made available by a delivering party under this CAISO Tariff.
Point-to-Point CRR	A CRR Option or CRR Obligation with a single CRR Source to a single CRR Sink.
POR	Point(s) of Receipt
Power	The electrical work produced by a Generating Unit that is absorbed by the resistive components of Load or other network components, measured in units of watts or standard multiples thereof, e.g., 1,000 Watt = 1 kW; 1,000 kW = 1 MW, etc.
Power Flow Model	A network model used by the CAISO to model the voltages, power injections and power flows on the CAISO Controlled Grid and adjacent Control Areas.
Power Management System (PMS)	The CAISO computer control system used to monitor the real-time performance of the various elements of the CAISO

	Controlled Grid, control Generation, and perform operational power flow studies.
Power System Stabilizers (PSS)	An electronic control system applied on a Generating Unit that helps to damp out dynamic oscillations on a power system. The Power System Stablizers senses Generator variables, such as voltage, current and shaft speed, processes this information and sends control signals to the Generator voltage regulator.
Power Transfer Distribution Factor (PTDF)	The percentage of a power transfer that flows on a transmission facility as a result of the injection of power at a specific bus and the withdrawal of power at another bus or a Reference Bus.
Preliminary Settlement Statement	The initial statement issued by the CAISO of the calculation of the Settlements and allocation of the charges in respect of all Settlement Periods covered by the period to which it relates.
Pre-RA Import Commitment	Any power purchase agreement, ownership interest, or other commercial arrangement entered into on or before March 10, 2006, by a Load Serving Entity serving Load in the CAISO Control Area for the procurement of Energy or capacity from a resource or resources located outside the CAISO Control Area. The Pre-RA Import Commitment shall be deemed to terminate upon the expiration of the initial term of the Pre-RA Import Commitment, notwithstanding any “evergreen” or other renewal provision exercisable at the option of the Load Serving Entity.
Pre-RA Import Commitment Capability	The quantity in MW assigned to a particular Intertie into the CAISO Control Area based on a Pre-RA Import Commitment.
Price Taker	A quantity only Energy Bid with no associated price.
Pricing Node (PNode)	A single network Node or subset of network Nodes where a physical injection or withdrawal is modeled and for which a Locational Marginal Price is calculated and used for financial settlements.
Primary CAISO Control Center	The CAISO Control Center located in Folsom, California.

Priority Nomination Process (PNP)	The step in an annual CRR Allocation in years beyond CRR Year One through which CRR Holders re-nominate (1) Seasonal CRRs they were allocated in the prior year, (2) Long Term CRRs that are expiring, and (3) Existing Transmission Contracts and Converted Rights that are expiring.
Priority Type	The Bid component that indicates if applicable the scheduling priority for the Settlement Period for Reliability Must-Run Generation, if applicable.
Project Sponsor	A Market Participant or group of Market Participants or a Participating TO that proposes the construction of a transmission addition or upgrade in accordance with Section 24.
Proposal for Installation	A written proposal submitted by a CAISO Metered Entity to the CAISO describing a proposal for the installation of additional Metering Facilities.
Proxy Cost	The cost basis of a generating resource for which the operating cost is calculated as an approximation of the actual operating cost pursuant to Section 30.4(1).
PSS	Power System Stabilizers
PTDF	Power Transfer Distribution Factor
PTO	Participating Transmission Owner
PTO Service Territory	The area in which an IOU, a Local Public Owned Electric Utility, or federal power marketing authority that has turned over

	its transmission facilities and/or Entitlements to CAISO Operational Control is obligated to provide electric service to Load. A PTO Service Territory may be comprised of the Service Areas of more than one Local Publicly Owned Electric Utility, if they are operating under an agreement with the CAISO for aggregation of their MSS and their MSS Operator is designated as the Participating TO.
Public Utility Regulatory Policies Act (PURPA)	The Public Utility Regulatory Policies Act of 1978, incorporated in relevant part into the Federal Power Act.
Pumped-Storage Hydro Unit	A hydroelectric dam with the capability to produce electricity and the ability to pump water between reservoirs at different elevations to store such water for the production of electricity.
Pumping Cost	The hourly cost of pumping, expressed in $/hour, submitted by a Participating Load.
Pumping Load	A hydro pumping resource that is capable of responding to Dispatch Instructions by ceasing to pump.
Pump Ramping Conversion Factor	A Master File entry submitted by Scheduling Coordinators that allows the Scheduling Coordinator to indicate the ratio of Energy expended to pump water into storage that can be used to produce Energy. A zero percent Pump Ramping Conversion Factor implies that no amount of Energy production capability is produced as a result of pumping water and the CAISO shall not use such unavailable Energy in its CAISO Markets optimization. A hundred percent Pump Ramping Conversion Factor indicates all the Energy expended to pump water is available for Generation and the CAISO shall use only the available portions in its CAISO Markets optimization. The Pump Ramping Conversion Factor submitted in the Master File need not be based on physical characteristics of the resource and is adjustable by the Scheduling Coordinator.

Pump Shut-Down Costs	A Bid Component submitted by Scheduling Coordinators for resources that are registered as a Participating Load that indicates the $/MWh that the Scheduling Coordinator is willing to be paid to not pump.
PURPA	Public Utility Regulatory Policies Act
QF	Qualifying Facility
QF PGA	Qualifying Facility Participating Generator Agreement
Qualified OCALSE	An OCALSE which the CAISO has certified has met all the requirements for eligibility for CRR Allocation in accordance with Section 39.
Qualifying Capacity	The maximum capacity of a Resource Adequacy Resource. The criteria for calculating Qualifying Capacity from Resource Adequacy Resources may be established by the CPUC or other applicable Local Regulatory Authority and provided to the CAISO.
Qualifying Facility (QF)	A qualifying co-generation facility or small power production facility, as defined in the Code of Federal Regulations, Title 18, Part 292 (18 C.F.R § 292).
Qualifying Facility Participating Generator Agreement (QF PGA)	An agreement between the CAISO and a Generator with a QF Generating Unit, a *pro forma* version of which is set forth in Appendix B.3.

Queue Position	The order of a valid Interconnection Request, relative to all other pending valid Interconnection Requests, that is established based upon the date and time of receipt of the valid Interconnection Request by the CAISO.
Ramping	Changing the loading level of a Generating Unit in a constant manner over a fixed time (e.g., Ramping up or Ramping down). Such changes may be directed by a computer or manual control.
Ramping Energy Deviation	The portion of Imbalance Energy delivered or consumed as the difference between the Standard Ramp trajectory and the Dispatch Operating Point that is contained between the Day-Ahead Schedules across consecutive hours and spreads across the hourly boundary.
Ramp Rate	The Bid component that indicates the operational Ramp Rate, Regulation Ramp Rate, and Operating Reserve Ramp Rate for a Generating Unit, and the Load drop rate and Load pick-up rate for Participating Loads, for which the Scheduling Coordinator is submitting Energy Bids or Ancillary Services Bids.
RAS	Remedial Action Schemes
Real-Time	The period of time during the Operating Hour. Any time period during the twenty-four Operating Hours of any given day.
Real-Time Congestion Fund	For each Settlement Period of the HASP and RTM, the CAISO shall calculate the Real-Time Congestion Fund as the difference of 1) the sum of the products of the RTM or HASP MCC for Demand and the Demand Imbalance Energy at the relevant Location; and 2) the sum of the products of RTM or HASP MCC for Supply and the Supply Imbalance Energy at the relevant Location; including also the sum of RTM and HASP Congestion Charges for Intertie Ancillary Services Awards.

Real-Time Congestion Offset	A component of the neutrality adjustments as provided in Section 11.5.4.2 to account for the non-assessment Marginal Cost of Congestion to Measured Demand for ETCs and TOR Self-Schedules in the Real-Time as provided in Section 11.5.7.
Real-Time Contingency Dispatch (RTCD)	The mode of the Real-Time Dispatch that will be invoked when a transmission or generation Contingency occurs and will include all Contingency Only Operating Reserves in the optimization.
Real-Time Dispatch (RTD)	The SCED and SCUC software used by the CAISO to determine which Ancillary Service and Imbalance Energy resources to Dispatch and to calculate LMPs.

Real-Time Economic Dispatch (RTED)	The mode of the Real-Time Dispatch that will optimally dispatch resources based on their Energy Bids, excluding Contingency Only Operating Reserves except when needed to avoid an imminent System Emergency.
Real-Time Interchange Export Schedule	A final agreed-upon schedule of Energy to be transferred from the CAISO Control Area to another Control Area based on agreed-upon size (megawatts), start and end time, beginning and ending ramp times and rate, and type required for delivery and receipt of power and Energy between the source and sink Control Areas involved in the transaction.
Real-Time Manual Dispatch (RTMD)	The mode of the Real-Time Dispatch that will be invoked as a fall-back mechanism only when the RTED or RTCD fails to provide a feasible dispatch.
Real-Time Marginal Cost of Losses Offset	A component of the neutrality adjustments as provided in Section 11.5.4.2 to account for the non-assessment of Marginal Cost of Losses Charges to Measured Demand for TOR Self-Schedules eligible for the Real-Time Marginal Cost of Losses Credit as provided in Section 11.5.7.2.
Real-Time Market (RTM)	The spot market conducted by the CAISO using SCUC and SCED in the Real-Time, after the HASP is completed, which includes the RTUC, STUC and the RTD for the purpose of Unit Commitment, Ancillary Service procurement, Congestion Management and Energy procurement based on Supply Bids and CAISO Forecast of CAISO Demand.
Real-Time Market Pumping Bid Cost	For the applicable Settlement Interval, the Pumping Cost submitted to the CAISO in the HASP or RTM divided by the number of Settlement Intervals in a Trading Hour, as further provided in Section 11.8.4.1.4.
Real-Time Settlement Interval MSS Price	1) The Real-Time LAP price for the MSS when the MSS internal metered Demand exceeds the MSS internal measured Generation; or 2) the weighted average of the Real-Time LMPs for all applicable PNodes within the relevant MSS when MSS internal measured Generation exceeds MSS internal Measured Demand where weighting factors for computing the weighted average are based on the measured Energy of all Generation at the corresponding PNodes.

Real-Time Unit Commitment (RTUC)	An application of the RTM that runs every 15 minutes and commits Fast and Medium-Start Units using the SCUC to adjust from Day-Ahead Schedules and HASP Intertie Schedules.
Recalculation Settlement Statement	The reissue of an Initial Settlement Statement T+38BD by the CAISO on the fifty-first (51st) Business Day from the relevant Trading Day (T+51BD) if T+51BD falls on a calendar day that is after the day the Invoice or Payment Advice for the bill period containing the relevant Trading Day is scheduled to publish.
Recalculation Settlement Statement T+76BD	The reissue of an Initial Settlement Statement Reissue or the Recalculation Settlement Statement by the CAISO on the seventy-sixth (76th) Business Day from the relevant Trading Day (T+76BD).
Redispatch	The readjustment of scheduled Generation or Demand side management measures, to relieve Congestion or manage Energy imbalances.
Reference Bus	The Location(s) on the CAISO Controlled Grid relative to which mathematical quantities relating to powerflow solution will be calculated.
Registered Cost	The cost basis of a generating resource for which the operating cost is determined from registered values pursuant to Section 30.4(2).

Registered Data	Those items of technical data and operating characteristics relating to Generation, transmission or distribution facilities which are identified to the owners of such facilities as being information, supplied in accordance with the CAISO Tariff, to assist the CAISO to maintain reliability of the CAISO Controlled Grid and to carry out its functions.
Regulating Range	The operating level range within which a generating resource may provide Regulation.
Regulation	The service provided either by Generating Units certified by the CAISO as equipped and capable of responding to the CAISO's direct digital control (AGC) signals, or by System Resources that have been certified by the CAISO as capable of delivering such service to the CAISO Control Area, in an upward and downward

	direction to match, on a Real-Time basis, Demand and resources, consistent with established NERC and WECC Reliability Standards and operating criteria. Regulation is used to control the Power output of electric generators within a prescribed area in response to a change in system frequency, tie line loading, or the relation of these to each other so as to maintain the target system frequency and/or the established Interchange with other Control Areas within the predetermined Regulation Limits. Regulation includes both the increase of output by a Generating Unit or System Resource (Regulation Up) and the decrease in output by a Generating Unit or System Resource (Regulation Down). Regulation Up and Regulation Down are distinct capacity products, with separately stated requirements and ASMPs in each Settlement Period.
Regulation Down or Regulation Down Reserve	Regulation reserve provided by a resource that can decrease its actual operating level in response to a direct electronic (AGC) signal from the CAISO to maintain standard frequency in accordance with established Reliability Criteria.
Regulation Down Reserve Cost	The revenues paid to the suppliers of the total awarded Regulation Down Reserve capacity in the Day-Ahead, HASP, and Real-Time Markets for the Settlement Period, minus the payments rescinded in the Settlement Period due to the unavailability of the Regulation Down under any of the provisions of Section 8.10.8.
Regulation Limits	The MW limits, up and down, set by a Generator for a Generating Unit's operation on Automatic Generation Control.
Regulation Up or Regulation Up Reserve	Regulation provided by a resource that can increase its actual operating level in response to a direct electronic (AGC) signal from the CAISO to maintain standard frequency in accordance with established Reliability Criteria.
Regulation Up Reserve Obligation	The obligation of a Scheduling Coordinator to pay its share of costs incurred by the CAISO in procuring Regulation Up Reserves.
Regulatory Must-Run Generation	Hydro Spill Generation and Generation which is required to run by applicable federal or California laws, regulations, or other governing jurisdictional authority. Such requirements include

	but are not limited to hydrological flow requirements, environmental requirements, such as minimum fish releases, fish pulse releases and water quality requirements, irrigation and water supply requirements of solid waste Generation, or other Generation contracts specified or designated by the jurisdictional regulatory authority as it existed on December 20, 1995, or as revised by federal or California law or Local Regulatory Authority.
Regulatory Must-Take Generation	Those Generation resources identified by CPUC, or a Local Regulatory Authority, the operation of which is not subject to competition. These resources will be scheduled by the relevant Scheduling Coordinator directly with the CAISO on a must-take basis. Regulatory Must-Take Generation includes Generation from Qualifying Facility Generating Units subject to a mandatory purchase obligation as defined by federal law, nuclear units and pre-existing power purchase contracts with minimum energy take requirements.
Reliability Coordinator	The entity designated by WECC as responsible for reliability coordination in Real-Time for the area defined by WECC.
Reliability Criteria	Pre-established criteria that are to be followed in order to maintain desired performance of the CAISO Controlled Grid under contingency or steady state conditions.
Reliability Must-Run Charge (RMR Charge)	The sum payable by a Responsible Utility to the CAISO pursuant to Section 41 for the costs, net of all applicable credits, incurred under the Reliability Must-Run Contract.
Reliability Must-Run Contract (RMR Contract)	A Must-Run Service Agreement between the owner of a Reliability Must-Run Unit and the CAISO.
Reliability Must-Run Generation (RMR Generation)	Generation that the CAISO determines is required to be on line to meet Applicable Reliability Criteria requirements. This includes i) Generation constrained on line to meet NERC and WECC reliability criteria for interconnected systems operation; ii) Generation needed to meet Load demand in constrained areas; and iii) Generation needed to be operated to provide voltage or security support of the CAISO or a local area.

Reliability Must-Run Unit (RMR Unit)	A Participating Generator which is the subject of a Reliability Must-Run Contract.
Reliability Network Upgrades	The transmission facilities at or beyond the Point of Interconnection necessary to interconnect a Large Generating Facility safely and reliably to the CAISO Controlled Grid, which would not have been necessary but for the interconnection of the Large Generating Facility, including Network Upgrades necessary to remedy short circuit or stability problems resulting from the interconnection of the Large Generating Facility to the CAISO Controlled Grid. Reliability Network Upgrades also include, consistent with WECC practice, the facilities necessary to mitigate any adverse impact the Large Generating Facility's interconnection may have on a path's WECC rating.
Reliability Requirement Determination (RRD)	The reliability process conducted by the CAISO during the DAM, prior to the IFM, and in the HASP, prior to the RTUC, to determine whether unit(s) subject to a contract with the CAISO

	to provide local reliability services, which includes Reliability Must-Run and any successor instrument determined are necessary to meet local reliability needs for the CAISO Control Area.
Reliability Services Costs	The costs associated with services provided by the CAISO: 1) that are deemed by the CAISO as necessary to maintain reliable electric service in the CAISO Control Area; and 2) whose costs are billed by the CAISO to the Participating TO pursuant to the CAISO Tariff. Reliability Services Costs include costs charged by the CAISO to a Participating TO associated with service provided under an Reliability Must Run Contract, Exceptional Dispatches and Minimum Load Costs associated with units committed under the must-offer obligation for local reliability requirements
Reliability Standard	A requirement approved by FERC under Section 215 of the Federal Power Act to provide for reliable operation of the bulk power system. The term includes requirements for the operation of existing bulk power system facilities, including cyber security protection, and the design of planned additions or modifications to such facilities to the extent necessary for reliable operation of the bulk power system; but the term does not include any requirement to enlarge such facilities or to construct new transmission capacity or generation capacity.
Remaining Import Capability	The quantity in MW of Total Import Capability assigned to a Load Serving Entity up to its Load Share Quantity after the assignment of Existing Contract Import Capability and Pre-RA Import Commitment. Capability.
Remedial Action Schemes (RAS)	Protective systems that typically utilize a combination of conventional protective relays, computer-based processors, and telecommunications to accomplish rapid, automated response to unplanned power system events. Also, details of RAS logic and any special requirements for arming of RAS schemes, or changes in RAS programming, that may be required.
Rerate Energy	Decremental IIE subsequent to a derate of a Generating Unit's PMax.

Reserve Margin	The amount of Resource Adequacy Capacity that a Scheduling Coordinator is required to maintain in accordance with Section 40.
Reserve Sharing LSE	A Load Serving Entity whose Scheduling Coordinator has informed the CAISO in accordance with Section 40.1 of its election to be a Reserve Sharing LSE.
Residual Imbalance Energy	The Instructed Imbalance Energy at the start or end of a Trading Hour and outside the Schedule-change band for that Trading Hour that is due to: 1) a Dispatch Instruction that is in the opposite direction of a previously issued Dispatch Instruction in the previous Trading Hour, or 2) a Dispatch Instruction in the next Trading Hour. Residual Imbalance Energy may cross hourly boundaries, in which case the portion that lies between hourly transactions is classified and settled as a Ramping Energy Deviation.

Residual Unit Commitment (RUC)	The process conducted by the CAISO in the Day-Ahead Market after the IFM has been executed to ensure sufficient Generating Units, System Units, System Resources and Participating Loads are committed to meet the CAISO Forecast of CAISO Demand.
Resource Adequacy Capacity or RA Capacity	The generation capacity of a Resource Adequacy Resource listed on a Resource Adequacy Plan and a Supply Plan.
Resource Adequacy Compliance Year	A calendar year from January 1 through December 31.
Resource Adequacy Plan	A submission by a Scheduling Coordinator for a Load Serving Entity in the form required by the Business Practice Manual to satisfy the requirements of Section 40.
Resource Adequacy Resource	A resource that is required to offer Resource Adequacy Capacity. The criteria for determining the types of resources that are eligible to provide Qualifying Capacity may be established by the CPUC or other applicable Local Regulatory and provided to the CAISO.
Resource ID	A resource that is required to offer Resource Adequacy Capacity. The criteria for determining the types of resources that are eligible to provide Qualifying Capacity may be established by the CPUC or other applicable Local Regulatory Authority and provided to the CAISO.
Resource Location	The Resource ID for a Generating Unit, Participating Load or System Resource.
Resource-Specific ASMP	The Ancillary Services Marginal Price as determined pursuant to Section 11.10.
Resource-Specific Settlement Interval LMP	The LMP at a PNode used for settlement of IIE, calculated as the IIE-weighted average, excluding the IIE weight for Residual Imbalance Energy, Energy from HASP Intertie Schedules, and Energy from Black Start and Voltage Support, of the individual LMPs for Dispatch Intervals within the given Settlement Interval for a resource, and if there is no Instructed Imbalance Energy, then it is calculated as the simple average of the individual LMPs for the Dispatch Intervals within the given Settlement Interval for a resource.
Resource-Specific System Resource	A Dynamic or Non-Dynamic Resource-Specific System Resource.

Resource-Specific Tier 1 UIE Settlement Interval Price	The price used to settle Tier 1 UIE as calculated pursuant to Section 11.5.2.1.
Responsible Participating Transmission Owner (or Responsible Participating TO or Responsible PTO)	The party providing transmission service under an Existing Contract listed in Appendix A of a Responsible Participating Transmission Owner Agreement and that is the Scheduling Coordinator for each Existing Right holder listed in Appendix A of that RPTOA, unless that Scheduling Coordinator responsibility is transferred pursuant to the provisions of the RPTOA.
Responsible Participating Transmission Owner Agreement (RPTOA)	An agreement between the CAISO and a Responsible Participating Transmission Owner, a *pro forma* version of which has been accepted by FERC as a CAISO rate schedule in 88 FERC ¶ 61,077.
Responsible Utility	The utility which is a party to the Transmission Control Agreement in whose Participating TO Service Territory the Reliability Must-Run Unit is located or whose Participating TO Service Territory is contiguous to the Participating TO Service Territory in which a Reliability Must-Run Unit owned by an entity outside of the CAISO

	Controlled Grid is located.
Revenue Meter Data Acquisition and Processing System (RMDAPS)	A collective name for the set of CAISO systems used to collect, validate, edit and report on Revenue Quality Meter Data.
Revenue Quality Meter Data	Meter data meeting the standards and requirements established and maintained by the CAISO.
Revenue Requirement	The revenue level required by a utility to cover expenses made on an investment, while earning a specified rate of return on the investment.
Revised Adjusted RMR Invoice	The monthly invoice issued by the Reliability Must-Run Owner to the CAISO pursuant to the Reliability Must-Run Contract reflecting any appropriate revisions to the Adjusted Reliability Must-Run Invoice based on the CAISO's validation and actual data for the billing month.
Revised Estimated RMR Invoice	The monthly invoice issued by the Reliability Must-Run Owner to the CAISO pursuant to the Reliability Must-Run Contract reflecting appropriate revisions to the Estimated Reliability Must-Run Invoice based on the CAISO's validation of the Estimated Reliability Must-Run Invoice.
RMDAPS	Revenue Meter Data Acquisition and Processing System
RMR	Reliability Must-Run
RMR Dispatch	The megawatt amount that is mandated by the CAISO to be scheduled in a given market for a resource under the RMR Contract.
RMR Dispatch Notice	Notice received by an RMR Unit from the CAISO containing an RMR Dispatch.

RMR Owner	The provider of services under a Reliability Must-Run Contract.
RMR Owner Facility Trust Account	The commercial bank account held in trust by the CAISO for the benefit of the owner of an RMR Unit subject to an RMR Contract as required and specified in Section 9.2 of the pro forma RMR Contract.
RMR Proxy Bid	For RMR Condition 1 Units, an amount calculated based on the hourly variable costs as defined in Schedule C of the applicable RMR Contract in the form of a monotonically increasing function consistent

	with the bidding rules in Section 30, which is used in the MPM-RRD process described in Section 31.2. For RMR Condition 2 Units, the Energy Bid defined in Schedule M of the RMR Contract, which is used in the MPM-RRD process described in Section 31.2.
RPTOA	Responsible Participating Transmission Owner Agreement
RRD	Reliability Requirement Determination
RTCD	Real-Time Contingency Dispatch
RTD	Real-Time Dispatch
RTED	Real-Time Economic Dispatch
RTM	Real-Time Market
RTM AS Bid Cost	The Bid Cost of a BCR Eligible Resource for Ancillary Service capacity in the RTM.
RTM Bid Cost	The total of a resource's RTM Start–Up Cost, RTM Minimum Load Cost, RTM Pump Shut-Down Cost, RTM Pumping Cost, RTM Energy Bid Cost, and RTM AS Bid Cost.
RTM Bid Cost Shortfall	For each Settlement Interval, for any BCR Eligible Resource, the negative amount resulting from the difference between its RTM Bid Cost and its RTM Market Revenue.
RTM Bid Cost Surplus	For each Settlement Interval, for any BCR Eligible Resource, the positive amount, if any, resulting from the difference between its RTM Bid Cost and its RTM Market Revenue.
RTM Bid Cost Uplift	The system-wide net of the RTM Bid Cost Shortfalls and RTM Bid Cost Surpluses for a Settlement Interval of all BCR Eligible Resources with Unrecovered Bid Cost Uplift Payments. This amount will be netted according to Section 11.8.6.2 to calculate the Net RTM Bid Cost Uplift before allocation to Scheduling Coordinators.

RTM Commitment Period	A Commitment Period determined by the RTM; provided that if the RTM changes the Commitment Status of units scheduled in the IFM or committed in the RUC, an RTM Commitment Period may or may not partially overlap with IFM and RUC Commitment Periods.
RTMD	Real-Time Manual Dispatch
RTM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules	A credit provided to Scheduling Coordinators pursuant to Section 17.3.3 to offset any HASP and RTM Marginal Cost of Losses that would otherwise be applied to the valid and balanced portions of any TOR Self-Schedule in the IFM as provided in Section 11.5.7.2.
RTM Market Revenue	The amount received by BCR Eligible Resource from Energy scheduled and Ancillary Services awarded in the RTM for the

	purposes of Bid Cost Recovery.
RTM Self-Commitment Period	A time period determined by the CAISO for the purposes of deriving any Bid Cost Recovery amounts, related to the RTM.
RTUC	Real-Time Unit Commitment
RUC	Residual Unit Commitment
RUC Availability Bid	The quantity (MW) and price ($/MW per hour) at or above which a Generating Unit, System Resource, System Unit or Participating Load has agreed to sell capacity for a specified interval of time to the CAISO to meet the Residual Unit Commitment requirement.
RUC Availability Bid Cost	As provided in Section 11.8.3.1.3, the product of the RUC Award and the relevant RUC Availability Bid price, divided by the number of Settlement Intervals in a Trading Hour.
RUC Availability Payment	The payment made for the RUC Availability Quantity as specified in Section 11.
RUC Availability Quantity	A RUC Award (MW) excluding any RUC Capacity that is actually unavailable due to a unit derate or Outage.
RUC Award	The portion of the RUC Capacity from resources eligible to receive RUC Availability Payments, exclusive of Minimum Load, capacity designated as RMR, and capacity under Resource Adequacy requirements as specified in Section 40.
RUC Bid Cost	The total Bid Costs associated with commitment by the CAISO through the RUC process used for determination of Unrecovered Bid Cost Uplift Payments and RUC Bid Cost Uplift allocation.
RUC Bid Cost Shortfall	For each Settlement Interval, for any BCR Eligible Resource, the negative amount, if any, resulting from the difference between its RUC Bid Cost and its RUC Market Revenue.
RUC Bid Cost Surplus	For each Settlement Interval, for any BCR Eligible Resource, the positive amount, if any, resulting from the difference between its RUC Bid Cost and its RUC Market Revenue.
RUC Bid Cost Uplift	The system-wide net of the RUC Bid Cost Shortfalls and RUC Bid Cost Surpluses for a Settlement Interval for all BCR Eligible Resources with Unrecovered Bid Cost Uplift Payments. This amount will be netted according to Section 11.8.6.2 to calculate the Net RUC Bid Cost Uplift before allocation to Scheduling Coordinators.

RUC Capacity	The positive difference between the RUC Schedule and the greater of the Day-Ahead Schedule and the Minimum Load level of a resource.
RUC Commitment Period	A Commitment Period determined by the RUC; provided that because the RUC may not decommit units scheduled in the IFM, if the unit is scheduled by the IFM within that Time Period an IFM Commitment Period is always within a RUC Commitment Period; and a RUC Commitment Period may start earlier and/or may end later than an IFM Commitment Period if RUC issues an earlier Start-Up

	and/or later Shut-Down Instruction than the IFM, respectively.
RUC Compensation	The Payment to Scheduling Coordinators with RUC Awards, calculated as the sum of RUC Availability Payment and RUC Unrecovered Bid Costs.
RUC Compensation Cost	As provided in Section 11.8.6.5, for each Trading Hour of the RUC, the sum of the RUC Availability Payment and the hourly Net RUC Bid Cost Uplift, which is allocated as provided in Section 11.8.6.5.3.
RUC Market Revenues	The sum of a resource's RUC Availability Payment for a Trading Hour divided by the number of Settlement Intervals in a Trading Hour or the purposes of calculating Bid Cost Recovery for RUC.
RUC Price	The price calculated by the RUC optimization for each Trading Hour of the next Trading Day which reflects the price ($/MW per hour) for the next increment of RUC Capacity at a specified PNode for each Trading Hour.
RUC Schedule	The total MW per hour amount of capacity committed by RUC including the MW per hour amounts committed in the Day-Ahead Schedule.
RUC Zone	A forecast region representing a UDC or MSS Service Area, Local Capacity Area, or other collection of Nodes for which the CAISO has developed sufficient historical CASIO Demand and relevant weather data to perform a Demand Forecast for such area, for which as further provided in Section 31.5.3.7 the CAISO may adjust the CAISO Forecast of CAISO Demand to ensure that the RUC process produces adequate local capacity procurement.
Rules of Conduct	The rules set forth in 37.2 through 37.7.
Sanction	A consequence specified in Section 37 for the violation of a Rule of Conduct, which may include a) a warning letter notifying the Market Participant of the violation and future consequences specified under Section 37 if the behavior is not corrected, or b) financial penalties. Neither referral to FERC nor rescission of payment for service not provided shall constitute a Sanction.
SC	Scheduling Coordinator
SCA	Scheduling Coordinator Agreement
SCADA	Supervisory Control and Data Acquisition
SCED	Security Constrained Economic Dispatch

Schedule	A Day-Ahead Schedule, a HASP Advisory Schedule, or a HASP Intertie Schedule.
Scheduled Demand	The MW of Energy of Demand cleared through the IFM and set in the Day-Ahead Schedule for the next Trading Day.
Scheduled Generation	The MW of Energy of Generation cleared through the IFM and set in the Day-Ahead Schedule for the next Trading Day.
Scheduling and Logging system for the CAISO (SLIC)	A logging application that allows Market Participants to notify the CAISO when a Generating Unit's properties change due to physical problems. Users can modify the maximum and minimum output of a unit, as well as the Ramping capability of the unit.
Scheduling Coordinator (SC)	An entity certified by the CAISO for the purposes of undertaking the functions specified in Section 4.5.3.
Scheduling Coordinator Agreement (SCA)	An agreement between a Scheduling Coordinator and the CAISO whereby the Scheduling Coordinator agrees to comply with all CAISO rules, protocols and instructions, as those rules, protocols and instructions may be amended from time to time, a *pro forma* version of which is set forth in Appendix B.1.
Scheduling Coordinator Applicant	An applicant for certification by the CAISO as a Scheduling Coordinator.
Scheduling Coordinator Application Form	The form specified by the CAISO from time to time in which a Scheduling Coordinator Applicant must apply to the CAISO for certification as a Scheduling Coordinator.
Scheduling Coordinator Customer	A customer of the Scheduling Coordinator Applicant or a Scheduling Coordinator for whom the Scheduling Coordinator provides services relevant to the CAISO Controlled Grid.
Scheduling Coordinator ID Code (SCID)	The Bid component that indicates the individual identification Code

	provided by the CAISO to the Scheduling Coordinator.
Scheduling Coordinator Metered Entity	A Generator, Eligible Customer or End-User that is not a CAISO Metered Entity.
Scheduling Point	A location at which the CAISO Controlled Grid is connected, by a group of transmission paths for which a physical, non-simultaneous transmission capacity rating has been established for Congestion Management, to transmission facilities that are outside the CAISO's Operational Control.
SCID	Scheduling Coordinator ID Code
Scoping Meeting	The meeting among representatives of the Interconnection Customer, the applicable Participating TO, and the CAISO conducted for the purpose of discussing alternative interconnection options, to exchange

	information including any transmission data and earlier study evaluations that would be reasonably expected to impact such interconnection options, to analyze such information, and to determine the potential feasible Points of Interconnection.
SCUC	Security Constrained Unit Commitment
Seasonal Available CRR Capacity	The upper limit of network capacity that will be used in the annual CRR Allocation and annual CRR Auction calculated by effectively reducing OTC for Transmission Ownership Rights as if all lines will be in service for the relevant year in accordance with Section 36.4.
Seasonal CRR	A Congestion Revenue Right that is valid for one season and one time-of-use period in a given year.
Seasonal CRR Eligible Quantity	The MW quantity of CRRs a CRR Holder or Candidate CRR Holder is eligible to nominate for a specific season and time-of-use period in the annual CRR Allocation.
Seasonal CRR Load Metric	The MW level of Load that is exceeded only in .05 percent of the hours for each season and time of use period based on the LSE's historical Load.
Secondary Registration System	The computer interface through which CRR Holders and Candidate CRR Holders register any bilateral CRR transactions with the CAISO.
Security	The form of security provided by a Scheduling Coordinator pursuant to Section 12.1 (i.e., letter of credit, guarantee or cash deposit) to secure its trading obligations.
Security Constrained Economic Dispatch (SCED)	An algorithm performed by a computer program that simultaneously clears Energy Supply Bids, including Self-Schedules, against Demand Forecast to determine Dispatch Instructions.

Security Constrained Unit Commitment (SCUC)	An algorithm performed by a computer program over a multi-hour Time Horizon that determines the Commitment Status and Day-Ahead Schedules, AS Awards, RUC Awards, HASP Intertie Schedules and Dispatch Instructions for selected resources and minimizes production costs (Start-Up, Minimum Load and Energy Bid Costs in IFM, HASP and RTM; Start-Up, Minimum Load and RUC Availability Bid Costs) while respecting the physical operating characteristics of selected resources and transmission constraints.
Security Monitoring	The real-time assessment of the CAISO Controlled Grid that is conducted to ensure that the system is operating in a secure state, and in compliance with all Applicable Reliability Criteria.
Self-Commitment Period	The portion of a Commitment Period of a unit with an Energy Self-

	Schedule or a Submission to Self-Provide an Ancillary Services, except for Non-Spinning Reserve self-provision by a Fast-Start Unit. The Self-Commitment Period may include Time Periods without Energy Self-Schedules or AS self-provision if it is determined by inference that the unit must be on due to Minimum Run Time, Minimum Down Time, or Maximum Daily Start-Up constraints.
Self-Provided Ancillary Services	A Submission to Self-Provide Ancillary Services in the Day Ahead, HASP, or Real-Time Market that has been accepted by the CAISO. Acceptance will occur prior to Ancillary Service Bid evaluation in the relevant market and indicates that the CAISO has determined the submission is feasible with regard to resource operating characteristics and regional constraints and is qualified to provide the Ancillary Service in the market for which it was submitted. Self provided Ancillary Services consist of self provided Regulation Up reserves, self provided Regulation Down reserves, self provided Spinning Reserves, and self provided Non-Spinning Reserves.
Self-provided Load	The portion of Load that is served by a Net Scheduled QF listed in a QF PGA, consistent with Section 218(b) of the California Public Utilities Code.
Self-Schedule	The Bid component that indicates the quantities in MWhs with no specification of a price that the Scheduling Coordinator is submitting to the CAISO, which indicates that the Scheduling Coordinator is a Price Taker, Regulatory Must-Run Generation or Regulatory Must-Take Generation, which includes ETC and TOR Self-Schedules and Self-Schedules for Converted Rights.
Service Area	An area in which an IOU or a Local Publicly Owned Electric Utility is obligated to provide electric service to End-Use Customers.
Set Point	Scheduled operating level for each Generating Unit or other resource scheduled to run in the HASP Schedule and Awards.
Settlement	Process of financial settlement for products and services purchased and sold undertaken by the CAISO under Section 11. Each Settlement will involve a price and a quantity.
Settlement Account	An account held at a bank situated in California, designated by a Scheduling Coordinator, a CRR Holder or a Participating TO pursuant to the Scheduling Coordinator's Scheduling Coordinator Agreement,

	the CRR Holder's CRR Entity Agreement or in the case of a Participating TO, Section 2.2.1 of the Transmission Control Agreement, to which the CAISO shall pay amounts owing to the Scheduling Coordinator, the CRR Holder or the Participating TO under the CAISO Tariff.
Settlement Interval	The time period equal to or a multiple of the Dispatch Interval, over which the CAISO settles cost compensation amounts or deviations in Generation and Demand in CAISO Markets.
Settlement Interval Penalty Location Real-Time LMP	The optimal Instructed Imbalance Energy weighted average of the individual Dispatch Interval Real-Time LMPs for the resources in a UDP Aggregation established pursuant to Appendix R.
Settlement Period	For all CAISO transactions the period beginning at the start of the hour, and ending at the end of the hour. There are twenty-four Settlement Periods in each Trading Day, with the exception of a Trading Day in which there is a change to or from daylight savings time.
Settlement Quality Meter Data	Meter Data gathered, edited, validated, and stored in a settlement-ready format, for Settlement and auditing purposes.
Settlement Quality Meter Data Systems	A collective name for the set of CAISO systems used to accept, analyze and report on Settlement Quality Meter Data.
Settlements, Metering, and Client Relations Charge	The component of the Grid Management Charge that provides for the recovery of the CAISO's costs, including, but not limited to the costs of maintaining customer account data, providing account information to customers, responding to customer inquiries, calculating market charges, resolving customer disputes, and the costs associated with the CAISO's Settlement, billing, and metering activities. Because this is a fixed charge per Scheduling Coordinator ID, costs associated with activities listed above also are allocated to other charges under the Grid Management Charge according to formula set forth in Appendix F, Schedule 1, Part A of this Tariff.
Settlement Statement	Either or both of a Preliminary Settlement Statement or Final Settlement Statement.
Settlement Statement Re-run	The re-calculation of a Settlement Statement in accordance with the provisions of the CAISO Tariff.
SFT	Simultaneous Feasibility Test

Shadow Price	The marginal value of relieving a particular constraint.
Short Start Unit	A Generating Unit that has a cycle time less than five hours (Start-Up Time plus Minimum Run Time is less than five hours), has a Start-Up Time less than two hours, and can be fully optimized with respect to this cycle time.
Short-Term Unit Commitment (STUC)	The Unit Commitment procedure run at approximately T-52.5 minutes for a Time Horizon of approximately five (5) hours. The STUC determines whether some Medium Start Units need to be started early enough to meet the Demand within the STUC Time Horizon using the CAISO Forecast of CAISO Demand. The STUC produces a Unit Commitment solution for every 15-minute interval within the STUC Time Horizon and issues binding Start-Up instructions only as necessary.
Shut-Down	A Commitment Status transition from On to Off.
Shut-Down Cost	The Bid Component submitted by the Scheduling Coordinator indicating a single price at which the resource is willing to Shut-Down.
Shut-Down Instruction	An instruction issued by the CAISO to a resource to Shut-Down.
Simultaneous Feasibility Test (SFT)	The process that the CAISO will conduct to ensure that allocated and auction CRRs do not exceed relevant transmission system constraints as described in Section 36.4.2 and further described in the Business Practices Manuals.

Site Control	Documentation reasonably demonstrating: (1) ownership of, a leasehold interest in, or a right to develop a site for the purpose of constructing the Generating Facility; (2) an option to purchase or acquire a leasehold site for such purpose; or (3) an exclusivity or other business relationship between Interconnection Customer and the entity having the right to sell, lease or grant Interconnection Customer the right to possess or occupy a site for such purpose.
SLIC	Scheduling and Logging system for the CAISO
Small Generating Facility	A Generating Facility that has a Generating Facility Capacity of no more than 20 MW.
SMEC	System Marginal Energy Cost
Spinning Reserve	The portion of unloaded synchronized generating capacity that is immediately responsive to system frequency and that is capable of being loaded in ten minutes, and that is capable of running for at least two hours.
Spinning Reserve Cost	The revenues paid to the suppliers of the total awarded Spinning Reserve capacity in the Day-Ahead Market, HASP, and Real-Time

	Market for the Settlement Period, minus the payments rescinded in the Settlement Period due to the unavailability of the Spinning Reserve under any of the provisions of Section 8.10.2.
Spinning Reserve Obligations	The obligation of a Scheduling Coordinator to pay its share of costs incurred by the CAISO in procuring Spinning Reserve.
Stand Alone Network Upgrades	Network Upgrades that an Interconnection Customer may construct without affecting day-to-day operations of the CAISO Controlled Grid or Affected Systems during their construction. The Participating TO, the CAISO, and the Interconnection Customer must agree as to what constitutes Stand Alone Network Upgrades and identify them in Appendix A to the Standard Large Generator Interconnection Agreement.
Standard Large Generator Interconnection Agreement (LGIA)	The form of interconnection agreement applicable to an Interconnection Request pertaining to a Large Generating Facility, a *pro forma* version of which is set forth in Appendix V.
Standard Large Generator Interconnection Procedures (LGIP)	The interconnection procedures applicable to an Interconnection Request pertaining to a Large Generating Facility that is set forth in Appendix U.
Standard Ramp (-ing)	A ramp calculated from two consecutive Day-Ahead Schedules that results in a straight trajectory between 10 minutes before the start of a Trading Hour to 10 minutes after the start of the Trading Hour.
Standard Ramping Energy	Imbalance Energy delivered or consumed as the difference between the Day-Ahead Schedules across consecutive hours and the Standard Ramp.
Standby Rate	A rate assessed a Standby Service Customer by the Participating TO that also provides retail electric service, as approved by the Local Regulatory Authority, or FERC, as applicable, for Standby Service which compensates the Participating TO, among other things, for costs of High Voltage Transmission Facilities.
Standby Service	Service provided by a Participating TO that also provides retail electric service, which allows a Standby Service Customer, among other things, access to High Voltage Transmission Facilities for the delivery of backup power on an instantaneous basis to ensure that Energy may

	be reliably delivered to the Standby Service Customer in the event of an Outage of a Generating Unit serving the customer's Load.
Standby Service Customer	A retail End-Use Customer of a Participating TO that also provides retail electric service that receives Standby Service and pays a Standby Rate.
Standby Transmission Revenue	The transmission revenues, with respect to cost of both High Voltage Transmission Facilities and Low Voltage Transmission Facilities, collected directly from Standby Service Customers through charges for Standby Service.
Start-Up	A Commitment Status transition from Off to On.
Start-Up Bid	The Bid component that indicates the Start-Up Time and Start-Up Cost curves for the Generating Unit, which applies for the entire Trading Day for which it is submitted. Start-Up Cost curves are strictly monotonically increasing non-negative staircase curves, up to three segments, which represent a function of Start-Up Cost versus down time.
Start-Up Cost	The cost incurred by a particular Generating Unit during Start-Up from the time of first fire, the time of receipt of a CAISO Dispatch Instruction, or the time the unit was last synchronized to the grid, whichever is later, until the time the Generating Unit reaches its minimum operating level.
Start-Up Instruction	An instruction issued by the CAISO to a resource to Start-Up.
Start-Up Time	The time period required for a resource to go from Off to its Minimum Load.
State Estimator	A computer software program that provides the CAISO with a near Real-Time assessment of system conditions within the CAISO Control Area, including portions of the CAISO Control Area where Real-Time information is unavailable.
STUC	Short-Term Unit Commitment
Submission to Self-Provide an Ancillary Service	A submission to the CAISO containing all of the bidding requirements for an Ancillary Service with the exception of price information.
Sub-Region	A region identified by the CAISO for procurement of Ancillary Services within the System Region.
Supervisory Control and Data Acquisition (SCADA)	A computer system that allows an electric system operator to remotely monitor and control elements of an electric system.

Supply	The Energy delivered from a Generating Unit, System Unit, Physical Scheduling Plant, System Resource or the Curtailable Demand provided by a Participating Load.
Supply Plan	A submission by a Scheduling Coordinator for a Resource Adequacy Resource in order to satisfy the requirements of Section 40.
System Emergency	Conditions beyond the normal control of the CAISO that affect the ability of the CAISO Control Area to function normally including any abnormal system condition which requires immediate manual or automatic action to prevent loss of Load, equipment damage, or tripping of system elements which might result in cascading Outages or to restore system operation to meet the minimum operating reliability criteria.
System Marginal Energy Cost (SMEC)	The component of the LMP that reflects the marginal cost of providing Energy from a designated reference Location.
System Planning Studies	Reports summarizing studies performed to assess the adequacy of the CAISO Controlled Grid as regards conformance to Reliability Criteria.
System Region	The CAISO Control Area.
System Reliability	A measure of an electric system's ability to deliver uninterrupted service at the proper voltage and frequency.
System Resource	A group of resources, single resource, or a portion of a resource located outside of the CAISO Control Area, or an allocated portion of a Control Area's portfolio of generating resources that are either a static Interchange schedule or directly responsive to that Control Area's Automatic Generation Control (AGC) capable of providing Energy and/or Ancillary Services to the CAISO Control Area, provided that if the System Resource is providing Regulation to the CAISO it is directly responsive to AGC.

System Unit	One or more individual Generating Units and/or Loads within a Metered Subsystem controlled so as to simulate a single resource with specified performance characteristics, as mutually determined and agreed to by the MSS Operator and the CAISO. The Generating Units and/or Loads making up a System Unit must be in close physical proximity to each other such that the operation of the resources comprising the System Unit does not result in significant differences in flows on the CAISO Controlled Grid.
TAC	Transmission Access Charge
TAC Benefit	The amount, if any, for each year by which the cost of Existing High Voltage Transmission Facilities associated with deliveries of Energy to Gross Loads in the PTO Service Territory is reduced by the implementation of the High Voltage Access Charge described in Schedule 3 to Appendix F. The TAC Benefit of a New Participating TO shall not be less than zero.
TAC Transition Date	January 1, 2001, the date described in Section 4.2 of Appendix F, Schedule 3, when the first New Participating TO's execution of the Transmission Control Agreement took effect, which established the start of the TAC Transition Period for the calculation of the Access Charge.
TAC Transition Period	The 10-year transition period for the CAISO's Access Charge

	methodology commencing January 1, 2001 through December 31, 2010.
Take-Out Point	The metering points at which a Scheduling Coordinator Metered Entity or CAISO Metered Entity takes delivery of Energy.
Tax Exempt Debt	Municipal Tax Exempt Debt or Local Furnishing Bonds.
Tax Exempt Participating TO	A Participating TO that is the beneficiary of outstanding Tax Exempt Debt issued to finance any electric facilities, or rights associated therewith, which are part of an integrated system including transmission facilities the Operational Control of which is transferred to the CAISO pursuant to the Transmission Control Agreement.
TCA	Transmission Control Agreement
TEA	Transmission Exchange Agreement
Tie Point Meter	A revenue meter, which is capable of providing Settlement Quality Meter Data, at a Scheduling Point or at a boundary between Utility Distribution Companies within the CAISO Controlled Grid.
Tier 1 UIE	The quantity of Uninstructed Deviation from the resource's Instructed Imbalance Energy.
Tier 2 UIE	The quantity of Uninstructed Deviation from the resource's Day-Ahead Schedule.
Tier LT	The tier of the annual CRR Allocation process through which the CAISO allocates Long Term CRRs.
Time Horizon	The time period to which a given CAISO Market optimization process applies. For the IFM and RUC the Time Horizon consists of each Trading Hour of the next Trading Day. For the HASP, the Time Horizon is 1.75 Trading Hours in fifteen-minute increments. For STUC the Time Horizon is 4.25 Trading Hours in fifteen-minute increments. For RTUC the Time Horizon is a variable number of fifteen-minute intervals that runs every fifteen minutes and covers 4 to 7 intervals. For the RTD, the Time Horizon is seven five-minute intervals span over thirty-five minutes.
Time Period	The period of time for Scheduling or Dispatch activities, which is a Trading Hour in the DAM and a Dispatch Interval in the RTM.

TO	Transmission Owner
Tolerance Band	The permitted area of variation for performance requirements of resources used for various purposes as further provided in the CAISO Tariff. The Tolerance Band is expressed in terms of Energy (MWh) for Generating Units, System Units and imports from Dynamic System Resources for each Settlement Interval and equals the greater of the absolute value of: (1) five (5) MW divided by number of Settlement Intervals per Settlement Period or (2) three percent (3%) of the relevant Generating Unit's, Dynamic System Resource's or System Unit's maximum output (PMax), as registered in the Master File, divided by number of Settlement Intervals per Settlement Period. The maximum output (PMax) of a Dynamic System Resource will be established by agreement between the CAISO and the Scheduling Coordinator representing the Dynamic System Resource on an individual case basis, taking into account the number and size of the generating resources, or allocated portions of generating resources, that comprise the Dynamic System Resource. The Tolerance Band is expressed in terms of Energy (MWh) for Participating Loads for each Settlement Interval and equals the greater of the absolute value of: (1) five (5) MW divided by number of Settlement Intervals per Settlement Period or (2) three percent (3%) of the applicable HASP Intertie Schedule or CAISO Dispatch amount divided by number of Settlement Intervals per Settlement Period. The Tolerance Band shall not be applied to Non-Dynamic System Resources.
TOR	Transmission Ownership Right

Total CAISO Markets Uplift	The sum of the Net IFM Bid Cost Uplift, the Net RUC Bid Cost Uplift, and the Net RTM Bid Cost Uplift, for all Settlement Intervals in the IFM, RUC and RTM.
Total Import Capability	The aggregate Maximum Import Capability of all Interties into the CAISO Control Area in MW deliverable to the CAISO Control Area based on CAISO study criteria minus the aggregate sum in MW of all Existing Contracts and Transmission Ownership Rights held by load serving entities that do not serve Load within the CAISO Control Area.
Total Positive CAISO Markets Uplift	The sum of the positive IFM Bid Cost Uplift, positive RUC Bid Cost Uplift and positive RTM Bid Cost Uplift, for all Settlement Intervals in the IFM, RUC and RTM
Total Transfer Capability (TTC)	The amount of power that can be transferred over an interconnected transmission network in a reliable manner while meeting all of a specific set of defined pre-contingency and post-contingency system conditions.
Trading Day	The twenty-four hour period beginning at the start of the hour ending 0100 and ending at the end of the hour ending 2400 daily, except where there is a change to and from daylight savings time.
Trading Hour	Any hour during which trades are conducted in a CAISO Market.
Trading Hub	An aggregation of network Pricing Nodes, such as Existing Zone Generation Trading Hubs, maintained and calculated by the CAISO for settlement and trading purposes posted by the

	CAISO on its CAISO Website.
Trading Interval	A Settlement Period.
Trading Month	The period beginning at the start of the hour ending 0100 and ending at the end of the hour ending 2400 for each calendar month, except where there is a change to and from daylight savings time on the first or last day of a month.
Transfer	An import and export from the CAISO Controlled Grid within the CAISO Control Area.
Transformer and Line Loss Correction Factor	The transformer and line loss correction factor as set forth in the applicable Business Practice Manual or Technical Specifications to be applied to revenue quality meters of CAISO Metered Entities which are installed on the low voltage side of step-up transformers.
Transition Charge	The component of the Access Charge collected by the CAISO with the High Voltage Access Charge in accordance with Section 5.7 of Appendix F, Schedule 3.
Transmission Access Charge (TAC)	Access Charge
Transmission Access Charge Area (TAC Area)	A portion of the CAISO Controlled Grid with respect to which Participating TOs' High Voltage Transmission Revenue Requirements are recovered through a High Voltage Access Charge. TAC Areas are listed in Appendix C.3.
Transmission Control Agreement (TCA)	The agreement between the CAISO and Participating TOs establishing the terms and conditions under which TOs will become Participating TOs and how the CAISO and each Participating TO will discharge their respective duties and responsibilities, as may be modified from time to time.
Transmission Exchange Agreement (TEA)	The agreement among the CAISO, Western Area Power Administration and Pacific Gas and Electric Company establishing the terms and conditions of the treatment of Western Area Power Administration's interests in the Pacific AC Intertie, which agreement was originally accepted by FERC in Docket No. ER04-688.

Transmission Interface	A CAISO-defined set of transmission facilities that comprise an important transmission corridor for Energy or capacity.
Transmission Losses	Energy that is lost as a natural part of the process of transmitting Energy from Generation to Load delivered at the CAISO/Utility Distribution Company boundary or Control Area boundary.
Transmission Losses Charge	The charge for Transmission Losses based on the Marginal Cost of Losses at the Pricing Node.
Transmission Owner (TO)	An entity owning transmission facilities or having firm contractual rights to use transmission facilities.

Transmission Ownership Right (TOR)	The ownership or joint ownership right to transmission facilities within the CAISO Control Area of a Non-Participating TO that has not executed the Transmission Control Agreement, which transmission facilities are not incorporated into the CAISO Controlled Grid.
Transmission Owner Tariff (TO Tariff)	A tariff setting out a Participating TO's rates and charges for transmission access to the CAISO Controlled Grid and whose other terms and conditions are the same as those contained in the document referred to as the Transmission Owners Tariff approved by FERC as it may be amended from time to time.
Transmission Revenue Balancing Account (TRBA)	A mechanism to be established by each Participating TO which will ensure that all Transmission Revenue Credits and other credits specified in Sections 6 and 8 of Appendix F, Schedule 3, flow through to transmission customers.
Transmission Revenue Credit	For an Original Participating TO, the proceeds received from the CAISO for Wheeling service, CRR Auction revenue and Congestion Charges, plus the shortfall or surplus resulting from any cost differences between Transmission Losses and Ancillary Service requirements associated with Existing Rights and the CAISO's rules and protocols. For a New Participating TO during the 10-year TAC Transition Period described in Section 4 of Schedule 3 of Appendix F, the proceeds received from the CAISO for Wheeling service and net CRR revenue, plus the shortfall or surplus resulting from any cost differences between Transmission Losses and Ancillary Service requirements associated with Existing Rights and the CAISO's rules and protocols. After the 10-year TAC Transition Period, the New Participating TO Transmission Revenue Credit shall be calculated the same as the Transmission Revenue Credit for the Original Participating TO.

Transmission Revenue Requirement (TRR)	The Transmission Revenue Requirement is the total annual authorized revenue requirements associated with transmission facilities and Entitlements turned over to the Operational Control of the CAISO by a Participating TO. The costs of any transmission facility turned over to the Operational Control of the CAISO shall be fully included in the Participating TO's Transmission Revenue Requirement. The Transmission Revenue Requirement includes the costs of transmission facilities and Entitlements and deducts Transmission Revenue Credits and credits for Standby Transmission Revenue and the transmission revenue expected to be actually received by the Participating TO for Existing Rights and Converted Rights.
Transmission Rights and Transmission Curtailment (TRTC) Instructions	Operational directives developed between Existing Rights holders, TOR holders, and holders of Converted Rights and the Participating TO, submitted to the CAISO by the Participating TO, unless otherwise agreed to by the Participating TO and the Existing Rights holder to facilitate the accommodation of Existing Rights in the CAISO Markets.
TRBA	Transmission Revenue Balancing Account
Trial Operation	The period during which Interconnection Customer is engaged in on-site test operations and commissioning of a Generating Unit prior to Commercial Operation.
TRR	Transmission Revenue Requirement
TRTC Instructions	Transmission Rights and Transmission Curtailment Instructions
Trustee	The trustee of the California Independent System Operator trust established by order of the California Public Utilities Commission on August 2, 1996 Decision No. 96-08-038 relating to the Ex Parte Interim Approval of a Loan Guarantee and Trust Mechanism to Fund the Development of an Independent System Operator (ISO) and a Power Exchange (PX) pursuant to Decision 95-12-063 as modified.

TTC	Total Transfer Capability
UDC	Utility Distribution Company
UDCOA	Utility Distribution Company Operating Agreement
UDP	Uninstructed Deviation Penalty
UDP Aggregation	Two or more units scheduled by the same Scheduling Coordinator with the same Resource ID that are to be considered interchangeable for calculating the Uninstructed Deviation Penalty.
UFE	Unaccounted for Energy
UIE	Uninstructed Imbalance Energy
UIE Settlement Amount	The payment due a Scheduling Coordinator for positive Uninstructed Imbalance Energy or the charge assessed on a Scheduling Coordinator for negative Uninstructed Imbalance Energy, calculated pursuant to Section 11.5.2.
Unaccounted for Energy (UFE)	The difference in Energy, for each utility Service Area and Settlement Period, between the net Energy delivered into the utility Service Area,

	adjusted for utility Service Area Transmission Losses and the total Metered Demand within the utility Service Area adjusted for distribution losses using Distribution System loss factors approved by the Local Regulatory Authority. This difference is attributable to meter measurement errors, power flow modeling errors, energy theft, statistical Load profile errors, and distribution loss deviations.
Unavailable Capacity	Ancillary Services capacity that receives an AS Award and Self-Provided Ancillary Services capacity that was not dispatched by the CAISO but where all or a portion of the capacity was not available for Dispatch in Real-Time.
Uncontrollable Force	Any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm, flood, earthquake, explosion, any curtailment, order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities or any other cause beyond the reasonable control of the CAISO or Market Participant which could not be avoided through the exercise of Good Utility Practice.
Undelivered Capacity	Ancillary Services capacity that receives an AS Award and Self-Provided Ancillary Services capacity, or capacity committed in RUC, that was dispatched by the CAISO to provide Energy but where a certain percentage or more of the Expected Energy was not provided in Real-Time, which percentage is determined as specified in the applicable Business Practice Manual.
Undispatchable Capacity	Ancillary Services capacity that receives an AS Award and Self-Provided Ancillary Services capacity, or capacity committed in RUC, that is not available for use due to a derate or Outage of the resource. Undispatchable Capacity includes AS Awards for Spinning Reserve and Non-Spinning Reserve capacity that are not available for use due to Ramp Rate constraints (*e.g.*, operational Ramping ability is lower than Operating Reserve Ramp Rate).
Uninstructed Deviation	A deviation from the resources' Dispatch Operating Point.
Uninstructed Deviation Penalty (UDP)	The penalty as set forth in Section 11.23.
Uninstructed Imbalance Energy (UIE)	The portion of Imbalance Energy that is not Instructed Imbalance Energy.
Unit Commitment	The process of determining which Generating Units will be committed

	(started) to meet Demand and provide Ancillary Services in the near future (e.g., the next Trading Day).
Unrecovered Bid Cost Uplift Payment	A payment made to Scheduling Coordinators for any Bid Costs in the IFM, RUC, and RTM not recovered by IFM, RUC, or RTM Market Revenues as provided in Section 11.8.5.
Use-Limited Resource	A resource that, due to design considerations, environmental restrictions on operations, cyclical requirements, such as the need to recharge or refill, or other non-economic reasons, is unable to operate continuously on a daily basis, but is able to operate for a minimum set of consecutive Trading Hours each Trading Day.
Utility Distribution Company (UDC)	An entity that owns a Distribution System for the delivery of Energy to and from the CAISO Controlled Grid, and that provides regulated retail electric service to Eligible Customers, as well as regulated procurement service to those End-Use Customers who are not yet eligible for direct access, or who choose not to arrange services through another retailer.
Utility Distribution Company Operating Agreement (UDCOA)	An agreement between the CAISO and a Utility Distribution Company, a *pro forma* version of which is set forth in Appendix B.8.
Validation, Estimation and Editing (VEE)	The procedures set forth in Section 10 that the CAISO applies to Revenue Quality Meter Data in order to develop Settlement Quality Meter Data.
Variable Cost	The cost associated with fuel cost and variable operations and maintenance costs.
Variable Cost Option	A method of calculation Default Energy Bids based on fuel costs and variable operations and maintenance costs.
VEE	Validation, Estimation and Editing
Voltage Limits	For all substation busses, the normal and post-contingency Voltage Limits (kV). The bandwidth for normal Voltage Limits must fall within the bandwidth of the post-contingency Voltage Limits. Special voltage limitations for abnormal operating conditions such as heavy or light Demand may be specified.

Voltage Support	Services provided by Generating Units or other equipment such as shunt capacitors, static var compensators, or synchronous condensers that are required to maintain established grid voltage criteria. This service is required under normal or System Emergency conditions.
WAC	Wheeling Access Charge
WECC	Western Electricity Coordinating Council
Weekly Peak Demand	Demand Forecast of the highest Hourly Demand in a

Forecast	period beginning at the start of the hour ending 0100 on Sunday and ending at the end of the hour ending 2400 the following Saturday, in MW.
Western Electricity Coordinating Council (WECC)	The Western Electricity Coordinating Council or its successor.
Western Interconnection	The network of transmission lines embodied within the WECC region.
Western Systems Coordinating Council (WSCC)	The Western Systems Coordinating Council or its successor, the WECC.
Western Systems Power Pool	An organization of participants in the electricity markets that have developed and maintain the Western Systems Power Pool Agreement.
Western Systems Power Pool Agreement	A standardized power sales agreement developed and maintained as a FERC rate schedule by the Western Systems Power Pool.
Western Path 15	The Western Area Power Administration, Sierra Nevada Region (or its successor) with respect solely to its rights and interests in the Path 15 Upgrade.
Wheeling	Wheeling Out or Wheeling Through.
Wheeling Access Charge (WAC)	The charge assessed by the CAISO that is paid by a Scheduling Coordinator for Wheeling in accordance with Section 26.1. Wheeling Access Charges shall not apply for Wheeling under a bundled non-economy Energy coordination agreement of a Participating TO executed prior to July 9, 1996. The Wheeling Access Charge may consist of a High Voltage Wheeling Access Charge and a Low Voltage Wheeling Access Charge.
Wheeling Out	Except for Existing Rights exercised under an Existing Contract in accordance with Section 16.1, the use of the CAISO Controlled Grid for the transmission of Energy from a Generating Unit located within the CAISO Controlled Grid to serve a Load located outside the transmission and Distribution System of a Participating TO.

Wheeling Through	Except for Existing Rights exercised under an Existing Contract in accordance with Section 16.1, the use of the CAISO Controlled Grid for the transmission of Energy from a resource located outside the CAISO Controlled Grid to serve a Load located outside the transmission and Distribution System of a Participating TO.
Wholesale Customer	A person wishing to purchase Energy and Ancillary Services at a Bulk Supply Point or a Scheduling Point for resale.
Wholesale Sales	The sale of Energy and Ancillary Services at a Bulk Supply Point or a Scheduling Point for resale.
WSCC	Western Systems Coordinating Council

WSCC Reliability Criteria Agreement

The Western Systems Coordinating Council Reliability Criteria Agreement dated June 18, 1999 among the WSCC and certain of its Member transmission operators, as such may be amended from time to time.

CAISO TARIFF APPENDIX B.11

Pro Forma CRR Entity Agreement

CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

AND

[CONGESTION REVENUE RIGHTS ENTITY]

CRR ENTITY AGREEMENT

CRR ENTITY AGREEMENT

THIS AGREEMENT is dated this _____ day of _____, _____, and is entered into, by and between:

(1) **[Full Legal Name]** having its registered and principal place of business located at **[Address]** (the "CRR Entity");

and

(2) **California Independent System Operator Corporation,** a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate, initially 151 Blue Ravine Road, Folsom, California 95630 (the "CAISO").

The CRR Entity and the CAISO are hereinafter referred to individually as a "Party" and collectively as the "Parties."

Whereas:

A. The CAISO Tariff provides that any entity that holds or intends to hold CRRs must register and qualify with the CAISO and comply with the terms of the CAISO Tariff, regardless of whether they are to acquire CRRs through the CRR Allocation or CRR Auction, or through the Secondary Registration System.

B. The CRR Entity has completed the Candidate CRR Holder application process and is eligible to participate in the CRR Allocation or CRR Auction or register as a CRR Holder through the Secondary Registration System.

C. The CAISO Tariff further provides that any entity who wishes to participate in the CRR Allocation or CRR Auction or register as a CRR Holder through the Secondary Registration System must meet all of the Candidate CRR Holder requirements and creditworthiness provisions in the CAISO Tariff and the relevant Business Practice Manual, including demonstration of its ability to accommodate the financial responsibility associated with holding CRRs.

D. The CRR Entity intends to obtain CRRs either through the CRR Allocation or CRR Auction or to register as a CRR Holder through the Secondary Registration System and, therefore, wishes to undertake to the CAISO that it will comply with the applicable provisions of the CAISO Tariff.

E. The Parties are entering into this Agreement in order to establish the terms and conditions pursuant to which the CAISO and the CRR Entity will discharge their respective duties and responsibilities under the CAISO Tariff.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, **THE PARTIES AGREE** as follows:

ARTICLE I
DEFINITIONS AND INTERPRETATION

1.1 Master Definitions Supplement. All terms and expressions used in this Agreement shall have the same meaning as those contained in the Master Definitions Supplement in Appendix A of the CAISO Tariff.

1.2 Rules of Interpretation. The following rules of interpretation and conventions shall apply to this Agreement:

(a) if there is any inconsistency between this Agreement and the CAISO Tariff, the CAISO Tariff will prevail to the extent of the inconsistency;

(b) the singular shall include the plural and vice versa;

(c) the masculine shall include the feminine and neutral and vice versa;

(d) "includes" or "including" shall mean "including without limitation";

(e) references to a Section, Article, or Schedule shall mean a Section, Article, or a Schedule of this Agreement, as the case may be, unless the context otherwise requires;

(f) a reference to a given agreement or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented, or restated through the date as of which such reference is made;

(g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced, or restated from time to time;

(h) unless the context otherwise requires, any reference to a "person" includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization, or other entity, in each case whether or not having separate legal personality;

(i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;

(j) any reference to a day, week, month, or year is to a calendar day, week, month, or year; and

(k) the captions and headings in this Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Agreement.

ARTICLE II
ACKNOWLEDGEMENTS OF CRR ENTITY AND CAISO

2.1 Scope of Application to Parties. The CRR Entity and CAISO acknowledge that all Candidate CRR Holders or CRR Holders must sign this Agreement in accordance with section 4.10.1.9.1 of the CAISO Tariff.

ARTICLE III
TERM AND TERMINATION

3.1 Effective Date. This Agreement shall be effective as of the later of the date it is executed by both Parties or the date accepted for filing and made effective by FERC if such FERC filing is required, and shall remain in full force and effect until terminated pursuant to Section 3.2 of this Agreement.

3.2 Termination

3.2.1 Termination by CAISO. Subject to Article V, the CAISO may terminate this Agreement by giving written notice to the CRR Entity of termination in the event that the CRR Entity commits any material default under this Agreement and/or the CAISO Tariff as it pertains to this Agreement which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given, to the CRR Entity, written notice of the default, unless excused by reason of Uncontrollable Forces in accordance with Article X of this Agreement or unless the CAISO agrees, in writing, to an extension of the time to remedy such material default. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement was filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the filing of the notice of termination is made after the preconditions for termination have been met and (2) the CAISO files the notice of termination within sixty (60) days after issuance of the notice of default or (3) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if filed with FERC, or thirty (30) days after the date of the CAISO's notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

3.2.2 Termination by CRR Entity. In the event that the CRR Entity is no longer a CRR Holder, it may terminate this Agreement, on giving the CAISO not less than ninety (90) days' written notice; provided, however any outstanding financial right or obligation or any other obligation under the CAISO Tariff of the Candidate CRR Holder or CRR Holder that have arisen while the CRR Entity was a Candidate CRR Holder or a CRR Holder, and any provision of this Agreement necessary to give effect to such right or obligation shall survive until satisfied. With respect to any notice of termination given pursuant to this Section, the ISO must file a timely notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the request to file a notice of termination is made after the preconditions for termination have been met and (2) the CAISO files the notice of termination within sixty (60) days after receipt of such request or (3) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if such notice is required to be filed with FERC, or upon ninety (90) days after the CAISO's receipt of the CRR Entity's notice of termination, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

ARTICLE IV
GENERAL TERMS AND CONDITIONS

4.1 CRR Holder Requirements. The CRR Entity must register and qualify with the CAISO and comply with all terms of the CAISO Tariff applicable to Candidate CRR Holders or CRR Holders, regardless of the manner in which they acquire CRRs whether by CRR Allocation, CRR Auction, or through the Secondary Registration System.

4.2 CRR Holder Creditworthiness Requirements. The CRR Entity must comply with the requirements for creditworthiness applicable to Candidate CRR Holders or CRR Holders, including the creditworthiness provisions of the CAISO Tariff and the relevant Business Practice Manual.

4.3 Settlement Account. The CRR Entity shall maintain at all times an account with a bank capable of Fed-Wire transfer to which credits or debits shall be made in accordance with the billing and Settlement provisions of Section 11 of the CAISO Tariff. Such account shall be the account referred to in Schedule 2 hereof or as notified by the CRR Entity to the CAISO from time to time by giving at least seven (7) days written notice before the new account becomes operational. Such changes to Schedule 2 shall not constitute an amendment to this Agreement.

4.4 Electronic Contracting. All submitted applications, bids, confirmations, changes to information on file with the CAISO and other communications conducted via electronic transfer (*e.g.*, direct computer link, FTP file transfer, bulletin board, e-mail, facsimile or any other means established by the CAISO) shall have the same legal rights, responsibilities, obligations and other implications as set forth in the terms and conditions of the CAISO Tariff as if executed in written format.

4.5 Agreement Subject to CAISO Tariff. The Parties will comply with all provisions of the CAISO Tariff applicable to Candidate CRR Holders or CRR Holders. This Agreement shall be subject to the CAISO Tariff, which shall be deemed to be incorporated herein.

ARTICLE V
PERFORMANCE

5.1 Penalties. The CRR Entity shall be subject to all penalties made applicable to Candidate CRR Holders and CRR Holders set forth in the CAISO Tariff. Nothing in this Agreement, with the exception of the provisions relating to ADR, shall be construed as waiving the rights of the CRR Entity to oppose or protest the specific imposition by the CAISO of any FERC-approved penalty on the CRR Entity.

5.2 Corrective Measures. If the CRR Entity or the CAISO fails to meet or maintain the requirements set forth in this Agreement and/or the CAISO Tariff as it pertains to this Agreement, the CAISO or the CRR Entity shall be permitted to take any of the measures, contained or referenced in the CAISO Tariff, which the Party seeking enforcement deems to be necessary to correct the situation.

ARTICLE VI
COSTS

6.1 Operating and Maintenance Costs. The CRR Entity shall be responsible for all its costs incurred in connection with all its CRR related activities.

ARTICLE VII
DISPUTE RESOLUTION

7.1 Dispute Resolution. The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the ISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that any reference in Section 13 of the CAISO Tariff to Market

Participants shall be read as a reference to the CRR Entity and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE VIII
REPRESENTATIONS AND WARRANTIES

8.1 Representation and Warranties. Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.

ARTICLE IX
LIABILITY

9.1 Liability. The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to the CRR Entity and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE X
UNCONTROLLABLE FORCES

10.1 Uncontrollable Forces Tariff Provisions. Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Agreement except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as a reference to the CRR Entity and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE XI
MISCELLANEOUS

11.1 Assignments. Either Party may assign or transfer any or all of its rights and/or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff and other CAISO Tariff requirements as applied to Candidate CRR Holders or CRR Holders. Such consent shall not be unreasonably withheld. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest was an original Party to this Agreement.

11.2 Notices. Any notice, demand, or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff. A Party must update the information in Schedule 1 of this Agreement as information changes. Such changes to Schedule 1 shall not constitute an amendment to this Agreement.

11.3 Waivers. Any waivers at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.

11.4 Governing Law and Forum. This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in accordance with, the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement to which the ISO ADR Procedures do not apply, shall be brought in any of the following forums, as appropriate: (i) any court of the State of California, (ii) any federal court of the United States of America located in the State of California, except to the extent subject to the protections of the Eleventh Amendment of the United States Constitution or, (iii) where subject to its jurisdiction, before the Federal Energy Regulatory Commission.

11.5 Consistency with Federal Laws and Regulations. This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.

11.6 Merger. This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereto and supersedes all prior agreements, whether written or oral, with respect to such subject matter.

11.7 Severability. If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.

11.8 Section Headings. Section headings provided in this Agreement are for ease of reading and are not meant to interpret the text in each Section.

11.9 Amendments. This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. If the amendment does not require FERC approval, the amendment will be filed with FERC for informational purposes. Nothing herein shall be construed as affecting in any way the right of the CAISO to make unilateral application to FERC for a change in the rates, terms, and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder. The standard of review the Commission shall apply when acting upon proposed modifications to this Agreement by the CAISO shall be the "just and reasonable" standard of review rather than the "public interest" standard of review. The standard of review the Commission shall apply when acting upon proposed modifications to this Agreement by the Commission's own motion or by a signatory other than the CAISO or non-signatory entity shall also be "just and reasonable" standard of review. Schedules 1 and 2 are provided for informational purposes and revisions to those schedules do not constitute a material change in the Agreement warranting Commission review.

11.10 Counterparts. This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date hereinabove written.

California Independent System Operator Corporation

By: _____

Name: _____

Title: _____

Date: _____

[Name of CRR Entity]

By: _____

Name: _____

Title: _____

Date: _____

SCHEDULE 1

NOTICES

[Section 11.2]

CRR Entity

Name of Primary
Representative: _____

Title: _____

Company: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

Name of Alternative
Representative: _____

Title: _____

Company: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

CAISO

Name of Primary
Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email address: _____

Phone: _____

Fax: _____

Name of Alternative Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email address: _____

Phone: _____

Fax: _____

SCHEDULE 2

SETTLEMENT ACCOUNT

[SECTION 4.3]

CRR Entity Account Information

Settlement Account No:

_____

Title:

_____

Sort Code:

_____

Bank:

_____

CAISO TARIFF APPENDIX B.12

Pro Forma MSS Aggregator CRR Entity Agent Agreement

CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

AND

[METERED SUBSYSTEM AGGREGATOR]

MSS AGGREGATOR CRR ENTITY AGENT AGREEMENT

MSS AGGREGATOR CRR ENTITY AGENT AGREEMENT

THIS AGREEMENT is dated this _____ day of _____, _____, and is entered into, by and between:

(1) **[INSERT NAME OF MSS AGGREGATOR],** a **[INSERT TYPE OF ENTITY]**, having its registered and principal place of business located at **[INSERT ADDRESS]**, acting as the agent on behalf of the following principals: **[INSERT NAMES OF MSS OPERATOR LSEs],** all of which are MSS Operators and Load Serving Entities, ("MSS Operators") pursuant to the terms of that certain **[INSERT TITLE OF MSS AGGREGATOR AGREEMENT]** ("MSSAA") dated _____ (the "CRR Entity Agent");

and

(2) **California Independent System Operator Corporation,** a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate, initially 151 Blue Ravine Road, Folsom, California 95630 (the "CAISO").

The CRR Entity Agent and the CAISO are hereinafter referred to individually as a "Party" and collectively as the "Parties."

Whereas:

A. The CAISO Tariff provides that any entity that holds or intends to hold CRRs must register and qualify with the CAISO and comply with the terms of the CAISO Tariff (either directly or through its agent), regardless of whether they are to acquire CRRs through the CRR Allocation or CRR Auction, or through the Secondary Registration System.

B. The CRR Entity Agent pursuant to the terms of the MSSAA is authorized by the aggregated MSS Operators to act on the behalf of the MSS Operators with regard to matters relating to CRRs, including, but not limited to, allowing the CRR Entity Agent to participate in the CRR nomination process on behalf of the MSS Operators, to accept financial responsibility under this Agreement, to perform settlement functions, and to comply with CAISO Tariff requirements.

C. The CRR Entity Agent has completed the Candidate CRR Holder application process on behalf of its aggregated MSS Operators and pursuant to the terms of the MSSAA is eligible to participate on behalf of the MSS Operators in the CRR Allocation or CRR Auction or register through the Secondary Registration System on behalf of the MSS Operators. However, the CRR Entity Agent will not hold title to or ownership of any CRRs issued to any of its aggregated MSS Operators through the CRR Allocation, CRR Auction, or Secondary Registration System processes. Rather, the CRR Entity Agent will hold title for the CRRs allocated to the individual MSS Operator's Load in trust on behalf of the MSS Operator.

D. The CAISO Tariff further provides that any entity that wishes to participate in the CRR Allocation or CRR Auction or register as a CRR Holder through the Secondary Registration System must meet all of the Candidate CRR Holder requirements and creditworthiness provisions in the CAISO Tariff and the relevant Business Practice Manual, including demonstration of its ability to accommodate the financial responsibility associated with holding CRRs.

E. The aggregated MSS Operators desire to act through the CRR Entity Agent to comply with all requirements referenced in part D, above, in order to obtain CRRs through the CRR Allocation, CRR Auction, or Secondary Registration System.

F. The CRR Entity Agent, on behalf of its aggregated MSS Operators, wishes to undertake such necessary tasks and requirements set forth herein to comply with the applicable provisions of the CAISO Tariff in order to allow the MSS Operators to participate in the CRR Allocation, CRR Auction, and Secondary Registration System processes.

G. The Parties are entering into this Agreement in order to establish the terms and conditions pursuant to which the CAISO and the CRR Entity Agent will discharge their respective duties and responsibilities under the CAISO Tariff.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, **THE PARTIES AGREE** as follows:

ARTICLE I
DEFINITIONS AND INTERPRETATION

1.1 Master Definitions Supplement. All terms and expressions used in this Agreement shall have the same meaning as those contained in the Master Definitions Supplement in Appendix A of the CAISO Tariff, unless otherwise defined herein.

1.2 Rules of Interpretation. The following rules of interpretation and conventions shall apply to this Agreement:

(a) if there is any inconsistency between this Agreement and the CAISO Tariff, the CAISO Tariff will prevail to the extent of the inconsistency;

(b) the singular shall include the plural and vice versa;

(c) the masculine shall include the feminine and neutral and vice versa;

(d) "includes" or "including" shall mean "including without limitation";

(e) references to a Section, Article, or Schedule shall mean a Section, Article, or a Schedule of this Agreement, as the case may be, unless the context otherwise requires;

(f) a reference to a given agreement or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented, or restated through the date as of which such reference is made;

(g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced, or restated from time to time;

(h) unless the context otherwise requires, any reference to a "person" includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization, or other entity, in each case whether or not having separate legal personality;

(i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;

(j) any reference to a day, week, month, or year is to a calendar day, week, month, or year; and

(k) the captions and headings in this Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Agreement.

ARTICLE II
ACKNOWLEDGEMENTS OF CRR ENTITY AGENT AND CAISO

2.1 Scope of Application to Parties. The CRR Entity Agent and CAISO acknowledge that all MSS Aggregators that are authorized by their aggregated MSS Operators to act as the agent of those MSS Operators in undertaking all obligations and responsibilities of Candidate CRR Holders or CRR Holders must sign this Agreement in accordance with section 4.10.1.9.1 of the CAISO Tariff.

ARTICLE III
TERM AND TERMINATION

3.1 Effective Date. This Agreement shall be effective as of the later of the date it is executed by both Parties or the date accepted for filing and made effective by FERC if such FERC filing is required, and shall remain in full force and effect until terminated pursuant to Section 3.2 of this Agreement.

3.2 Termination

3.2.1 Termination by CAISO. Upon notice that the agency relationship between all of the aggregated MSS Operators and the CRR Entity Agent has terminated, including any notice that the MSSAA has terminated, the CAISO may terminate this Agreement by giving written notice to the CRR Entity Agent of termination. Further, subject to Article V, the CAISO may terminate this Agreement by giving written notice to the CRR Entity Agent of termination in the event that the CRR Entity Agent commits any material default under this Agreement and/or the CAISO Tariff as it pertains to this Agreement which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given, to the CRR Entity Agent, written notice of the default, unless excused by reason of Uncontrollable Forces in accordance with Article X of this Agreement or unless the CAISO agrees, in writing, to an extension of the time to remedy such material default. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement was filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the filing of the notice of termination is made after the preconditions for termination have been met and (2) the CAISO files the notice of termination within sixty (60) days after issuance of the notice of default or (3) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if filed with FERC, or thirty (30) days after the date of the CAISO's notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

3.2.2 Termination by CRR Entity Agent. In the event that the CRR Entity Agent is no longer a CRR Holder as trustee for any or all of its aggregated MSS Operators, the CRR Entity Agent may terminate this Agreement, on giving the CAISO not less than ninety (90) days' written notice; provided, however, any outstanding financial right or obligation or any other obligation under the CAISO Tariff of the Candidate CRR Holder or CRR Holder (regardless of whether such obligation shall be borne by an aggregated MSS Operator or the CRR Entity Agent) that has arisen while the CRR Entity Agent was a Candidate CRR Holder or a CRR Holder as trustee for any or all of its MSS Operators, and any provision of this Agreement necessary to give effect to such right or obligation, shall survive until satisfied. With respect to any notice of termination given pursuant to this Section, CAISO must file a timely notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the request to file a notice of termination is made after the preconditions for termination have been met and (2) the CAISO files the notice of termination within sixty (60) days after receipt of such request or (3) the CAISO files the notice of termination in accordance with the

requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if such notice is required to be filed with FERC, or upon ninety (90) days after the CAISO's receipt of the CRR Entity Agent's notice of termination, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

ARTICLE IV
GENERAL TERMS AND CONDITIONS

4.1 CRR Holder Requirements. The CRR Entity Agent acting on behalf of its aggregated MSS Operators must register and qualify on behalf of the MSS Operators with the CAISO and comply with all terms of the CAISO Tariff applicable to Candidate CRR Holders or CRR Holders, regardless of the manner in which it acquires the CRRs on behalf of its aggregated MSS Operators, whether by CRR Allocation or CRR Auction, or through the Secondary Registration System. The CRR Entity Agent shall participate in the CRR nomination process on an aggregated basis on behalf of each of its aggregated MSS Operators on the basis of that individual MSS Operator's Load ratio share set forth in Schedule 3. The CAISO shall allocate CRRs to each individual MSS Operator based on its Load ratio share set forth in Schedule 3, which CRRs will be held in the aggregate by the CRR Entity Agent on behalf of its aggregated MSS Operators. The CRR Entity Agent acknowledges and agrees that it shall not hold title to or ownership of any of the CRRs of its aggregated MSS Operators. Ownership and title of any obtained CRRs shall be held in trust by the CRR Entity Agent on behalf of the applicable MSS Operator in accordance with each MSS Operator's Load share ratio as set forth in Schedule 3.

4.2 CRR Holder Creditworthiness Requirements. The CRR Entity Agent acting on behalf of its aggregated MSS Operators must comply with the requirements for creditworthiness applicable to Candidate CRR Holders or CRR Holders, including the creditworthiness provisions of the CAISO Tariff and the relevant Business Practice Manual.

4.3 Settlement Account. The CRR Entity Agent on behalf of its aggregated MSS Operators shall maintain at all times an account with a bank capable of Fed-Wire transfer to which credits or debits shall be made in accordance with the billing and Settlement provisions of Section 11 of the CAISO Tariff. Such account shall be the account referred to in Schedule 2 hereof or as notified by the CRR Entity Agent to the CAISO from time to time by giving at least seven (7) days written notice before the new account becomes operational. Such changes to Schedule 2 shall not constitute an amendment to this Agreement.

4.4 CRR Entity Agent Responsibility for MSS Operator Load Share Ratio. The CRR Entity Agent shall track each aggregated MSS Operator's Load share ratio of CRRs separately as set forth in Schedule 3 and shall be solely responsible for tracking such allocations. The CRR Entity Agent acknowledges and agrees that CAISO shall have no responsibility with regard to such pro rata allocations of CRRs as set forth in Schedule 3. The CAISO shall issue CRRs allocated to the aggregated MSS Operators in aggregate to the CRR Entity Agent, and the CRR Entity Agent shall be solely responsible for ensuring the proper allocation of such CRRs to each aggregated MSS Operator. In the event the MSS Operator and CRR Entity Agent aggregation or agency relationship terminates, the CRR Entity Agent shall be solely responsible for ensuring that the appropriate pro rata share of every CRR Source is properly assigned to the applicable MSS Operator.

4.5 Provision of Evidence of CRR Entity Agent Authority. The CRR Entity Agent shall provide the CAISO with a copy of the MSSAA or other sufficient evidence to assure the CAISO of its authority to act as agent on behalf of its aggregated MSS Operators with regard to the matters addressed in this Agreement. The CRR Entity Agent shall provide the CAISO with the contact name, address, e-mail address, and phone number of an individual representative of each of its aggregated MSS Operators whom the CAISO may contact regarding matters addressed in this Agreement. The CRR Entity Agent shall immediately notify the CAISO in writing of any revision to the terms of the MSSAA that affects its authority to act as agent on behalf of its aggregated MSS Operators or any other change in its relationship with any of its aggregated MSS Operators.

4.6 Electronic Contracting. All submitted applications, bids, confirmations, changes to information on file with the CAISO and other communications conducted via electronic transfer (*e.g.*, direct computer link, FTP file transfer, bulletin board, e-mail, facsimile or any other means established by the CAISO) shall have the same legal rights, responsibilities, obligations and other implications as set forth in the terms and conditions of the CAISO Tariff as if executed in written format.

4.7 Agreement Subject to CAISO Tariff. The Parties will comply with all provisions of the CAISO Tariff applicable to Candidate CRR Holders or CRR Holders. This Agreement shall be subject to the CAISO Tariff, which shall be deemed to be incorporated herein.

ARTICLE V
PERFORMANCE

5.1 Penalties. The CRR Entity Agent on behalf of its aggregated MSS Operators shall be subject to all penalties made applicable to Candidate CRR Holders and CRR Holders set forth in the CAISO Tariff. Nothing in this Agreement, with the exception of the provisions relating to ADR, shall be construed as waiving the rights of the CRR Entity Agent on behalf of its aggregated MSS Operators to oppose or protest the specific imposition by the CAISO of any FERC-approved penalty on the CRR Entity Agent or any MSS Operator.

5.2 Corrective Measures. If the CRR Entity Agent or the CAISO fails to meet or maintain the requirements set forth in this Agreement and/or the CAISO Tariff, the CAISO or the CRR Entity Agent shall be permitted to take any of the measures, contained or referenced in the CAISO Tariff as it pertains to this Agreement, which the Party seeking enforcement deems to be necessary to correct the situation.

ARTICLE VI
COSTS

6.1 Operating and Maintenance Costs. The CRR Entity Agent shall be responsible for all its costs and any costs of its aggregated MSS Operators incurred in connection with all its CRR related activities.

ARTICLE VII
DISPUTE RESOLUTION

7.1 Dispute Resolution. The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the ISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that any reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to one or more aggregated MSS Operators and/or the CRR Entity Agent (as applicable) and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE VIII
REPRESENTATIONS AND WARRANTIES

8.1 Representation and Warranties. Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law, and that the proper agreements providing for the CRR Entity Agent relationship with each aggregated MSS Operator, including, but not limited to, the MSSAA, are in full force and effect.

ARTICLE IX
LIABILITY

9.1 Liability. The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to one or more aggregated MSS Operators and/or the CRR Entity Agent (as applicable), and references to the CAISO Tariff shall be read as references to this Agreement. Further, in reliance on the agency relationship between the CRR Entity Agent and each aggregated MSS Operator, CAISO shall treat the CRR Entity Agent as the MSS Operators and shall not be liable to any aggregated MSS Operator for any claims, liabilities, or errors arising from this agency relationship, including, but not limited to, CRR ownership or Settlement Accounts, unless the CAISO causes such claim(s), liability(ies) or error(s) due to its gross negligence or willful conduct.

ARTICLE X
UNCONTROLLABLE FORCES

10.1 Uncontrollable Forces Tariff Provisions. Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Agreement except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as a reference to one or more aggregated MSS Operators and/or the CRR Entity Agent (as applicable) and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE XI
MISCELLANEOUS

11.1 Assignments. Either Party may assign or transfer any or all of its rights and/or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff and other CAISO Tariff requirements as applied to Candidate CRR Holders or CRR Holders. Such consent shall not be unreasonably withheld. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest was an original Party to this Agreement.

11.2 Notices. Any notice, demand, or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff. A Party must update the information in Schedule 1 of this Agreement as information changes. Such changes to Schedule 1 shall not constitute an amendment to this Agreement.

11.3 Waivers. Any waivers at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.

11.4 Governing Law and Forum. This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in accordance with, the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement to which the ISO ADR Procedures do not apply, shall be brought in any of the following forums, as appropriate: (i) any court of the State of California, (ii) any federal court of the United States of America located in the State of California, except to the extent subject to the protections of the Eleventh Amendment of the United States Constitution, or (iii) where subject to its jurisdiction, before the Federal Energy Regulatory Commission.

11.5 Consistency with Federal Laws and Regulations. This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.

11.6 Merger. This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereto and supersedes all prior agreements, whether written or oral, with respect to such subject matter.

11.7 Severability. If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.

11.8 Section Headings. Section headings provided in this Agreement are for ease of reading and are not meant to interpret the text in each Section.

11.9 Amendments. This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. If the amendment does not require FERC approval, the amendment will be filed with FERC for informational purposes. Nothing herein shall be construed as affecting in any way the right of the CAISO to make unilateral application to FERC for a change in the rates, terms, and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder. The standard of review the Commission shall apply when acting upon proposed modifications to this Agreement by the CAISO shall be the "just and reasonable" standard of review rather than the "public interest" standard of review. The standard of review the Commission shall apply when acting upon proposed modifications to this Agreement by the Commission's own motion or by a signatory other than the CAISO or non-signatory entity shall also be the "just and reasonable" standard of review. Schedules 1 and 2 are provided for informational purposes and revisions to those schedules do not constitute a material change in the Agreement warranting Commission review.

11.10 Counterparts. This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date hereinabove written.

California Independent System Operator Corporation

By: _____

Name: _____

Title: _____

Date: _____

[INSERT NAME OF CRR ENTITY AGENT]

By: _____

Name: _____

Title: _____

Date: _____

SCHEDULE 1

NOTICES

[Section 11.2]

CRR Entity Agent

Name of Primary
Representative: _____

Title: _____

Company: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

Name of Alternative
Representative: _____

Title: _____

Company: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

CAISO

Name of Primary
Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email address: _____

Phone: _____

Fax: _____

Name of Alternative Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email address: _____

Phone: _____

Fax: _____

SCHEDULE 2

SETTLEMENT ACCOUNT

[Section 4.3]

CRR Entity Agent Account Information

Settlement Account No:

_____

Title:

_____

Sort Code:

_____

Bank:

_____

SCHEDULE 3

[Pro Rata Load Share per MSS Operator Represented by CRR Entity Agent]

[Section 4.4]

CAISO TARIFF APPENDIX C

Location Marginal Price

CAISO TARIFF APPENDIX C

Location Marginal Price

The CAISO shall calculate the price of Energy at Generation PNodes, Scheduling Points, and Aggregated Pricing Nodes, as provided in the CAISO Tariff. LMPs can be set by Bids to sell or purchase Energy. The CAISO establishes Trading Hub prices and LAPs as provided in Sections xx and xx. The LMPs at PNodes, including Scheduling Points, and Aggregated Pricing Nodes include separate components for the marginal cost of Energy, Marginal Cost of Congestion, and Marginal Cost of Losses. As provided in Sections 6.5.3.2.2 and 6.5.5.2.4, Day-Ahead Market LMPs are calculated and posted on a Day-Ahead basis for each hour of the Day-Ahead Market for Energy and for each Dispatch Interval for the Real-Time LMPs.

A. LMP Composition

In each hour of the Day-Ahead Market for Energy, the CAISO calculates the LMP for each PNode, which is equal to the marginal cost of Energy available at the PNode in the hour, based on the Bids of sellers and buyers selected in the Day-Ahead Market for Energy and specified in the Day-Ahead Schedule. The CAISO designates a Reference Bus, r, for calculation of the System Marginal Cost of Energy (SMECr). The CAISO uses a distributed Reference Bus to define an aggregate value of Energy for the CAISO Control Area. For each bus other than the Reference Bus, the Transmission Provider determines separate components of the LMP for the marginal cost of Energy, Marginal Cost of Congestion, and Marginal Cost of Losses relative to the Reference Bus, consistent with the following equation:

$LMP_i = SMEC_r + MCC_i + MCL_i$

$LMP_r = SMEC_r$

where:

- $SMEC_r$ is the LMP component representing the marginal cost of Energy (also referred to as λ) at the Reference Bus, r (System Marginal Energy Cost).
- MCC_i is the LMP component representing the Marginal Cost of Congestion (also referred to as ρ) at bus *i* relative to the Reference Bus.

- MCL_i is the LMP component representing the Marginal Cost of Losses (also referred to as γ) at bus i relative to the Reference Bus.

B. The System Marginal Energy Cost Component of LMP

The SMEC shall be the same for each location throughout the system. SMEC is the sensitivity of the power balance constraint at the optimal solution. The power balance constraint ensures that the physical law of conservation of Energy (the sum of Generation and imports equals the sum of Demand, including exports and Transmission Losses) is accounted for in the network solution. For the designated reference location the CAISO will utilize a distributed Reference Bus for which constituent PNodes are weighted in pre-specified proportions, referred to as Reference Bus distribution factors. The distribution factors are based on actual Demand at each PNode that represents Load. Once the Reference Bus is selected, and Demand has dictated the distribution factors, the cost of economically providing the next increment of Energy, based on submitted Bids, at that Reference Bus becomes the System Marginal Energy Cost.

C. Marginal Congestion Component Calculation

The CAISO calculates the Marginal Costs of Congestion at each bus as a component of the bus-level LMP. The Marginal Cost of Congestion (MCCi) component of the LMP at bus i is calculated using the equation:

$$\mathrm{MCC}i = -\left(\sum_{k=1}^{k} \mathrm{PTDF}ik * \mathrm{FSP}k\right)$$

where:

- K is the number of thermal or interface transmission constraints.
- PTDFik is the Power Transfer Distribution Factor for the generator at bus i on interface k which limits flows across that constraint when an increment of power is injected at bus i and an equivalent amount of power is withdrawn at the Reference Bus. The industry convention is to ignore the effect of losses in the determination of PTDFs.
- FSPk is the constraint Shadow Price on interface k and is equivalent to the reduction in system cost expressed in $/MWh that results from an increase of 1MW of the capacity on interface k.

The Shadow Price at a given binding constraint is the value per MW of the next increment of generation that would flow across the constrained path by relaxing the binding constraint. The PTDF of a PNode with

respect to a transmission path (and direction on the path) measures the change in the power flow through the path (positive or negative, with respect to the designated direction on the path) as a result of an incremental injection at the Node, balanced by incremental change of Load at the Reference Bus.

D. Marginal Losses Component Calculation

The CAISO calculates the Marginal Cost of Losses (MCL*i*) at each bus *i* as described in Section 27.1.1.2. The MCL component of the LMP at any bus *i* within the CAISO's Control Area is calculated using the equation:

$$MCL_i = MLF_i * SMEC_r$$

Where:

- MLFi is the marginal loss factor for PNode *i* to the system Reference Bus, based on an AC power flow solution. The marginal loss factor at a PNode is the incremental change in the quantity (MW) of transmission losses in the network resulting when serving an increment of Load at the PNode from the Reference Bus.
    - MLF*i* is equal to 1 - $\partial L/\partial G_i$, where: L is system losses, G*i* is "generation injection" at PNode *i*, $\partial L/\partial G_i$ is the partial derivative of system losses with respect to generation injection at bus *i*, that is, the incremental change in system losses associated with an incremental change in the generation injections at bus *i* holding constant other injection and withdrawals at all buses other than the Reference Bus and bus *i*.
- SMEC*r* is the SMEC at the Reference Bus, *r*.

E. Trading Hub Price Calculation

The CAISO calculates Existing Zone Generation Trading Hub prices, as provided in Section 27.3, based on the LMP calculations described in this Attachment and in Section 27.2.

$$\text{EZ Gen Trading Hub Price}_j = \sum_{i=1}^{NG} WG_{ist} * LMP_i$$

where:

- NG is the number of Generation buses defined in the Existing Zone Generation Trading Hub *j*.

- WG*ist* is the generation-weighting factor for bus *i* for season *s* for time period *t* representing peak or off-peak period in Existing Zone Generation Trading Hub *j*. The sum of the weighting factors must add up to 1. These weights are based on the previous years actual generation output as described in Section 27.3.

F. Load Zone Price Calculation

The CAISO calculates LAP prices based on the LMPs for a set of buses that comprise the LAP. These LAP prices represent the weighted average of the LMPs at the set of buses that comprise the LAP. The LAP bus weight is equal to the fractional share of each Load bus in the total Load in the LAP during the hour.
The price for LAP *j* is:

$$\text{LAP Price}j = \sum_{i=1}^{NZ} \text{WZ}i * \text{LMP}i)$$

where:

- NZ is the number of Load buses in LAP *j*.
- WZ*i* is the load-weighting factor for bus *i* in LAP *j*. The sum of the weighting factors must equal 1 (i.e., 100 percent). These weights are based on State Estimator results for similar day.

Each LAP one includes only the buses of Market Participants who are in the LAP and who have Load that is represented by that LAP's definition. Market Participants that have metered Load must either be settled at a Default LAP or a Custom LAP created for each Load point of the Market Participant (nodal Settlement).

G. Scheduling Point Price Calculation

The CAISO calculates LMPs for Scheduling Points, which are PNodes or an aggregation of PNodes that exist external to the CAISO Control Area through the same process that is used to calculate LMPs within the CAISO Control Area. A Scheduling Point typically is physically located at an "outside" boundary of the CAISO Controlled Grid (e.g., at the point of interconnection between a Control Area utility and the CAISO Controlled Grid). CAISO Controlled Grid that is external to the CAISO Control Area connects some Scheduling Points to the CAISO Control Area, and in these cases the Scheduling Points are within external Control Areas. In both of these cases, the CAISO places injections and withdrawals at the Scheduling

Points, which represent Bids and Schedules whose physical location is unknown, and the LMPs for Settlement of Interchange schedules are established by the Scheduling Point's PNodes. The CAISO's FNM includes a full model of Embedded Control Areas and Adjacent Control Areas. The CAISO may place injections and withdrawals within the Embedded Control Areas and Adjacent Control Areas, which represent Bids and Schedules for the Embedded Control Areas' and Adjacent Control Areas' impact on transmission flows, to ensure the accuracy of power flow calculations and Congestion Management within the CAISO Control Area. The CAISO models the congestion and losses in Embedded Control Areas and Adjacent Control Areas as described in Section 27.5.3. The CAISO will establish PNodes for the Embedded Control Areas' and Adjacent Control Areas' Scheduling Points through consultation with the Embedded Control Areas and Adjacent Control Areas. The CAISO will use Intertie scheduling constraints to limit the quantity of scheduled Energy and AS on a specified Intertie. An Intertie constraint is scheduled quantity limit as opposed to a flow based limit.

CAISO TARIFF APPENDIX J

[NOT USED]

[SHEET NOT USED]

[SHEET NOT USED]

PART A
[Not Used]

PART B
[NOT USED]

PART C

[NOT USED]

PART D

[NOT USED]

PART E

[NOT USED]

PART G

[NOT USED]

PART I

[NOT USED]

CAISO TARIFF APPENDIX O

[NOT USED]

[SHEETS NOT USED]

[SHEETS NOT USED]

Attachment B

* * *

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

* * *

4.5 Responsibilities of a Scheduling Coordinator.

4.5.1 Scheduling Coordinator Certification.

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

Each Scheduling Coordinator shall:

(a) demonstrate to the CAISO's reasonable satisfaction that it is capable of performing the functions of a Scheduling Coordinator under this CAISO Tariff including (without limitation) the functions specified in Sections 4.5.3 and 4.5.4;

(b) identify each of the Eligible Customers (including itself if it trades for its own account) which it is authorized to represent as Scheduling Coordinator and confirm that the metering requirements under Section 10 are met in relation to each Eligible Customer that it represents~~for which it is submitting Bids~~ under this CAISO Tariff;

(c) confirm that each of the End-Use Customers it represents is eligible for service as a Direct Access End User;

(d) confirm that none of the Wholesale Customers it represents is ineligible for wholesale transmission service pursuant to the provisions of FPA Section 212(h);

(e) demonstrate to the CAISO's reasonable satisfaction that it meets the financial criteria set out in Section 12~~.1~~;

(f) enter into a~~n~~ Scheduling Coordinator Agreement with the CAISO; and

(g) provide NERC tagging data.

4.5.1.1 Procedure to become a Scheduling Coordinator.

4.5.1.1.1 Scheduling Coordinator Application.

To become a Scheduling Coordinator, a Scheduling Coordinator Applicant must submit a completed ~~written~~ application, as set forth in the applicable Business Practice Manual~~provided in Appendix T~~, to the CAISO by mail~~, fax, e-mail~~ or in person. A Scheduling Coordinator Applicant may retrieve the application and necessary information from the CAISO~~'s~~ Website.

4.5.1.1.2 CAISO Information.

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

(a) the Scheduling Coordinator Application Form, as set forth in the applicable Business Practice Manual ~~(including the CAISO Application File Template, which is Appendix T)~~;

(b) the CAISO Tariff and Business Practice Manuals; and

~~(c) Interim Black Start Agreement;~~

~~(d) historical CAISO charges (Note: with respect to historical charges prior to implementation of MRTU, the CAISO will provide historical CAISO Grid Operations Charges, and Imbalance Energy market charges) to assist the Scheduling Coordinator applicant in determining the CAISO Security Amount the Scheduling Coordinator Applicant must provide; and~~

(c~~e~~) ~~a pro forma letter of understanding for payment~~forms for a credit application for Scheduling Coordinator ~~a~~Applicants applying for Unsecured Credit Limits and for provision of Financial Security to be provided pursuant to Section 12~~with Approved Credit Ratings, guarantee, letter of credit and escrow agreement for the CAISO Security Amount, all of which will be in a form acceptable to the CAISO~~.

4.5.1.1.3 Duplicate Information.

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

4.5.1.1.4 Scheduling Coordinator Applicant ~~r~~Returns Application.

At least ~~60~~120 days before the proposed commencement of service, the Scheduling Coordinator Applicant must return a completed application form with the non-refundable application fee ~~set by the CAISO Governing Board~~ of $5,000 to cover the application processing costs~~, site visit and the costs of furnishing the CAISO Tariffs~~.

4.5.1.1.5 Notice of Receipt.

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

4.5.1.1.6 CAISO Review of Application.

Within ~~14~~ten (10) Business ~~d~~Days after receiving an application, the CAISO will ~~notify~~provide electronic notification to the Scheduling Coordinator Applicant whether the Scheduling Coordinator Applicant has submitted all necessary information as set forth in ~~CAISO Tariff~~ Section 4.5.1, and the ~~CAISO~~ Scheduling Coordinator Application Form set forth in the applicable Business Practice Manual ~~File Template requirements~~.

4.5.1.1.6.1 Information Requirements.

The Scheduling Coordinator Applicant must submit with its application:

(a) the proposed date for commencement of service, which may not be less than ~~60~~120 days after the date the application was filed, unless waived by the CAISO;

(b) financial and ~~security~~ credit information as set forth in ~~CAISO Tariff~~ Section 12~~.1~~; and

(c) the prescribed non-refundable application fee of $5,000.

4.5.1.1.6.2 Scheduling Coordinator Applicant's Obligation for Contracts.

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

(a) represented Generators have entered into Participating Generator Agreements or Qualifying Facility Participating Generator Agreements as provided in Appendices B.2 and B.3, respectively with the CAISO;

(b) represented UDCs have entered into UDC Operating Agreements as provided in Appendix B.8 with the CAISO;

(c) represented CAISO Metered Entities have entered into Meter Service Agreements for CAISO Metered Entities as provided in Appendix B.6 with the CAISO;

(d) none of the Wholesale Customers it will represent are ineligible for wholesale transmission service pursuant to the provisions of the FPA Section 212(h); and

(e) each End-Use Customer it will represent is eligible for service as a Direct Access ~~service~~End User pursuant to an established program approved by the California Public Utilities Commission or a Local Regulatory Authority.

4.5.1.1.7 Deficient Application.

In the event that the CAISO has determined that the application is deficient, the CAISO will send an electronic ~~written~~ notification of the deficiency to the Scheduling Coordinator Applicant within ~~14~~ten (10) Business ~~d~~Days of receipt by the CAISO of the application explaining the deficiency and requesting additional information.

4.5.1.1.7.1 Scheduling Coordinator Applicant's Additional Information.

Once the CAISO requests additional information, the Scheduling Coordinator Applicant has ~~7~~five (5) Business ~~d~~Days, or such longer period as the CAISO may agree, to provide the additional material requested by the CAISO.

4.5.1.1.7.2 No Response from Scheduling Coordinator Applicant.

If the Scheduling Coordinator Applicant does not submit additional information within ~~7~~five (5) Business ~~d~~Days or the longer period referred to in Section 4.5.1.1.7.1, the application may be rejected by the CAISO.

4.5.1.1.8 CAISO Approval ~~O~~or Rejection ~~O~~of ~~A~~an Application.

4.5.1.1.8.1 Approval or Rejection NotificationLetter.

(a) If the CAISO approves the application, it will send an electronic notification of approval. ~~letter with a signed~~ In addition, the CAISO will provide a Scheduling Coordinator Agreement, a Meter Service Agreement for Scheduling Coordinators as provided in Appendix B.7, if applicable, any other applicable agreements, and any required CAISO network connectivity security agreement for the Scheduling Coordinator Applicant's signature ~~and any required software licensing agreement~~.

(b) If the CAISO rejects the application, the CAISO will send an electronic notification of rejection ~~letter~~ stating one or more of the following grounds:

i. incomplete information;

ii. non-compliance with ~~security~~ credit requirements pursuant to Section 12;

iii. non-compliance with third party contractual obligations;

iv. non-compliance with technical requirements; or

v. non-compliance with any other CAISO Tariff requirements.

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

4.5.1.1.8.2 Time for Processing Application.

The CAISO will make a decision whether to accept or reject the application within ~~14~~ ten (10) Business ~~d~~Days of receipt of the application. If more information is requested, the CAISO will make a final decision within ~~14~~ten (10) Business ~~d~~Days of the receipt of all outstanding or additional information requested.

4.5.1.1.9 Scheduling Coordinator Applicant's Response.

4.5.1.1.9.1 Scheduling Coordinator Applicant's Acceptance.

If the CAISO accepts the application, the Scheduling Coordinator Applicant must return an executed Scheduling Coordinator Agreement, Meter Service Agreements for Scheduling Coordinators, if applicable, any other applicable agreements, and a completed credit application and Financial Security provided pursuant to Section 12 Interim Black Start Agreements and letter of credit, guarantee or escrow agreement for the CAISO Security Amount, as applicable.

4.5.1.1.9.2 Scheduling Coordinator Applicant's Rejection.

4.5.1.1.9.2.1 Resubmittal.

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

4.5.1.1.9.2.2 Appeal.

The Scheduling Coordinator Applicant may also appeal against the rejection of an application by the CAISO. An appeal must be submitted within 28twenty (20) Business dDays following the CAISO's issuance of a notification of rejection of its application.

4.5.1.1.10 Post Application Procedures Prior Tto Final Certification.

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

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

(a) provided the technical/operational information required to complete the CAISO Scheduling Coordinator Application Form as set forth in the applicable Business Practice ManualFile Template, and to comply with CAISO Tariff Section 10.3;

(b) executed software licensing a network connectivity security agreement for access to the CAISO's software used in conducting business with the CAISO and compliance with the CAISO's system security requirements in a form approved by the CAISO, if applicable;

(c) bought obtained and installed any required software for functional interface in order to for Validatione, Estimatione and Editing meter values (VEE), if applicable;.

(d) undertaken required training and testing regarding the use of the CAISO's market, operating, and technical systems, as specified in the applicable Business Practice Manual~~purchased the requisite Value Area Network (VAN) service in order to support Electronic Data Interchange (EDI) requirements~~;

(e) provided its bank account information and arranged for Fed-Wire ~~System~~ transfers ~~as defined in Tariff Appendix A~~;

(f) provided an emergency plan specifying the procedures by which Scheduling Coordinator operations and contacts with the CAISO will be maintained during an emergency, containing information specified in the applicable Business Practice Manual~~submitted a timetable for completion of its operational facilities, in order to coordinate site visits by CAISO staff to ensure compliance with the CAISO Tariff Section 4.5.4.1~~; and

(g) obtained~~bought~~ and installed a computer link ~~account~~and any necessary software in order to communicate with the CAISO, as specified in the applicable Business Practice Manual.

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

4.5.1.1.10.2 Application Closure after 12 Months.

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

4.5.1.1.11 Final Certification of Scheduling Coordinator Applicant.

The Scheduling Coordinator Applicant will become a Scheduling Coordinator when:

(a) its application has been accepted;

(b) it has entered into a~~n~~ Scheduling Coordinator Agreement, a Meter Service Agreement~~s~~ for Scheduling Coordinators ~~and Interim Black Start Agreements~~, if applicable, and any other applicable agreements with the CAISO;

(c) ~~the Scheduling Coordinator Applicant~~ it has met the ~~financial~~ credit requirements of ~~CAISO Tariff~~ Section 12~~.1~~; and

(d) ~~the Scheduling Coordinator Applicant~~it has fulfilled all technical/operational requirements of ~~CAISO Tariff~~ Section~~s~~ 4.5.4.1~~,~~ and ~~Section~~ 4.5.1.1.10.1~~, and the CAISO Application File Template~~.

The CAISO will not certify a Scheduling Coordinator Applicant as a Scheduling Coordinator until the Scheduling Coordinator Applicant has completed all the above referenced requirements to the CAISO's satisfaction, at least ~~14~~ ten (10) Business ~~d~~Days before the commencement of service.

4.5.1.2 Scheduling Coordinator's Ongoing Obligations After Certification.

4.5.1.2.1 Scheduling Coordinator's Obligation to Report Changes.

4.5.1.2.1.1 Obligation to Report a Change in Filed Information.

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

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

The Scheduling Coordinator has an ongoing obligation to inform the CAISO within three (3) Business Days of any change to its credit ratings or any Material Change in Financial Condition~~if its Approved Credit Rating has been reduced below the CAISO requirements~~.

4.5.1.2.2 CAISO's Response for Failure to Inform.

4.5.1.2.2.1 Failure to Promptly Report a Material Change.

If a Scheduling Coordinator fails to inform the CAISO of a material change in its information provided to the CAISO, which may affect the reliability or safety of the CAISO Controlled Grid, or the financial security

of the CAISO, the CAISO may suspend or terminate the Scheduling Coordinator's rights under the CAISO Tariff in accordance with the terms of ~~CAISO Tariff~~ Sections 12~~.3~~ and 4.5~~.1~~ respectively. If the CAISO intends to terminate the Scheduling Coordinator's rights it shall file a ~~N~~notice of ~~T~~termination with FERC, if required by FERC rules, in accordance with the terms of the Scheduling Coordinator Agreement. Such termination shall be effective upon acceptance by FERC of a ~~N~~notice of ~~T~~termination, if required by FERC rules, or as otherwise permitted by FERC rules.

4.5.1.3 Additional Scheduling Coordinator Identification Code Registration.

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

* * *

4.5.3.2 Submit Bids and Interchange Schedules.

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

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

* * *

4.5.3.10 Participating Intermittent Resources.

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

4.5.3.11 Day-Ahead Market Published Schedules and Awards.

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

4.5.3.12 Financial Responsibility.

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

4.5.3.13~~1~~ Compliance with Environmental Constraints, Operating Permits and Applicable Law.

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

* * *

4.5.4.3 Dynamic Scheduling.

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

4.5.4.4 Termination of ~~a~~ Scheduling Coordinator Agreement and Suspension of Certification.

(a) A Scheduling Coordinator's Scheduling Coordinator Agreement may be terminated by the CAISO on written notice to the Scheduling Coordinator:

(i) if the Scheduling Coordinator no longer meets the requirements for eligibility set out in Section 4.5 and fails to remedy the default within a period of ~~seven~~ five (5~~7~~) Business ~~d~~Days after the CAISO has given written notice of the default;

(ii) if the Scheduling Coordinator fails to pay any sum under this CAISO Tariff and fails to remedy the default within a period of ~~seven~~ five (5~~7~~) Business ~~d~~Days after the CAISO has given written notice of the default; ~~or~~

(iii) if the Scheduling Coordinator commits any other default under this CAISO Tariff or any of the CAISO Business Practice Manuals which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given it written notice of the default; or

(iv) if the Scheduling Coordinator does not schedule or bid in the CAISO's markets for Energy or Ancillary Services for a period of twelve (12) consecutive months and fails to comply with the provisions of Section 4.5.4.4.2 within 120 days after the CAISO has given it written notice of the CAISO's intent to terminate its Scheduling Coordinator Agreement.

(b) A Scheduling Coordinator's Scheduling Coordinator Agreement may be terminated by the Scheduling Coordinator on sixty (60) days written notice to the CAISO, provided that such notice shall not be effective to terminate the Scheduling Coordinator Agreement until the Scheduling Coordinator has complied with all applicable requirements of Section 4.5.2.

The CAISO shall, following termination of a Scheduling Coordinator Agreement and within thirty (30) days of being satisfied that no sums remain owing by the Scheduling Coordinator under the CAISO Tariff, return or release to the Scheduling Coordinator, as appropriate, any money or credit support provided by such Scheduling Coordinator to the CAISO under Section 12~~.1~~.

4.5.4.4.1 Pending ~~acceptance~~the effective date of termination of service pursuant to Section 4.5.4.5.1 ~~by FERC~~, the CAISO will suspend the certification of a Scheduling Coordinator which has received a notice of termination under Section 4.5.4.4(a) and the Scheduling Coordinator will not be eligible to schedule or bid in the CAISO's Energy and Ancillary Services markets ~~submit Bids or Inter-SC Trades to the CAISO~~.

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

4.5.4.5 Notification of Termination.

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

4.5.4.5.1 Filing of Notice of Termination.

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

* * *

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

With regard to any Generating Unit directly connected to a UDC system, a Participating Generator shall comply with applicable UDC tariffs, interconnection requirements and generation agreements. With

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

* * *

4.6.3.2 Existing ~~Contracts~~Agreements for Regulatory Must-Take Generation.

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

4.6.3.3 Qualifying Facilities without Existing QF Contracts.

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

4.6.3.4 Participating Generator with a QF PGA.

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

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

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

4.6.3.4.2 Telemetry for a QF Subject to a QF PGA.

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

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

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

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

A Participating Generator that has entered into a QF PGA shall abide by CAISO Tariff provisions regarding the CAISO's ability to dispatch or curtail Generation from the Net Scheduled QF(s) listed in its QF PGA. The CAISO shall only dispatch or curtail a Net Scheduled QF of the Participating Generator: (a) to the extent the Participating Generator bids Energy or Ancillary Services from the Net Scheduled QF into the CAISO Markets or the Energy is otherwise available to the CAISO under Section 40, subject to the restrictions on operating orders set forth below; or (b) if the CAISO must dispatch or curtail the Net

Scheduled QF in order to respond to an existing or imminent System Emergency or condition that would compromise CAISO Control Area integrity or reliability as provided in Sections 7 and 7.6.1 of the CAISO Tariff.

The CAISO will not knowingly issue an operating order to a Participating Generator that has entered into a QF PGA that: (1) requires a Participating Generator to reduce its Generation below the delineated minimum operating limit, other than in a System Emergency; (2) conflicts with operating instructions provided to the CAISO by the Participating Generator; or (3) results in damage to the Participating Generator's equipment, provided that any such equipment limitation has been provided to the CAISO and incorporated in the Participating Generator's operating instructions provided to the CAISO. If the Participating Generator: (1) receives a Schedule which requires operation below the minimum operating limit, and (2) deviates from that Schedule to continue to operate at the minimum operating limit, it will not be subject to any penalties or sanctions as a result of operating at the minimum operating limit. The Participating Generator's consequences for deviating from Schedules in Real-Time will be governed by the CAISO Tariff.

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

* * *

4.9.9 ~~Load Following.~~[NOT USED]

~~4.9.9.1~~ ~~The MSS Operator may operate a System Unit, or Generating Units in the MSS to follow its Load, provided that: (a) the Scheduling Coordinator for the MSS Operator shall remain responsible for purchases of Energy in accordance with the CAISO Tariff if the MSS Operator does not operate its System Unit or Generating Units and schedule imports into the MSS, to match the Metered Demand in the MSS and exports from the MSS; and (b) if the deviation between Generation and imports into the MSS and Metered Demand and exports from the MSS exceeds a deviation band equal to three percent (3%) of the MSS Operator's metered Demand from the MSS, adjusted for Forced Outages and any CAISO directed firm Load Shedding for the MSS's portfolio as a whole (the "Deviation Band"), then the~~

Scheduling Coordinator for the MSS Operator shall pay the additional amounts specified in Section 4.9.9.2.

4.9.9.2 Under the circumstances described in Section 4.9.9.1, the Scheduling Coordinator for a Load-following MSS Operator shall pay amounts for: (i) excess MSS generation supplied to the CAISO markets and (ii) excess MSS Load relying on CAISO markets and not served by MSS generating resources. The revenue received from these payments will be used as an off-set to the CAISO's Grid Management Charge. The payments due from a Scheduling Coordinator will be calculated as follows:

4.9.9.2.1 If the metered Generation resources and imports into the MSS exceed: (i) the metered Demand and exports from the MSS, and (ii) Energy expected to be delivered by the Scheduling Coordinator for the MSS in response to the CAISO's Dispatch Instructions and/or Regulation set-point signals issued by the CAISO's AGC by more than the Deviation Band, then the payment for excess energy outside of the deviation band shall be rescinded and Scheduling Coordinator for the MSS Operator will pay the CAISO an amount equal to one hundred percent (100%) of the product of the highest LMP paid to MSS Operator for its generation in the in the settlement interval and the amount of the Imbalance Energy that is supplied in excess of the Deviation Band.

4.9.9.2.2 If metered Generation resources and imports into the MSS are insufficient to meet: (i) the metered Demand and exports from the MSS, and (ii) Energy expected to be delivered by the Scheduling Coordinator for the MSS in response to the CAISO's Dispatch Instructions and/or Regulation set-point signals issued by the CAISO's AGC by more than the Deviation Band, then the Scheduling Coordinator for the MSS Operator shall pay the CAISO an amount equal to the product of the IOU-LAP price for the settlement interval Deviation Price and two hundred percent (200%) of the shortfall that is outside of the Deviation Band. The payment in the previous sentence is in addition to the charges for the Imbalance Energy that serves the excess MSS Demand that may be applicable under the CAISO Tariff.

4.9.9.3 GMC Charges.

If the CAISO is charging Grid Management Charges for Uninstructed Deviations, and the Scheduling Coordinator for a Load-following MSS has Uninstructed Deviations associated with the MSS's resources, then the CAISO will net the Generation and imports into the MSS to match the Demand and exports out

~~of the MSS, and will not assess GMC associated with Uninstructed Deviations for such portion of Energy that is used to match MSS Demand and net exports.~~

~~**4.9.9.3.1** If Generation, above the amount to cover Demand and exports, was sold into the CAISO's Real-Time Market, then the Scheduling Coordinator for the MSS will be charged GMC associated with Uninstructed Deviations for this quantity.~~

~~**4.9.9.3.2** If insufficient Generation and imports was available to cover Demand and exports, and the Scheduling Coordinator for the MSS purchased Imbalance Energy from the CAISO's market, then such Scheduling Coordinator will be charged GMC associated with Uninstructed Deviations for this quantity.~~

~~**4.9.9.3.3** Only GMC associated with Deviations (the Ancillary Services and Real-Time Energy Operations Charge (ASREO)) will be treated on a net basis. GMC for Control Area Services (CAS) will be charged based on Gross Load and exports out of the MSS. The Scheduling Coordinator for the MSS Operator will be assessed the GMC Congestion Management Charge (CONG) in accordance with Section 11.22.2.5. Ancillary Service bids accepted by the CAISO and Instructed Energy will be assessed the GMC ASREO.~~

* * *

4.9.13 MSS Elections and Participation in CAISO Markets.

MSS ~~entities~~ Operators must make an election or choice on ~~three~~ four issues that govern the manner in which the MSS participates in the CAISO Markets. The MSS ~~entity~~ Operator must choose either: (i) net ~~s~~Settlements or gross ~~s~~Settlements, (ii) to Load-follow or not Load-follow with its generati~~on~~ng resources, ~~and~~ (iii) to have its Load participate in the RUC procurement process or not have its Load participate in the RUC procurement process; and (iv) whether or not to charge the CAISO for their Emissions Costs as provided in Section 11.7.4. The MSS Operator shall make annual elections regarding these ~~three~~ four sets of options pursuant to the timeline specified for such elections in the Business Practice Manuals. The default for the first twelve months after this Section 4.9.13 and Section 36 become~~s~~ effective shall be: 1) non Load-following; 2) gross ~~s~~Settlement ~~as specified in Section 11.2.3.1~~; and 3) to opt-in to the RUC procurement process. In subsequent years, the prior year election will be the default if the MSS Operator

does not make a timely election, unless the MSS Operator has been found to have violated Load-following or RUC opt out requirements and is no longer eligible for making such elections. If the MSS Operator fails to elect ~~for~~ net Settlement as specified in Section 11.2.3.2, the default mechanism for all MSS ~~s~~Settlements shall be gross ~~s~~Settlement as specified in Section 11.2.3.1.

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

4.9.13.1 Gross or Net Settlement.

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

4.9.13.2 Load-Following or Non Load-Following Election.

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

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

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

~~**4.9.14 MSS Settlements.**~~

~~**4.9.14.1** The CAISO will assess the Scheduling Coordinator for the MSS the neutrality adjustments and Existing Contracts cash neutrality charges pursuant to Section 11.14 (or collect refunds therefore) based on the net Metered Demand and exports of the MSS.~~

~~**4.9.14.2** If the CAISO is charging Scheduling Coordinators for summer reliability or demand programs, the MSS Operator may petition the CAISO for an exemption of these charges. If the MSS Operator provides documentation to the CAISO by November 1 of any year demonstrating that the MSS Operator has secured capacity reserves for the following calendar year at least equal to one hundred and fifteen percent (115%), on an annual basis, of the peak Demand responsibility of the MSS Operator, the CAISO shall grant the exemption. Eligible capacity reserves for such a demonstration may include on-demand rights to Energy, peaking resources, and Demand reduction programs. The peak Demand responsibility of the MSS Operator shall be equal to the annual peak Demand Forecast of the MSS Load plus any firm power sales by the MSS Operator, less interruptible Loads, and less any firm power~~

~~purchases. Firm power for the purposes of this Section 4.9.14.2 shall be Energy that is intended to be available to the purchaser without being subject to interruption or curtailment by the supplier except for Uncontrollable Forces or emergency. To the extent that the MSS Operator demonstrates that it has secured capacity reserves in accordance with this Section 4.9.14.2., the Scheduling Coordinator for the MSS Operator shall not be obligated to bear any share of the CAISO's costs for any summer Demand reduction program or for any summer reliability Generation procurement program pursuant to CAISO Tariff Section 42.1.8 for the calendar year for which the demonstration is made.~~

~~**4.9.14.3** Unless specified otherwise in the MSS agreement(s), if the CAISO is compensating Generating Units for Emissions Costs, Start-Up Fuel Costs and Minimum Load Costs, and if MSS Operator charges the CAISO for the Emissions Costs, Start-Up Fuel Costs and Minimum Load Costs, of the Generating Units serving the Load of the MSS, then the Scheduling Coordinator for the MSS shall bear its proportionate share of the total amount of those costs incurred by the CAISO based on the MSS gross Metered Demand and exports and the Generating Units shall be made available to the CAISO through the submittal of Energy Bids. If the MSS Operator chooses not to charge the CAISO for the Emissions Costs, Start-Up Fuel Costs and Minimum Load Costs of the Generating Units serving the Load of the MSS, then the Scheduling Coordinator for the MSS shall bear its proportionate share of the total amount of those costs incurred by the CAISO based on the MSS's net Metered Demand and exports. The MSS Operator shall make the election whether to charge the CAISO for these costs on an annual basis on November 1 for the following calendar year.~~

4.10 Candidate CRR Holder and CRR Holder Registration.

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

4.10.1 Procedure to Become a Candidate CRR Holder.

4.10.1.1 Candidate CRR Holder Application.

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

4.10.1.2 CAISO Information.

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

(a) the Candidate CRR Holder application form;

(b) the CAISO Tariff and Business Practice Manuals; and

(c) an application for an Unsecured Credit Limit for Candidate CRR Holder applicants requesting an Unsecured Credit Limit in lieu of another form of Financial Security.

4.10.1.3 Candidate CRR Holder Applicant Submits Application.

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

4.10.1.4 Notice of Receipt.

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

4.10.1.5 CAISO Review of Application.

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

Holder application, the application will be nullified and the applicant will be required to resubmit a new application in order to reinstate its status as a Candidate CRR Holder applicant.

4.10.1.5.1 Information Requirements.

The Candidate CRR Holder applicant must submit with its application:

(a) the proposed date for commencement of the CRR Allocation, CRR Auction or Secondary Registration System in which the applicant intends to qualify to participate, which may not be less than sixty (60) days after the date the application was filed, unless waived by the CAISO;

(b) Financial Security information as set forth in Section 12;

(c) proof of completion of CRR training or expected completion of CRR training; and

(d) the prescribed non-refundable application fee.

4.10.1.5.2 Candidate CRR Holder Load Serving Entity Certifications.

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

4.10.1.6 Deficient Application.

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

4.10.1.6.1 Candidate CRR Holder Applicant's Additional Information.

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

4.10.1.6.2 No Response from Candidate CRR Holder Applicant.

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

4.10.1.7 CAISO Acceptance or Rejection of an Application.

4.10.1.7.1 Acceptance or Rejection Notification.

(a) If the CAISO accepts the application, it will send a written notification to the Candidate CRR Holder applicant stating that its application has been accepted.

(b) If the CAISO rejects the application, the CAISO will send a rejection letter stating one or more of the following grounds:

i. incomplete information;

ii. non-compliance with Financial Security requirements; or

iii. non-compliance with any other CAISO Tariff requirements.

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

4.10.1.7.2 Time for Processing Application.

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

4.10.1.8 Candidate CRR Holder Applicant's Response.

4.10.1.8.1 Candidate CRR Holder Applicant's Acceptance.

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

4.10.1.8.2 Candidate CRR Holder Applicant's Rejection.

4.10.1.8.2.1 Resubmittal.

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

4.10.1.8.2.2 Appeal.

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

4.10.1.9 Final Registration and Qualification of Candidate CRR Holder Applicant.

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

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

(a) fully executed a CRR Entity Agreement with the CAISO;

(b) provided its bank account information and arranged for Fed-Wire transfers;

(c) met the Financial Security requirements of Section 12;

(d) certified that it has attended required CRR training; and

(e) obtained and installed any necessary software for communication with the CAISO as necessary.

4.10.1.9.2 Market Notice.

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

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

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

4.10.2.1.1 Obligation to Report a Change in Filed Information.

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

4.10.2.1.2 Obligation to Report a Material Change in Financial Condition.

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

4.10.2.2 Failure to Promptly Report a Material Change.

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

4.10.3 Termination of a CRR Entity Agreement.

4.10.3.1 Prior Notice Requirements.

(a) A CRR Entity Agreement may be terminated by the CAISO on written notice to the Candidate CRR Holder or CRR Holder that is a party to the CRR Entity Agreement in accordance with the terms of the CRR Entity Agreement:

(i) if the Candidate CRR Holder or CRR Holder no longer meets the requirements for eligibility set out in Section 4.10 and fails to remedy the default within a period of seven (7) days after the CAISO has given written notice of the default;

(ii) if the Candidate CRR Holder or CRR Holder fails to pay any sum under this CAISO Tariff and fails to remedy the default within a period of five (5) Business Days after the CAISO has given written notice of the default; or

(iii) if the Candidate CRR Holder or CRR Holder commits any other default under this CAISO Tariff or any of the Business Practice Manuals which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given it written notice of the default.

(b) The Candidate CRR Holder or CRR Holder may terminate its CRR Entity Agreement in accordance with the provisions of that agreement.

(c) Upon termination of the CRR Entity Agreement, Candidate CRR Holders or CRR Holders shall continue to be liable for any outstanding financial or other obligations incurred under the CAISO Tariff as a result of their status as a Candidate CRR Holder or CRR Holder.

(d) The CAISO shall, following termination of a CRR Entity Agreement and within thirty (30) days of being satisfied that no sums remain owing by the Candidate CRR Holder or CRR Holder under the CAISO Tariff, return or release to the Candidate CRR Holder or CRR Holder, as appropriate, any Financial Security support provided by such Candidate CRR Holder or CRR Holder to the CAISO under Section 12.

4.10.3.2 Suspension of Registration and Qualification.

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

* * *

6.5 CAISO Communications.

* * *

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

6.5.1.1 Market Participants With Non-Disclosure Agreements.

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

(a) CRR Full Network Model;

(b) Constraints and interface definitions; ~~and~~

(c) Load Distribution Factors for each CRR ~~a~~Allocation and CRR ~~a~~Auction that is published prior to the CRR Allocation and CRR ~~a~~Auction~~.~~; and

(d) Nominations and/or parameters to be used for modeling in each annual CRR Allocation and CRR Auction processes: Transmission Ownership Rights, Existing Contracts and Converted Rights expected usage, and Merchant Transmission CRRs.

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

(a) CRR Full Network Model;

(b) Constraints and interface definitions; ~~and~~

(c) Load Distribution Factors for each CRR ~~a~~Allocation and CRR ~~a~~Auction that is published prior to the CRR Allocation or CRR ~~a~~Auction~~.~~; and

(d) Nominations and/or parameters to be used for modeling in each monthly CRR Allocation and CRR Auction processes: Transmission Ownership Rights, Existing Contracts and Converted Rights expected usage, and Merchant Transmission CRRs.

6.5.1.2 CRR Participants Without Non-Disclosure Agreements.

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

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

6.5.1.3 Public Market Information.

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

(a) Market ~~c~~Clearing ~~p~~Prices for all Aggregated PNodes used in the CRR ~~a~~Auction clearing for on-peak and off-peak;

(b) CRR Holdings by CRR Holder (including):~~;~~

(i~~c~~) CRR Source ~~N~~name(s);

(ii~~d~~) CRR Sink ~~N~~name(s);

(iii) CRR quantity (MW) for each CRR Source(s) and CRR Sink(s);

(iv~~e~~) CRR ~~S~~start and ~~E~~end dates;

(v) Time of use specifications for the CRR(s); and

(vi) Whether the CRR is a CRR Option or CRR Obligation.

~~(f) Cleared MW values; and~~

~~(g) Clearing price for CRRs obtained in the auction.~~

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

(a) Market ~~c~~Clearing ~~p~~Prices for all Aggregated PNodes used in the CRR ~~a~~Auction clearing for on-peak and off-peak;

(b) CRR Holdings by CRR Holder (including):~~;~~

(i~~c~~) CRR Source ~~N~~name(s);

(iid) CRR Sink Nname(s);

(iii) CRR quantity (MW) for each CRR Source(s) and CRR Sink(s);

(ive) CRR Sstart and Eend dates;

(v) Time of use specifications for the CRR(s); and

(vi) Whether the CRR is a CRR Option or a CRR Obligation.

~~(f) Cleared MW values; and~~

~~(g) Clearing price for CRRs obtained in the auction.~~

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

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

6.5.1.4 Requirements to Obtain the CRR Full Network Model.

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

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

(b) A Market Participant that is not a member of the WECC and that requests the CRR Full Network Model: (i) shall execute the Non-Disclosure Agreement for CRR Full Network Model Distribution that is posted on the CAISO Website, (ii)

shall provide to the CAISO a fully executed WECC Non-Member Confidentiality Agreement for WECC Data, and (iii) shall provide to the CAISO a non-disclosure statement, the form of which is attached as an exhibit to the Non-Disclosure Agreement executed by the Market Participant, executed by each employee and consultant of the Market Participant who will have access to the CRR Full Network Model.

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

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

6.5.1.5 Non-Disclosure Agreement.

The CAISO's Non-Disclosure Agreement for CRR Full Network Model Distribution shall be posted on the CAISO Website. This Non-Disclosure Agreement shall provide for the CAISO to receive the costs of

litigation, including attorneys' fees, related to the Non-Disclosure Agreement if the CAISO prevails in litigation. Recipients of the CRR Full Network Model may use the CRR Full Network Model and related studies in pleadings to the FERC provided they request confidential treatment of all information subject to the Non-Disclosure Agreement.

6.5.1.6 Obligation to Report Violations of Section 6.5.1.4.

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

* * *

6.5.2.3 Public Market Information.

6.5.2.3.1 ~~Load~~ Demand Forecasts.

6.5.2.3.1.1 Beginning seven days prior to the target Day-Ahead Market, and updated as necessary, the CAISO will publish the CAISO Forecast of CAISO Demand~~its peak Load forecasts by IOU service area~~.

6.5.2.3.1.2 By 6:00 pm the day prior to (two days before the ~~o~~Operating ~~d~~Day) the target Day-Ahead Market~~-~~, the CAISO will publish ~~its~~ the updated CAISO Forecast of CAISO Demand ~~Load forecast by IOU service area~~.

* * *

6.5.2.3.5 Extremely Long-Start Unit Commitment.

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

* * *

6.5.3 Day-Ahead Market Communications.

6.5.3.1 Communications With Scheduling Coordinators.

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

6.5.3.1.2 Between 6:00 am and the end of the Day-Ahead Inter-SC Trading Period, the CAISO performs the validation of Inter-SC Trades of Energy for the DAM and will notify the participants of the status of these~~ir~~ Inter-SC Trades.

* * *

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

* * *

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

(a) Unit commitment status for resources committed in the IFM;

(b) Day-Ahead Schedules and prices;

(c) Day-Ahead AS Awards and prices;

(d) RUC Awards and RUC Capacity and resource-specific RUC Prices;

(e) ~~Day-Ahead and~~ RUC Start-Up Instructions; and

(f) Day-Ahead final resource Bid mitigation results.

6.5.3.2 Public Market Information.

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

(a) Total Day-Ahead Schedules (MWh) by Generator, ~~Load~~ Demand and ~~Intertie~~ Scheduling Point for the CAISO Control Area;

(b) Total Day-Ahead AS Awards by AS Region;

(c) RUC ~~p~~Prices by ~~B~~bus PNode;

(d) Day-Ahead LMP for Energy, including the ~~SMEC~~Energy, MCC and MCL components;

(e) Day-Ahead ASMP by ~~B~~bus by PNode;

(f) Day Ahead mitigation indicator;

(g) CAISO Forecast of CAISO Demand~~System Load forecast~~;

(h) ~~Intertie s~~Shadow ~~p~~Prices; and

(i) Total Day-Ahead system ~~m~~Marginal Cost of ~~l~~Losses ~~costs and average system losses~~ in MWh for each Trading Hour of the next Operating Day.

* * *

6.5.4.1 Communications With Scheduling Coordinators.

6.5.4.1.1 Before T-135, the CAISO will continuously screen Inter-SC Trades of Energy for the HASP, Inter-SC Trades of Ancillary Services, and Inter-SC Trades of IFM Load Uplift Obligations submitted by Scheduling Coordinators and will communicate with the Scheduling Coordinators about the consistency and validity of these Inter-SC Trades ~~of Energy~~ based on information available to the CAISO.

6.5.4.1.2 Between T-135 and T-45, the CAISO will perform the pre-market validation check for Inter-SC Trades ~~of Energy~~ for the HASP and Inter-SC Trades of Ancillary Services~~pre-market validation check~~ and will provide feedback to the Scheduling Coordinators about the validity of these Inter-SC Trades ~~of Energy~~ based on information available to the CAISO.

* * *

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

(a) HASP Intertie Schedules and LMPs; and

(b) HASP ~~Intertie~~ AS Awards and ASMPs

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

(a) HASP ~~a~~Advisory Schedules;

(b) HASP ~~advisory~~ AS Awards; and

(c) HASP final resource Bid mitigation results.

* * *

6.5.4.2 Public Market Information.

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6.5.4.2.2 At T-30, on an hourly basis, the CAISO will publish on OASIS the following:

(a) HASP Intertie Schedules ~~by Intertie~~;

~~**(b)**Total HASP advisory Schedules (MWh) by Generator;~~

~~(c)~~(b) Total HASP ~~a~~Advisory Schedules (MWh) by ~~Intertie~~Scheduling Point;

~~(d)~~(c) HASP AS Awards by ~~Intertie~~Scheduling Point;

~~(e)~~(d) HASP LMPs for Scheduling Points;

~~(f)~~(e) HASP advisory LMPs;

~~(g)~~(f) HASP Intertie ASMP for AS by ~~B~~bus PNode;

~~(h)~~(g) HASP advisory ASMP for AS by ~~B~~bus PNode;

~~(i)~~(h) HASP ~~Intertie congestion s~~Shadow ~~prices~~Prices; and

~~(j)~~(i) Total HASP ~~marginal loss costs and average~~ system losses in MWh for the next Operating Hour.

* * *

6.5.5.2 Public Market Information.

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

(a) CAISO Forecast of CAISO Demand~~Load forecast~~;

(b) Total Real-Time Dispatched Energy and Demand on a 24-hour delayed basis;

(c) Real-Time Dispatch Interval LMP;

(d) Real-Time ~~marginal loss costs and average~~ system losses; and

(e) Actual ~~o~~Operating ~~r~~Reserve.

* * *

6.5.6.1.2 Within seven (7)~~30~~ days after the ~~o~~Operating ~~d~~Day, the CAISO will publish via OASIS all Start-Up Costs and Minimum Load Costs for CAISO committed resources.

* * *

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

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

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

* * *

8. ANCILLARY SERVICES.

8.1 Scope.

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

Demand plus HASP Intertie Schedule for the Operating Hour net of (i) Self-Provided Ancillary Services from ~~g~~Generati~~o~~ng Units internal to the CAISO Control Area and Dynamic System Resources certified to provide Ancillary Services and (ii) Ancillary Services self-provided pursuant to an ETC, TOR or Converted Right. The CAISO will manage both CAISO procured and Self-Provided Ancillary Services as part of the Real-Time Dispatch. The CAISO will calculate payments for Ancillary Services supplied by ~~-~~Scheduling Coordinators and charge the cost of Ancillary Services to Scheduling Coordinators based on their Ancillary Service ~~o~~Obligations.

For purposes of this CAISO Tariff, Ancillary Services are: (i) Regulation Up and Regulation Down, (ii) Spinning Reserve, (iii) Non-Spinning Reserve, (iv) Voltage Support, and (v) Black Start capability. These services will be procured as stated in Section 8.3.5. Bids for Non-Spinning Reserve may be submitted by Scheduling Coordinators for Curtailable Demand as well as ~~by owners of~~for Generation. Identification of specific services in this CAISO Tariff shall not preclude development of additional interconnected operation services over time. The CAISO and Market Participants will seek to develop additional categories of these unbundled services over time as the operation of the CAISO Controlled Grid matures or as required by regulatory authorities.

* * *

8.3.4 Certification and Testing Requirements.

The owner of and Scheduling Coordinator for e~~E~~ach Generating Unit, System Unit, Dynamic System Resource, or Participating Load~~, that is allowed to submit~~ for which a Bid to provide Ancillary Services or Submission to ~~s~~Self-~~p~~Provide Ancillary Services is allowed under the~~is~~ CAISO Tariff, and all other ~~each~~ System Resource~~s~~ that ~~is~~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~~in the Business Practice Manual~~. Each Generating Unit, Dynamic System Resource, and System Unit used to bid Regulation or used to self-provide Regulation must have been certified and tested by the CAISO using the process defined in Part A of Appendix K. Each Dynamic System Resource offering Regulation must comply with the Dynamic Scheduling Protocol in Appendix X. Spinning Reserve may be provided only from Generating Units, System Resources that

submit Bids to provide Spinning Reserve from imports, or System Units, which have been certified and tested by the CAISO using the process defined in Appendix K. Non-Spinning Reserve may be provided from ~~Loads,~~Curtailable Demand ~~which can be reduced by Dispatch~~, on-demand rights from other entities or Control Areas, Generating Units, System Resources that submit Bids to provide Non-Spinning Reserve from imports, or System Units, which have been certified and tested by the CAISO using the process defined in ~~–~~ Part~~s~~ C of Appendix K~~, respectively~~. Voltage Support may only be provided from resources including Loads, Generating Units, and System Units, which have been certified and tested by the CAISO using the process defined in Part D of Appendix K. Black Start capability may only be provided from Generating Units which have been certified and tested by the CAISO using the process defined in Part E of Appendix K. CAISO certification to provide Ancillary Services may be revoked by the CAISO under the provisions of this CAISO Tariff, including ~~and Parts A-E of~~ Appendix K.

* * *

8.4 Technical Requirements for Providing Ancillary Services.

All Generating Units, System Units, Participating Loads and System Resources providing Ancillary Services shall comply with the technical requirements set out in Sections 8.4.1 to 8.4.3 below relating to their operating capabilities, communication capabilities and metering infrastructure. No Scheduling Coordinator shall be permitted to submit a Bid to the CAISO for the provision of an Ancillary Service from a Generating Unit, System Unit, Participating Load or System Resource, or to provide a Submission to Self-Provide an Ancillary Service from ~~that~~ a Generating Unit, System Unit, ~~or~~ Participating Load, or Dynamic System Resource, unless the Scheduling Coordinator is in possession of a current certificate issued by the CAISO confirming that the Generating Unit, System Unit, Participating Load or System Resource complies with the CAISO's technical requirements for providing the Ancillary Service concerned. Scheduling Coordinators can apply for Ancillary Services certificates in accordance with the requirements for considering and processing such applications in Appendix K and the CAISO's Operating Procedures~~the CAISO's Business Practice Manual~~. The CAISO shall have the right to inspect Generating Units, Participating Loads or the individual resources comprising System Units and other equipment for the purposes of the issue of a certificate and periodically thereafter to satisfy itself that its

technical requirements continue to be met. If at any time the CAISO's technical requirements are not being met, the CAISO may withdraw the certificate for the Generating Unit, System Unit, Participating Load or System Resource concerned.

8.4.1 Operating Characteristics Required to Provide Ancillary Services.

Each Generating Unit, System Unit, Participating Load or System Resource which a Scheduling Coordinator wishes to submit a Bid to provide Ancillary Services must comply with the requirements for the specific Ancillary Service as set forth in the Business Practice Manual. The requirements in the Business Practice Manuals include Ancillary Service control, capability and availability standards. The requirements also involve the following operating characteristics:

(a) ramp rate increase and decrease (MW/minute);

(b) power factor (leading and lagging) as required by Section 8.2.3.3;

(c) maximum output (real and reactive), except that System Resources shall be required to comply only with the requirement for maximum real power;

(d) minimum output (real and reactive), except that System Resources shall be required to comply only with the requirement for minimum real power;

(e) AGC capability, control scheme, and range; and

(f) minimum length of time the resource can be available to provide the relevant Ancillary Service.

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

* * *

8.4.7.2 Bidding and Self-Provision of Ancillary Services.

Scheduling Coordinators may bid or self-provide Ancillary Services from resources located within the CAISO Control Area or Dynamic System Resources certified to provide Ancillary Services, submit Bids for Ancillary Services from resources located outside the CAISO Control Area, or specify Inter-SC~~cheduling~~

Trades of ~~Coordinator~~ Ancillary Service~~s Trades~~. Ancillary Services in the Day-Ahead Market, in the HASP, and in the Real-Time Market are comprised of the following: Regulation Up, Regulation Down, Spinning Reserve, and Non-Spinning Reserve. Each Generating Unit (including Physical Scheduling Plants), System Unit, Participating Load, ~~Curtailable Demand~~ or System Resource for which a Scheduling Coordinator wishes to submit Ancillary Service Bids must meet the requirements set forth in this CAISO Tariff. The same resource capacity may be offered into more than one CAISO Ancillary Service auction at the same time. Ancillary Services Bids and Submissions to Self-Provide an Ancillary Service ~~Each of the following data sections~~ can be submitted up to seven (7) days in advance. Ramp ~~r~~Rates will be only used by the CAISO for procuring capacity associated with the specific Ancillary Services. The CAISO will issue Real-Time Dispatch Instructions in the Real-Time Market for the Energy associated with the awarded capacity based upon the applicable ~~o~~Operational ~~r~~Ramp ~~r~~Rate submitted with the single Energy Bid Curve in accordance with Section 30.10. There is no provision for exports with regard to Ancillary Services Bids. The functionality necessary to accept such Bids does not exist in the CAISO scheduling software. To the extent a Scheduling Coordinator has an on-demand obligation to serve loads outside the CAISO ~~c~~Control ~~a~~Area, it can do so provided that (1) it is using export transmission capacity available in Real-Time, (2) the resource capacity providing Energy to satisfy the on-demand obligation is not under an RMR Contract or Resource Adequacy Capacity obligation, and has not been paid a RUC ~~a~~Availability ~~p~~Payment for the Trading Hour.

* * *

8.10.8 Rescission of Payments for Undispatchable, Unavailable, and Undelivered Ancillary Service ~~or RUC~~ Capacity.

If ~~Awarded~~ Ancillary Services ~~C~~capacity that receives an AS Award or~~,~~ Self-Provided Ancillary Services ~~C~~capacity ~~and capacity committed in RUC~~ provided from a Generating Unit, Participating Load, System Unit or System Resource is Undispatchable Capacity, ~~u~~Unavailable Capacity, or Undelivered Capacity during the relevant Settlement Interval, then payments will be rescinded as described in this Section 8.10.8 and settled in accordance with Section 11.10.9. If the CAISO determines that non-compliance of a Participating Load, Generating Unit, System Unit or System Resource, with an operating order or

Dispatch Instruction from the CAISO, or with any other applicable technical standard under the CAISO Tariff, causes or exacerbates system conditions for which the WECC imposes a penalty on the CAISO, then the Scheduling Coordinator of such Participating Load, Generating Unit, System Unit or System Resource shall be assigned that portion of the WECC penalty which the CAISO reasonably determines is attributable to such non-compliance, in addition to any other penalties or sanctions applicable under the CAISO Tariff.~~The rescission of payments for Ancillary Services applies to Ancillary Services provided in the Day-Ahead, HASP or Real-Time Markets and the rescission will be in proportion to the amount of capacity sold to the CAISO in each market. For Self-Provided Ancillary Service capacity that becomes Undispatchable Capacity, Unavailable Capacity, or Undelivered Capacity, the payment obligation in this Section 8.10.8 shall be equivalent to that which would arise if the Self Provided Ancillary Service had been submitted as a Bid into each market in which it was scheduled. The rescission of payments in this Section 8.10.8 shall not apply to a capacity payment for any particular Ancillary Service or RUC capacity if the Ancillary Service Marginal Price (ASMP) or RUC Availability payment, respectively, is less than or equal to zero. Examples of the rescission of payments for Undispatchable, Unavailable, or Undelivered Ancillary Service Capacity or RUC Capacity are set forth in the BPM on compliance matters.~~

8.10.8.1 Rescission of Payments for Undispatchable Ancillary Service Capacity ~~or RUC Capacity~~.

~~Undispatchable Capacity is Awarded Ancillary Services capacity, Self Provided Ancillary Service capacity, or capacity committed in RUC, that is not available for use due to a derate or outage of the resource. Undispatchable Capacity includes Awards for Spinning Reserve and Non-Spinning Reserve that are not available for use due to ramp rate constraints, (*e.g.*, operational ramping ability is lower than Operating Reserve ramp rate).~~ The CAISO shall calculate the ~~r~~Real-~~t~~Time ability of each Generating Unit, Participating Load, System Unit or System Resource to deliver Energy from Ancillary Services capacity or Self-Provided Ancillary Services capacity ~~or capacity committed in RUC~~ for each Settlement Interval based on its maximum operating capability, actual telemetered output, and ~~o~~Operational ~~r~~Ramp ~~r~~Rate as described in Section 30.10. System Resources that are awarded Ancillary Services ~~C~~capacity or RUC Capacity in the Day-Ahead Market are required to electronically tag (E-Tag as prescribed by the WECC) the Ancillary Services ~~C~~capacity or RUC Capacity. If the amounts of Ancillary Services ~~C~~capacity or RUC

Capacity in an electronic tag differ from the amounts of Ancillary Services ~~C~~capacity or RUC Capacity for the System Resource, the Undispatchable Capacity will equal the amount of the difference, and will be settled in accordance with the provisions of Section 11.10.9.1. ~~If a Scheduling Coordinator has Undispatchable Capacity that it is obligated to supply to the CAISO during a Settlement Interval, the Ancillary Service capacity payment or RUC Availability Payment for the amount of Energy that cannot be delivered from the Generating Unit, Participating Load, System Unit or System Resource for the Settlement Interval shall be rescinded; provided, however, that to the extent an Ancillary Service procured in the IFM from a System Resource becomes undispatchable due to an intertie transmission derate before the Operating Hour for which it was procured, in rescinding the Ancillary Service capacity payment, the CAISO shall credit back to the Scheduling Coordinator any congestion charge assessed pursuant to Section 11.10.1.1.1 of the CAISO Tariff, but at the lower of the Day-Ahead and HASP Shadow Price on the corresponding intertie.~~

~~For capacity committed in RUC from a Resource Adequacy (RA) resource that becomes Undispatchable Capacity, the payment obligation shall be equivalent to payment obligation which would arise if the resource were eligible to receive a RUC Availability Payment. Such payment obligation is in addition to the consequences for non-compliance under a Local Regulatory Authority's Resource Adequacy Program. The CAISO will report instances of non-compliance under this Section 8.10.8 to the appropriate Local Regulatory Authority.~~

~~If the Undispatchable Capacity is capacity committed in RUC and is from a Generating Unit, Participating Load, System Unit or System Resource that is a Resource Adequacy resource, there is no payment obligation to the CAISO for the Undispatchable RUC capacity. The CAISO will report the instance of non-compliance by the RA Resource to the appropriate Local Regulatory Authority.~~

~~If a Partial RA Resource is providing RUC capacity from both the non-RA portion of the resource and the RA portion of the resource, the bid-based RUC Availability payment for the non-RA portion of the resource will be rescinded to the extent of any deficiency. The payment rescission will occur for the non-RA portion of the resource prior to eliminating any capacity for the RA portion of the resource.~~

8.10.8.2 Rescission of Payments for Unavailable Ancillary Service Capacity.

~~Unavailable Capacity is Awarded Ancillary Services capacity and Self Provided Ancillary Services capacity that was not dispatched by the CAISO but where all or a portion of the capacity is not available for dispatch in Real-Time.~~

~~**8.10.8.2.1**~~ ~~If~~ If the CAISO determines that a Scheduling Coordinator has supplied Uninstructed Imbalance Energy to the CAISO during a Settlement Interval from the capacity of a Generating Unit, Participating Load, System Unit or System Resource that is obligated to supply Spinning Reserve or Non-Spinning Reserve to the CAISO, payments to the Scheduling Coordinator for the Ancillary Service ~~C~~capacity used to supply Uninstructed Imbalance Energy shall be eliminated to the extent of the deficiency, in accordance with the provisions of Section 11.10.9.2.

~~**8.10.8.2.2** Payments to the Scheduling Coordinator representing the Generating Unit, Participating Load, System Unit or System Resource for the Ancillary Service Capacity used to supply Uninstructed Imbalance Energy shall not be eliminated to the extent of the deficiency if: (i) the deficiency in the availability of Ancillary Service capacity from the Generating Unit, Participating Load, System Unit or System Resource is attributable to control exercised by the CAISO in that Settlement Interval through AGC operation, an RMR Dispatch Notice, or dispatch to avoid an intervention in Market operations or to prevent a System Emergency; or (ii) a penalty is imposed under Section 8.10.7 with respect to the deficiency.~~

~~**8.10.8.2.3** In calculating the amount of the payment to be rescinded under Section 8.10.8.2, the CAISO shall reduce the payment for Ancillary Service capacity otherwise payable by one sixth of the product of the applicable prices and the amount of Ancillary Service capacity from which the Generating Unit, Participating Load, System Unit or System Resource has supplied Uninstructed Energy in the Settlement Interval.~~

8.10.8.3 Rescission of Payments for Undelivered Ancillary Service Capacity ~~or RUC Capacity~~.

~~Undelivered Capacity is Awarded Ancillary Services capacity and Self Provided Ancillary Services capacity, or capacity committed in RUC that was dispatched by the CAISO but where the Dispatch Instruction was not followed and a certain percentage or more of the scheduled Energy was not provided in Real-Time.~~ For each Settlement Interval in which a Generating Unit, Participating Load, System Unit or

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

~~If the total metered output of a Generating Unit, Participating Load, System Unit or System Resource is insufficient to supply the amount of Instructed Energy associated with a Dispatch Instruction issued in accordance with awarded or Self-Provided Spinning Reserves, or Awarded or Self-Provided Non-Spinning Reserves in any Settlement Interval, then the capacity payment associated with the difference between the scheduled amount of each Ancillary Service for which insufficient Energy was delivered and the actual output attributed to the response to the Dispatch Instruction shall be rescinded. However, no capacity payment shall be rescinded if the shortfall in the metered output of the Generating Unit, Participating Load, System Unit, or System Resource is less than a deadband amount published by CAISO on the CAISO Website at least twenty-four hours prior to the Settlement Interval. For any Settlement Interval with respect to which no deadband amount has been published by the CAISO, the deadband amount shall be zero MWH.~~

~~For each Settlement Interval in which the total metered output for a Generating Unit, Participating Load, System Unit or System Resource is less than Real-Time expected Energy by more than the Tolerance Band and less than the RUC Schedule, the RUC Award for that Settlement Interval will be rescinded.~~

8.10.8.4 [NOT USED]~~Order of Payment Rescission for Resources with More Than One Capacity Obligation in a Settlement Interval.~~

~~If the Generating Unit, Participating Load, System Unit or System Resource is scheduled to provide more than one Ancillary Service in a Settlement Interval the order in which the non-compliant Ancillary Service and RUC Capacity will be apportioned to the various services under this Section 8.10.8 as follows. For Undispatchable Capacity the non-compliant capacity is first apportioned to RUC Capacity and then to any Non-Spinning Reserves. If the amount of Undispatchable Capacity exceeds the amount of Non-Spinning Reserves, then the payment shall be eliminated for Spinning Reserves. For Unavailable Capacity or Undelivered Capacity the non-compliant capacity is first apportioned to any Non-Spinning Reserves. If the amount of non-compliant Ancillary Service capacity exceeds the amount of Non-Spinning Reserves,~~

~~then the payment shall be eliminated for Spinning Reserves. If the same Ancillary Service is scheduled in the Day-Ahead Market, HASP or Real-Time Market then the payments shall be rescinded in proportion to the amount of each Ancillary Service scheduled in each market. If the same Ancillary Service is self-provided and Bid, the order of rescission will be first the amount of Ancillary Service amounts submitted in Bids and then the Self-Provided Ancillary Service.~~

8.10.8.5 [NOT USED]~~Load Following Metered SubSystems with an Obligation to Provide Ancillary Service Capacity or RUC Capacity in a Settlement Interval.~~

~~If a Load following MSS is scheduled to provide Ancillary Service capacity, RUC Capacity, or some combination thereof in a Settlement Interval and if the scheduled capacity or a portion thereof is unavailable for some reason during the Settlement Interval, the non-compliant Ancillary Services and RUC capacity (*i.e.*, Undispatchable, Unavailable, or Undelivered Capacity) will be not be apportioned to the capacity designated by the MSS Operator as Load following up capacity and Load following down capacity. In determining which of the MSS Operator's capacity obligations were not available in Real-Time, the capacity designated by the MSS Operator as Load following up capacity and Load following down capacity shall be preserved or take precedence over the other capacity obligations.~~

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

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

8.10.8.7 [NOT USED]~~Penalties applied pursuant to Section 8.10.7, and payments rescinded pursuant to Section 8.10.8 shall be redistributed to Scheduling Coordinators in proportion to CAISO Control Area metered Demand and scheduled exports for the same Trading Day. Regulation capacity payments rescinded pursuant to Section 8.10.8.6 shall be redistributed to Scheduling Coordinators in~~

~~proportion to CAISO Control Area metered Demand (excluding exports) for the same Trading Day. RUC capacity payment rescinded due to non-performance shall be allocated to Real-Time load deviation.~~

8.10.8.8 **[NOT USED]**~~If the CAISO determines that non-compliance of a Participating Load, Generating Unit, System Unit or System Resource, with an operating order or Dispatch Instruction from the CAISO, or with any other applicable technical standard under the CAISO Tariff, causes or exacerbates system conditions for which the WECC imposes a penalty on the CAISO, then the Scheduling Coordinator of such Participating Load, Generating Unit, System Unit or System Resource shall be assigned that portion of the WECC penalty which the CAISO reasonably determines is attributable to such non-compliance, in addition to any other penalties or sanctions applicable under the CAISO Tariff.~~

* * *

9.3.10.1A Each PTO shall report any change or potential change in equipment status of the PTO's transmission assets turned over to the control of the CAISO or in equipment that affects transmission assets turned over to the control of the CAISO immediately to the CAISO (this will include line and station equipment, line protection, Remedial Action Schemes and communication problems, etc.). Each PTO shall also keep the CAISO immediately informed as to any change or potential change in the PTO's transmission system that could affect the reliability of the CAISO Controlled Grid. This would include, but is not limited to, adverse weather conditions, fires, bomb threats, system failures, etc. To the extent possible, the CAISO shall reflect all transmission Outages in the Integrated Forward Market, HASP, and Real-Time Market.

* * *

10 METERING.

10.1 General Provisions.

10.1.1 Role of the CAISO.

The CAISO is responsible for establishing and maintaining the ~~r~~Revenue ~~m~~Meter ~~d~~Data ~~a~~Acquisition and ~~p~~Processing ~~s~~System (RMDAPS) and the Settlement Quality Meter Data Systems (SQMDS). RMDAPS

will acquire ~~r~~Revenue ~~q~~Quality ~~m~~Meter ~~d~~Data for use in the CAISO's Settlement and billing process, and SQMDS acquires Scheduling Coordinators' Settlement Quality Meter Data. The CAISO is also responsible for the following for CAISO Metered Entities:

(a) setting standards and procedures for the registration, certification, auditing, testing and maintenance of revenue quality meters and ~~m~~Meter ~~d~~Data servers; and

(b) ~~for~~ establishing procedures for the collection, security, validation and estimation of Meter Data ~~for metered entities that are subject to the CAISO Tariff~~.

10.1.2 Meter Data Retention by the CAISO.

The CAISO will maintain a record of all Revenue Quality Meter Data and Settlement Quality Meter Data provided to it, as well as the Settlement Quality Meter Data it produces, for a period of 18 months on site at the CAISO's facilities and for a period of 10 years in the CAISO's archive storage facilities. The CAISO will, on reasonable notice, provide a Scheduling Coordinator with access to Meter Data or Settlement Quality Meter Data provided that the Scheduling Coordinator requesting access represented the entity ~~that submitted~~for which that data was provided at the time the data was ~~submitted~~ provided to the CAISO.

10.1.3 Netting.

10.1.3.1 Permitted Netting.

CAISO Metered Entities and Scheduling Coordinators may, when providing Meter Data to the CAISO, net MWh values for Generating Unit output and auxiliary Load equipment electrically connected to that Generating Unit at the same point provided that the Generating Unit is on-line and is producing sufficient output to serve all of that auxiliary Load equipment. For example, where a Generating Unit's auxiliary ~~l~~Load equipment is served via a distribution line that is separate from the switchyard to which the Generating Unit is connected, that Generating Unit and auxiliary ~~l~~Load equipment will not be considered to be electrically connected at the same point.

10.1.3.2 Prohibited Netting.

CAISO Metered Entities or Scheduling Coordinators may not net values for Generating Unit output and Load. CAISO Metered Entities or Scheduling Coordinators that serve third party Load connected to a Generating Unit's auxiliary system must add that third party Load to the Generating Unit's output. The CAISO Metered Entity may add that third party Load to the Generating Unit's output either by means of a hard wire local meter connection between the metering systems of the third party Load and the Generating Unit or by requesting the CAISO to use RMDAPS to perform the addition. Scheduling Coordinators representing SC Metered Entities that ~~S~~serve third party Load connected to the auxiliary system of a Generating Unit must ensure that those SC Metered Entities add the Energy consumed by such third parties to that Generating Unit's output so as to ensure proper settlement of that Generating Unit's gross output. The CAISO Metered Entity or the Scheduling Coordinator must ensure that the third party Load has Metering Facilities that meet the standards referred to in this Section 10 and the Business Practice Manuals.

10.1.3.3 Permitted Netting for a QF with a QF PGA and Other QF Metering Requirements.

A Generating Unit that is a QF and that qualifies as Regulatory Must-Take Generation is subject to the revenue metering requirements set forth in the Existing QF Contract for the QF and is not subject to the revenue metering requirements of Section 10. A QF Generating Unit not operating under the terms of an Existing QF Contract is subject to the metering requirements of Section 10 prohibiting the net metering of Generation and Load, except if it is subject to a QF PGA. A Generating Unit that is a QF and that operates under the terms of a QF PGA is eligible for net metering treatment. Notwithstanding Section 10.1.3.2, a Participating Generator with a QF PGA may net the value for the Generation produced by each Net Scheduled QF listed in its QF PGA and the value for the Demand of the Self-provided Load that is (i) served by the Net Scheduled QF and (ii) electrically located on the same side of the Point of Demarcation. The Participating Generator with a QF PGA may satisfy the provisions of Section 10 for the installation of revenue metering by installing Metering Facilities at the Point of Demarcation; provided that the installed Metering Facilities satisfy the technical, functional, and performance requirements for Metering Facilities set forth in Section 10 and the applicable Business Practice Manual.

10.1.4 Meter Service Agreements.

A CAISO Metered Entity shall enter into a Meter Service Agreement for CAISO Metered Entities with the CAISO. A Scheduling Coordinator representing a Scheduling Coordinator Metered Entity shall enter into a Meter Service Agreement for Scheduling Coordinators. If a CAISO Metered Entity is also a Scheduling Coordinator, it shall be treated as a CAISO Metered Entity for the purposes of this Section 10 and will be required to enter into a ~~CAISO~~ Meter Service Agreement for CAISO Metered Entities. A CAISO Metered Entity will not be required to enter into a ~~Scheduling Coordinator~~ Meter Service Agreement for Scheduling Coordinators unless it represents any Scheduling Coordinator ~~m~~Metered ~~e~~Entities ~~other than itself~~. A ~~Scheduling Coordinator~~ Meter Service Agreement for Scheduling Coordinators entered into by a~~n~~ CAISO Metered Entity shall only apply to those Scheduling Coordinator ~~m~~Metered ~~e~~Entities that the CAISO Metered Entity represents; the ~~Scheduling Coordinator~~ Meter Service Agreement for Scheduling Coordinators shall not apply to the CAISO Metered Entity other than in its capacity as Scheduling Coordinator for those ~~other~~ Scheduling Coordinator Metered Entities.

10.1.5 Access to Meter Data.

The CAISO has complete authority over all rights of access to (and has authority to deny access to) the CAISO's RMDAPS and Settlement Quality Meter Data Systems including servers (where used), interface equipment, and software needed to collect the relevant information for Settlement, billing and related purposes. Each Market Participant acknowledges this CAISO authority as a condition of CAISO Controlled Grid service and participation. For CAISO Metered Entities, authority over the sealing of meters, and all related ~~m~~Metering ~~f~~Facilities, shall reside solely with the CAISO for all CAISO designated Meter Points, regardless of any remote electronic access that a CAISO Metered Entity or its Scheduling Coordinator may have provided to third parties, except as otherwise may be required by law, FERC, any Local Regulatory Authority or other provision of this CAISO Tariff. Meter Data supplied by a CAISO Metered Entity shall be made available by the CAISO to the Scheduling Coordinator representing such CAISO Metered Entity at the time the Meter Data was provided and the other authorized users identified in its Meter Service ~~a~~Agreement for CAISO Metered Entities, but shall not be disclosed to any other third party except as may otherwise be required by law, FERC, any Local Regulatory Authority or other provision of this CAISO Tariff. Meter Data supplied by a Scheduling Coordinator for a Scheduling Coordinator Metered Entity shall be made available by the CAISO to the Scheduling Coordinator

representing such Scheduling Coordinator Metered Entity at the time the Meter Data was provided and the other authorized users identified in its Meter Service Agreement for Scheduling Coordinator Metered Entities, but shall not be disclosed to any other third party except as may otherwise be required by law, FERC, any Local Regulatory Authority or other provision of this CAISO Tariff. Access by third parties other than authorized users to Meter Data held by the CAISO shall be coordinated through the Scheduling Coordinator that provided the Meter Data or that is representing the relevant CAISO Metered Entity that supplied the data and shall not be obtained directly from the CAISO on any basis including, without limitation, by accessing the RMDAPS.

10.1.6 Failure of CAISO Facilities or Systems.

In the event facility and/or systems failures impact the CAISO's ability to accept, collect, and process Revenue Quality Meter Data or Settlement Quality Meter Data, alternative measures may be required by the CAISO, CAISO-Metered Entities, and Scheduling Coordinator Metered Entities. These measures are described in the applicable Business Practice Manual~~will be maintained in the metering area of the CAISO Website~~.

10.2 Metering for CAISO Metered Entities.

~~Unless otherwise expressly stated to the contrary, the requirements set forth in Section 10.1 and 10.2 apply to CAISO Metered Entities.~~ CAISO Metered Entities' ~~will either provide Revenue Quality Meter Data directly to the CAISO via Compatible Meter Data Systems or their~~ revenue quality meters will be directly polled by the CAISO's RMDAPS as specified in this CAISO Tariff and Business Practice Manuals.

10.2.1 Responsibilities of CAISO Metered Entities.

10.2.1.1 Duty to Provide Revenue Quality Meter Data.

CAISO Metered Entities shall ensure that Revenue Quality Meter Data from their meters directly connected to the CAISO Controlled Grid or at interconnections thereto, including interconnections between utility Service Areas which have separate UFE calculations, is made available to the CAISO RMDAPS in accordance with the requirements of this Section 10 and the Business Practice Manuals.

10.2.1.2 Format for Data Submission.

~~**10.2.1.2.1 Data Provided Directly From Meters.**~~

CAISO Metered Entities must ensure that the Meter Data obtained by the CAISO directly from their revenue quality meters is raw, unedited and unaggregated Meter Data in kWh and kVarh values, as specified in the applicable Business Practice Manual. The CAISO will be responsible for the ~~v~~Validation, Estimation and ~~e~~Editing ~~and estimation~~ of that Meter Data in order to produce Settlement Quality Meter Data.

~~**10.2.1.2.2 Data Provided From Meter Data Servers.**~~

~~CAISO Metered Entities or Scheduling Coordinators representing CAISO Metered Entities must ensure that the Meter Data provided to the CAISO from a Compatible Meter Data System identifies the relevant CAISO Metered Entity and is raw, unedited and unaggregated Meter Data in kWh and kVarh values. The CAISO will be responsible for the validation, editing and estimation of that Meter Data in order to produce Settlement Quality Meter Data.~~

10.2.1.3 Access to Settlement Quality Meter Data.

Scheduling Coordinators may obtain Settlement Quality Meter Data relating to the CAISO Metered Entities they represent by directly accessing the Settlement Quality Meter ~~d~~Data ~~s~~Systems ~~using the Meter Data Request Formats~~ as specified in the applicable Business Practice Manual. The CAISO will use its best efforts to ensure that such data is made available to Scheduling Coordinators within five (5) Business Days of the relevant Trading Day.

10.2.2 Duty to Install and Maintain Meters.

CAISO Metered Entities, at their cost, shall install and maintain, or cause to be installed and maintained, metering equipment and associated communication devices at CAISO-designated Meter Points to meet the requirements of this Section 10 and the applicable Business Practice Manuals. The CAISO may require CAISO Metered Entities to install, at the cost of CAISO Metered Entities, additional meters and relevant metering system components, including Real-Time metering, at CAISO-specified Meter Points or other locations as deemed necessary by the CAISO, in addition to those connected to or existing on the CAISO Controlled Grid at the CAISO Operations Date. In directing the addition of meters and metering

system components that would impose increased costs on a CAISO Metered Entity, the CAISO shall give due consideration to whether the expected benefits of such equipment are sufficient to justify such increased costs. Nothing in this Section 10 shall preclude CAISO Metered Entities from installing additional meters, instrument transformers and associated communications facilities not deemed necessary by the CAISO at their own cost. A CAISO Metered Entity may not commence installing such additional metered facilities until the CAISO has approved the CAISO Metered~~ing~~ Entity's Proposal for Installation. If a CAISO Metered Entity installs such additional metering, such metering must: (i) be installed and maintained at the CAISO Metered Entity's cost and (ii) not unduly interfere with the accuracy of any primary meter and, if that primary meter is directly polled by the CAISO, the CAISO's ability to poll directly that meter.

10.2.3 Metering Standards.

Each CAISO Metered Entity shall ensure that each of its meters used to provide Meter Data to the CAISO complies with the meter standards and accuracy requirements for meters set forth in this Tariff and the applicable Business Practice Manuals. ~~In relation to revenue quality meters, the CAISO will publish on the CAISO Website, for information purposes and without liability on the part of the CAISO, a list of the types and manufacturers of revenue quality meters that have been independently certified as meeting the standards for revenue quality meters referred to in the CAISO Tariff.~~

10.2.4 Certification of Meters.

Each CAISO Metered Entity that makes Meter Data available to the CAISO shall ensure that metering facilities used to produce such Meter Data have been certified by the CAISO as meeting the requirements of Section 10. Certification of the relevant metering facilities shall only be provided upon the production of such evidence as the CAISO may reasonably require to demonstrate that the facilities in question have been documented, inspected and successfully tested by the CAISO or a CAISO Authorized Inspector for conformance to the standards and accuracy requirements referred to in the Business Practice Manuals and this Section 10. ~~Meters of End-Use Scheduling Coordinator Metered Entities in place as of the CAISO Operations Date are deemed to be certified as in compliance with this CAISO Tariff and the applicable Business Practice Manuals and such End-Users shall not be required to~~

~~enter into meter service agreements with the CAISO provided that their Scheduling Coordinators have entered into a meter service agreement with the CAISO.~~ CAISO certification pursuant to this Section 10.2.4 shall not relieve the CAISO Metered Entity from the obligation to ensure that its metering facilities continue to remain in compliance with the requirements of this CAISO Tariff and the applicable Business Practice Manuals.

* * *

10.2.4.2 Certification by the CAISO.

All requests made to the CAISO to perform the certification of Metering Facilities must be made in accordance with the ~~C~~certification ~~P~~process for Metering Facilities and technical specifications published in the Business Practice Manuals and be accompanied by the documents referred to in the applicable Business Practice Manual. If the CAISO agrees to perform the certification of Metering Facilities, the CAISO and that CAISO Metered Entity will agree the terms and conditions on which the CAISO will undertake the certification, including the assistance to be provided by the CAISO Metered Entity, the responsibility for costs and the indemnities to be provided.

* * *

10.2.4.6 Revocation of Certification.

The CAISO may revoke in full or in part any Certificate of Compliance if:

(a) it has reasonable grounds to believe that all or some of the Metering Facilities covered by that Certificate of Compliance no longer meet the certification criteria for Metering Facilities contained in the CAISO Tariff and the Business Practice Manuals; and

(b) it has given written notice to the relevant CAISO Metered Entity stating that it does not believe that the identified Metering Facilities meet the certification criteria (including the reasons for that belief) and that CAISO Metered Entity fails to satisfy the CAISO, within the time period specified in the CAISO's notice, that the Metering Facilities meet the certification criteria.

If the CAISO revokes in full or part a Certificate of Compliance, the relevant CAISO Metered Entity may seek recertification of the relevant Metering Facilities by requesting certification. Such request must indicate that it relates to Metering Facilities in respect of which the CAISO has previously revoked a Certificate of Compliance.

Subject to any exemption granted by the CAISO under this CAISO Tariff, the CAISO will not accept Revenue Quality Meter Data from a CAISO Metered Entity unless that Revenue Quality Meter Data is produced by Metering Facilities that are certified in accordance with this CAISO Tariff and the CAISO Metered Entity has a current ~~c~~Certificate of ~~c~~Compliance.

* * *

10.2.6 Metering Communications.

The CAISO's RMDAPS shall collect and process Revenue Quality Meter Data made available by CAISO Metered Entities pursuant to ~~m~~Meter ~~s~~Service ~~a~~Agreements for CAISO Metered Entities and the applicable Business Practice Manual. Revenue Quality Meter Data for CAISO Metered Entities shall be made available to the CAISO's RMDAPS as specified in the applicable Business Practice Manual either directly by the CAISO Metered Entity or via a central data server which collects Revenue Quality Meter Data for various CAISO Metered Entities provided that the central data server does not aggregate or adjust that data. Revenue Quality Meter Data on the CAISO's RMDAPS may be provided or made accessible to other CAISO systems as deemed necessary by the CAISO, subject to the CAISO being satisfied that such access by such authorized uses and/or systems will not adversely effect the security of the data held by the CAISO. CAISO Metered Entities shall ensure that their Metering Facilities are compatible with the CAISO's RMDAPS for these purposes. The CAISO may, at its discretion, exempt a CAISO Metered Entity from the requirement to make Revenue Quality Meter Data directly available to the CAISO's RMDAPS, for example, where the installation of communication links is unnecessary, impracticable or uneconomic. The CAISO shall maintain the RMDAPS and remedy any faults occurring in such system. Scheduling Coordinators and other authorized users requiring Settlement Quality Meter Data for CAISO Metered Entities on whose behalf they Bid may obtain such data by accessing the CAISO's Settlement Quality Meter Data ~~s~~Systems in accordance with the CAISO Tariff and applicable

Business Practice Manuals. Scheduling Coordinators and other authorized users shall not poll the CAISO revenue meters for any other purpose, unless specifically authorized in the~~ir~~ Meter Service Agreement for CAISO Metered Entities.

10.2.7 Format of Meter Data~~Service Agreements for CAISO Metered Entities~~.

~~The CAISO shall establish Meter Service Agreements with CAISO Metered Entities for the collection of Revenue Quality Meter Data. Such agreements shall specify that~~ CAISO Metered Entities shall make available to the CAISO's RMDAPS~~,~~ Revenue Quality Meter Data meeting the requirements of this Section 10. ~~The Meter Service Agreement and this Section 10 shall specify t~~The format of Meter Data to be submitted~~, which~~ shall be identified by Transmission Owner, Distribution System, PNode, CAISO Controlled Grid interface point and other information reasonably required by the CAISO. ~~A Meter service agreement entered into by a CAISO metered entity shall only apply to those entities that the CAISO Metered Entity represents. Meter Service Agreements will identify other authorized users that are allowed to access the Settlement Quality Meter Data relating to the CAISO Metered Entities they represent that is held by the CAISO.~~

10.2.8 Security and Meter Data Validation Procedures.

The ~~Meter Service Agreement for each CAISO Metered Entity, this CAISO Tariff, and the~~ applicable Business Practice Manuals shall specify, in such detail as the CAISO may deem necessary, the Meter Data security and validation procedures that the CAISO shall apply to the Revenue Quality Meter Data made available by each CAISO Metered Entity. The CAISO may base the security and validation procedures on historical data or an appropriate alternative data source. The CAISO shall correct or replace or cause to be corrected or replaced inaccurate or missing data. The procedure may include data correction and substitution algorithms which shall estimate, substitute and flag such inaccurate or missing data. Any necessary correction or replacement shall be approved by the CAISO prior to the data being sent to the CAISO for settlement purposes. Security and validation measures for existing Tie Point Meters shall be consistent with existing arrangements with the operators in adjacent Control Areas. Any additional measures or changes to the existing arrangements shall only be implemented upon mutual agreement of the CAISO and the operator in the adjacent Control Area.

* * *

10.2.8.2 Third Party Access to Meters.

10.2.8.2.1~~(a)~~ **Local Access.**

If a CAISO Metered Entity desires to grant a third party local access to its revenue quality meters, those meters must be equipped with CAISO approved communications capabilities in accordance with the applicable Business Practice Manuals. The CAISO may set the password and any other security requirements for locally accessing the revenue quality meters of CAISO Metered Entities so as to ensure the security of those meters and their Revenue Quality Meter Data. The CAISO may alter the password and other requirements for locally accessing those meters from time to time as it determines necessary. The CAISO must provide CAISO Metered Entities with the current password and other requirements for locally accessing their revenue quality meters. CAISO Metered Entities must not give a third party local access to its revenue quality meters or disclose to that third party the password to its revenue quality meters without the CAISO's prior approval which shall not unreasonably be withheld. CAISO Metered Entities will be responsible for ensuring that a third party approved by the CAISO to access its revenue quality meters only accesses the data it is approved to access and that the data are only accessed for the purposes for which the access was approved.

10.2.8.2.2~~(b)~~ **Remote Access.**

The CAISO may set the password and any other security requirements for remotely accessing the revenue quality meters of CAISO Metered Entities so as to ensure the security of those meters and their Revenue Quality Meter Data. The CAISO will alter the password and other requirements for remotely accessing those meters from time to time as it determines necessary. The CAISO must provide CAISO Metered Entities with the current password and other requirements for remotely accessing their revenue quality meters. CAISO Metered Entities must not give a third party remote access to its revenue quality meters or disclose to that third party the password to its revenue quality meters without the CAISO's prior approval which shall not unreasonably be withheld. CAISO Metered Entities will be responsible for ensuring that a third party approved by the CAISO to access its revenue quality meters only accesses the

data it is approved to access and that the data are only accessed for the purposes for which the access was approved.

* * *

10.2.9 Validation, Estimation and Editing ~~and Estimating~~ of Meter Data.

~~-~~Subject to any exemption granted by the CAISO, Revenue Quality Meter Data that CAISO Metered Entities provide to the CAISO will be processed using the ~~v~~Validation, Estimation and ~~e~~Editing ~~and estimation~~ procedures published in the Business Practice Manuals ~~from time to time~~ in order to produce Settlement Quality Meter Data.

* * *

10.2.9.2 Availability of Meter Data.

Subject to any exemption granted by the CAISO, Meter Data of CAISO Metered Entities must be recorded~~:~~

~~(a) at 5-minute intervals by Loads and Generating Units providing Ancillary Services and/or Imbalance Energy; and~~

~~(b) at 1-hour intervals by other CAISO Metered Entities.~~

~~Meter Data~~ and will be collected ~~regularly~~ in accordance with the provisions of the applicable Business Practice Manual~~frequency for collection determined by the CAISO from time to time~~. The CAISO may also collect Meter Data on demand as provided in the applicable Business Practice Manual. ~~The CAISO will issue such demands using voice communications. If the CAISO issues a demand for Meter Data, the CAISO Metered Entity from which the CAISO demands that Meter Data must provide that Meter Data to the CAISO within 10 minutes of receiving the demand from the CAISO or, if that CAISO Metered Entity has been granted an exemption from directly interfacing with RMDAPS, within the time period specified in that exemption.~~

10.2.9.3 [NOT USED]~~Failure to Achieve Required Standards.~~

~~Meter service agreements shall set out appropriate measures and rights the CAISO may exercise upon any failure by the other party to meet the requirements for meter standards and accuracy set out in this Section 10.~~

10.2.9.4 CAISO Imposed Penalties and Sanctions.

The CAISO shall have the authority to impose penalties and sanctions, including but not limited to Sanctions set forth in Section 37 and the applicable Business Practice Manual and suspension of trading rights, if a~~n~~ CAISO Metered Entity provides fraudulent metering data to the CAISO. Such penalties shall be approved by FERC.

10.2.10 Low Voltage Side Metering.

10.2.10.1 Requirement for CAISO Approval.

CAISO Metered Entities may only install revenue quality meters on the low voltage side of step-up transformers if they have obtained the prior approval of the CAISO in accordance with Section 10.2.10 ~~of the CAISO Tariff~~. CAISO Metered Entities that have installed low voltage side metering, whether such installation was before or after the CAISO Operations Date, shall apply the Transformer and Line Loss Correction Factor in accordance with Section 10.2.10.4.

* * *

10.2.10.3 CAISO's Grounds for Approval.

The CAISO shall approve a request made under Section 10.2.10.2 only if the CAISO is satisfied that adequate accuracy and security of Revenue Quality Meter Data obtained can be assured in accordance with Section 10.2.10 ~~of the CAISO Tariff~~. The CAISO's rejection of such a request may be referred to the CAISO ADR Procedures if, after using all reasonable good faith efforts, the CAISO and a CAISO Metered Entity are unable to reach agreement.

* * *

10.2.12 Exemptions.

The CAISO has the authority to grant exemptions from certain CAISO metering standards for a CAISO Metered Entity, as set forth in Section 10.4 ~~provided the CAISO annually publishes details of the criteria the CAISO will use when considering an application for an exemption and details of specific exemptions which are available~~. A CAISO Metered Entity with ~~an interim~~ a temporary exemption shall provide site specific ~~Settlement~~Revenue Quality Meter Data to the CAISO in accordance with its ~~m~~Meter ~~s~~Service ~~a~~Agreement for CAISO Metered Entities and the CAISO Tariff. A Generating~~or~~ Unit that provides Regulatory Must-Take Generation connected directly to a UDC Distribution System and that sells its entire output to the UDC in which the Generating~~or~~ Unit is located is not subject to the audit, testing or certification requirements of the CAISO.

10.2.13 Maintenance of Metering Facilities.

10.2.13.1 Duty to Maintain Metering Facilities.

CAISO Metered Entities must maintain their Metering Facilities so that those Metering Facilities continue to meet the standards prescribed by the CAISO Tariff and the applicable Business Practice Manuals.

~~If the Metering Facilities of a CAISO Metered Entity require maintenance in order to ensure that they operate in accordance with the requirements of the CAISO Tariff the CAISO Metered Entity shall notify the CAISO by telephone or other means specified by the CAISO of the need for such maintenance. The CAISO Metered Entity must also inform the CAISO of the time period during which such maintenance is expected to occur. During that period, the CAISO Metered Entity or its authorized representative shall be entitled to access those sealed Metering Facilities to which access is required in order to undertake the required maintenance.~~

~~During periods for which no Meter Data is available from a meter which has a current Certificate of Compliance, the CAISO will substitute estimated meter data for that CAISO Metered Entity using the estimation procedures referred to in Section 10.2.9. That estimated meter data will be used by the CAISO in its Settlement and billing process.~~

10.2.13.2 Repairs.

If a revenue quality meter of a CAISO Metered Entity requires repairs to ensure that it operates in accordance with the requirements of the CAISO Tariff and the applicable Business Practice Manuals, the CAISO Metered Entity must immediately notify the CAISO of the need for repairing that meter and must ensure that those repairs are completed in accordance with the applicable Business Practice Manual.~~:~~

~~(a) where there is no Check Meter installed, within 12 hours of the notification to the CAISO; or~~

~~(b) where there is a Check Meter installed, within 5 Business Days of the notification to the CAISO.~~

During periods for which no Meter Data is available from a meter which has a current Certificate of Compliance, the CAISO will substitute estimated ~~m~~Meter ~~d~~Data for that CAISO Metered Entity using the estimation procedures referred to in Section 10.2.9. That estimated ~~m~~Meter ~~d~~Data will be used by the CAISO in its Settlement and billing process.

~~In respect of Metering Facilities (other than a revenue quality meter) of a CAISO Metered Entity that need repair, the CAISO Metered Entity shall notify the CAISO of that need and, after consultation with the CAISO Metered Entity, the CAISO will set the time period in which such repairs must be completed.~~

10.2.14 Installation of Additional Metering Facilities.

10.2.14.1 CAISO Requirement to Install Additional Metering.

~~**10.2.14.1.1 CAISO Authority to Require Additional Metering Facilities.**~~

~~The CAISO has authority under Section 10.2.2 the CAISO Tariff to require a CAISO Metered Entity to install Metering Facilities in addition to those Metering Facilities on the CAISO Controlled Grid at the CAISO Operations Date. In directing the addition of meters and metering system components that would impose increased costs on a CAISO Metered Entity, the CAISO shall give due consideration to whether the expected benefits of such equipment are sufficient to justify such increased costs. A CAISO Metered Entity may not commence installing those additional Metering Facilities until the CAISO has approved its Proposal for Installation.~~

~~**10.2.14.1.2 Requirement to Install.**~~

If the CAISO determines that there is a need to install additional Metering Facilities on the CAISO Controlled Grid pursuant to Section 10.2.2, it will notify the relevant CAISO Metered Entity of that need and will process the CAISO Metered Entity's Proposal for Installation in accordance with the applicable Business Practice Manual. ~~The CAISO's notice to that CAISO Metered Entity will include the following information:~~

~~(a) the location of the Meter Point at which the additional Metering Facilities are required;~~

~~(b) the date by which the CAISO Metered Entity must install the relevant Metering Facilities;~~

~~(c) the reason for the need to install the additional metering Facilities; and~~

~~(d) any other information that the CAISO considers relevant.~~

~~**10.2.14.1.3 Obligations of CAISO Metered Entity.**~~

~~A CAISO Metered Entity that is notified by the CAISO that it is required to install additional Metering Facilities must:~~

~~(a) give the CAISO written confirmation of receipt of that notice within 3 Business Days of receiving that notice;~~

~~(b) submit a Proposal for Installation to the CAISO within 45 Business Days of receiving that notice. The Proposal for Installation must set out the following information:~~

~~i. a description of the proposed Metering Facilities to be installed (which shall include all relevant schematic drawings and one-line drawings);~~

~~ii. a proposed timetable for the installation; and~~

iii. any other information requested by the CAISO in the notice referred to in Section 10.2.14.1.2.

10.2.14.1.4 Approval or Rejection of a Proposal for Installation.

The CAISO may either:

(a) unconditionally approve;

(b) conditionally approve; or

(c) reject, a Proposal for Installation.

10.2.14.1.5 Unconditional Approval.

If the CAISO unconditionally approves a Proposal for Installation, it will promptly notify the CAISO Metered Entity that the Proposal for Installation has been approved. The CAISO Metered Entity shall then commence installation of the Metering Facilities in accordance with the Proposal for Installation.

10.2.14.1.6 Conditional Approval.

(a) Notification of Conditional Approval.

If the CAISO conditionally approves a Proposal for Installation, it will promptly notify the CAISO Metered Entity that the Proposal for Installation has been conditionally approved and set out in that notice the conditions on which approval is granted and the time period in which each such condition must be satisfied by the CAISO Metered Entity.

(b) Ability to Satisfy Conditions.

If the CAISO Metered Entity disputes any condition imposed by the CAISO, the CAISO Metered Entity must immediately notify the CAISO of its concerns and provide the CAISO with the reasons for its concerns. If the CAISO Metered Entity gives the CAISO such a notice, the CAISO may amend or waive any of the conditions on which it granted its approval or it may require the CAISO Metered Entity to satisfy other conditions. The CAISO and the CAISO Metered Entity will use all reasonable good faith efforts to reach

agreement, and in the absence of agreement either entity may refer the dispute to the CAISO ADR Procedures.

(c) Notification of Satisfaction of Conditions.

The CAISO Metered Entity must promptly notify the CAISO when each condition in the approval has been satisfied and provide to the CAISO any information reasonably requested by the CAISO as evidence that such condition has been satisfied.

(d) Confirmation of Satisfaction of Conditions.

If the CAISO determines that a condition in the approval of the Proposal for Installation has been satisfied, it will give the CAISO Metered Entity written confirmation that the condition has been satisfied.

(e) Unsatisfied Conditions.

If the CAISO determines that a condition has not been satisfied after having received notice from a CAISO Metered Entity, the CAISO will notify the CAISO Metered Entity that it does not consider the condition satisfied and shall set out in that notice the reason(s) that it does not consider the condition satisfied. If, after using all reasonable good faith efforts, the CAISO and the CAISO Metered Entity are unable to agree on whether that condition is satisfied, either entity may refer the dispute to the CAISO ADR Procedures.

10.2.14.1.7 Rejection.

If the CAISO rejects a Proposal for Installation, it will promptly notify the CAISO Metered Entity that the Proposal for Installation has been rejected and set out in that notice the reason for its rejection. The CAISO Metered Entity must submit to the CAISO a revised Proposal for Installation within 14 Business Days of receiving such notice of rejection. If the CAISO rejects for a second time a Proposal for Installation submitted by a CAISO Metered Entity in respect of the same or similar notice issued by the CAISO under Section 10.2.14.1.2, the CAISO and the CAISO Metered Entity will use all reasonable good faith efforts to reach agreement on the requirements and disputed items and in the absence of agreement either entity may refer the dispute to the CAISO ADR Procedures.

10.2.14.2~~1.8~~ CAISO Metered Entities' Election to Install Additional Metering.

In accordance with Section 10.2.2 ~~of the CAISO Tariff~~, a CAISO Metered Entity may choose to install additional metering, including ~~Check~~Backup Meters. If a CAISO Metered Entity installs such additional metering, such metering must, unless the CAISO agrees otherwise:

(a) be installed and maintained at the CAISO Metered Entity's cost;

(b) be located on the CAISO Metered Entity's side of any primary meter; and

(c) not interfere with the accuracy of any primary meter and, if that primary meter is directly polled by the CAISO, the CAISO's ability to directly poll that meter.

Any Meter Data produced by any such additional metering may be used by the CAISO for Settlement and billing purposes in the event of the failure, or during tests or repairs of, the primary meter provided that such additional metering has a current Certificate of Compliance, the CAISO Metered Entity gives the CAISO prior verbal notice that such meter will be used and the period for which it will be used and, if the primary meter is directly polled by the CAISO, the additional metering must also be capable of being directly polled by the CAISO.

* * *

10.3.2 Responsibilities of Scheduling Coordinators and the CAISO.

10.3.2.1 Duty to Provide Settlement Quality Meter Data.

Scheduling Coordinators shall be responsible for: (i) the collection of Meter Data for the Scheduling Coordinator Metered Entities it represents; (ii) the provision of Settlement Quality Meter Data to the CAISO; and (iii) ensuring that the Settlement Quality Meter Data supplied to the CAISO meets the requirements of Section 10. Scheduling Coordinators shall provide the CAISO with Settlement Quality Meter Data for all Scheduling Coordinator Metered Entities served by the Scheduling Coordinator no later than the day specified in Section 10.3.6. Settlement Quality Meter Data for Scheduling Coordinator Metered Entities shall be either (1) an accurate measure of the actual consumption of Energy by each Scheduling Coordinator Metered Entity in each Settlement Period; (2) for Scheduling Coordinator Metered

Entities connected to a UDC Distribution System and meeting that Distribution System's requirement for load profiling eligibility, a profile of that consumption derived directly from an accurate cumulative measure of the actual consumption of Energy over a known period of time and an allocation of that consumption to Settlement Periods using the applicable Approved Load Profile; or (3) an accurate calculation by the Scheduling Coordinator representing entities operating pursuant to Existing Contracts.

~~Scheduling Coordinators must use Compatible meter Data Systems to submit Settlement Quality Meter Data to the CAISO for those Scheduling Coordinator Metered Entities that they represent. Scheduling Coordinators shall provide the CAISO with the current password and any other information it needs to access, at all times the Compatible Meter Data Systems of those Scheduling Coordinators so as to ensure the security of those servers. Each Scheduling Coordinator must also provide the CAISO with connectivity to the Scheduling Coordinator's systems with which the CAISO will interface to obtain or prove Settlement Quality Meter Data.~~

10.3.2.2 Format for Data Submission.

Scheduling Coordinators shall submit Settlement Quality Meter Data to the Settlement Quality Meter Data System for the Scheduling Coordinator Metered Entities they represent using one of the CAISO's approved Meter Data Exchange Formats. Subject to any exemption granted by the CAISO, Scheduling Coordinators must ensure that Settlement Quality Meter Data submitted to the CAISO is in intervals of five (5) minutes for Loads and Generators providing Ancillary Services and/or Imbalance Energy, and one (1) hour for other Scheduling Coordinator Metered Entities.

Each Scheduling Coordinator shall submit Settlement Quality Meter Data in ~~either~~ kWh ~~or kVarh~~ values for all of the Scheduling Coordinator Metered Entities that it schedules aggregated by:

(a) LAP~~s~~S and PNodes, as applicable; and

(b) the relevant PNode ~~unit~~ for Generating Units.; ~~or~~

~~(c) the Scheduling Point for imports and exports.~~

10.3.2.3 Format for Data Requests.

Scheduling Coordinators may obtain Settlement Quality Meter Data relating to the Scheduling Coordinator Metered Entities they represent by requesting extracts from the CAISO's Settlement Quality Meter Data Systems using the Meter Data ~~R~~request ~~F~~formats as published in the Business Practice Manuals. The CAISO will ensure that such data is made available in a timely manner.

10.3.3 Loss Factors.

Where a Scheduling Coordinator Metered Entity is connected to a UDC's Distribution System, the responsible Scheduling Coordinator shall adjust the Meter Data by an estimated Distribution System loss factor to derive an equivalent CAISO Controlled Grid level measure. Such estimated Distribution System loss factors shall be approved by the relevant Local Regulatory Authority prior to their use. ~~The Scheduling Coordinator shall aggregate its equivalent CAISO Controlled Grid-level Meter Data for Scheduling Coordinator Metered Entities.~~

10.3.4 Load Profile Authorization.

Scheduling Coordinators shall be responsible for obtaining all necessary authorizations of Approved Load Profiles from Local Regulatory Authorities having jurisdiction over the use of profiled Meter Data and shall use Approved Load Profiles in any Settlement process in which load profiles are used to allocate consumption to Settlement Periods.

* * *

10.3.6 Timing of Meter Data Submission.

Scheduling Coordinators shall submit either hourly time-stamped Settlement Quality Meter Data for Scheduling Coordinator Metered Entities or profiled cumulative Settlement Quality Meter Data to the CAISO for each Settlement Period in an Operating Day ~~-~~according to the timelines established in the CAISO Payments Calendar and as provided in the applicable Business Practice Manual.

~~Scheduling Coordinators shall submit Settlement Quality Meter Data to the CAISO when required to do so by this CAISO Tariff and the CAISO Payments Calendar.~~ Scheduling Coordinators must also submit Settlement Quality Meter Data on demand as provided in the applicable Business Practice Manual. ~~The CAISO will issue such demands using voice communications. If the CAISO issues a demand for~~

~~Settlement Quality Meter Data, the Scheduling Coordinator from which the CAISO demands that data must submit it to the CAISO within 4 hours of receiving the demand from the CAISO.~~

* * *

10.3.8 Access to Meter Data.

The CAISO has complete authority over rights of access to (and has authority to deny access to) its Settlement Quality Meter Data Systems by Scheduling Coordinators and Scheduling Coordinator Metered Entities for Settlement, billing and related purposes. Each Scheduling Coordinator, on behalf of itself and Scheduling Coordinator Metered Entities that it serves or represents, acknowledges this CAISO authority as a condition of access to the CAISO Controlled Grid. Meter Data of a Scheduling Coordinator Metered Entity remains the property of that Scheduling Coordinator Metered ~~e~~Entity and shall be made available to third parties only with its express permission or the permission of its Scheduling Coordinator or as otherwise required by law or provided for in this CAISO Tariff.

10.3.9 Certification of Meters.

Scheduling Coordinators shall ensure that revenue meters and related metering facilities of those Scheduling Coordinator Metered Entities whom they represent are certified in accordance with any certification criteria prescribed by the relevant Local Regulatory Authority or, if no such criteria have been prescribed by that Local Regulatory Authority, certified in accordance with this Section 10. Scheduling Coordinators shall upon request of the CAISO supply promptly copies of all certificates issued by the relevant Local Regulatory Authority. The End Use Meter of ~~a CAISO Metered Entity or~~ a Scheduling Coordinator Metered Entity in place as of the CAISO Operations Date is deemed to be certified as in compliance with this CAISO Tariff and Business Practice Manuals. Once certified, meters for Scheduling Coordinator Metered Entities need not be recertified provided such meters are maintained so as to meet the standards and accuracy requirements prescribed by any relevant Local Regulatory Authority or, if no such standards have been prescribed by that Local Regulatory Authority, such requirements as referred to in the Business Practice Manuals and this Section 10. Recertification is not required by the CAISO upon an election by a Scheduling Coordinator Metered Entity to change its Scheduling Coordinator from which it takes service.

10.3.10 Requirement for Audit and Testing.

10.3.10.1~~(a)~~ Audit and Testing by Scheduling Coordinator.

Each Scheduling Coordinator shall at least annually conduct (or engage an independent, qualified entity to conduct) audits and tests of the Metering Facilities of the Scheduling Coordinator Metered Entities that it represents and the Meter Data provided to the Scheduling Coordinator in order to ensure compliance with all applicable requirements of any relevant Local Regulatory Authority. Scheduling Coordinators shall undertake any other actions that are reasonable necessary to ensure the accuracy and integrity of the Settlement Quality Meter Data provided by them to the CAISO.

10.3.10.2~~(b)~~ Audit and Testing by CAISO.

Subject to any applicable Local Regulatory Authority requirements, the Metering Facilities and data handling and processing procedures of Scheduling Coordinators and Scheduling Coordinator Metered Entities are subject to audit and testing by the CAISO or a CAISO Authorized Inspector ~~in accordance with Section 10.3.14.2 of the CAISO Tariff~~. Subject to any applicable Local Regulatory Authority requirements, the CAISO will have the right to either conduct any audit or test it considers necessary or to witness such audit or test carried out by the Scheduling Coordinator, Scheduling Coordinator Metered Entity or a CAISO Authorized Inspector engaged by the Scheduling Coordinator, Scheduling Coordinator Metered Entity or the CAISO to carry out those audits or tests.

10.3.11 Scheduling Coordinator to Ensure Certification.

If the relevant Local Regulatory Authority has not prescribed any certification criteria for the Metering Facilities of a Scheduling Coordinator Metered Entity, the Scheduling Coordinator representing that Scheduling Coordinator Metered Entity must promptly notify the CAISO in writing that no such criteria have been prescribed. That Scheduling Coordinator will then be responsible for ensuring that the Scheduling Coordinator Metered Entities it represents obtain and maintain Certificates of Compliance in respect of all of the Metering Facilities of those Scheduling Coordinator Metered Entities in accordance with Section 10.3.9~~2~~.4. Scheduling Coordinators must engage a CAISO Authorized Inspector to perform the certification of any Metering Facilities that are to be certified under the CAISO Tariff.

~~**10.3.12 Certification of Meter Data Servers.**~~

~~Subject to any exemption granted by the CAISO, the CAISO will not accept Settlement Quality Meter Data relating to a Scheduling Coordinator Metered Entity from a meter data server unless that meter data server is a Compatible Meter Data Server.~~

10.3.11~~2~~.1 Confirmation of Certification.

On the written request of the CAISO, each Scheduling Coordinator must give the CAISO written confirmation that the Metering Facilities of each Scheduling Coordinator Metered Entity that it represents are certified in accordance with either the criteria of the relevant Local Regulatory Authority or the criteria prescribed by the CAISO Tariff and Business Practice Manuals within five (5) Business Days of receiving a request from the CAISO.

10.3.11~~2~~.2 Deemed Certification.

Revenue ~~Q~~quality meters of Scheduling Coordinator Metered Entities that are subject to certification and which were installed and operational as of the CAISO Operations Date will be deemed to be certified for the purposes of the CAISO Tariff. Revenue quality meters that have been fully installed as of the CAISO Operations Date but which are not operational as of that date because they were undergoing maintenance or repairs will also be deemed to be certified in accordance with the CAISO Tariff.

10.3.12 [NOT USED]

10.3.13 [NOT USED] ~~Meter Service Agreements for Scheduling Coordinator Metered Entities.~~

~~The CAISO shall enter into Meter Service Agreements with Scheduling Coordinators responsible for providing Settlement Quality Meter Data for Scheduling Coordinator Metered Entities to the CAISO. Such agreements shall specify that Scheduling Coordinators require their Scheduling Coordinator Metered Entities to adhere to the meter requirements set forth in this Section 10. A Meter Service Agreement entered into by a Scheduling Coordinator shall apply to the Scheduling Coordinator only in its capacity as Scheduling Coordinator for those Metered Entities.~~

10.3.14 Approval by Local Regulatory Authority of Security and Validation Procedures.

Scheduling Coordinators shall be responsible for obtaining any necessary approval of the relevant Local Regulatory Authority to its proposed security, validation, editing and estimation procedures. The CAISO will not perform any ~~v~~Validation, Estimation and ~~e~~Editing ~~or estimating~~ on the Settlement Quality Meter Data it receives from Scheduling Coordinators.

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~~**10.3.14.2 Failure to Achieve Required Standards.**~~

~~Subject to any Local Regulatory Authority requirements, Meter Service Agreements shall set out appropriate measures and rights the CAISO may exercise upon any failure by the other party to meet the requirements for meter standards set out in Section 10.3.~~

10.3.15 [NOT USED]~~Exemptions from CAISO Metering Standards.~~

~~The CAISO has the authority to grant exemptions from certain CAISO metering standards for Scheduling Coordinator Metered Entities that are subject to CAISO metering standards provided the CAISO annually publishes details of the criteria the CAISO will use when considering an application for an exemption and details of specific exemptions which are available.~~

10.3.16 [NOT USED] ~~COMMUNICATIONS~~

~~**10.3.16.1 Facilities Provided by the CAISO.**~~

~~The CAISO will provide the facilities referred to in this Section 10.3.16.1 to acquire Meter Data from CAISO Metered Entities and receive Settlement Quality Meter Data from Scheduling Coordinators.~~

~~**10.3.16.1.1 RMDAPS Master Station.**~~

~~The RMDAPS master station will have a redundant configuration. The primary master station is located in Folsom, the redundant master station is located in Alhambra.~~

~~**10.3.16.1.2 CAISO's Secure Communication System.**~~

RMDAPS will use a secure communication system to acquire Meter Data from CAISO Metered Entities and receive Settlement Quality Metered Data from Scheduling Coordinators.

10.3.16.1.3 Facilities Failure.

In the event that the primary or redundant RMDAPS master station or CAISO's secure communication system fails, the procedures referred to in the applicable Business Practice Manual will be followed by the CAISO, CAISO Metered Entities and Scheduling Coordinators.

10.3.16.2 Facilities Provided by CAISO Metered Entities.

CAISO Metered Entities must provide the telecommunication facilities referred to in 10.3.16.2.1 to 10.3.16.2.3 inclusive to connect their Compatible Meter Data Servers to the CAISO's secure communication system.

10.3.16.2.1 Telecommunications Channels.

The CAISO Metered Entity must provide one of the following types of telecommunication channels from the CAISO's secure communication system to its Compatible Meter Data Servers:

(a) Digital leased line;

(b) ISDN channel; or

(c) frame relay channel.

With the CAISO's approval, the revenue quality meters of two or more CAISO Metered Entities may be served by one telecommunications channel.

10.3.16.2.2 Router/Terminal Server.

CAISO Metered Entities must provide router/terminal servers to interface the telecommunication channels to revenue quality meters. Each revenue quality meter will use an RS-232 interface nominally operating at 9600 bits/second.

10.3.16.2.3 Meter Data Server.

CAISO Metered Entities must use a Compatible Meter Data Server to interface with RMDAPS.

~~**10.3.16.3 Facilities provided by Scheduling Coordinators.**~~

~~Scheduling Coordinators must use a Compatible Meter Data Server to interface with RMDAPS.~~

10.3.17 ~~METER IDENTIFICATION~~Meter Identification.

~~**10.3.17.1 Scheduling Coordinator Metered Entities.**~~

If a Scheduling Coordinator Metered Entity is required to identify its revenue quality meters by the relevant:

(a) Local Regulatory Authority; or

(b) UDC,

then the Scheduling Coordinator representing that Scheduling Coordinator Metered Entity must, at the CAISO's request, provide the CAISO with a copy of that information within five (5) Business Days of a request by the CAISO in a format to be prescribed by the CAISO.

If a Scheduling Coordinator Metered Entity is not required by either the relevant Local Regulatory Authority or UDC to identify its revenue quality meters, the Scheduling Coordinator representing that Scheduling Coordinator Metered Entity shall maintain an accurate record of the revenue quality meter of each of the Scheduling Coordinator Metered Entities that it represents from time to time. The record maintained by Scheduling Coordinators must include the information set out in the applicable Business Practice Manuals. The Scheduling Coordinator must, at the CAISO's request, provide the CAISO with a copy of any information contained in that record within five (5) Business Days of a request by the CAISO in a format to be prescribed by the CAISO.

10.~~4~~3.18 Exemptions from Compliance ~~EXEMPTIONS FROM COMPLIANCE~~.

10.~~4~~3.18.1 Authority to Grant Exemptions.

In addition to the specific exemptions granted under the CAISO Tariff, the CAISO has the authority under the CAISO Tariff to grant exemptions from compliance with certain requirements imposed by the CAISO Tariff.

10.43.18.2 Guidelines for Granting Exemptions.

The CAISO will use the following guidelines when considering applications for exemptions from compliance with the provisions of Section 10CAISO Tariff.

(a) Publication of Guidelines

The CAISO will from time to time publish on the CAISO Website the general guidelines that it may use when considering applications for exemptions so as to achieve consistency in its reasoning and decision making and to give prospective applicants an indication of whether an application will be considered favorably.

(b) Publication of Exemption Applications

The CAISO will promptly publish on the CAISO Website a description of each application it receives for an exemption.

(c) Publication of Decision

The CAISO will publish on the CAISO Website details of whether the application was approved or rejected by it and, if the CAISO considers it appropriate, the reasons for rejecting the application.

(d) Class Exemptions

In addition to exemptions granted to individual entities, the CAISO may grant exemptions that will apply to a class of entities. The CAISO may grant class exemptions whether or not it has received any application for an exemption. The CAISO will publish details of the class exemptions it has granted on the CAISO Website.

10.4.3.18.3 Procedure for Applying for Exemptions.

All applications to the CAISO for exemptions from compliance with the requirements of Section 10 the CAISO Tariff must be made in writing and will be processed by the CAISO in accordance with the provisions of the applicable Business Practice Manual. addressed to the Meter and Data Acquisition Manager, Client Service Department. The CAISO will confirm receipt of each application it receives within 3 Business Days of receiving the application. The CAISO will decide whether to grant the

~~exemption within 45 Business Days of receiving the application. At any time during that period, t~~The CAISO may require the applicant to provide additional information in support of its application. The applicant must provide such additional information to the CAISO within five (5) Business Days of receiving the request for additional information or within such other period as the CAISO may notify to the applicant. If the CAISO makes a request for additional information more than ~~40~~five (5) Business Days after the date on which it received the application, the CAISO will have an additional ~~7~~five (5) Business Days after receiving that additional information in which to consider the application. If the applicant does not provide the additional information requested, the CAISO may refuse the application in which case it will notify the applicant that its application has been rejected for failure to provide the additional information.

~~**10.3.18.4 Information to be Included in the Application.**~~

~~The application submitted to the CAISO must provide:~~

~~(a) a detailed description of the exemption sought (including specific reference to the relevant section(s) of the CAISO Tariff giving the CAISO authority to grant the exemption) and the facilities to which the exemption will apply;~~

~~(b) a detailed statement of the reason for seeking the exemption (including any supporting documentation);~~

~~(c) details of the entity(s) (if any) to which the exemption will apply;~~

~~(d) details of the location (if any) to which the exemption will apply;~~

~~(e) details of the period of time for which the exemption will apply (including the proposed start and finish dates of that period); and~~

~~(f) any other information requested by the CAISO.~~

10.4.~~43~~.18.5 Permitted Exemptions.

10.4.~~43~~.18.5.1 Exemptions from Providing Meter Data Directly to RMDAPS.

~~(a) General~~

The CAISO has the authority under 10.2.6 ~~of the CAISO Tariff~~ to exempt CAISO Metered Entities from the requirement to make Meter Data directly available to the CAISO via RMDAPS. ~~In addition to t~~The applicable Business Practice Manual sets forth specific exemptions available.~~provided under this Section 10.3.18.5.1,~~ In addition, the CAISO may, at its discretion, grant such an exemption where it considers the requirement to install communication links (or related facilities) between the CAISO Metered Entity and CAISO's secure communication system to allow the CAISO to directly poll that CAISO Metered Entity would be unnecessary, impractical or uneconomic.

~~(b) Specific Exemptions Available~~

~~i. Tie Points~~

~~Meters located at tie points are exempted from the requirement that they be directly polled by the CAISO provided that the meters at those tie points are revenue quality and they provide hourly, raw Meter Data to the CAISO's Power Management System.~~

~~The entities responsible for Tie Point Meters must designate a primary meter and the entity responsible for providing the relevant Meter Data to the CAISO. Meter Data from any other meter located at that tie point may be provided to the CAISO in the event that the primary meter is unable to provide Meter Data to the CAISO.~~

~~Existing Tie Point Meters will be exempt from the metering standards referred to in the CAISO Tariff, if such meters are only used to measure bi-directional Energy.~~

~~ii. Generation not Providing Regulation~~

~~CAISO Metered Entities that are Generators or Participating Generators that are not directly connected to the CAISO Controlled Grid and which do not provide Regulation may request the CAISO for an exemption from the requirement that they be directly polled by the CAISO in which case they will be treated as Scheduling Coordinator Metered Entities for the purposes of the CAISO Tariff.~~

~~iii. Scheduling Coordinators inability to directly poll RMDAPS~~

~~If a Scheduling Coordinator does not have the ability as at the CAISO Operations Date to directly poll RMDAPS for the Settlement Quality Meter Data of the CAISO Metered Entities that it represents, that Scheduling Coordinator shall have a period of 12 months from the CAISO Operations Date in which to install the necessary equipment to enable it to directly poll RMDAPS. During the period in which a Scheduling Coordinator is unable to directly poll RMDAPS, that Scheduling Coordinator will be responsible for providing the CAISO with Settlement Quality Meter Data for its CAISO Metered Entities in accordance with the CAISO Tariff.~~

~~iv. Generator Profiling~~

~~The CAISO may permit Generators and Participating Generators with Generating Units of less than 1 MW to use generator profiles, provided that such profiles are reconciled against revenue quality cumulative meters and the CAISO has given prior approval to the use of the proposed generator profile. The revenue quality meters used by such Generators and Participating Generators will not be required to have a current Certificate of Compliance at the CAISO Operations Date. However, such meters maybe required to have a Certificate of Compliance within a time period prescribed by the CAISO after consultation with the relevant Generator or Participating Generator.~~

~~v. Small Remote Generators~~

~~Remote Generators of less than 10 MW and capacity factors of less than 20% over the past three years, may be granted an exemption from the requirement to be directly polled by the CAISO provided that the CAISO is able to receive Meter Data for that Generator from a Compatible Meter Data Serve.~~

10.~~4.4~~3.18.~~5~~.2 Exemptions from Meter Standards.

~~(a) General~~

The CAISO has the authority under 10.2.12 ~~of the CAISO Tariff~~ to exempt CAISO Metered Entities from the requirement to comply with the meter standards referred to in the CAISO Tariff. The applicable Business Practice Manual sets forth specific exemptions available.

~~(b) Specific Exemptions Available~~

~~i. Data Storage for Existing Meters~~

~~Revenue quality meters installed as at the CAISO Operations Date are required to have 30 days data storage capacity (new revenue quality meters are required to have 60 days data storage capacity). Existing revenue quality meters that otherwise comply with the meter standards referred to in the CAISO Tariff but which do not have 30 days data storage will be exempted from that requirement if there is alternative time stamped meter data storage of 30 days or more.~~

~~ii. Voltage Transformers~~

~~CAISO Metered Entities will be exempt from the requirement to install Voltage Transformers (VT) at 500 kV and higher voltage levels provided that those CAISO Metered Entities install Capacity Coupled Voltage Transformers (CCVT) that meet the metering standards referred to in the CAISO Tariff. The CAISO Metered Entity must establish a testing program to ensure that the CCVT remains within the CAISO's accuracy requirements. A copy of such test program must be supplied to the CAISO and the CAISO may require amendments and/or additions to that program that it reasonably believes are necessary to ensure the accuracy of the CCVT.~~

~~iii. Loss Correction Factors~~

~~The CAISO may grant a CAISO Metered Entity an exemption from compliance with the metering standards referred to and the CAISO Tariff if, in the CAISO's sole discretion, applicable loss correction factors can be applied to existing meters without any materially adverse effect on the accuracy or security of the Meter Data obtained from such meters.~~

~~iv. 5 Minute Interval Data~~

~~Generators that are CAISO Metered Entities and that provide Ancillary Services to the CAISO will not be required to provide the CAISO with 5 minute interval data until such time as specified by the CAISO. Until such time as the CAISO requires 5 minute interval data, these entities will be required to provide the CAISO with hourly interval data.~~

~~v. Request for Direct Polling~~

~~Scheduling Coordinators may request the CAISO to grant an exemption from the requirement to provide Settlement Quality Meter Data to the CAISO for Scheduling Coordinator Metered Entities they represent if those entities are Generators which have requested the CAISO, and the CAISO has agreed to directly poll them for Meter Data. Such Generators will be treated as CAISO Metered Entities and must comply with all of the requirements relating to CAISO Metered Entities in accordance with the CAISO Tariff. The Scheduling Coordinator representing such Generators will be required to apply the relevant distribution loss factors to that Generator's Meter Data (the Scheduling Coordinator may obtain that Meter Data from the CAISO).~~

~~vi. QF Exemptions~~

~~If a QF sells all of its Energy (excluding any Energy consumed by auxiliary load equipment electrically connected to that QF at the same point or any Energy sold through "over the fence" arrangements as authorized by Section 218(b) of the California Public Utilities Code) and Ancillary Services to the UDC in whose Service Area it is located pursuant to an existing power purchase agreement (which is authorized under Section 218(b) of the California Public Utilities Code) and there is any inconsistency between that existing power purchase agreement, Section 10 of the CAISO Tariff or Appendix J to the CAISO Tariff, the existing power purchase agreement shall prevail to the extent of that inconsistency for the term of the agreement. In this context, an existing power purchase agreement shall mean an agreement which has been entered into and is effective as of December 20, 1995.~~

~~vii. Combining Generation~~

~~A metered entity may elect to meter a group of Generating Units which are electrically connected to the same point by combined total generation output or by individual Generating Unit provided that those Generating Units are Scheduled in the same fashion as they are metered and the Generating Units are not individually providing Ancillary Services.~~

~~10.3.18.5.3 Exemptions from Audit, Testing or Certification.~~

~~The CAISO has the authority under 10.2.12 of the CAISO Tariff to exempt CAISO Metered Entities from the metering standards referred to in the CAISO Tariff.~~

11 CAISO SETTLEMENTS AND BILLING.

* * *

11.2.1 IFM Settlements.

* * *

11.2.1.5 IFM Congestion Credit for ETCs, TORs, and Converted Rights.

For all ~~source and sink~~ Points of Receipt and Points of Delivery pairs associated with a valid and balanced ETC Self-Schedule, TOR Self-Schedule or Converted Rights Self-Schedule, the CAISO shall not impose any ~~C~~charge or make any ~~P~~payment to the Scheduling Coordinator related to the MCC associated with such ~~s~~Self-~~s~~Schedules. For each Scheduling Coordinator, the CAISO shall determine the applicable IFM Congestion Credit, which can be positive or negative, as the sum of the products of the quantity scheduled in the Day-Ahead Schedule and the MCC at each eligible Point of Receipt and Point of Delivery ~~source and sink~~ associated with ~~that Scheduling Coordinator's~~the valid and balanced portions of that Scheduling Coordinator's ETC, TOR, and Converted Rights Self-Schedules.

11.2.1.6 Allocation of IFM Marginal Losses Surplus Credit.

On each Settlement Statement, the CAISO shall apply the ~~distribution of the~~ IFM Marginal Losses Surplus Credit to each Scheduling Coordinator for the period of each ~~s~~Settlement ~~s~~Statement. For each Settlement Period, the IFM Marginal Losses Surplus Credit shall be the product of the IFM Marginal Losses Surplus rate ($/MWh) and the MWh of Measured Demand for the relevant Scheduling Coordinator. The IFM Marginal Losses Surplus rate shall be equal to the total IFM Marginal Losses Surplus ($) divided by the sum of the total MWh of Measured Demand in the CAISO Control Area for the relevant Settlement Period net of any Measured Demand associated with a TOR Self-Schedule subject to the IFM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules as provided in Section 11.2.1.7. ~~For each Settlement Period of the IFM the CAISO shall calculate the total IFM Marginal Losses Surplus as the difference between: (1) the Net Hourly Energy Charge; and (2) the total IFM Congestion Charges which do not include Congestion Charges Credits collected by the CAISO as specified in Section 11.2.1.5. The Net Hourly Energy Charge is determined as the total Charges to all Demand minus total Payments to all Supply as specified in Sections 11.2.1.1, 11.2.1.2, 11.2.1.3 and 11.2.4.~~

11.2.1.7 IFM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules.

For all Points of Receipt and Points of Delivery pairs associated with a valid and balanced TOR Self-Schedules submitted pursuant to an existing agreement between the TOR holder and the CAISO as specified in Section 17.3.3, the CAISO shall not impose any charge or make any payment to the Scheduling Coordinator related to the MCL associated with such TOR Self-Schedules and will instead impose any applicable losses charges as specified in the existing agreement between the the TOR holder and the CAISO applicable to the relevant TOR. For each Scheduling Coordinator, the CAISO shall determine the applicable IFM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules, which can be positive or negative, as the sum of the products of the quantity scheduled in the Day-Ahead Schedule and the MCL at each eligible Point of Receipt and Point of Delivery associated with the valid and balanced portions of that Scheduling Coordinator's TOR Self-Schedules.

* * *

11.2.2.1 Settlement of RUC Availability Payment.

Scheduling Coordinators shall receive RUC Availability Payments for all eligible capacity awarded in the RUC process. Resource Adequacy Capacity and capacity from RMR Units Dispatched under its RMR Contract in the DAM are not eligible for RUC Availability Payments. The RUC Availability Payment shall be calculated for each resource based on the product of the RUC Price and the RUC Availability Quantity for the relevant Settlement Period. The RUC Availability Payment amounts are allocated through the RUC Compensation Costs allocation in Section 11.8.6.5.

11.2.2.2 Rescission of RUC Availability Payment.

Rescission of all or a portion of the RUC Availability Payment for a resource as defined in Section 31.5.7 shall be settled in accordance with this Section 11.2.2.2~~8.10.8~~.

11.2.2.2.1 Undispatchable RUC Capacity.

If a Scheduling Coordinator has Undispatchable Capacity that it is obligated to supply to the CAISO during a Settlement Interval, the RUC Availability Payment, if applicable for any non-Resource Adequacy Capacity, for the amount of Energy that cannot be delivered from the Generating Unit, Participating Load, System Unit or System Resource for the Settlement Interval shall be rescinded.

If a Partial Resource Adequacy Resource is providing RUC Capacity from both the non-Resource Adequacy Capacity and the Resource Adequacy Capacity the payment rescission will occur for the non-Resource Adequacy Capacity prior to eliminating any capacity for the Resource Adequacy Capacity of the Partial Resource Adequacy Resource.

11.2.2.2.2 Undelivered RUC Capacity.

For each Settlement Interval in which the total metered output for a Generating Unit, Participating Load, System Unit or System Resource is less than Real-Time Expected Energy by more than the Tolerance Band and less than the RUC Schedule, the RUC Award for that Settlement Interval will be rescinded.

11.2.2.2.3 Allocation of Rescinded RUC Availability Payments Due to Non-Performance.

RUC Availability Payments rescinded due to non-performance shall be allocated to Scheduling Coordinators in the proportion of their Net Negative Uninstructed Deviations to the total Net Negative CAISO Demand Deviation.

11.2.3 IFM Energy Charges and Payments for Metered Subsystems.

11.2.3.1 Gross Energy Settlement for Metered Subsystems.

For Scheduling Coordinators that submit Bids for MSS Operators that have selected gross Energy Settlement, CAISO shall settle Energy, the MSS Demand and MSS Supply, in the Day-Ahead Schedules pursuant to Section 11.2.3.1.1 and 11.2.3.1.2.

11.2.3.1.1 IFM Charges for MSS Demand ~~U~~under Gross Energy Settlement.

The CAISO shall charge Scheduling Coordinators that submit Bids for MSS Operators that have selected or are subject to gross Energy Settlement an amount equal to the product of the MWh quantity of Demand internal to the MSS in its Day-Ahead Schedule at ~~the corresponding MSS LAP and~~ the price at the Default LAP where the MSS LAP is located~~Price. The Default LAP Price shall be for the LAP within which the relevant MSS LAP is located.~~

11.2.3.1.2 IFM Payments for MSS Supply ~~U~~under Gross Energy Settlement.

The CAISO shall pay Scheduling Coordinators that submit Bids for MSS Operators that have selected or are subject to gross Energy Settlement an amount equal to the product of the MWh quantity of Supply

from the MSS in its Day-Ahead Schedule at the corresponding PNode and the applicable ~~r~~Resource-~~s~~Specific Settlement Interval LMP at that PNode.

* * *

11.2.3.2.1 IFM Charges for MSS Demand ~~U~~under Net Energy Settlement.

The CAISO shall charge Scheduling Coordinators that submit Bids for MSS Operators that have selected net Energy Settlement an amount equal to the product of the net MSS Demand in the Day-Ahead Schedule and the IFM MSS ~~LAP~~ Price. The net MSS Demand is the quantity of MSS Demand that exceeds MSS Generation for the applicable MSS.

* * *

11.2.4 CRR Settlements.

CRR Holders shall be paid or charged for Congestion costs depending on the type of CRRs held by the CRR Holder, the direction of Congestion as measured through the IFM, and the LMP as calculated in the IFM. CRRs shall be funded through the revenues associated with the IFM Congestion Charge, CRR ~~Obligation~~ Charges, and the CRR Balancing Account. The CRR Payments and CRR Charges shall be settled first on a daily basis for each Settlement Period of the DAM. The CAISO shall pro-rate CRR Payments and CRR Charges for each Settlement Period, if there is an insufficiency of funds during that Settlement Period from the IFM Congestion Charge pursuant to Section 11.2.4.1. A monthly true up ~~and, if necessary, an annual true up~~ will then be conducted, on both CRR Payments and CRR Charges in the clearing of the CRR Balancing Account pursuant to Section 11.2.4.4.1 and 11.2.4.4.2.

11.2.4.1 Calculation of the IFM Congestion Charge.

For each Settlement Period of the IFM, the CAISO shall calculate the IFM Congestion Charge as the IFM MCC for all scheduled Demand minus the IFM MCC for all scheduled Supply where. ~~T~~the IFM MCC for all scheduled Demand is the sum of the products of the IFM MCC and the MWh of Demand scheduled in the Day-Ahead Schedule at all the applicable PNodes, Scheduling Points and Aggregated Pricing Nodes for the Settlement Period and. ~~T~~the IFM MCC for all scheduled Supply is the sum of the products of the IFM MCC and the MWh of Supply scheduled in the Day-Ahead Schedule at all the applicable PNodes and Scheduling Points for the Settlement Period.

11.2.4.1.2 Calculation of IFM Congestion Fund.

For each Settlement Period of the IFM, the CAISO shall determine the IFM Congestion Fund, which shall consist of the funds available to pay CRR Holders in any Settlement Period as follows:

(a) The CAISO shall add to the IFM Congestion Fund the IFM Congestion Charge computed as described in Section 11.2.4.1, minus any IFM Congestion Credits as specified in Section 11.2.1.5;

(b) The CAISO shall add to the IFM Congestion Fund any CRR ~~Obligation~~ Charges calculated pursuant to Sections 11.2.4.2.2 and 11.2.4.2.3~~.~~; and

(c) The CAISO shall add to the IFM Congestion Fund any IFM Congestion Charges associated with Day-Ahead Ancillary Services Awards as provided in Section 11.10.1.1.1.

* * *

11.2.4.2.2 Point-to-Point CRR Obligations.

For each CRR Holder, the CAISO shall calculate a CRR Payment for each CRR Obligation for a Point-to-Point CRR ~~Obligation~~ held by the CRR Holder, equal to the product of: 1) the MCC at the CRR Sink minus the MCC at the CRR Source; and 2) the MW quantity of the CRR; if that amount is positive. If the resulting amount is negative, the CAISO shall calculate a CRR Charge for the relevant CRR Holder equal to that negative amount. The full CRR Payment or CRR Charges calculated pursuant to this process shall be subject to pro-ration as described in 11.2.4.4.

* * *

11.2.4.4 Hourly CRR Settlement.

For each Settlement Period, the IFM Congestion Funds calculated in Section 11.2.4.1.2 will be used to pay CRR Holders that are owed CRR Payments. If the IFM Congestion Fund is sufficient to make the required CRR Payments for the Settlement Period, all CRR Holders shall be paid and charged fully according to their entitlements. If the IFM Congestion Fund is insufficient to make the required CRR Payments, then CRR Payments and CRR Charges shall be pro-rated by a ratio equal to the total hourly amount of IFM Congestion Funds divided by the net of CRR Payments for that Settlement Period. Any surplus revenue for the Settlement Period after making all hourly CRR Payments will go to the CRR Balancing Account for use in the end-of-month clearing ~~and end-of-year clearing~~ of the CRR Balancing

Account processes pursuant to Section 11.2.4.4.1. Any CRR Paymentrevenue shortfalls (or amounts not fully paid) and CRR cCharge shortfalls (or amounts not fully charged) for the Settlement Period, will be tracked for further Settlement during the end-of-month clearing process as described in Section 11.2.4.4.1. The hourly Settlement of CRRs for each CRR Holder will be based on the type of CRR holdings as described in Section 11.2.4.2. The CRR Holder's hourly CRR Settlement amount, which may be subject to pro-ration if necessary as described in this Section, will be the net of the holder's CRR Payments for CRR Options or CRR Obligations, and the holder's CRR Charges for CRR Obligations out of these holdings.

11.2.4.4.1 Monthly Clearing of the CRR Balancing Account – Full Funding of CRRs.

At the end of each month, all CRR Payment shortfalls for all CRR Holders shall be paid in full and all CRR Charge shortfalls shall be fully charged through the if the CRR Balancing Account clearing processcontains a balance sufficient to cover all hourly revenue shortfalls for that month, then these revenue shortfalls shall be fully satisfied and the CRR Holder shall be paid using the balance in the CRR Balancing Account according to their Payment rights that accrue out of the hourly CRR Settlement process pursuant to Section 11.2.4.4. The net of these CRR Charges and CRR Payment shortfalls shall be added to the CRR Balancing Account for the applicable month. Any surplus or shortfall revenue amounts in the CRR Balancing Account will be distributed to Scheduling Coordinators in an amount equal to (a) the CRR Balancing Accountthe revenue surplus or shortfall amounts, times (b) the ratio of each Scheduling Coordinator's Measured Demand (net of the valid and balanced ETC, TOR or Converted Rights Self-Schedule quantities for which IFM Congestion Credits were provided in the same relevant month) divided by the total Measured Demand for all Scheduling Coordinators for the relevant month.divided by total Measured Demand for all Scheduling Coordinators for the relevant month. If the balance in the CRR Balancing Account is not sufficient to satisfy all revenue shortfalls for the month, then these shortfalls shall be recovered by charging Scheduling Coordinators an amount equal to the revenue shortfall times the ratio of each Scheduling Coordinator's Measured Demand divided by total Measured Demand for all Scheduling Coordinators for the relevant month subject to the conditions set forth in Section 36.2.8.

* * *

11.2.5 Payment by Out-of Control Area Load Serving Entity to Obtain CRRs Through the CRR Allocation Process.

11.2.5.1 Pursuant to Section 36.9, in addition to other requirements specified therein, an OCALSE~~entity that serves load outside of the CAISO Control Area~~ will be eligible to participate in the CRR Allocation process if such entity has made a pre-payment to the CAISO and has met the requirements in Section 36.9. The prepayment amount shall equal the MW of CRR requested times the Wheeling Access Charge associated with the Scheduling Point corresponding to the CRR Sink times the number of hours in the period for each requested CRR MW amount. Except as provided in Section 39.9.2, s~~S~~uch prepayment will be made three (3) Business Days in advance of the submission of CRR nominations for Monthly CRRs, ~~and~~ Seasonal CRRs and Long Term CRRs to the CRR Allocation. Within thirty (30) days following the completion of the CRR Allocation process for Monthly CRRs, ~~and~~ Seasonal CRRs and Long Term CRRs, the CAISO shall reimburse such OCALSE ~~entity representing the out-of-Control Area load~~ the amount of money pre-paid for any CRRs that were not allocated to the entity.

11.2.5.2 Annual Prepayment Option.

~~An entity serving load outside the CAISO Control Area that wants to nominate an allocated Seasonal CRR as a Long Term CRR must execute a contract with the CAISO committing the entity to make annual Wheeling Access Charge payments for each year of the term of a Long Term CRR.~~ For entities that are eligible and elect for the annual prepayment pursuant to Section 36.9.2, ~~For the nomination process,~~ the annual prepayment will be ~~made~~due three (3) Business Days in advance of the submission of CRR nominations for Tier LT in the CRR Allocation process. ~~Within thirty (30) days following the completion of the CRR Allocation process for Long Term CRRs, the CAISO shall reimburse such entity representing the out-of-Control Area load the amount of money pre-paid for any CRRs that were not allocated to the entity.~~ For allocated Long Term CRRs, each of the nine subsequent annual payments must be made at the beginning of the annual CRR Allocation process for the following year.

11.2.5.3 Monthly Prepayment Option.

If the OCALSE qualified for the monthly prepayment option as specified in Section 36.9.2, the OCALSE shall make its payments consistent with the monthly prepayment schedule specified in the applicable Business Practice Manual.

11.2.5.4 Treatment of Prepaid WAC Amounts.

For the amount of CRRs that were allocated to the entity, the CAISO will exempt the Scheduling Coordinator for such entity from the WAC for any Real-Time Interchange ~~e~~Export ~~s~~Schedules at the Scheduling Point corresponding to the sink of each allocated CRR, on an hourly basis for the period for which the CRR is defined, until the pre-paid funds are exhausted. At the end of the period for which the CRR is defined any remaining balance will be allocated to the Participating TOs in accordance with Section 26.1.4.3. To the extent the pre-paid balance amount is exhausted prior to the end of the duration of the awarded CRR, the Scheduling Coordinator designated by the CRR Holder that has been allocated CRRs pursuant to Section 36.9 will be charged for the WAC in accordance with Section 26.1.4.

* * *

11.4 HASP Settlement of Scheduling Points.

The CAISO shall settle both incremental and decremental Energy at the relevant Scheduling Points including Operational Adjustments for all Non-Dynamic System Resources based on the HASP Intertie LMP in accordance with Section 11.4.1 and 11.4.2. Energy dispatched using HASP Intertie Schedules is accounted as Instructed Imbalance Energy and its costs shall be included in the Real-Time Market Settlements in accordance with Section 11.5.

* * *

11.5 Real-Time Market Settlements.

The CAISO shall calculate and account for Imbalance Energy for each Dispatch Interval and settle Imbalance Energy in the Real-Time Market for each Settlement Interval for each resource within the CAISO Control Area and all System Resources ~~D~~dispatched in Real-Time. Imbalance Energy consists of IIE and UIE. IIE includes Energy associated with HASP Intertie Schedules. IIE is settled pursuant to Section 11.5.1 and UIE is settled pursuant to Section 11.5.2. In addition, the CAISO shall settle UFE as part of the Real-Time Market Settlements~~ as described in Section 11.5.3~~. To the extent that the sum of the Settlements Amounts for IIE and UIE does not equal zero, the CAISO will assess charges or make payments for the resulting differences to all Scheduling Coordinators based on a pro rata share of their Measured Demand for the relevant Settlement Interval.~~The CAISO shall allocate Charges or Payments~~

~~associated with any non-zero amounts resulting from the sum of IIE, UIE and UFE as described in Section 11.5.4.2.~~ Imbalance Energy due to Exceptional Dispatches, as well as the allocation of related costs, including Excess Costs Payments is settled as described in Section 11.5.6. The CAISO shall reverse RTM Congestion Charges for valid and balanced ETC and TOR Self-Schedules as described in Section 11.5.7. The CAISO will settle Energy for emergency assistance as described in Section 11.5.8.

11.5.1 Instructed Imbalance Energy Settlements.

For each Settlement Interval, IIE consists of the following types of Energy: (1) Energy dispatched through the Real-Time Market optimization process; (2) Energy from HASP Intertie Schedules as defined in Section 11.4; (3) Residual Imbalance Energy; (4) Minimum Load Energy from units Dispatched in Real-Time; (5) Energy related to Exceptional Dispatches; (6) Energy from Regulation; (7) Standard Ramping Energy; (8) Ramping Energy Deviation; (9) Rerate Energy; (10) Real-Time Self-Schedule~~d~~ Energy; ~~and~~ (11) MSS Load ~~F~~following Energy; and (12) Operational Adjustments for the Day-Ahead and Real-Time. Payments and ~~C~~charges for IIE attributable to each resource in each Settlement Interval shall be settled by debiting or crediting, as appropriate, the specific Scheduling Coordinator's IIE Settlement Amount. The IIE Settlement Amounts for the Standard Ramping Energy ~~and the MSS Load Following Energy~~ shall be zero. The IIE Settlement Amounts for Energy dispatched through the Real-Time Market optimization, Minimum Load Energy from units Dispatched in the Real-Time, Energy from Regulation, Ramping Energy Deviation, Rerate Energy, and Real-Time Self-Schedule~~d~~ Energy shall be calculated as the product of the sum of all of these types of Energy and the Resource-Specific Settlement Interval LMP. For MSS Operators that have elected net Settlement, the IIE Settlement Amounts for Energy dispatched through the Real-Time Market optimization, Minimum Load Energy from System Units dispatched in Real-Time, Energy from Regulation, Ramping Energy Deviation, Rerate Energy, MSS Load following Energy and Real-Time Self-Schedule Energy shall be calculated as the product of the sum of all of these types of Energy and the Real-Time Settlement Interval MSS Price. For MSS Operators that have elected gross Settlement, regardless of whether that entity has elected to follow its Load or to participate in RUC, the IIE for such entities is settled similarly to non-MSS entities as provided in this Section 11.5.1. The remaining IIE Settlement Amounts are determined as follows: (1) IIE Settlement Amounts for the Energy from the HASP Intertie Schedules is settled per Section 11.4; (2) IIE Settlement Amounts for Residual

Imbalance Energy are determined pursuant to Section 11.5.5.; and (3) IIE Settlement aAmounts for Exceptional Dispatches are settled pursuant to Section 11.5.6.

11.5.1.1 Total IIE Settlement Amount.

The total IIE Settlement Amount ($) per Settlement Interval for each Scheduling Coordinator is the sum of the IIE Settlement Amounts for the Standard Ramping Energy, MSS Load Ffollowing Energy, Energy Dispatched through the Real-Time Market optimization, the Minimum Load Energy from units Dispatched in the Real-Time, Energy from Regulation, Ramping Energy Deviation, Rerate Energy, Real-Time Self-Schedule Energy, Residual Imbalance Energy, and the portion of IIE Settlement Amounts for Exceptional Dispatches pursuant to Sections 11.5.6.

11.5.1.2 Total IIE Quantity.

The total IIE quantity (MWh) per Settlement Interval for each Scheduling Coordinator is the sum of Standard Ramping Energy, MSS Load Ffollowing Energy, Energy dispatched through the Real-Time Market optimization, Minimum Load Energy from units Dispatched in the Real-Time, Energy from Regulation, Ramping Energy Deviation, Rerate Energy, and Real-Time Self-Scheduled Energy, Residual Imbalance Energy and Energy from Exceptional Dispatches.

11.5.2 Uninstructed Imbalance Energy.

Scheduling Coordinators shall be paid or charged a UIE Settlement Amount for each LAP, PNode or Scheduling Point for which the CAISO calculates a UIE quantity. UIE quantities are calculated for each resource that has a Day-Ahead Schedule, HASP Intertie Schedule, Dispatch Instruction, Real-Time Interchange Export sSchedule or Metered Quantity. For MSS Operators electing gross Settlement, regardless of whether that entity has elected to follow its Load or to participate in RUC, the UIE for such entities is settled similarly to how UIE for non-MSS entities is settled as provided in this Section 11.5.2. The CAISO shall account for UIE in two categories: (1) Tier 1 UIE is accounted as the quantity deviation from the resource's IIE; and (2) Tier 2 UIE is accounted as the quantity deviation from the resource's Day-Ahead Schedule. For Generating Units, System Units of MSS Operators that have elected gross Settlement, Physical Scheduling Plants, System Resources and the Demand Response portion of all Participating Load, the Tier 1 UIE Settlement Amount is calculated for each Settlement Interval as the

product of its Tier 1 UIE quantity and its Resource-Specific Tier 1 UIE Settlement Interval Price as calculated per Section 11.5.2.1, and the Tier 2 UIE Settlement Amount is calculated for each Settlement Interval as the product of its Tier 2 UIE quantity and the simple average of the relevant Dispatch Interval LMPs. For resources within a System Unit of MSS Operators that have elected net Settlement, the Tier 1 UIE Settlement Amount is calculated for each Settlement Interval as the product of its Tier 1 UIE quantity and its Real-Time Settlement Interval MSS Price and the Tier 2 UIE Settlement Amount is calculated for each Settlement Interval as the product of its Tier 2 UIE quantity and the Real-Time Settlement Interval MSS Price. The Tier 2 UIE Settlement Amount for non-Participating Load~~Demand~~ and MSS Demand under gross Settlement is settled~~, the Base Load of a Participating Load and net MSS Demand is calculated for the Trade Hour as the sum of (1) the product of the hourly Tier 2 UIE quantity and the Hourly Real-Time LAP Price and (2) the Hourly UIE Adjustment Amount~~ as described in Section 11.5.2.2. For MSS Operators that have elected net Settlement, the Tier 2 UIE Settlement Amount for Demand of a net MSS Demand is calculated for the Trading Hour as the sum of the product of the hourly Tier 2 UIE quantity and the Real-Time Settlement Interval MSS Price.

* * *

11.5.2.2 Hourly Real-Time LAP Price~~UIE Adjustment Amount~~.

The Hourly Real-Time LAP Price will apply to Demand~~, the Base Load portion of a Participating Load,~~ and ~~net~~ MSS Demand under net~~for~~ Settlement of Imbalance Energy, except for Demand not settled at the Default LAP as provided in Section 30.5.3.2. The Hourly Real-Time LAP Price is calculated as the ~~load deviation~~ weighted average of the hourly average of the Dispatch Interval LMPs for the LAP, using as weights the Real-Time LAP nodal Loads in the relevant Trading Hour.

11.5.2.3 Revenue Neutrality Resulting from Changes in LAP Load Distribution Factors.

Any resulting revenue from changes in the LAP Load Distribution Factors between the Day-Ahead Market and the Real-Time Market shall be allocated to metered CAISO Demand in the corresponding Default LAP.

~~For Demand, the Base Load of a Participating Load and net MSS Demand, the Hourly UIE Adjustment Amount is calculated as the product of the hourly Tier 2 UIE quantity and the Hourly LAP UIE Adjustment~~

~~Price, in the case of a positive hourly Tier 2 UIE quantity, or the product of the hourly Tier 2 UIE quantity and the negative of the Hourly LAP UIE Adjustment Price, in the case of a negative hourly UIE quantity. The Hourly LAP UIE Adjustment Price is calculated as the ratio of the following quantities:~~

~~(1)the difference of (a) the load deviation weighted-average of the hourly average of the Dispatch Interval LMPs for the LAP and (b) the load-weighted average of the Hourly Real-Time LMP Price where the weights for (b) are each Scheduling Coordinator's Imbalance Energy quantity in the Trading Hour in the LAP; and~~

~~(2)the sum of the absolute values of each Scheduling Coordinator's Imbalance Energy quantity for the Trading Hour in the relevant LAP.~~

~~The Hourly UIE Adjustment Amount is to account for Energy quantity cancellations in the denominator of the calculation of the Hourly Real-Time LAP Price.~~

11.5.3 Unaccounted For Energy (UFE).

For each Settlement Interval, the CAISO will calculate UFE ~~in the CAISO Control Area, and~~ for each utility Service Area for which the IOU or Local Publicly ~~Utility~~ Owned Electric Utility has requested separate UFE calculation and has met the requirements applicable to a CAISO Metered Entity. The UFE will be settled as Imbalance Energy at the Settlement Interval Locational Marginal Price calculated for each utility Service Area for which UFE is calculated separately. UFE attributable to meter measurement errors, load profile errors, Energy theft, and distribution loss deviations will be allocated to each Scheduling Coordinator based on the ratio of its metered CAISO Demand within the relevant utility Service Area for which UFE is calculated separately ~~plus its Real-Time Interchange export schedules from the relevant Utility Service Area~~ to total metered CAISO Demand within that utility Service Area ~~plus its Real-Time Interchange export schedules from the relevant Utility Service Area~~.

11.5.4 Pricing for Imbalance Energy and Allocation of Non-Zero Amounts of the Sum of IIE, UIE and UFE.

11.5.4.1 Application and Calculation of Dispatch Interval LMPs.

Payments to Scheduling Coordinators, including Scheduling Coordinators for MSS Operators that have elected gross Settlement, that supply ~~iers of~~ Imbalance Energy will be based on Resource-Specific

Settlement Interval LMPs. The Resource-Specific Settlement Interval LMPs are established using Dispatch Interval LMPs. Dispatch Interval LMPs will apply to Generating Units, System Units for MSS Operators that have elected gross Settlement, Physical Scheduling Plants, ~~d~~Dynamic~~ally scheduled~~ System Resources, and the Demand ~~R~~response portion of a Participating Load for ~~s~~Settlement of Imbalance Energy. The Dispatch Interval LMP will be calculated at each PNode associated with such resource irrespective of whether the resource at that PNode has received Dispatch Instructions. The Dispatch Interval LMP*s* are then used to calculate a Resource-Specific Settlement Interval LMP and a Resource Specific Tier 1 UIE Settlement Interval Price for each Generating Unit, System Unit or MSS Operator that has elected gross Settlement, Physical Scheduling Plant, ~~d~~Dynamic~~ally scheduled~~ System Resource, and Participating Load within the CAISO Controlled Grid. Payments to Scheduling Coordinators for MSS Operators that have elected net Settlement that supply Imbalance Energy will be based on the Real-Time Settlement Interval MSS Price.

11.5.4.2 Allocations of Non-Zero Amounts of the sum of IIE, UIE and UFE.

The CAISO will first compute (1) the Real-Time Congestion Offset and allocate it to all Scheduling Coordinators, based on Measured Demand, excluding ~~d~~Demand associated with ETC or TOR Self-Schedules for which ~~Real-Time~~a HASP and RTM Congestion Credit was provided as specified in Section 11.5.7; and (2) the Real-Time Marginal Cost of Losses Offset and allocate it to all Scheduling Coordinators based on Measured Demand, excluding Demand associated with TOR Self-Schedules for which a RTM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules was provided as specified in Section 11.5.7.2. For Scheduling Coordinators for MSS Operators regardless of whether the MSS Operator has elected gross or net Settlement, the CAISO will allocate the Real-Time Congestion Offset based on the MSS Aggregation Net Total Non-ETC/TOR Measured Demand. To the extent that the sum of the Settlement ~~A~~amounts for IIE, UIE, and UFE, less Real-Time Congestion Offset, does not equal zero, the CAISO will assess ~~C~~charges or make ~~P~~payments for the resulting differences to all Scheduling Coordinators, including Scheduling Coordinators for MSS Operators that are not Load following MSSs and have elected gross Settlement, based on a pro rata share of their Measured Demand for the relevant Settlement Interval. For Scheduling Coordinators for MSS Operators that have elected Load following or net Settlement, or both, the CAISO will assess charges or make payments for the resulting non-zero

differences of the sum of the Settlement amounts for IIE, UIE, and UFE, less Real-Time Congestion Offset based on their MSS Aggregation Net Measured Demand.

11.5.5 Settlement Amount for Residual Imbalance Energy.

For each Settlement Interval, Residual Imbalance Energy Settlement ~~A~~amounts shall be the product of the MWh of Residual Imbalance Energy for that Settlement Interval and the Bid that led to the Residual Imbalance Energy from the relevant Dispatch Interval in which the resource was ~~D~~dispatched. For MSS Operators the Settlement for Residual Imbalance Energy is conducted in the same manner, regardless of any MSS elections (net/gross Settlement, Load following or opt-in/opt-out of RUC).

11.5.6 Settlement Amounts for IIE from Exceptional Dispatch.

For each Settlement Interval, IIE Settlement Amount from each type of Exceptional Dispatch described in Section 34.9 is calculated as the sum of the products of the relevant IIE quantity for the Dispatch Interval and the relevant ~~s~~Settlement price for the Dispatch Interval for each type of Exceptional Dispatch as further described below. For MSS Operators the settlement for IIE from Exceptional Dispatch is conducted in the same manner, regardless of any MSS elections (net/gross Settlement, Load following or opt-in/opt-out of RUC).

11.5.6.1 Settlement for IIE from Exceptional Dispatches used for System Emergency Conditions, to Avoid Market Interruption, Overgeneration Conditions or to Prevent or Relieve Imminent System Emergencies.

The Exceptional Dispatch ~~s~~Settlement price for incremental IIE that is delivered as a result of an Exceptional Dispatch for System Emergency conditions, to avoid a~~n intervention~~ Market Interruption ~~in market operations~~, to mitigate Overgeneration conditions, or to prevent or relieve an imminent System Emergency, including forced ~~s~~Start-~~u~~Ups and ~~s~~Shut-~~d~~Downs, is the higher of the Resource-Specific Settlement Interval LMP, the Energy Bid ~~P~~price or the Default Energy Bid price, if applicable and the Energy that does not have an Energy Bid ~~P~~price, or the negotiated price as applicable to System Resources. Costs for incremental Energy for this type of Exceptional Dispatch are settled in two ~~P~~payments: (1) incremental Energy is first settled at the Resource-Specific Settlement Interval LMP and included in the total IIE Settlement Amount described in Section 11.5.1.1; and (2) second, the incremental

Energy Bid ~~c~~Cost in excess of the applicable LMP at the relevant Location is settled ~~is settled per~~pursuant to Section 11.5.6.1.1. The Exceptional Dispatch Settlement price for decremental IIE not associated with an Energy Bid that is delivered as a result of an Exceptional Dispatch ~~I~~instruction to avoid ~~an intervention~~ Market Interruption ~~in market operations,~~ or to prevent or reli~~e~~eve a System Emergency is the minimum of the Resource-Specific Settlement Interval LMP, the Energy Bid ~~P~~price, or the negotiated price, if applicable and the Energy that does not have an Energy Bid ~~P~~price. ~~-~~All Energy costs for decremental IIE associated with this type of Exceptional Dispatch are included in the total IIE Settlement Amount described in Section 11.5.1.1.

11.5.6.1.1 Settlement of Excess Cost Payments for Exceptional Dispatches used for Emergency Conditions, to Avoid Market Interruption~~Intervention~~, and Avoid an Imminent System Emergency~~ies~~.

The Excess Cost Payment for incremental Exceptional Dispatches used for emergency conditions, to avoid Market Interruption ~~intervention~~, or to avoid an imminent System Emergency~~ies~~ is calculated for each resource for each Settlement Interval as the cost difference between the Settlement amount calculated pursuant to Section 11.5.6.1 for the applicable Exceptional Dispatch at the Resource-Specific Settlement Interval LMP and delivered Exceptional Dispatch quantity at one of the following three costs: (1) the ~~R~~resource's Energy Bid Cost, (2) the Default Energy Bid cost, or (3) the Energy cost at the negotiated price, if applicable, for the relevant Exceptional Dispatch. ~~A Resource must be operating within its Tolerance Band for the relevant Settlement Interval in order to be eligible for Excess Cost Payment.~~

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11.5.6.2.3 Settlement of Excess Cost Payments for Exceptional Dispatches used for Transmission-Related Modeling Limitations.

The Excess Cost Payment for Exceptional Dispatches used for transmission-related modeling limitations as described in Section 34.9.3 is calculated for each ~~R~~resource for each Settlement Interval as the cost difference between the Settlement amount calculated pursuant to Section 11.5.6.2.1 or 11.5.6.2.2 for the applicable Exceptional Dispatch at the Resource-Specific Settlement Interval LMP and one of the following three costs: (1) the ~~R~~resource's Energy Bid Cost, 2) the Default Energy Bid cost, or 3) the

Energy cost at the negotiated price, if applicable, for the relevant Exceptional Dispatch. ~~A Resource must be operating within its Tolerance Band for the relevant Settlement Interval in order to be eligible for Excess Cost Payment.~~

* * *

11.5.6.2.5 Allocation of Exceptional Dispatch Excess Cost Payments.

11.5.6.2.5.1 Allocation of Exceptional Dispatch Excess Cost Payments to PTOs.

The total Excess Cost Payments calculated pursuant to Section 11.5.6.2.3 for the IIE from Exceptional Dispatches instructed as a result of a transmission-related modeling limitation in the FNM as described in Section 34.9.3 in that Settlement Interval shall be charged to the Participating Transmission Owner in whose P~~articipating~~ TO Service Territory the transmission-related modeling limitation as described in Section 34.9.3 is located. If the modeling limitation affects more than one Participating TO, the Excess Cost Payments shall be allocated pro-rata ~~allocated~~ in proportion to the Participating TOs~~'s~~ Transmission Revenue Requirements. Costs allocated~~These allocations~~ to Participating TOs~~'s~~ under this section ~~Transmission Revenue Requirement~~ shall constitute Reliability Services Costs.

11.5.6.2.5.2 Allocation of Exceptional Dispatch Costs to Scheduling Coordinators.

Excess Cost Payments for the Exceptional Dispatches used for ~~E~~emergency ~~C~~conditions and to avoid ~~m~~Market Interruption~~intervention~~ and System Emergencies as determined pursuant to Section 11.5.6.1.1 shall be charged to Scheduling Coordinators as follows in a two-step process. First, each Scheduling Coordinator's charge shall be the lesser of:

i. the pro rata share of total Excess Cost Payment based upon the ratio of each Scheduling Coordinator's Net Negative Uninstructed Deviations to the total system Net Negative Uninstructed Deviations; or

ii. the amount obtained by multiplying the Scheduling Coordinator's Net Negative Uninstructed Deviation for each Settlement Interval and a weighted average price. The weighted average price is equal to the total Excess Cost Payments to be allocated divided by the MWh of Exceptional Dispatch Energy associated with the Excess Cost Payment.

Second, any remaining unallocated costs shall be allocated to all Scheduling Coordinators pro-rata based on their Measured Demand. For a Scheduling Coordinator of an MSS Operator that has elected to follow Load, allocation of this second category of Excess Cost Payments will be based on net metered MSS Demand. In addition, to the extent the Exceptional Dispatches are made to resolve congestion internal to the MSS, the Scheduling Coordinator for such an MSS will also be subject to these two categories of Excess Cost Payments.

A Scheduling Coordinator shall be exempt from the ~~Step one~~first category of the Excess Cost Payment allocation for a Settlement Interval if the Scheduling Coordinator has sufficient incremental Energy ~~b~~Bids from physically available resources in the Real-Time ~~Energy~~ Market for Energy to cover its Net Negative Uninstructed Deviation in the given Settlement Interval and the prices of such Energy ~~b~~Bids do not exceed the applicable maximum Bid level as set forth in Section 39~~ of this Tariff~~.

* * *

11.5.6.6 Settlement of IIE from Exceptional Dispatches for HASP and Real-Time ETC and TOR Self-Schedules.

The Exceptional Dispatch Settlement price for IIE from HASP and Real-Time ETC and TOR ~~Supply~~ Self-Schedules shall be the Resource-Specific Settlement Interval LMP. The IIE Settlement Amount for this type of Exceptional Dispatch shall be calculated as the product of the sum of all of these types of Energy and the Resource-Specific Settlement Interval LMP. All Energy costs for these types of Exceptional Dispatches will be included in the IIE Settlement Amount described in Section 11.5.1.1.

11.5.7 HASP and RTM Congestion Credit and Marginal Cost of Losses Credit For Eligible TOR Self-Schedules.

11.5.7.1 HASP and RTM Congestion Credit for ETCs, and TORs.

The CAISO shall not apply ~~C~~charges or ~~P~~payments to Scheduling Coordinators related to the MCC associated with all ~~source and sink~~ Points of Receipt and Points of Delivery pairs associated with valid and balanced ETC Self-Schedules or TOR Self-Schedules. The balanced portion will based on the difference between: (1) minimum of the metered CAISO Demand, ETC or TOR Self-Schedule submitted in the HASP, or the Existing Contract maximum capacity as specified in the TRTC Instructions; and (2)

the Day-Ahead Schedule. For each Scheduling Coordinator, the CAISO shall determine for each Settlement Interval the applicable HASP and ~~Real-Time Market~~ RTM Congestion Credit for Imbalance Energy, which can be positive or negative, as the sum of the product of the relevant MWh quantity and the MCC at each ~~source and sink~~ Point of Receipt and Point of Delivery associated with the valid and balanced portions of that Scheduling Coordinator's ETC or TOR Self-Schedules. For all exports and imports settled in the HASP, the CAISO shall use the MWh quantity specified in the HASP Intertie Schedule. For all Demand settled in the Real-Time Market the CAISO shall use the metered CAISO Demand associated with the applicable ETC or TOR. For all Supply settled in the Real-Time Market the CAISO shall use the quantity specified in the Dispatch Instructions.

~~**11.5.7.1 Allocation of the HASP and RTM Congestion Credit for ETCs, TORs**~~

~~The HASP and Real-Time Market Congestion Credit calculated pursuant to 11.5.7shall be allocated to all Scheduling Coordinators based on their Measured Demand excluding Metered Load and IIE quantities from Supply at all source and sink pairs associated with valid and Balanced ETC Self-Schedules or TOR Self-Schedules.~~

11.5.7.2 RTM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules.

For all Points of Receipt and Points of Delivery pairs associated with a valid and balanced TOR Self-Schedule submitted to the HASP or RTM pursuant to an existing agreement between the TOR holder and the CAISO as specified in Section 17.3.3, the CAISO shall not impose any charge or make any payment to the Scheduling Coordinator related to the MCL associated with such TOR Self-Schedules and will instead impose any applicable charges for losses as specified in the existing agreement between the TOR holder and the CAISO applicable to the relevant TOR. The balanced portion of the TOR Self-Schedule will based on the difference between: (1) minimum of the metered CAISO Demand or TOR Self-Schedule submitted in the HASP, or the TOR maximum capacity as specified in the TRTC Instructions; and (2) the Day-Ahead Schedule. For each Scheduling Coordinator, the CAISO shall determine for each Settlement Interval the applicable RTM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules for Imbalance Energy, which can be positive or negative, as the sum of the product of the relevant MWh quantity and the MCL at each eligible Points of Receipt and Points of Delivery associated with the valid and balanced portions of that Scheduling Coordinator's TOR Self-Schedules. For all exports and imports

settled in the HASP, the CAISO shall use the MWh quantity specified in the HASP Intertie Schedule. For all Demand settled in the Real-Time Market the CAISO shall use the metered CAISO Demand associated with the applicable TOR. For all Supply settled in the Real-Time Market the CAISO shall use the quantity specified in the Dispatch Instructions.

* * *

11.5.8.1 Settlement for Energy Purchased by the CAISO for System Emergency Conditions, to Avoid Market ~~Intervention~~ Interruption, or to Prevent or Relieve Imminent System Emergencies, Other than Energy from Exceptional Dispatches.

The Settlement price for Energy that is delivered to the CAISO from a utility in another Control Area as a result of a CAISO request pursuant to Section 42.1.5 or any other provision ~~of the CAISO Tariff~~ for assistance in System Emergency conditions, to avoid a~~n intervention in~~ ~~m~~Market ~~operations~~ Interruption, or to prevent or relieve an imminent System Emergency, other than Energy from an Exceptional Dispatch, shall be either (i) a negotiated price agreed upon by the CAISO and the seller or (ii) a price established by the seller for such emergency assistance in advance, as may be applicable. In the event no Settlement price is established prior to the delivery of the emergency Energy, the default Settlement price shall be the simple average of the relevant Dispatch Interval LMPs at the applicable Scheduling Point, plus all other charges applicable to imports to the CAISO Control Area, as specified in the CAISO Tariff. If the default Settlement price is determined by the seller not to compensate the seller for the value of the emergency Energy delivered to the CAISO, then the seller shall have the opportunity to provide the CAISO with cost support information demonstrating that a higher price is justified. The cost support information must be provided in writing to the CAISO within thirty (30) days following the date of the provision of emergency assistance. The CAISO shall have the discretion to pay that higher price based on the seller's justification of this higher price. The CAISO will provide notice of its determination whether to pay such a higher price within thirty (30) days after receipt of the cost support information. Any dispute regarding the CAISO's determination whether to pay a higher price for emergency assistance based on cost support information shall be subject to the CAISO ADR Procedures. Payment by the CAISO for such emergency assistance will be made in accordance with the Settlement process, billing cycle, and payment timeline set forth in the CAISO Tariff. The costs for such emergency assistance, including the

payment of a price based on cost support information, will be settled in two payments: (1) the costs will first be settled at the simple average of the relevant Dispatch Interval LMPs and included in the total IIE Settlement Amount as described in Section 11.5.1.1; and (2) costs in excess of the simple average of the relevant Dispatch Interval LMPs plus other applicable charges will be settled in accordance with Section 11.5.8.1.1. The allocation of the amounts settled in accordance with Section 11.5.1.1 will be settled according to Section 11.5.4.2.

* * *

11.7 ~~[Not Used]~~Additional MSS Settlements Requirements.

11.7.1 MSS Load Following Deviation Penalty.

For MSS Operators that have elected to follow their Load as described in Section 4.9.13.2, the Scheduling Coordinator for a Load following MSS Operator shall pay amounts for: (i) excess MSS Generation supplied to the CAISO Markets and (ii) excess MSS Load relying on CAISO Markets and not served by MSS generating resources. The revenue received from these payments will be used as an off-set to the CAISO's Grid Management Charge. The payments due from a Scheduling Coordinator will be calculated as follows:

11.7.1.1 If the metered Generation resources and imports into the MSS exceed: (i) the metered Demand and exports from the MSS, and (ii) Energy expected to be delivered by the Scheduling Coordinator for the MSS in response to the CAISO's Dispatch Instructions and/or Regulation Set Point signals issued by the CAISO's AGC by more than the MSS Deviation Band, then the payment for excess Energy outside of the MSS Deviation Band shall be rescinded and Scheduling Coordinator for the MSS Operator will pay the CAISO an amount equal to one hundred percent (100%) of the product of the highest LMP paid to the MSS Operator for its Generation in the Settlement Interval and the amount of the Imbalance Energy that is supplied in excess of the MSS Deviation Band.

11.7.1.2 If metered Generation resources and imports into the MSS are insufficient to meet: (i) the metered Demand and exports from the MSS, and (ii) Energy expected to be delivered by the Scheduling Coordinator for the MSS in response to the CAISO's Dispatch Instructions and/or Regulation Set Point signals issued by the CAISO's AGC by more than the MSS Deviation Band, then the Scheduling

Coordinator for the MSS Operator shall pay the CAISO an amount equal to the product of the Default LAP price for the Settlement Interval and two hundred percent (200%) of the shortfall that is outside of the MSS Deviation Band. The payment in the previous sentence is in addition to the charges for the Imbalance Energy that serves the excess MSS Demand that may be applicable under Section 11.5.

11.7.2 The CAISO will assess the Scheduling Coordinator for the MSS the neutrality adjustments and Existing Contracts cash neutrality charges pursuant to Section 11.14 (or collect refunds therefrom) based on the net Measured Demand of the MSS.

11.7.3 If the CAISO is charging Scheduling Coordinators for summer reliability or Demand reduction programs, the MSS Operator may petition the CAISO for an exemption of these charges. If the MSS Operator provides documentation to the CAISO by November 1 of any year demonstrating that the MSS Operator has secured capacity reserves for the following calendar year at least equal to one hundred and fifteen percent (115%), on an annual basis, of the peak Demand responsibility of the MSS Operator, the CAISO shall grant the exemption. Eligible capacity reserves for such a demonstration may include on-demand rights to Energy, peaking resources, and Demand reduction programs. The peak Demand responsibility of the MSS Operator shall be equal to the annual peak Demand Forecast of the MSS Load plus any firm power sales by the MSS Operator, less interruptible Loads, and less any firm power purchases. Firm power for the purposes of this Section 11.7.3 shall be Energy that is intended to be available to the purchaser without being subject to interruption or curtailment by the supplier except for Uncontrollable Forces or emergency. To the extent that the MSS Operator demonstrates that it has secured capacity reserves in accordance with this Section 11.7.3, the Scheduling Coordinator for the MSS Operator shall not be obligated to bear any share of the CAISO's costs for any summer Demand reduction program or for any summer reliability Generation procurement program pursuant to Section 42.1.8 for the calendar year for which the demonstration is made.

11.7.4 Unless specified otherwise in the MSS agreement(s), if the CAISO is compensating Generating Units for Emissions Costs, and if an MSS Operator charges the CAISO for the Emissions Costs of the Generating Units serving the Load of the MSS, then the Scheduling Coordinator for the MSS shall bear its proportionate share of the total amount of those costs incurred by the CAISO based on the MSS gross Measured Demand excluding out of state exports and the Generating Units shall be made

available to the CAISO through the submittal of Energy Bids. If the MSS Operator chooses not to charge the CAISO for the Emissions Costs of the Generating Units serving the Load of the MSS, then the Scheduling Coordinator for the MSS shall bear its proportionate share of the total amount of those costs incurred by the CAISO based on the MSS's net Measured Demand excluding out-of-state exports. For MSS Operators that have elected to follow their Load, and if an MSS Operator chooses not to charge the CAISO for the Emissions Costs of the Generating Units serving that MSS Operator's Load, then that MSS's Scheduling Coordinator for that Load shall bear its proportionate share of the total amount of those costs incurred by the CAISO based on that MSS's Net Negative Uninstructed Deviations with Load Following Energy included in the netting. The MSS Operator shall make the election whether to charge the CAISO for these costs on an annual basis on November 1 for the following calendar year.

11.8 Bid Cost Recovery.

For purposes of determining the Unrecovered Bid Cost Uplift Payments for each Bid Cost Recovery Eligible Resource as determined in Section 11.8.5 and the allocation of Unrecovered Bid Cost Uplift Payments for each Settlement Interval, the CAISO shall sequentially calculate the Bid Costs, which can be positive (IFM, RUC or ~~Real-Time Market~~RTM Bid Cost Shortfall) or negative (IFM, RUC or ~~Real-Time Market~~RTM Bid Cost Surplus) in the IFM, RUC and the Real-Time Market, as the algebraic difference between the respective IFM, RUC or ~~Real-Time Market~~RTM Bid Cost and the IFM, RUC or ~~Real-Time Market~~RTM Market Revenues, which is netted across the CAISO Markets. In any Settlement Interval a resource is eligible for Bid Cost Recovery payments only if it is On, or in the case of a Participating Load, only if the resource has actually stopped or started consuming pursuant to the Dispatch Instruction. BCR Eligible Resources for different MSS Operators are supply resources listed in the applicable MSS Agreement. All Bid Costs shall be based on mitigated Bids as specified in Section 39.7. In order to be eligible for Bid Cost Recovery, Non-Dynamic Resource-Specific System Resources must provide to the CAISO Revenue- Quality Meter Data demonstrating that they have performed in accordance with their CAISO commitments.

11.8.1 CAISO Determination of Self-Commitment Periods.

For the purposes of identifying the periods during which a Bid Cost Recovery Eligible Resource is deemed self-committed and thus ineligible for Start-Up Costs, Minimum Load Costs, ~~IFM Load Reduction~~

~~Initiation Cost for Participating Loads, IFM Minimum Curtailable Demand for Participating Loads, and~~ IFM Pump Shut-Down Costs and IFM Pumping ~~Participating Load Shut-Down~~ Costs, the CAISO derives the Self-Commitment Periods as described below. MSS resources designated for Load following are considered to be self-committed if they have been scheduled with non-zero Load following capacity, or are otherwise used to follow Load in the Real-Time. The IFM and RUC Self-Commitment Periods will be available as part of the Day-Ahead Market results provided to the applicable Scheduling Coordinator. The ~~I~~interim ~~Real-Time Market~~RTM Self-Commitment Periods as reflected in the HASP will be available as part of the HASP results for the relevant Trading Hour as provided to the applicable Scheduling Coordinator. The ~~F~~final ~~Real-Time Market~~RTM Self-Commitment Period is determined ex-post for Settlements purposes. ELS Resources committed through the ELC Process described in Section 31.7 ~~of the CAISO Tariff~~ are considered to have been committed in the IFM Commitment Period for the applicable Trading Day for the purposes of determining BCR settlement in this section 11.8.

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11.8.2 IFM Bid Cost Recovery Amount.

For purposes of determining the IFM Unrecovered Bid Cost Uplift Payments as determined in Section 11.8.5, and the purposes of allocating Net IFM Bid Cost Uplift as described in Section 11.8.6.4 the CAISO shall calculate the IFM Bid Cost Shortfall or the IFM Bid Cost Surplus as the algebraic difference between the IFM Bid Cost and the IFM Market Revenues for each Settlement Interval. The IFM Bid Costs shall be calculated pursuant to Section 11.8.2.1 and the IFM Market Revenues shall be calculated pursuant to Section 11.8.2.2. The Energy subject to IFM Bid Cost Recovery is the actual Energy delivered in the Real-Time that is within the Day-Ahead Schedule for each eligible resource.

11.8.2.1 IFM Bid Cost Calculation.

For each Settlement Interval, the CAISO shall calculate IFM Bid Cost for each Bid Cost Recovery Eligible Resource as the algebraic sum of the IFM Start-Up Cost ~~(or the IFM Load Reduction Initiation Cost for Participating Loads)~~, IFM Minimum Load Cost ~~(or the IFM Minimum Curtailable Demand for Participating Loads)~~, IFM Pump ~~and Participating Load~~ Shut-Down Cost, ~~IFM Pump and Participating Load Bid Cost,~~ IFM Energy Bid Cost, IFM Pumping Cost, and IFM AS Bid Cost.

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11.8.2.1.2 IFM Minimum Load Cost.

The Minimum Load Cost for the applicable Settlement Interval shall be the Minimum Load Cost submitted to the CAISO in the IFM divided by the number of Settlement Intervals in a Trading Hour. For each Settlement Interval, only the IFM Minimum Load Cost in a CAISO IFM Commitment Period is eligible for Bid Cost Recovery. The IFM Minimum Load Cost for any Settlement Interval is zero if: (1) the Settlement Interval is in an IFM Self Commitment Period for the Bid Cost Recovery Eligible Resource; (2) the Bid Cost Recovery Eligible Resource is manually pre-dispatched under an RMR Contract prior to the Day-Ahead Market or the resource is flagged as an RMR Dispatch in the Day-Ahead Schedule for the applicable Settlement Interval; or (3) the Bid Cost Recovery Eligible Resource is determined not actually ~~o~~On during the applicable Settlement Interval. For the purposes of IFM Minimum Load Cost,~~A~~ a Bid Cost Recovery Eligible Resource is determined~~detected as~~ to not actually be~~ing~~ On if the metered Energy in that Settlement Interval is less than the Tolerance Band referenced by the ~~relevant~~ Minimum Load Energy ~~within the Tolerance Band~~.

11.8.2.1.3 IFM Pump ~~and Participating Load~~ Shut-Down Cost.

For Pumped-Storage Hydro Units and Participating Load only, the IFM Pump ~~and Participating Load~~ Shut-Down Costs for each Settlement Interval shall be equal to the relevant Pump ~~and Participating Load~~ Shut-Down Cost submitted to CAISO in the IFM divided by the number of Settlement Intervals in a Trading Hour in which shut down is to occur if the unit is committed by the IFM not to pump and actually does not operate in pumping mode in that Settlement Interval (as detected by Meter~~ed~~ ~~d~~Data).

11.8.2.1.4 IFM Pump~~ing~~ Bid ~~and Participating Load Energy Bid~~ Cost.

For Pumped~~-~~-Storage Hydro Units and Participating Load only, the IFM Pumping ~~and Participating Load Energy~~ Bid Cost for the applicable Settlement Interval shall be the Pumping ~~and Participating Load Energy Bid~~ Cost submitted to the CAISO in the IFM divided by the number of Settlement Intervals in a Trading Hour. The Pumping ~~and Participating Load Energy Bid~~ Cost is negative. The Pumping ~~and Participating Load Energy Bid~~ Cost is included in IFM Bid Cost computation for a Pumped-Storage Hydro Unit and Participating Load committed by the IFM to pump or serve Load~~,~~ if it actually operates in

pumping mode or serves Load in that Settlement Interval. The IFM Energy Bid Cost for a Participating Load for any Settlement Interval is set to zero for actual Energy consumed in excess of the Day-Ahead Schedule for Demand.

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11.8.2.1.6 IFM AS Bid Cost.

For any Settlement Interval, the IFM AS Bid Cost shall be the product of the IFM upward AS Award from each accepted IFM AS Bid and the relevant AS Bid Price, divided by the number of Settlement Intervals in a Trading Hour.

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11.8.2.3 IFM Bid Cost Recovery Amounts for Metered Subsystems.

The IFM Bid Cost Recovery for MSS Operators differs based on whether the MSS Operator has elected gross or net Settlement.

11.8.2.3.1 MSS Elected Gross Settlement.

For an MSS Operator that has elected gross Settlement, regardless of other MSS optional elections (Load following or RUC opt-in or out), the IFM Bid Cost and the IFM Market Revenue are calculated similarly to non-MSS resources on an individual resource basis as described in Sections 11.8.2.1 and 11.8.2.2, respectively.

11.8.2.3.2 MSS Elected Net Settlement.

For an MSS Operator that has elected net Settlement, regardless of other MSS optional elections (Load following or RUC opt-in or out), the Energy affected by IFM Bid Cost Recovery is the MSS level net Energy where the MSS Supply exceeds the MSS Demand within the MSS. The IFM Bid Cost Shortfall or Surplus is also settled at the MSS level as opposed to the individual resource level. The IFM Bid Cost as described in Section 11.8.2.1 above and IFM Market Revenue as provided in Section 11.8.2.2 above, of each MSS will be, respectively, the total of the IFM Bid Costs and IFM Market Revenues of all BCR Eligible Resources within the MSS. The IFM Bid Cost Shortfalls and Surpluses for Energy and AS are first calculated separately for the MSS for each Trading Hour of the Trading Day with qualified Start-Up Cost and qualified Minimum Load Cost included in the IFM Bid Cost Shortfalls and Surpluses for Energy

calculation. The IFM Bid Cost Shortfall or Surplus of Energy in each Trading Hour is then pro-rated by the MSS's ratio of the net positive MSS Generation Schedule to the gross MSS Generation Schedule of that Trading Hour. If the MSS CAISO Demand is in excess of the MSS Generation in a given Trading Hour in the Day-Ahead Schedule, the CAISO will set the pro-rating ratio for that Trading Hour to zero. The MSS's overall IFM Bid Cost Shortfall or Surplus is then calculated as the algebraic sum of the pro-rated IFM Bid Cost Shortfall or Surplus for Energy and the IFM Bid Cost Shortfall or Surplus for AS for each Trading Hour.

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11.8.3.1.2 RUC Minimum Load Cost.

The Minimum Load Cost for the applicable Settlement Interval shall be the Minimum Load Cost of the Generating Bid Cost Recovery Eligible Resource divided by the number of Settlement Intervals in a Trading Hour. For each Settlement Interval, only the RUC Minimum Load Cost in a CAISO RUC Commitment Period is eligible for Bid Cost Recovery. The RUC Minimum Load Cost for any Settlement Interval is zero if: (1) the Bid Cost Recovery Eligible Resource is manually pre-dispatched under an RMR Contract or the resource is flagged as an RMR Dispatch in the Day-Ahead Schedule in that Settlement Interval; (2) the Bid Cost Recovery Eligible Resource is not actually ~~o~~On in the applicable Settlement Interval~~, indicated by metered Energy in that Settlement Interval less than the relevant MLE~~; or (3) the applicable Settlement Interval is included in an IFM Commitment Period. For the purposes of RUC Minimum Load Cost, a Bid Cost Recovery Eligible Resource is determined to not actually be On if the metered Energy in that Settlement Interval is less than the Tolerance Band referenced by the Minimum Load Energy.

11.8.3.1.3 RUC Availability Bid Cost.

The product of the RUC Award with the relevant RUC Availability Bid price, divided by the number of Settlement Intervals in a Trading Hour. The RUC Availability Bid Cost for a Bid Cost Recovery Eligible Resource ~~except Participating Loads~~ for a Settlement Interval is zero if the Bid Cost Recovery Eligible Resource is operating below its RUC ~~s~~Schedule, and also has a negative Uninstructed Imbalance Energy (UIE) magnitude in that Settlement Interval in excess of: (1) 5 MWh divided by the number of Settlement Intervals in the Trading Hour; or (2) three percent (3%) of its maximum capacity divided by the number of

Settlement Intervals in a Trading Hour. ~~The RUC Availability Bid Cost for Participating Loads for any Settlement Interval is set to zero if the Bid Cost Recovery Eligible Resource is operating below its RUC Schedule, and has a negative Uninstructed Imbalance Energy (UIE) magnitude in that Settlement Interval in excess of the greater of: (1) five (5) MWh divided by the number of Settlement Intervals in the Trading Hour; or (2) 3% of the difference between the Base Load and the Real-Time Market Self-Schedule.~~

11.8.3.2 RUC Market Revenues.

For any Settlement Interval, the RUC Market Revenue for a Bid Cost Recovery Eligible Resource is the RUC Availability Payment as specified in Section 11.2.2.1 ~~all~~ divided by the number of Settlement Intervals in a Trading Hour. If the RUC Availability ~~b~~Bid ~~c~~Cost of a BCR- ~~e~~Eligible ~~r~~Resource is reduced to zero in a Settlement Interval because of ~~u~~Uninstructed ~~d~~Deviation as stated in Section 11.8.3.1.3, then the RUC Market Revenue for that resource for that Settlement Interval shall also be set to 0 since the resource is subject to rescission of RUC ~~no pay~~Availability Payments as specified in Section 31.5.7~~8.10.8~~.

11.8.3.3 RUC Bid Cost Recovery for Metered Subsystem.

11.8.3.3.1 MSS Elected Gross Settlement.

For an MSS Operator that has elected gross Settlement, regardless of other MSS optional elections (Load following or RUC opt-in or out), the RUC Bid Cost and the RUC Market Revenue are calculated similarly to non-MSS resources on an individual resource basis as described in Sections 11.8.3.1 and 11.8.3.2, respectively.

11.8.3.3.2 MSS Elected Net Settlement.

For an MSS Operator that has elected net Settlement, regardless of other MSS optional elections (Load following or RUC opt-in or out), the RUC Bid Costs and RUC Market Revenue are calculated on an MSS level, consistent with the Energy Settlement. The RUC Bid Cost Shortfall or Surplus is also settled at the MSS level as opposed to the individual resource level as is done for MSS Operators that have elected gross Settlement.

11.8.4 RTM Bid Cost Recovery Amount.

For purposes of determining the ~~Real-Time Market~~RTM Unrecovered Bid Cost Uplift Payments as determined in Section 11.8.5, and for the purposes of allocation of Net ~~Real-Time Market~~RTM Bid Cost

Uplift as described in Section 11.8.6.6 the CAISO shall calculate the ~~Real-Time Market~~RTM Bid Cost Shortfall or the ~~Real-Time Market~~RTM Bid Cost Surplus as the algebraic difference between the ~~Real-Time Market~~RTM Bid Cost and the ~~Real-Time Market~~RTM Market Revenues for each Settlement Interval. The ~~Real-Time Market~~RTM Bid Costs shall be calculated pursuant to Section 11.8.4.1 and the ~~Real-Time Market~~RTM Market Revenues shall be calculated pursuant to Section 11.8.4.2. The Energy subject to RTM Bid Cost Recovery is the actual Energy delivered in the Real-Time associated with Instructed Imbalance Energy, excluding Standard Ramping Energy, Residual Imbalance Energy, Exceptional Dispatch Energy, Rerate Energy, Ramping Energy Deviation, Regulation Energy and MSS Load following Energy.

11.8.4.1 RTM Bid Cost Calculation.

For each Settlement Interval, the CAISO shall calculate ~~Real-Time Market~~RTM Bid Cost for each Bid Cost Recovery Eligible Resource, as the algebraic sum of the ~~Real-Time Market~~RTM Start-Up Cost ~~(or the Real-Time Market Load Reduction Initiation Cost for Participating Loads)~~, ~~Real-Time Market~~RTM Minimum Load Cost ~~(or the Real-Time Market Minimum Curtailable Demand for Participating Loads)~~, ~~Real-Time Market~~RTM Pump Shut-Down Cost, ~~Real-Time Market~~RTM Energy Bid Cost, RTM Pumping Cost and ~~Real-Time Market~~RTM AS Bid Cost.

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11.8.4.1.2 RTM Minimum Load Cost.

The ~~Real-Time Market~~RTM Minimum Load Cost is the Minimum Load Cost of the Bid Cost Recovery Eligible Resource submitted to the CAISO for the Real-Time Market divided by the number of Settlement Intervals in a Trading Hour. For each Settlement Interval, only the ~~Real-Time Market~~RTM ~~Start-Up~~Minimum Load Cost in a CAISO ~~Real-Time Market~~RTM Commitment Period is eligible for Bid Cost Recovery. The ~~Real-Time Market~~RTM Minimum Load Cost for any Settlement Interval is zero if: (1) the Settlement Interval is included in a ~~Real-Time Market~~RTM Self-Commitment ~~p~~Period for Bid Cost Recovery Eligible Resource; (2) the Bid Cost Recovery Eligible Resource has been manually dispatched under an RMR ~~c~~Contract or the resource has been flagged as an RMR Dispatch in the Day-Ahead Schedule or the Real-Time Market in that Settlement Interval; (3) the Bid Cost Recovery Eligible Resource is not actually ~~o~~On in that Settlement Interval; or (4) that Settlement Interval is included in an

IFM or RUC Commitment Period. For the purposes of RTM Minimum Load Cost, a Bid Cost Recovery Eligible Resource is determined to not actually be On if the metered Energy in that Settlement Interval is less than the Tolerance Band referenced by the Minimum Load Energy.

11.8.4.1.3 RTM Pump ~~and Participating Load~~ Shut-Down Cost.

The ~~Real-Time Market~~RTM Pump~~ing and Participating Load~~ Shut-Down Cost is the relevant Pump ~~and Participating Load~~ Shut-Down Cost submitted by the Scheduling Coordinator for Pumped~~-~~Storage Hydro Units and Participating Load committed by the Real-Time Market to stop pumping and serving Load and actually does not operate in pumping mode or serve Load in that Settlement Interval, divided by the number of Settlement Intervals in a Trading Hour.

11.8.4.1.4 RTM Pumping ~~and Participating Load Energy~~ Bid Cost.

For Pumped~~-~~Storage Hydro Units and Participating Load only, the ~~Real-Time Market~~RTM Pumping ~~and Participating Load Energy~~ Bid Cost for the applicable Settlement Interval shall be the Pumping ~~and Participating Load Energy Bid~~ Cost submitted to the CAISO in the HASP or RTM divided by the number of Settlement Intervals in a Trading Hour. The Pumping ~~and Participating Load Energy Bid~~ Cost is negative since it represents the amount the entity is willing to pay to pump or serve Load. The Pumping ~~and Participating Load Energy Bid~~ Cost is included in ~~Real-Time Market~~RTM Bid Cost computation for a Pumped-Storage Hydro Unit and Participating Load committed by the Real-Time Market to pump or serve Load, if it actually operates in pumping mode or serves Load in that Settlement Interval. The ~~Real-Time Market~~RTM Energy Bid Cost for a Participating Load for any Settlement Interval is set to zero for any Energy consumed in excess of instructed Energy.

11.8.4.1.5 RTM Energy Bid Cost.

For any Settlement Interval, the ~~Real-Time Market~~RTM Energy Bid Cost for the Bid Cost Recovery Eligible Resource except Participating Loads shall be computed as the sum of the products of each Instructed Imbalance Energy (IIE) portion, except Standard Ramping Energy, Residual Imbalance Energy, Exceptional Dispatch Energy, Rerate Energy, MSS Load following Energy, Ramping Energy Deviation and Regulating Energy, with the relevant Energy ~~b~~Bid prices, if any, for each Dispatch Interval in the Settlement Interval. The ~~Real-Time Market~~RTM Energy Bid Cost for a Bid Cost Recovery Eligible

ResourceUnit except Participating Loads for a Settlement Interval is set to zero for any undelivered Real-Time iInstructed Imbalance Energy by the Bid Cost Recovery Eligible Resource. Any Uninstructed Imbalance Energy in excess of iInstructed Imbalance Energy is also not eligible for Bid Cost Recovery.

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11.8.4.3 RTM Bid Cost Recovery for Metered Subsystems.

In addition to the exclusions to actual Energy delivered as provided in Section 11.8.4, for MSS resources, the Energy subject to RTM Bid Cost Recovery also excludes Minimum Load Energy if the resource is not committed by the CAISO in the Real-Time. As provided below, the RTM Bid Cost Recovery for MSS Operators differs based on whether the MSS Operator has elected gross or net Settlement; except that the calculation of the RTM Bid Costs and RTM Market Revenues for Ancillary Services will be as provided in Sections 11.8.4.1.6 and 11.8.4.2 and does not vary on the basis of the MSS's election of gross or net Settlement.

11.8.4.3.1 MSS Elected Gross Settlement.

For an MSS Operator that has elected gross Settlement, regardless of other MSS optional elections (Load following or RUC opt-in or out), the RTM Bid Cost and RTM Market Revenue of the Real-Time delivered Instructed Imbalance Energy subject to Bid Cost Recovery is determined for each resource identically to the non-MSS resource following the general principles in Section 11.8.4. The RTM Bid Cost Shortfall or Surplus for Energy and Ancillary Services in total is determined for each Trading Hour of the RTM over the Trading Day by taking the algebraic difference between the RTM Bid Cost and RTM Market Revenue.

11.8.4.3.2 MSS Elected Net Settlement.

For MSS entities that have elected net Settlement regardless of other MSS optional elections (i.e., Load following or not, or RUC opt-in or out), unlike non-MSS resources, the RTM Bid Cost Shortfall or Surplus is treated at the MSS level and not at the resource specific level, and is calculated as the RTM Bid Cost Shortfall or Surplus of all BCR Eligible Resources within the MSS. In calculating the Energy RTM Market Revenue for all the resources within the MSS as provided in Section 11.8.4.2, the CAISO will use the Real-Time Settlement Interval MSS Price. The RTM Bid Cost Shortfall and Surplus for Energy and

Ancillary Services are first calculated separately for the MSS for each Settlement Interval of the Trading Day, with qualified Start-Up Cost and qualified Minimum Load Cost included into the RTM Bid Cost Shortfalls and Surpluses of Energy calculation. The RTM Bid Cost Shortfall or Surplus for Energy for each Settlement Interval is pro-rated by the ratio of the net positive metered Generation to the gross metered Generation of the MSS for that interval. If the MSS metered CAISO Demand is in excess of the MSS Generation in a given Settlement Interval, the CAISO will set the pro-rating ratio for that Settlement Interval to zero. The MSS's overall IFM Bid Cost Shortfall or Surplus is then calculated as the algebraic sum of the pro-rated RTM Bid Cost Shortfalls and Surpluses for Energy and the RTM Bid Cost Shortfalls and Surpluses for AS for each Settlement Interval.

11.8.5 Unrecovered Bid Cost Uplift Payment.

Scheduling Coordinators shall receive an Unrecovered Bid Cost Uplift Payment for a Bid Cost Recovery Eligible Resource, including resources for MSS Operators that have elected gross Settlement, if the net of all IFM Bid Cost Shortfalls and Surpluses calculated pursuant to Section 11.8.2, RUC Bid Cost Shortfalls and Surpluses calculated pursuant to Section 11.8.3, and the ~~Real-Time Market~~RTM Bid Cost Shortfalls and Surpluses calculated pursuant to Section 11.8.4 for that Bid Cost Recovery Eligible Resource over a Trading Day is positive. For MSS Operators that have elected net Settlement, the Unrecovered Bid Cost Uplift Payment is at the MSS level. The MSS IFM, RUC, and RTM Bid Cost Shortfall or Surplus for each market for each Trading Hour is the sum of the IFM, RUC, and RTM Bid Cost Shortfalls and Surpluses for all resources in the MSS. Scheduling Coordinators for MSS Operators that have elected net Settlement will receive an Unrecovered Bid Cost Uplift Payment if the net of all IFM, RUC, and RTM Bid Cost Shortfalls and Surpluses for that MSS over a Trading Day is positive.

11.8.6 System-wide IFM, RUC and RTM Bid Cost Uplift Allocation.

11.8.6.1 Determination of IFM, RUC and RTM Bid Cost Uplift.

For each Settlement Interval, the CAISO shall determine the IFM, RUC and ~~Real-Time Market~~RTM Bid Cost Uplift for purposes of allocating the IFM, RUC and ~~Real-Time Market~~RTM Bid Cost Uplift as described below~~follows~~. In determining the IFM, RUC and RTM Bid Cost Uplifts below, the Unrecovered Bid Cost Uplift Payments for MSS BCR Eligible Resources in Metered Subsystems where the MSS

Operator has elected net Settlement will be included on an MSS basis and not on an individual resource basis.~~:~~

(i) The IFM Bid Cost Uplift shall be the net of the IFM Bid Cost Shortfalls and IFM Bid Cost Surpluses for a Settlement Interval of all Bid Cost Recovery Eligible Resources with Unrecovered Bid Cost Uplift Payments.

(ii) The RUC Bid Cost Uplift shall be the net of the RUC Bid Cost Shortfalls and RUC Bid Cost Surpluses for a Settlement Interval of all Bid Cost Recovery Eligible Resources with Unrecovered Bid Cost Uplift Payments.

(iii) The ~~Real-Time Market~~RTM Bid Cost Uplift shall be the net of the ~~Real-Time Market~~RTM Bid Cost Shortfalls and ~~Real-Time Market~~RTM Bid Cost Surpluses for a Settlement Interval of all Bid Cost Recovery Eligible Resources with Unrecovered Bid Cost Uplift Payments.

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11.8.6.4 Allocation of Net IFM Bid Cost Uplift.

For each Trading Hour of the IFM the~~,~~ ~~H~~hourly Net IFM Bid Cost Uplift is determined as the sum over the Settlement Intervals in that Trading Hour of the product of any positive Net IFM Bid Cost Uplift remaining in the Settlement Interval after the sequential netting in Section 11.8.6.2 and the application of the uplift ratio as determined in 11.8.6.3. The ~~H~~hourly Net IFM Bid Cost Uplift is allocated in two tiers as follows:

(i) In the first tier, the ~~H~~hourly Net IFM Bid Cost Uplift is allocated to Scheduling Coordinators in proportion to their non-negative IFM Load Uplift Obligation, but with an IFM Bid Cost Uplift rate not exceeding the ratio of the ~~H~~hourly Net IFM Bid Cost Uplift for the Trading Hour divided by the sum of all hourly Generation scheduled in the Day-Ahead Schedule and IFM upward AS Awards for all Scheduling Coordinators from CAISO-~~C~~committed Bid Cost Recovery Eligible Resources in that Trading Hour. The IFM Load Uplift Obligation for each Scheduling Coordinator, including Scheduling Coordinators for Metered Subsystems regardless of their MSS optional elections (net/gross Settlement, Load following, RUC opt-in/out), is the difference between the total Demand scheduled in the Day-Ahead Schedule of that Scheduling Coordinator and the scheduled Generation from the Self-Schedules in the Day-Ahead Schedule of that

Scheduling Coordinator, plus imports scheduled by that Scheduling Coordinator in its Day-Ahead Schedule, adjusted by any applicable Inter-SC Trades of IFM Load Uplift Obligations.

(ii) In the second tier, Scheduling Coordinators, including Scheduling Coordinators for MSS Operators that have elected both to not follow their Load and gross Settlement, will be charged for an amount equal to any remaining ~~H~~hourly Net IFM Bid Cost Uplift for the Trading Hour in proportion to the Scheduling Coordinator's Measured Demand. Scheduling Coordinators for MSS Operators that have elected to either follow their Load or net Settlement, or both, will be charged for an amount equal to any remaining hourly Net IFM Bid Cost Uplift for the Trading Hour in proportion to their MSS Aggregation Net Measured Demand.

11.8.6.5 Allocation of ~~Net~~ RUC Compensation~~Bid~~ Costs ~~Uplift~~.

11.8.6.5.1 Calculation of RUC Compensation Costs.

For each Trading Hour of the RUC, the CAISO shall calculate the RUC Compensation Costs as the sum of the RUC Availability Payment and the hourly Net RUC Bid Cost Uplift.

11.8.6.5.2 Calculation of the Hourly Net RUC Bid Cost Uplift.

For each Trading Hour of the RUC~~IFM~~, the ~~H~~hourly Net RUC Bid Cost Uplift is determined as the sum over the Settlement Intervals in that Trading Hour of the product of any positive Net RUC Bid Cost Uplift remaining in the Settlement Interval after the sequential netting in Section 11.8.6.2 and the application of the uplift ratio as determined in 11.8.6.3. ~~As specified in~~Consistent with Section 31.5.2.2, Scheduling Coordinators for MSS Operators that have opted out of RUC participation, or opt-out of RUC by default as a result of having elected to Load follow, will not be subject to any ~~are exempt from allocation or~~ RUC ~~BCR~~Bid Cost Uplift allocation. Scheduling Coordinators for MSS Operators that have opted-into RUC, and consequently also are non-Load following and under gross Settlement, will receive the allocation of hourly Net RUC Bid Cost Uplift like all other Scheduling Coordinators.~~The Hourly Net RUC Bid Cost Uplift is allocated in two tiers as follows:~~

11.8.6.5.3 Allocation of the RUC Compensation Costs.

(i) In the first tier, the RUC Compensation Costs are~~Hourly Net RUC Bid Cost Uplift is~~ allocated to Scheduling Coordinators, based on their Net Negative CAISO Demand Deviation ~~CAISO~~

~~Demand~~ in that Trading Hour. The Scheduling Coordinator shall be charged at a rate which is the lower of (1) the RUC Compensation Costs~~Hourly Net RUC Bid Cost Uplift~~ divided by the Net Negative CAISO Demand Deviation ~~CAISO Demand~~ for all Scheduling Coordinators in that Trading Hour; or (2) the ~~Hourly Net RUC Bid Cost Uplift~~RUC Compensation Costs divided by the RUC Capacity, for all Scheduling Coordinators in that Trading Hour. Participating Load shall not be subject to the first tier allocation of RUC Compensation Costs.

(ii) In the second tier, the Scheduling Coordinator shall be charged an amount equal to any remaining RUC Compensation Costs~~Hourly Net RUC Bid Cost Uplift~~ in proportion to the Scheduling Coordinator's metered CAISO Demand in any Trading Hour.

11.8.6.6 Allocation of Net RTM Bid Cost Uplift.

The ~~H~~hourly Net ~~Real-Time Market~~ RTM Bid Cost Uplift is computed for the Trading Hour as the product of the uplift ratio in 11.8.6.3 and the sum over all Settlement Intervals of the Tradinge Hour of any positive Net ~~Real-Time Market~~RTM Bid Cost Uplift after the sequential netting in Section 11.8.6.2. The ~~H~~hourly ~~Real-Time Market~~RTM Bid Cost Uplift is allocated to Scheduling Coordinators, including Scheduling Coordinators for MSS Operators that have elected to not follow their Load and gross Settlement, in proportion to their Measured Demand for the Trading Hour. For Scheduling Coordinators for MSS Operators that have elected to either Load follow or net Settlement, or both, the hourly RTM Bid Cost Uplift is allocated in proportion to their MSS Aggregation Net Measured Demand. Accordingly, each Scheduling Coordinator shall be charged an amount equal to ~~their~~its Measured Demand times the ~~Real-Time Market~~RTM Bid Cost Uplift rate, where the ~~Real-Time Market~~RTM Bid Cost Uplift ~~R~~rate is computed as the Net ~~Real-Time Market~~RTM Bid Cost Uplift amount divided by the sum of Measured Demand across all Scheduling Coordinators for the Trading Hour.

11.9 Inter-SC Trades.

11.9.1 ~~Inter-SC Trades of Energy~~Physical Trades.

Inter-SC Trades of Energy in the Day-Ahead Market will be settled separately from Inter-SC Trades of Energy in the HASP. Both the Day-Ahead and HASP Inter-SC Trades of Energy will be settled on an hourly basis and the two respective Settlement amounts between the two parties for each market shall

net to zero. All MWh quantities of Physical Trades submitted to the CAISO for Settlement in the Day-Ahead Market ~~and validated pursuant to Section 28.1.5~~ that are confirmed through the Physical Trade post market confirmation as provided in Section 28.1.6.3 shall be settled at the Day-Ahead LMP at the relevant PNode. All ~~unvalidated~~ MWh quantities of Physical Trades ~~and all MWh quantities associated with other Inter-SC Trades of Energy submitted for Settlement in the Day-Ahead~~ that are reduced during the Physical Trade post market confirmation shall be settled at the relevant Existing Zone (EZ) Generation Trading Hub price.~~Day Ahead LMP at the relevant Aggregated Price Node.~~ All MWh quantities of Physical Trades submitted to the CAISO for Settlement in the HASP ~~and validated~~that are confirmed through the Physical Trade post market confirmation pursuant to Section 28.6.1.3 shall be settled at the simple average of Dispatch Interval LMP at the relevant Pricing Node. All ~~unvalidated~~ MWh quantities of Physical Trades ~~and all MWh quantities associated with Inter-SC Trades of Energy~~ submitted ~~to~~ for Settlement in HASP that are reduced during the Physical Trade post market confirmation shall be settled at the relevant Real-Time ~~P~~price for the EZ Generation Trading Hub~~Trading Hub or the Aggregated Pricing Node~~.

11.9.2 Inter-SC Trades at Aggregated Pricing Nodes.

Inter-SC Trades of Energy at Aggregated Pricing Nodes in the Day-Ahead Market will be settled separately from Inter-SC Trades at Aggregated Pricing Nodes in the HASP. Both the Day-Ahead and HASP Inter-SC Trades at Aggregated Pricing Nodes will be settled on an hourly basis and the two respective Settlement amounts between the two parties for each market shall net to zero. All MWh quantities of Inter-SC Trades at Aggregated Pricing Nodes submitted to the CAISO for Settlement in the Day-Ahead Market shall be settled at the relevant Day-Ahead Aggregated Pricing Node price such as the Existing Zone (EZ) Generation Trading Hub price or LAP price. All MWh quantities of Inter-SC Trades at Aggregated Pricing Nodes submitted to the CAISO for Settlement in the HASP shall be settled at the relevant Real-Time Aggregated Pricing Node price.

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11.10.1.3.1 Congestion Charges for Real-Time Intertie Ancillary Service Awards from Dynamic System Resources.

Suppliers of Real-Time Ancillary Services Awards at Scheduling Points for Dynamic System Resources are also charged for Congestion if the award is at a congested Scheduling Point. The charge shall be equal to the simple average of the 15 minute Shadow Price of the applicable congested Scheduling Point multiplied by the quantity of the Ancillary Service Award for the Settlement Period.

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11.10.2.1.3 Hourly Net Obligation for Regulation Down Reserve.

Each Scheduling Coordinator's hourly net obligation for Regulation Down is determined as follows: the Scheduling Coordinator's metered CAISO Demand multiplied by the Scheduling Coordinator's Ancillary Services Obligation percentage for Regulation Down, reduced by accepted Self-Provided Ancillary Services specified as Regulation Down, plus or minus any Regulation Down Reserve ~~O~~obligations for the hour acquired or sold through Inter-SC Trades of Ancillary Services. The Scheduling Coordinator's Ancillary Services Obligation percentage is the total hourly Real-Time Regulation Down required divided by the hourly metered CAISO Demand.

* * *

11.10.2.2.2 Hourly Net Obligation for Regulation Up.

Each Scheduling Coordinator's hourly net obligation for Regulation Up is determined as follows: (a) the Scheduling Coordinator's metered CAISO Demand ~~-~~multiplied by the Scheduling Coordinator's Ancillary Services Obligation percentage for Regulation Up, reduced by accepted Self-Provided Ancillary Services specified as Regulation Up, plus or minus any Regulation Up Reserve Obligations for the hour acquired or sold through Inter-SC Trades of Ancillary Services. The Scheduling Coordinator's Ancillary Services Obligation percentage for Regulation Up is the total hourly Real-Time Regulation Up divided by the hourly metered CAISO Demand.

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11.10.3.2 Hourly Net Obligation for Spinning Reserves.

Each Scheduling Coordinator's hourly net obligation for Spinning Reserves is determined as follows: the Scheduling Coordinator's total Ancillary Services Obligation for Operating Reserve ~~-~~for the hour multiplied by the ratio of the CAISO's total Ancillary Services Obligation for Spinning Reserves in the hour to the

CAISO's total Operating Reserve ~~o~~Obligations in the hour~~,~~ (and if negative, multiplied by NOROCAF), reduced by the accepted Self-Provided Ancillary Services for Spinning Reserves, plus or minus any Spinning Reserve Obligations for the hour acquired or sold through Inter-SC Trades of Ancillary Services.

The Scheduling Coordinator's total Operating Reserve Obligation for the hour is the sum of five percent (5%) of its Real-Time Demand (except the Demand covered by firm purchases from outside the CAISO Control Area) met by Generation from hydroelectric resources plus seven percent (7%) of its Demand (except the Demand covered by firm purchases from outside the CAISO Control Area) met by Generation from non-hydroelectric resources, plus one hundred percent (100%) of any Interruptible Imports, which can only ~~must~~ be submitted as a Self-Schedule in the Day-Ahead Market, and on-demand obligations which it schedules.

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11.10.4.2 Hourly Net Obligation for Non-Spinning Reserves.

Each Scheduling Coordinator's hourly net obligation for Non-Spinning Reserves is determined as follows: the product of the Scheduling Coordinator's total Ancillary Services Obligation for Operating Reserve for the hour (and if negative, multiplied by NOROCAF) multiplied by the ratio of the CAISO's total Ancillary Services Obligation for Non-Spinning Reserves in the hour to the CAISO's total Operating Reserve obligations in the hour, reduced by the accepted Self-Provided Ancillary Services for Non-Spinning Reserves, plus or minus any Non-Spinning Reserve Obligations for the hour acquired or sold through Inter-SC Trades of Ancillary Services. The Scheduling Coordinator's total Operating Reserve Obligation for the hour is the sum of five percent (5%) of its Real-Time Demand (except the Demand covered by firm purchases from outside the CAISO Control Area) met by Generation from hydroelectric resources plus seven percent (7%) of its Demand (except the Demand covered by firm purchases from outside the CAISO Control Area) met by Generation from non-hydroelectric resources, plus one hundred percent (100%) of any Interruptible Imports, which can only be submitted as a Self-Schedule in the Day-Ahead Market, plus five percent (5%) (if hydro) or seven percent (7%) (if thermal) of any unit-contingent or dynamic imports which it schedules.

* * *

11.10.6 Upward Ancillary Services Neutrality Adjustment.

For each Settlement Period the difference between the ~~U~~upwards Ancillary Service cost and the product of the total Ancillary Service ~~N~~net ~~R~~requirements at the relevant Ancillary Service user rate will be allocated to all Scheduling Coordinators in proportion to their ~~U~~upward Ancillary Service ~~o~~Obligation net of Inter-SC Trades of Ancillary Services. The ~~U~~upwards Ancillary Service cost is the sum of the Regulation Up, Spinning Reserve and Non-Spinning Reserve cost described in Sections 11.10.2.2.1, 11.10.3.1 and 11.10.4.1. The Ancillary Service ~~N~~net ~~R~~requirement is the sum of the Real-Time Regulation Up ~~N~~net ~~R~~requirement in Section 11.10.2.2.3, Spinning Reserve ~~N~~net ~~R~~requirement in Section 11.10.3.3~~2~~ and Non-Spinning Reserve ~~N~~net ~~R~~requirement in Section 11.10.4.3~~1~~.

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11.10.9 Settlements of Rescission of Payments for Ancillary Services Capacity that is Undispatchable, Unavailable, and Undelivered Capacity.

The rescission of payments for Ancillary Services for Undispatchable, Unavailable, and Undelivered Capacity applies to Ancillary Services that are awarded in the Day-Ahead, HASP or Real-Time Markets and the rescission will be the weighted average of the Ancillary Service Marginal Prices (ASMPs) and Ancillary Services Award amounts for a resource across the Day-Ahead, HASP and Real-Time Markets. For Self-Provided Ancillary Service capacity that becomes Undispatchable Capacity, Unavailable Capacity, or Undelivered Capacity, the rescission of Ancillary Services self-provision in the Day-Ahead, HASP and Real-Time Markets reduces the relevant Scheduling Coordinator's effective Ancillary Services self-provision in the Ancillary Services cost allocation, effectively resulting in a charge back at the relevant Ancillary Services rate. The rescission of payments in this Section 11.10.9 shall not apply to a capacity payment for any particular Ancillary Service if the Ancillary Service Marginal Price (ASMP) is less than or equal to zero.

11.10.9.1 Rescission of Payments for Undispatchable Ancillary Service Capacity.

If a Scheduling Coordinator has Undispatchable Capacity that it is obligated to supply to the CAISO during a Settlement Interval, the Ancillary Service capacity payment for the amount of Energy that cannot be delivered from the Generating Unit, Participating Load, System Unit or System Resource for the

Settlement Interval shall be rescinded; provided, however, that to the extent an Ancillary Service procured in the IFM from a System Resource becomes Undispatchable Capacity due to an Intertie transmission derate before the Operating Hour for which it was procured, in rescinding the Ancillary Service capacity payment, the CAISO shall credit back to the Scheduling Coordinator any Congestion Charge assessed pursuant to Section 11.10.1.1.1, but at the lower of the Day-Ahead and HASP Shadow Price on the corresponding Intertie.

11.10.9.2 Rescission of Payments for Unavailable Ancillary Service Capacity.

Payments to the Scheduling Coordinator representing the Generating Unit, Participating Load, System Unit or System Resource for the Ancillary Service capacity used to supply Uninstructed Imbalance Energy shall not be eliminated to the extent of the deficiency if: (i) the deficiency in the availability of Ancillary Service capacity from the Generating Unit, Participating Load, System Unit or System Resource is attributable to control exercised by the CAISO in that Settlement Interval through AGC operation, an RMR Dispatch Notice, or an Exceptional Dispatch; or (ii) a penalty is imposed under Section 8.10.7 with respect to the deficiency.

In calculating the amount of the payment to be rescinded under Section 8.10.8.2, the CAISO shall reduce the payment for Ancillary Service capacity otherwise payable for the Settlement Interval by the product of the applicable prices and the amount of Ancillary Service capacity from which the Generating Unit, Participating Load, System Unit or System Resource has supplied Uninstructed Imbalance Energy in that Settlement Interval.

11.10.9.3 Rescission of Payments for Undelivered Ancillary Service Capacity.

If the total metered output of a Generating Unit, Participating Load, System Unit or System Resource is insufficient to supply the amount of Instructed Imbalance Energy associated with a Dispatch Instruction issued in accordance with awarded or self-provided Spinning Reserves or awarded or self-provided Non-Spinning Reserves in any Settlement Interval, then the capacity payment associated with the difference between the scheduled amount of each Ancillary Service for which insufficient Energy was delivered and the actual output attributed to the response to the Dispatch Instruction shall be rescinded. However, no capacity payment shall be rescinded if the shortfall in the metered output of the Generating Unit, Participating Load, System Unit, or System Resource is less than a deadband amount published by

CAISO on the CAISO Website at least twenty-four hours prior to the Settlement Interval. For any Settlement Interval with respect to which no deadband amount has been published by the CAISO, the deadband amount shall be zero MWh.

11.10.9.4 Allocation of Rescinded Ancillary Services Capacity Payments.

Payments rescinded pursuant to Sections 8.10.8 and 11.10.9 shall be allocated to Scheduling Coordinators in proportion to CAISO Control Area Measured Demand for the same Trading Day. Regulation capacity payments rescinded pursuant to Section 8.10.8.6 shall be allocated to Scheduling Coordinators in proportion to CAISO Control Area metered CAISO Demand for the same Trading Day.

* * *

11.12 Participating Intermittent Resources.

11.12.1 Uninstructed Energy by Participating Intermittent Resources.

Uninstructed Imbalance Energy associated with deviations by a Participating Intermittent Resource shall be settled as provided in this Section 11.12.1 for every Settlement Period in which such Participating Intermittent Resource meets the scheduling requirements established in the Eligible Intermittent Resources Protocol in Appendix Q. The net Uninstructed Imbalance Energy in each Settlement Interval shall be assigned to a deviation account specific to each Participating Intermittent Resource. The net balance in each deviation account at the end of each calendar month shall be paid (or charged) to the Scheduling Coordinator for the associated Participating Intermittent Resource at the average price specified in Section 34.19.2.5 ~~of the CAISO Tariff~~. If the above-referenced scheduling requirements for Participating Intermittent Resources are not met, then charges (payments) for Uninstructed Imbalance Energy during such Settlement Periods shall be determined in accordance with Section 11.5.2.

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11.12.4 Price for Uninstructed Deviations for Participating Intermittent Resources.

Uninstructed Deviations associated with each Participating Intermittent Resource in a Scheduling Coordinator's portfolio shall be settled as provided in Section 34.19.2.5 at the monthly weighted average Dispatch Interval LMP, where the weights are the metered Generation quantities ~~of IIE~~ associated with each Dispatch Interval LMP.

* * *

11.14 Neutrality Adjustments.

The CAISO shall be authorized to levy additional charges or make additional payments as special adjustments in regard to:

~~(a) amounts required to round up any invoice amount expressed in dollars and cents to the nearest whole dollar amount in order to clear the CAISO Clearing Account. These charges will be allocated amongst Scheduling Coordinators over an interval determined by the CAISO and pro rata based on metered Demand (including exports) during that interval;~~

~~(b) amounts in regard to penalties or sanctions that may be levied by the CAISO in accordance with the CAISO Tariff. These charges will be levied on the Market Participants liable for payment of the penalty or sanction;~~

(a~~c~~) amounts required to reach an accounting trial balance of zero in the course of the Settlement process in the event that the charges calculated as due from CAISO Debtors are lower than payments calculated as due to the CAISO Creditors for the same Trading Day. These charges will be allocated amongst the Scheduling Coordinators who traded on that Trading Day pro rata to their Measured~~metered~~ Demand ~~(including exports)~~ in MWh of Energy for that Tradinge Day on a monthly basis. In the event that the charges due from CAISO Debtors are higher than the payments due to CAISO Creditors, the CAISO shall allocate a payment to the Scheduling Coordinators who traded on that Trading Day pro rata to their Measured~~metered~~ Demand ~~(including exports)~~ in MWh of Energy for that Trading Day on a monthly basis; and

(b~~d~~) awards payable by or to the CAISO pursuant to good faith negotiations or CAISO ADR Procedures that the CAISO is not able to allocate to or to collect from a Market Participant or Market Participants in accordance with Section 13.5.3. These charges will be allocated among~~st~~ Scheduling Coordinators over an interval determined

by the CAISO and pro rata based on Measured~~metered~~ Demand ~~(including exports)~~ during that interval.

* * *

11.16 ~~[NOT USED]~~Additional Ancillary Services and RUC Capacity Obligation Rescission of Payments Requirements.

The following provisions apply to the Settlement of rescission of payments for Ancillary Services and RUC Capacity in addition to the provisions of Sections 8.10.8 and 11.10.9 for Ancillary Services and Sections 31.5.7 and 11.2.2.2 for RUC Capacity.

11.16.1 Order of Payment Rescission for Resources with More Than One Capacity Obligation in a Settlement Interval.

If the Generating Unit, Participating Load, System Unit or System Resource is scheduled to provide more than one capacity obligation in a Settlement Interval, the order in which the non-compliant Ancillary Service and RUC Capacity will be apportioned to the various services under Section 8.10.8 is as follows. For Undispatchable Capacity the non-compliant capacity is first apportioned to RUC Capacity and then to any Non-Spinning Reserves. If the amount of Undispatchable Capacity exceeds the amount of Non-Spinning Reserves, then the payment shall be eliminated for Spinning Reserves. For Unavailable Capacity or Undelivered Capacity the non-compliant capacity is first apportioned to any Non-Spinning Reserves. If the amount of non-compliant Ancillary Service capacity exceeds the amount of Non-Spinning Reserves, then the payment shall be eliminated for Spinning Reserves. If the same Ancillary Service is scheduled in the Day-Ahead Market, HASP or Real-Time Market, then the payments shall be rescinded in proportion to the amount of each Ancillary Service scheduled in each market. If the same Ancillary Service is self-provided and Bid, the order of rescission will be first the amount of Ancillary Service amounts submitted in Bids and then the Self-Provided Ancillary Service.

11.16.2 Load Following Metered Subsystems with an Obligation to Provide Ancillary Service Capacity or RUC Capacity in a Settlement Interval.

If a Load following MSS Operator is scheduled to provide Ancillary Service capacity, RUC Capacity, or some combination thereof in a Settlement Interval and if the scheduled capacity or a portion thereof is

unavailable for some reason during the Settlement Interval, the non-compliant Ancillary Services and RUC Capacity (*i.e.*, Undispatchable, Unavailable, or Undelivered Capacity) will be not be apportioned to the capacity designated by the MSS Operator as Load following up capacity and Load following down capacity. In determining which of the MSS Operator's capacity obligations were not available in Real-Time, the capacity designated by the MSS Operator as Load following up capacity and Load following down capacity shall be preserved or take precedence over the other capacity obligations.

* * *

11.18 Emissions Costs.

11.18.1 Obligation to Pay Emissions Cost Charges.

Each Scheduling Coordinator shall be obligated to pay a ~~C~~charge in accordance with this Section 11.18, which will be used to pay the verified Emissions Costs incurred by an ~~Must-Offer~~ Emissions Eligible Generator during a CAISO Commitment Period. The CAISO shall levy this administrative charge (the ~~"~~Emissions Cost ~~C~~charge~~"~~) each month, against all Scheduling Coordinators based upon each Scheduling Coordinator's Control Area Gross Load and Demand within California outside of the CAISO Control Area that is served by exports from the CAISO Control Area. Scheduling Coordinators shall make payment for all Emissions Cost ~~C~~charges in accordance with the CAISO Payments Calendar.

* * *

11.18.3 Rate ~~F~~for the Emissions Cost Charge.

The rate at which the CAISO will assess the Emissions Cost ~~C~~charge shall be at the projected annual total of all Emissions Costs incurred by ~~Must-Offer~~ Emissions Eligible Generators during CAISO Commitment Period, adjusted for interest projected to be earned on the monies in the CAISO Emissions Cost Trust Account, divided by the sum of the Control Area Gross Load and the projected Demand within California outside of the CAISO Control Area that is served by ~~E~~exports from the CAISO Control Area of all Scheduling Coordinators for the applicable year ("Emissions Cost Demand"). The initial rate for the Emissions Cost ~~C~~charge, and all subsequent rates for the Emissions Cost ~~C~~charge, shall be posted on the CAISO Website.

11.18.4 Adjustment of the Rate ~~F~~for the Emissions Cost Charge.

The CAISO may adjust the rate at which the CAISO will assess the Emissions Cost ~~C~~charge on a monthly basis, as necessary, to reflect the net effect of the following:

(a) the difference, if any, between actual Emissions Cost Demand and projected Emissions Cost Demand;

(b) the difference, if any, between the projections of the Emissions Costs incurred by ~~Must-Offer~~ Emissions Eligible Generators during a CAISO Commitment Period and the actual Emissions Costs incurred by ~~Must-Offer~~ Emissions Eligible Generators during a CAISO Commitment Period as invoiced to the CAISO and verified in accordance with this Section 11.18; and

(c) the difference, if any, between actual and projected interest earned on funds in the CAISO Emissions Cost Trust Account.

The adjusted rate at which the CAISO will assess the Emissions Cost ~~C~~charge shall take effect on a prospective basis on the first day of the next calendar month. The CAISO shall publish all data and calculations used by the CAISO as a basis for such an adjustment on the CAISO Website at least five (5) days in advance of the date on which the new rate shall go into effect.

* * *

11.19 FERC Annual Charges.

11.19.1 FERC Annual Charge Recovery Rate.

~~The CAISO shall calculate the amount due from each UDC or MSS, or from a Scheduling Coordinator delivering Energy for the supply of Gross Load not directly connected to the facilities of a UDC or MSS, for the High Voltage Access Charge and Transition Charge in accordance with operating procedures posted on the CAISO Website. These charges shall accrue on a monthly basis. The CAISO shall calculate, charge and disburse all collected default Interest in accordance with the CAISO Tariff.~~

* * *

11.19.1.2 Annual Charges Assessment.

Scheduling Coordinators ~~may elect, each year, to~~ shall pay ~~the~~ FERC Annual Charges assessed against them by the CAISO ~~either~~ on a monthly ~~basis~~ or ~~an~~ annual basis. Scheduling Coordinators that ~~elect to~~

pay FERC Annual Charges on a monthly basis shall make the payment for such charges within five (5) Business Days after issuance of the market Invoice or Payment Advice containing the charges ~~monthly invoice~~. Scheduling Coordinators that must pay FERC Annual Charges on an annual basis shall make the payment for such charges within five (5) Business Days from the Payment Date stated on the Invoice for FERC Annual Charges. The FERC Annual Charges for a given Trading Month that are due monthly will be issued to Scheduling Coordinators twice ~~once~~ a month in accordance with the CAISO Payments Calendar in the same ~~, on the first business day after the final market and Grid Management Charge i~~Invoice~~s~~ and Payment Advice that contains the market Settlement and Grid Management Charge ~~are issued for the trade month~~. The FERC Annual Charges for a given trading month that are due annually will be issued to Scheduling Coordinators twice a month on the same day as the market Invoice and Payment Advice but in a separate Invoice as indicated in Section 11.29.10. Once the final FERC Annual Charge Recovery Rate is received from FERC in the ~~S~~spring~~/~~ or ~~S~~summer of the following year, ~~a supplemental invoice~~revised FERC Annual Charges will be calculated and included on a supplemental Invoice or Payment Advice ~~will be issued~~. All Scheduling Coordinators ~~that elect to pay FERC Annual Charges on an annual basis~~ shall make payment for such charges within five (5) Business Days after the CAISO issues such supplemental ~~i~~Invoice. ~~Scheduling Coordinators that elect to pay FERC Annual Charges on an annual basis shall maintain either an Approved Credit Rating, as defined with respect to either payment of the Grid Management Charge, or payment of other charges, or shall maintain security in accordance with this CAISO Tariff.~~

* * *

~~**11.19.5 Auditing.**~~

~~All of the data, information, and estimates the CAISO uses to calculate these amounts shall be subject to the auditing requirements of Section 10.2.11 of the CAISO Tariff. The CAISO shall calculate these amounts using the software referred to in Section 11.29.5.4 except in cases of system breakdown when it shall apply the procedures set out in 11.29.10.1 (Emergency Procedures).~~

* * *

11.22.2.5.6 Market Usage Charge.

The Market Usage Charge for each Scheduling Coordinator is calculated using the absolute value of the Scheduling Coordinator's market purchases and sales of Ancillary Services, Supplemental Energy, Instructed Imbalance Energy, and net Uninstructed Imbalance Energy (with uninstructed deviations being netted by Settlement Interval). For a Scheduling Coordinator for a Load following MSS, Instructed Imbalance Energy associated with Load following instructions will not be assessed the Market Usage Charge for Instructed Imbalance Energy and will be netted with Uninstructed Imbalance Energy for determining the Market Usage Charge for net Uninstructed Imbalance Energy. The rate for the Market Usage Charge is determined by dividing the GMC costs allocated to this service category, including a specified percentage of the costs for the Settlements, Metering, and Client Relations Charge determined to be in excess of what is recovered by that charge, by the total forecasted number of market purchases and sales, according to the formula in Appendix F, Schedule 1, Part A ~~of this Tariff~~.

* * *

11.22.3 MSS GMC Charges.

If the CAISO is charging Grid Management Charges for Uninstructed Deviations, and the Scheduling Coordinator for a Load-following MSS has Uninstructed Deviations associated with the MSS's resources, then the CAISO will net the Generation and imports into the MSS to match the Demand and exports out of the MSS, and will not assess GMC associated with Uninstructed Deviations for such portion of Energy that is used to match MSS Demand and net exports.

11.22.3.1 If Generation, above the amount to cover Demand and exports, was sold into the CAISO's Real-Time Market, then the Scheduling Coordinator for the MSS will be charged GMC associated with Uninstructed Deviations for this quantity.

11.22.3.2 If insufficient Generation and imports was available to cover Demand and exports, and the Scheduling Coordinator for the MSS purchased Imbalance Energy from the CAISO Markets, then such Scheduling Coordinator will be charged GMC associated with Uninstructed Deviations for this quantity.

11.22.3.3 Only GMC associated with deviations (the Ancillary Services and Real-Time Energy Operations Charge (ASREO)) will be treated on a net basis. GMC for Control Area Services (CAS) will

be charged based on Gross Load and exports out of the MSS. The Scheduling Coordinator for the MSS Operator will be assessed the GMC Congestion Management Charge (CONG) in accordance with Section 11.22.2.5. Ancillary Service Bids accepted by the CAISO and Instructed Imbalance Energy, will be assessed the GMC ASREO.

* * *

11.29 Billing and Payment Process.

The CAISO will calculate for each charge the amounts payable by the relevant Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for each Settlement Period of the Trading Day, and the amounts payable to that Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for each charge for each Settlement Period of that Trading Day and shall arrive at a net amount payable for each charge by or to that Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for each charge for that Trading Day. Each of these amounts will appear in the Initial Settlement Statement T+38BD, Initial Settlement Statement Reissue, Recalculation Settlement Statement and the Recalculation Settlement Statement T+76BD ~~Preliminary and Final Settlement Statements~~ that the CAISO will provide to the relevant Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO.

The ~~eight~~ components of the Grid Management Charge will be included in the Initial Settlement Statement T+38BD, Initial Settlement Statement Reissue, Recalculation Settlement Statement and the Recalculation Settlement Statement T+76BD ~~Preliminary Settlement Statement and Final Settlement Statement~~ with the other types of charges referred to in Section 11, but a separate ~~i~~Invoice for the Grid Management Charge, stating the rate, billing determinant volume, and total charge for each of its ~~eight~~ components, will be issued by the CAISO to the Scheduling Coordinator.

11.29.1 The billing and payment process shall be based on the issuance of Initial Settlement Statement T+38BD, Initial Settlement Statement Reissue, Recalculation Settlement Statement and the Recalculation Settlement Statement T+76BD~~Preliminary and Final Settlement Statements~~ for each Settlement Period in each Trading Day.

11.29.2 Payment for the charges referred to in Section 11.1.2 ~~of the CAISO Tariff~~ (except for the charges payable under long-term contracts) for each Trading Day in each calendar month shall be made five (5) Business Days after issuance of the ~~Preliminary Settlement Statement~~ Initial Settlement Statement T+38BD for the last day of the relevant calendar month. Payment for adjustments will be made five (5) Business Days after issuance of the Initial Settlement Statement Reissue or Recalculation ~~Final~~ Settlement Statement for the last day of the relevant month. Payments for FERC Annual Charges will be made in accordance with Section 11.19 ~~of this CAISO Tariff~~.

11.29.3 Prepayments.

(a) A Scheduling Coordinator or CRR Holder may choose to pay at an earlier date than the Payment Date specified in the CAISO Payments Calendar by way of prepayment provided it notifies the CAISO by electronic means before submitting its prepayment.

(b) Prepayment notifications must specify the dollar amount prepaid.

(c) Prepayments must be made by Scheduling Coordinators or CRR Holder via Fed-Wire into their CAISO prepayment account designated by the CAISO. The relevant Scheduling Coordinator or CRR Holder shall grant the CAISO a security interest on all funds in its CAISO prepayment account.

(d) On any Payment Date the CAISO shall be entitled to cause funds from the relevant Scheduling Coordinator's or CRR Holder's CAISO prepayment account to be transferred to the CAISO Clearing Account in such amounts as may be necessary to discharge in full that Scheduling Coordinator's or CRR Holder's payment obligation arising in relation to that Payment Date by way of set-off or recoupment.

(e) Any funds held in the relevant Scheduling Coordinator's or CRR Holder's CAISO prepayment account shall be treated as part of that Scheduling Coordinator's or CRR Holder's Financial Security.

(f) Interest (or other income) accruing on the relevant Scheduling Coordinator's or CRR Holder's CAISO prepayment account shall inure to the benefit of that Scheduling Coordinator or CRR Holder and shall be added to the balance of its CAISO prepayment account on a monthly basis.

(g) Funds held in a CAISO prepayment account by a Scheduling Coordinator or CRR Holder may be recouped, offset or applied by the CAISO to any outstanding financial obligations of that Scheduling Coordinator or CRR Holder to the CAISO or to other Scheduling Coordinators or CRR Holders under this CAISO Tariff.~~,~~

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11.29.5 General Principles for Production of Settlement Statements.

11.29.5.1 Basis of Settlement.

The basis of each Settlement Statement shall be the debiting or crediting of an account in the name of the relevant Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO in the general ledger set up by the CAISO to reflect all transactions, charges or payments settled by the CAISO.

11.29.5.2 Right to Dispute.

All Scheduling Coordinators, CRR Holders, Black Start Generators or Participating TOs shall have the right to dispute any item or calculation set forth in any Initial~~Preliminary~~ Settlement Statement in accordance with this CAISO Tariff.

11.29.5.3 Data Files.

Settlement Statements relating to each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO shall be accompanied by ~~a~~ data file~~s~~ of supporting information that includes the following for each Settlement Period of the Trading Day ~~on a Zone-by-Zone basis~~:

(a) the aggregate quantity (in MWh) of Energy supplied or withdrawn by the Scheduling Coordinator Metered Entities represented by the Scheduling Coordinator;

(b) the aggregate quantity (in MW) and type of Ancillary Services capacity provided or purchased;

(c) the relevant prices that the CAISO has applied in its calculations;

(d) details of the ~~S~~scheduled quantities of Energy and Ancillary Services accepted by the CAISO in the Day-Ahead Market and the Hour-Ahead Market;

(e) details of Imbalance Energy and penalty payments; ~~and~~

(f) details of the CRR Payments or CRR Charges, and any payments or charges associated with the CRR Auctions; and

(g~~f~~) detailed calculations of all fees, charges and payments allocated among~~st~~ Scheduling Coordinators and each Scheduling Coordinator's share.

* * *

11.29.6 Calculation in the Event of Lack of Meter Data for the Balancing of Market Accounts.

Settlements shall not be cleared for final processing until the accounting trial balance is zero. In order to publish a Settlement Statement, the CAISO may use estimated, disputed or calculated Meter Data. When actual verified Meter Data is available and all of the disputes raised by Scheduling Coordinators, CRR Holders. Black Start Generators, and Participating TOs during the validation process described in Section 11.29.8 ~~of this CAISO Tariff~~ have been determined, the CAISO shall recalculate the amounts payable and receivable by the affected Scheduling Coordinators, CRR Holders, Black Start Generators, and Participating TOs or by all Scheduling Coordinators, CRR Holders, Black Start Generators, and Participating TOs, if applicable, as soon as reasonably practical and shall show any required adjustments as a debit or credit in the next Settlement Statement.

11.29.7 Settlements Cycle.

11.29.7.1 Timing of the Settlements Process.

11.29.7.1.1 ~~Preliminary~~Initial Settlement ~~Statements~~ T+38BD.

The CAISO shall provide to each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for validation an Initial~~Preliminary~~ Settlement Statement for each Trading Day within thirty-eight (38) Business Days of the relevant Trading Day, covering all Settlement Periods in that Trading Day. Each ~~Preliminary~~ Initial Settlement Statement will include a statement of:

(a) the amount payable or receivable by the Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for each charge referred to in Section 11 for each Settlement Period in the relevant Trading Day;

(b) the total amount payable or receivable by that Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO for each charge for all Settlement Periods in that Trading Day after the amounts payable and the amounts receivable under (a) have been netted off pursuant to Section 11.29; and

(c) the components of each charge in each Settlement Period except for information contained in the Imbalance Energy ~~R~~report referred to in this Section 11.29.7.1.1.

Each ~~Preliminary~~ Initial Settlement Statement shall also be accompanied by a breakdown of the components of the Imbalance Energy Charge (the "Imbalance Energy ~~R~~report").

11.29.7.1.2 Each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO shall have a period of eight (8) Business Days from the issuance of an ~~Preliminary~~ Initial Settlement Statement during which it may review the ~~Preliminary~~ Initial Settlement Statement T+38BD and notify the CAISO of any errors. No later than fifty-one (51) Business Days after the Trading Day to which it relates, the CAISO shall issue an Initial Settlement Statement Reissue or a Recalculation ~~Final~~ Settlement Statement to each Scheduling Coordinator or CRR Holder for that Trading Day.

11.29.7.1.3 ~~Final~~Initial Settlement Statement Reissues and Recalculation Settlement Statements.

The CAISO shall provide to each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO an Initial Settlement Statement Reissue or a Recalculation ~~Final~~ Settlement Statement in accordance with the CAISO Tariff and the CAISO Payments Calendar. The Initial Settlement Statement Reissue or Recalculation~~Final~~ Settlement Statement shall be in a format similar to that of the Initial~~Preliminary~~ Settlement Statement and shall include the same granularity of ~~all the~~ information provided in the Initial~~Preliminary~~ Settlement Statement as amended following the validation procedure.

11.29.7.1.4 Each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO shall have a period of ten (10) Business Days from the issuance of the Initial Settlement Statement Reissue or Recalculation ~~Final~~ Settlement Statement during which it may review the Incremental

Changes on the Initial Settlement Statement Reissue or Recalculation ~~Final~~ Settlement Statement and notify the CAISO of any errors. No later than twenty-five (25) Business Days from the date of issuance of the Initial Settlement Statement Reissue or Recalculation~~Final~~ Settlement Statement, the CAISO shall issue the 76th Day Recalculation Settlement Statement and shall incorporate any required corrections in a subsequent ~~Preliminary~~ Initial Settlement Statement.

11.29.7.2 Basis for Billing and Payment.

The Initial Settlement Statement T+38BD, Initial Settlement Statement Reissue, Recalculation Settlement Statement and the Recalculation Settlement Statement T+76BD ~~Preliminary and the Final Settlement Statements~~ shall constitute the basis for billing and associated automatic funds transfers in accordance with this CAISO Tariff. The ~~Preliminary~~ Initial Settlement Statement T+38BD shall constitute the basis for billing and associated automatic funds transfers for all charges in the first instance. The Initial Settlement Statement Reissue and Recalculation ~~Final~~ Settlement Statement shall constitute the basis for billing and associated automatic funds transfers for adjustments to charges set forth in the ~~Preliminary~~ Initial Settlement Statement T+38BD. Each Scheduling Coordinator, CRR Holder, Black Start Generator, and Participating TO shall pay any net debit and shall be entitled to receive any net credit shown in an ~~i~~Invoice or Payment Advice on the Payment Date, whether or not there is any dispute regarding the amount of the debit or credit.

11.29.7.2.1 Elimination of Invoices under $10.00.

Preliminary and final ~~i~~Invoices and Payment Advices ~~either~~ due to or from any Market Participant for amounts less than $10.00 will be adjusted to $0.00 and no amount will be due to or from that Market Participant for that ~~i~~Invoice or Payment Advice.

11.29.7.3 Settlement Statement Re-runs and Post Final Adjustments.

The CAISO is authorized to perform Settlement Statement Re-runs following approval of the CAISO Governing Board. A request to perform a Settlement Statement Re-run may be made at any time by a Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO by notice in writing to the CAISO Governing Board. The CAISO Governing Board shall, in considering whether to approve a

request for a Settlement Statement Re-run, determine in its reasonable discretion~~,~~ whether there is good cause to justify the performance of a Settlement Statement Re-run.

* * *

11.29.7.3.2 The cost of a Settlement Statement Re-run shall be borne by the Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO requesting it, unless the Settlement Statement Re-run was needed due to a clerical oversight or error on the part of the CAISO staff.

11.29.7.3.3 Where a Settlement Statement Re-run indicates that the accounts of Scheduling Coordinators, CRR Holders, Black Start Generators, or Participating TOs should be debited or credited to reflect alterations to Settlements previously made under this CAISO Tariff, for those Scheduling Coordinators, CRR Holders, Black Start Generators, or Participating TOs affected by the statement re-run, the CAISO shall reflect the amounts to be debited or credited in the next subsequent Recalculation ~~Preliminary~~ Settlement Statement~~s~~ that it issues following the Settlement Statement Re-run to which the provisions of this Section 11 apply.

11.29.7.3.4 Reruns, post closing adjustments and the financial outcomes of CAISO ADR Procedures and any other ~~D~~ddispute ~~R~~rresolution may be invoiced separately from monthly market activities. The CAISO shall provide a ~~m~~MMarket ~~n~~NNotice at least 30 days prior to such invoicing identifying the components of such ~~i~~IInvoice or Payment Advice.

11.29.8 Confirmation and Validation.

11.29.8.1 Confirmation.

It is the responsibility of each Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO to notify the CAISO if it fails to receive a ~~Preliminary~~ Settlement Statement ~~or a Final Settlement Statement~~ on the date specified for the publication of such Settlement Statement in the CAISO Payments Calendar. Each Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO shall be deemed to have received its Settlement Statement on the dates specified, unless it notifies the CAISO to the contrary.

11.29.8.2 Validation.

Each Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO shall have the opportunity to review the terms of the ~~Preliminary~~Initial Settlement Statement~~s~~ T+38BD that it receives. The Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO shall be deemed to have validated each ~~Preliminary~~ Initial Settlement Statement unless it has raised a dispute or reported an exception within eight (8) Business Days from the date of issuance. Once validated, an Initial ~~Preliminary~~ Settlement Statement shall be binding on the Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO to which it relates, unless the CAISO performs a Settlement Statement ~~r~~Re-run pursuant to Section 11.29.7.3 ~~of this CAISO Tariff~~.

The notice of dispute, if any, shall state clearly the Trading Day, the issue date of the ~~Preliminary~~ Initial Settlement Statement, the item disputed, the reasons for the dispute, the amount claimed (if appropriate) and shall be accompanied with all available evidence reasonably required to support the claim.

11.29.8.3 Validation of ~~Final~~ Initial Settlement Statement~~s~~ Reissue and Recalculation Settlement Statements.

Each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO shall have the opportunity to review the Incremental Changes that appear on the Initial Settlement Statement Reissue and Recalculation~~Final~~ Settlement Statement that it receives. The Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO shall be deemed to have validated the Incremental Changes on each Initial Settlement Statement Reissue and Recalculation ~~Final~~ Settlement Statement unless it has raised a dispute or reported an exception regarding those Incremental Changes within ten (10) Business Days from the date of issuance. Once validated, the Incremental Changes on the Initial Settlement Statement Reissue and Recalculation~~Final~~ Settlement Statement shall be binding on the Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO to which it relates, unless the CAISO performs a Settlement Statement ~~r~~Re-run pursuant to Section 11.29.7.3 ~~of this CAISO Tariff~~.

The notice of dispute shall state clearly the Trading Day, the issue date of the Initial Settlement Statement Reissue and Recalculation~~Final~~ Settlement Statement, the item disputed, the reasons for the dispute, the amount claimed (if appropriate) and shall be accompanied with all available evidence reasonably required to support the claim. The only Recalculation Settlement Statement that cannot be disputed is the one issued on T+59BD.

11.29.8.4 Recurring Disputes or Exceptions.

A Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO may request the CAISO to treat as recurring a dispute or exception raised in accordance with Sections 11.29.8.1 and 11.29.8.2 above, if a dispute or exception would apply to subsequent ~~Preliminary~~ Initial and the Initial Settlement Statement Reissue and Recalculation~~Final~~ Settlement Statements. A request for recurring treatment may be made for any valid reason provided that subsequent Initial Settlement Statements T+38BD, Initial Settlement Statement Reissue and Recalculation ~~Preliminary and Final~~ Settlement Statements would be affected, including but not limited to, that the disputed calculation will recur, or that a disagreement as to policy will affect calculations in subsequent Initial Settlement Statement T+38BD, the Initial Settlement Statement Reissue and Recalculation~~Preliminary and Final~~ Settlement Statements. If a Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO wishes to request that the CAISO treat a dispute as recurring, it shall, in the notice, clearly indicate that it requests such treatment and set forth in detail the reasons that support such treatment. To the extent possible, the Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO shall state the types of charges and dates to which the dispute will apply, and provide estimates of the amounts that will likely be claimed on each date.

The CAISO shall make a determination on such a request within five (5) Business Days of receipt. To preserve its right to dispute an item, a Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO must continue to raise a dispute or report an exception until it is notified by the CAISO that the CAISO agrees to treat the dispute or exception as recurring. If the CAISO grants a request to treat a dispute or exception as recurring, the dispute raised or exception reported by the Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO shall be deemed to apply to every subsequent Initial Settlement Statement T+38BD, the Initial Settlement Statement Reissue and Recalculation~~Preliminary and Final~~ Settlement Statement provided to the Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO from the date that the CAISO grants the request for recurrent treatment until: a) ninety (90) days have elapsed, unless the CAISO indicates a different expiration date on its response to the request, in which case the expiration date shall be as stated by the CAISO~~,~~ in its response or b) the dispute or exception is resolved, whichever is shorter. The CAISO may

deny a request that the CAISO treat a dispute as recurring for any valid reason, including because the request is not adequately specific as to the basis for recurring treatment or the subsequent calculations that will be affected.

11.29.8.5 Amendment.

Regarding a dispute related to an Initial ~~Preliminary~~ Settlement Statement, if the CAISO agrees with the amount claimed, it shall incorporate the relevant data into the Initial Settlement Statement Reissue or Recalculation~~Final~~ Settlement Statement. Regarding a dispute related to an Incremental Change in an Initial Settlement Statement Reissue or Recalculation~~Final~~ Settlement Statement, the CAISO shall make a determination on the dispute no later than twenty-five (25) Business Days from the issuance of the Initial Settlement Statement Reissue or Recalculation~~Final~~ Settlement Statement, and, if the CAISO agrees with the amount claimed, shall incorporate the relevant data into the next ~~available Preliminary~~Recalculation Settlement Statement issued on T+76BD.

11.29.8.6 CAISO Contact.

If the CAISO does not agree with the amount claimed or if it requires additional information, it shall make reasonable efforts (taking into account the time it received the notice of dispute and the complexity of the issue involved) to contact the relevant Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO to resolve the issue before issuing the Initial Settlement Statement Reissue or Recalculation~~Final~~ Settlement Statement. If it is not possible to contact the relevant party, the CAISO shall issue the Initial Settlement Statement Reissue or Recalculation~~Final~~ Settlement Statement without taking into account the dispute notice.

11.29.8.7 Payment Pending Dispute.

Each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO which receives an ~~i~~Invoice or Payment Advice shall pay any net debit and shall be entitled to receive any net credit shown in the ~~i~~Invoice or Payment Advice on the Payment Date, whether or not there is any dispute regarding the amount of the debit or credit. The provisions of Section 13 ~~(Dispute Resolution) of the CAISO Tariff~~ shall apply to the disputed amount.

11.29.9 Payment Procedures.

11.29.9.1 All Payments to Be Made Through the CAISO.

All Scheduling Coordinators, CRR Holders, Black Start Generators, and Participating TOs shall discharge their obligations to pay the amounts owed by them and shall receive payments of all amounts owed to them under this CAISO Tariff only through the CAISO.

11.29.9.2 CAISO Accounts to be Established.

The CAISO is authorized to establish and maintain bank accounts held in trust for Market Participants and obtain lines of credit and other banking facilities (not exceeding an aggregate amount set by the CAISO Governing Board) necessary for the operation of its Settlement and billing procedures. Unless otherwise specified in this CAISO Tariff the CAISO will recover all costs incurred in connection with these CAISO banking facilities through the appropriate component of the Grid Management Charge. The CAISO shall establish and operate the following accounts:

* * *

11.29.9.2.2 A CAISO Reserve Account from which any debit balances on the CAISO Clearing Account at the close of banking business on each Business Day shall be settled or reduced in accordance with this CAISO Tariff. The CAISO shall use the Financial ~~s~~Security provided by a Scheduling Coordinator, CRR Holder, or Candidate CRR Holder pursuant to Section 12~~.1 of this CAISO Tariff~~, if necessary, to clear any debit balances on the CAISO Reserve Account that may arise as a result of that Scheduling Coordinator's or CRR Holder's failure to pay an amount due under this CAISO Tariff;~~.~~

11.29.9.2.3 A CAISO Surplus Account~~.~~; and

11.29.9.2.4~~3.1~~ Such other accounts as the CAISO deems necessary or convenient for the purpose of efficiently implementing the funds transfer system under this CAISO Tariff. The CAISO shall notify Market Participants of the establishment of such accounts through the CAISO Website and by issuance of a Market Notice.

11.29.9.3~~.2~~ Accounts of the Scheduling Coordinators, CRR Holders, Black Start Generators, and Participating TOs.

Each Scheduling Coordinator, CRR Holder, Black Start Generator, and ~~each~~ Participating TO shall establish and maintain a Settlement Account at a commercial bank located in the United States and

reasonably acceptable to the CAISO which can effect money transfers via Fed-Wire where payments to and from the CAISO Clearing Account shall be made in accordance with this CAISO Tariff. Scheduling Coordinators, CRR Holders, and Black Start Generators may, but will not be required to, maintain separate accounts for receipts and payments. Each Scheduling Coordinator, CRR Holder, and Black Start Generator shall notify the CAISO of its account details and of any changes to those details in accordance with the provisions of its Scheduling Coordinator Agreement, CRR Entity Agreement, or Interim Black Start Agreement. Participating TOs will notify the CAISO of their Settlement Account details in accordance with Section 2.2.1 of their Transmission Control Agreement and may notify the CAISO from time to time of any changes by giving at least seven (7) days written notice before the new account becomes operational.

* * *

11.29.9.6 Use of Accounts.

11.29.9.6.1 Clearing Account.

(a) Subject to Section 11.29.3 each CAISO Debtor shall remit to the CAISO Clearing Account the amount shown on the ~~i~~Invoice as payable by that CAISO Debtor for value not later than 10:00 am on the Payment Date.

(b) On the Payment Date the CAISO shall be entitled to cause the transfer of such amounts held in a Scheduling Coordinator's or CRR Holder's CAISO prepayment account to the CAISO Clearing Account as provided in Section 11.29.3.

The CAISO shall calculate the amounts available for distribution to CAISO Creditors on the Payment Date and shall give irrevocable instructions to the CAISO Bank to remit from the CAISO Clearing Account to the relevant Settlement Accounts maintained by the CAISO Creditors, the aggregate amounts determined by the CAISO to be available for payment to CAISO Creditors for value by close of business on the Payment Date if no CAISO Debtors are in default. If a CAISO Debtor is in default and until all defaulting amounts have been collected, the CAISO shall make payments as soon as practical within five (5) ~~b~~Business ~~d~~Days of the collection date posted in the CAISO Payments Calendar. If required, the CAISO

shall instruct the CAISO Bank to transfer amounts from the CAISO Reserve Account to enable the CAISO Clearing Account to clear.

The CAISO is authorized to instruct the CAISO Bank to debit the CAISO Clearing Account and transfer to the relevant CAISO ~~a~~Account sufficient funds to pay in full the Grid Management Charge falling due on any Payment Date~~y~~ with priority over any other payments to be made on that or on subsequent days out of the CAISO Clearing Account.

11.29.9.6.2 Reserve Account.

The CAISO Reserve Account shall be available to the CAISO for the purpose of providing funds to clear the CAISO Clearing Account in the event that there are insufficient funds in the CAISO Clearing Account to pay CAISO Creditors. If there are insufficient funds in the CAISO Clearing Account to pay CAISO Creditors and clear the account on any Payment Date, due to payment default by one or more CAISO Debtors, the CAISO shall transfer funds from the CAISO Reserve Account to the CAISO Clearing Account to clear it by close of banking business on that Payment Date pursuant to Section 11.29.13.4.

If the CAISO Reserve Account is drawn upon, the CAISO shall as soon as possible thereafter take any necessary steps against the defaulting Scheduling Coordinator or CRR Holder, including making any calculations or taking any other appropriate action, to replenish the CAISO Reserve Account including drawing on any credit support or other Financial Security provided by the defaulting Scheduling Coordinator, Candidate CRR Holder or CRR Holder pursuant to Section 12~~.1 of this CAISO Tariff~~ or serving demands on any defaulting Scheduling Coordinator, Candidate CRR Holder or CRR Holder if Financial Security has been exhausted or if no Financial Security is available due to establishment of an Unsecured Credit Limit~~s with an Approved Credit Rating~~.

The proceeds of drawings under any line of credit, ~~or~~ other credit facility, or other Financial Security of the CAISO Reserve Account shall be held on trust for CAISO Creditors. If the CAISO Reserve Account is replenished as provided for in this Section 11.29.9.6.2, any credits shall be held on trust for all CAISO Creditors.

11.29.9.6.2.1 Replenishing the CAISO Reserve Account Following Payment Default.

If the CAISO has debited the CAISO Reserve Account then:

(a) If, after the CAISO has debited the CAISO Reserve Account on a Payment Date, the CAISO Bank receives a remittance from a CAISO Debtor which has not been (but should have been, if it had been received on a timely basis) credited to the CAISO Clearing Account by 10:00 am on the Payment Date and which required the debiting of the CAISO Reserve Account, such remittance shall be credited to the CAISO Reserve Account.

(b) The proceeds of any enforcement of Financial Security and/or amounts recovered under proceedings shall be credited to the CAISO Reserve Account.

(c) If after taking reasonable action the CAISO determines that the ~~D~~default ~~A~~amount (or any part) and/or Interest cannot be recovered, such amounts shall be deemed to be owing by those Market Participants who were CAISO Creditors on the relevant Payment Date pro rata to the net payments they received on that Payment Date and shall be accounted for by way of a charge in the next Settlement Statements of those CAISO Creditors. Such charge shall be credited to the CAISO Reserve Account.

11.29.9.6.3 Surplus Account.

The CAISO shall establish and maintain a bank account ~~in accordance with this Protocol~~ denominated the "~~"~~CAISO Surplus Account~~"~~. The CAISO Surplus Account shall include the following:

(a) Any amounts paid to the CAISO in respect of penalties or ~~s~~Sanctions referred to in Section 11.14 shall be credited to the CAISO Surplus Account, subject, however, to Section 11.29.9.6.1(b).

(b) The funds referred to in Section 11.29.9.6.1(a) pertaining to penalties or ~~s~~Sanctions as provided in Section 11.14 shall first be applied towards any expenses, loss or costs incurred by the CAISO except for that portion of those amounts collected pursuant to 37.9.4. Any excess after such

application will be credited to the CAISO Surplus Account pursuant to 11.29.9.6.1(a).

(c) The funds referred to in Section 11.29.9.6.1(a) pertaining to default interest referred to in Section 11.29.13.1 shall first be applied towards any unpaid CAISO ~~c~~Creditor balances for the ~~t~~Tradinge ~~m~~Month in which the default interest was assessed and second to any other unpaid CAISO ~~c~~Creditor balances. Only after all unpaid CAISO ~~c~~Creditor balances are satisfied in full will any excess funds pertaining to default ~~i~~Interest ~~-~~be credited to the CAISO Surplus Account pursuant to Section 11.29.9.6.1(a).

In the event that there are funds in the CAISO Surplus Account in excess of an amount to be determined by the CAISO Governing Board and identified in a Market ~~n~~Notice~~d~~ by the CAISO to Market Participants, the amount of such excess will be distributed to Scheduling Coordinators using the same method of apportioning the refund as the method employed in apportioning the liability for the Grid Management Charge.

11.29.10 ~~Invoices~~Billing and Payment.

The CAISO shall prepare and send to each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO two ~~i~~Invoices or Payment Advices for each calendar month. The first ~~i~~Invoice or Payment Advice will be based on the ~~Preliminary~~ Initial Settlement Statement~~s~~ T+38BD and the second ~~i~~Invoice or Payment Advice will be based on the Initial Settlement Statement Reissue or Recalculation~~Final~~ Settlement Statement(s). Each ~~i~~Invoice or Payment Advice will show amounts which are to be paid by or to each Scheduling Coordinator, CRR Holder, Black Start Generator or Participating TO, the Payment Date, being the date on which such amounts are to be paid or received and details of the CAISO Clearing Account to which any amounts owed by Scheduling Coordinators, CRR Holder, Black Start Generator or Participating TO are to be paid.

The Invoices or Payment Advices will also include the total charges for each component of~~A separate invoice for~~ the Grid Management Charge, ~~stating the rate, billing determinant volume and~~the total charges associated with any ~~for each of its eight components, will be issued by the CAISO to the Scheduling Coordinator. A separate invoice for~~ Interest~~, issued on the preliminary invoice date, stating the total~~

~~charges~~ for each relevant Tradinge Month, the FERC Annual Charges due monthly, ~~in which interest is charged, will be issued by the CAISO~~ as well as any disbursements associated with a shortfall receipt distribution.

A separate Invoice for the FERC Annual Charges due annually will be issued by the CAISO to the Scheduling Coordinator in accordance with Section 11.19.1.2.

A separate Invoice for a shortfall allocation will be issued by the CAISO to Scheduling Coordinators in the event of a payment default in accordance with Section 11.29.17.1.

Settlement Statement Reruns, post closing adjustments and the financial outcomes of CAISO ADR Procedures and any other ~~D~~dispute ~~R~~resolution may be invoiced separately from monthly market activities. The CAISO shall provide a ~~m~~Market ~~n~~Notice at least 30 days prior to such invoicing identifying the components of such ~~i~~Invoice or Payment Advice.

11.29.10.1 Emergency Procedures.

11~~0~~.29.10.2 Use of Estimated Data.

In the event of an emergency or a failure of any of the CAISO software or business systems, the CAISO may use estimated Settlement Statements and ~~i~~Invoices and Payment Advices and may implement any temporary variation of the timing requirements relating to the Settlement and billing process contained in the CAISO Tariff. Details of the variation and the method chosen to produce estimated data, Settlement Statements and ~~i~~Invoices and Payment Advices will be published on the CAISO Website.

11.29.10.3 Payment of Estimated Statements and Invoices.

When estimated Settlement Statements and ~~i~~Invoice~~s~~ or Payment Advices are issued by the CAISO, payments between the CAISO and Market Participants shall be made on an estimated basis and the necessary corrections shall be made by the CAISO as soon as practicable. The corrections will be reflected as soon as practicable in later Settlement Statements and ~~i~~Invoices and Payment Advices issued by the CAISO. Failure to make such estimated payments shall result in the same consequences as a failure to make actual payments.

11.29.10.4 Validation and Correction of Estimated Statements and Invoices.

The CAISO shall use its best efforts to verify the estimated data and to make the necessary corrections as soon as practicable. The corrections will be reflected as soon as practicable in later Settlement Statements and ~~i~~Invoices and Payment Advices issued by the CAISO.

11.29.10.5 Estimated Statements to be Final.

In the event that the CAISO is of the opinion that, despite its best efforts, it is not possible for it to verify the estimated data because actual data is not reasonably expected to become available to the CAISO in the foreseeable future, the CAISO shall consult with the Market Participants in order to develop the most appropriate substitute data including using data provided by Market Participants. Following such determination of substitute data, the CAISO shall send to the relevant Market Participants revised Settlement Statements and Invoices and Payment Advices. The provisions of Section 11.29.8.6 shall apply to payment of revised ~~i~~Invoices issued in accordance with these emergency procedures. Failure to make payments of such revised ~~i~~Invoices shall result in the same consequences as a failure to make actual payments.

11.29.11 Instructions for Payment.

Each Scheduling Coordinator or CRR Holder shall remit to the CAISO Clearing Account the amount shown on the ~~i~~Invoice as payable by that Scheduling Coordinator or CRR Holder for value not later than 10:00 a.m. on the Payment Date.

11.29.12 CAISO's Responsibilities.

On the due date for payment of amounts shown in an ~~i~~Invoice, the CAISO shall ascertain whether all amounts required to be remitted to the CAISO Clearing Account have been credited to it. If any such amount has not been so credited, it shall ascertain which Scheduling Coordinators or CRR Holder have failed to pay the amount owed by them and it may take steps to recover any overdue amount.

11.29.13 Non-payment by a Scheduling Coordinator or CRR Holder.

11.29.13.1 Notification and Interest.

If a Scheduling Coordinator or CRR Holder becomes aware that a payment for which it is responsible will not be remitted to the CAISO Clearing Account on time, it shall immediately notify the CAISO of the fact and the reason for the non-payment. If the Scheduling Coordinator or CRR Holder fails to pay any sum to

the CAISO when due and after the CAISO draws upon any and all available Financial Security ~~is unable to enforce the Security (if any)~~ provided by the defaulting Scheduling Coordinator or CRR Holder, the Scheduling Coordinator or CRR Holder shall pay ~~i~~Interest on the overdue amount for the period from the Payment Date to the date on which the payment is remitted to the CAISO Clearing Account, together with any related transaction costs incurred by the CAISO. ~~-~~The CAISO shall apply all such Interest payments on the ~~D~~default ~~A~~amount on a pro rata basis to CAISO Creditors in relation to amounts past due in the order of the creation of such debts.

11.29.13.2 Payment Default.

Subject to Section 11.29.13.6, if by 10:00 am on a Payment Date the CAISO, in its reasonable opinion, believes that all or any part of any amount due to be remitted to the CAISO Clearing Account by any Scheduling Coordinator or CRR Holder will not or has not been remitted and there are insufficient funds in the relevant Scheduling Coordinator's or CRR Holder's CAISO prepayment account (the amount of insufficiency being referred to as the "~~D~~default ~~A~~amount"), the CAISO shall take the following actions to enable the CAISO Clearing Account to clear not later than the close of banking business on the relevant Payment Date.

11.29.13.3 Enforcing the Financial Security of a Defaulting Scheduling Coordinator or CRR Holder.

Subject to Section 11.29.13.6, the CAISO shall make reasonable endeavors to enforce the defaulting Scheduling Coordinator's or CRR Holder's Financial Security (if any) to the extent necessary to pay the ~~D~~default ~~A~~amount. If it is not practicable to obtain clear funds in time to effect payment to CAISO Creditors on the same day the CAISO shall proceed in accordance with 11.29.13.4 or 11.29.17.1 as applicable.

* * *

11.29.13.5 Action against a Defaulting Scheduling Coordinator or CRR Holder.

The CAISO shall as soon as possible after taking action under 11.29.13.4 take any steps it deems appropriate against the defaulting Scheduling Coordinator to recover the ~~D~~default ~~A~~amount (and any Interest as set out in Section 11.29.13.3 including enforcing any Financial Security, exercising its rights of

recoupment or set-off and/or bringing proceedings against the defaulting Scheduling Coordinator or CRR Holder pursuant to Section 11.29.21.1 ~~of the CAISO Tariff~~.

11.29.13.6 Default to be Remedied Promptly.

In the event that the CAISO reasonably believes that an outstanding amount which has not been paid by 10:00 am on the relevant Payment Date, is likely to be paid no later than close of banking business on the next Business Day then the CAISO may, but shall not be obliged to, delay enforcing that CAISO Debtor's Financial Security or taking other measures to recover payment until after the close of banking business on the next ~~Banking~~Business Day but Interest shall nonetheless accrue pursuant to Section 11.29.13.1.

* * *

11.29.13.9 Interest Accruing while Enforcing the Financial Security.

If the CAISO has debited the CAISO Reserve Account and it subsequently succeeds in enforcing the Financial Security provided by the defaulting Scheduling Coordinator or CRR Holder, the CAISO shall be entitled to withdraw from such Financial Security in addition to the ~~D~~ddefault ~~A~~aamount, all costs incurred and ~~i~~Interest accrued to the CAISO as a result of debiting the CAISO Reserve Account from the date of such debit to the date of enforcement of the said Financial Security.

11.29.13.10 Application of Funds Received.

Amounts credited to the CAISO Clearing Account in payment of a ~~D~~ddefault ~~A~~aamount (as set out in Section 11.29.9.6.2.1) or as a result of enforcing the defaulting CAISO Debtor's Financial Security shall be applied to the CAISO Reserve Account pursuant to Section 11.29.9.6.2.1 to reduce amounts outstanding under any CAISO banking facilities used to fund the CAISO Reserve Account on the relevant Payment Date and the balance (if any) shall be applied to reimburse pro rata any CAISO Creditors whose payments were reduced pursuant to Section 11.29.17.1.

* * *

11.29.17 Alternative Payment Procedures.

11.29.17.1 Pro Rata Reduction to Payments.

If it is not possible to clear the CAISO Clearing Account on a Payment Date because of an insufficiency of funds available in the CAISO Reserve Account or by enforcing any ~~guarantee, letter of credit or other~~

~~credit support~~ Financial Security provided by a defaulting Scheduling Coordinator or CRR Holder, the CAISO shall reduce payments to all CAISO Creditors proportionately to the net amounts payable to them on the relevant Payment Date to the extent necessary to clear the CAISO Clearing Account through a shortfall allocation. The CAISO shall account for such reduction in the CAISO ledger accounts as amounts due and owing by the non-paying CAISO Debtor to each CAISO Creditor whose payment was so reduced. The provisions of this section shall not apply to non-payment of any penalty amount that a Scheduling Coordinator or CRR Holder has disputed and FERC has specifically authorized the Scheduling Coordinator or CRR Holder to net its payment to the CAISO by the amount of the penalty in question in accordance with Section 37.9.3, in which case the non-payment amount will be allocated exclusively to the CAISO penalty trust account and not allocated to CAISO Creditors.

* * *

11.29.19 Payment Errors.

11.29.19.1 Overpayments.

If for any reason, including the negligence of the CAISO Bank or the CAISO, a CAISO Creditor receives an overpayment on any Payment Date, the CAISO Creditor shall within two (2) Business Days from the date of receipt of the funds into its Scheduling Coordinator or CRR Holder Settlement Account, notify the CAISO of the amount of the overpayment and shall forthwith pay the overpayment into a CAISO Account specified by the CAISO.

* * *

11.29.21 Proceedings to Recover Overdue Amounts.

11.29.21.1 Proceedings Brought by the CAISO.

Without prejudice to the right of any Scheduling Coordinator, CRR Holder, Black Start Generator, or Participating TO to bring such proceedings as it sees fit in connection with matters related to the recovery of amounts owed to it, the CAISO may bring proceedings against any Scheduling Coordinator or CRR Holder on behalf of those Scheduling Coordinators, CRR Holders, Black Start Generators, or Participating TOs who have indicated to the CAISO their willingness for the CAISO first so to act, for the recovery of any amounts due by that Scheduling Coordinator or CRR Holder, if the CAISO has first reached

agreement with the Scheduling Coordinators, CRR Holders, Black Start Generators, or Participating TOs as to the appropriate remuneration, is indemnified to its reasonable satisfaction, and receives such Financial ~~s~~Security as it may reasonably request against all costs, claims, expenses (including legal fees) and liabilities which it will or may sustain or incur in complying with such instructions.

11.29.21.2 Evidence of Unpaid Amount.

The CAISO shall, on request, certify in writing the amounts owed by a CAISO Debtor that remain unpaid and the CAISO Creditors to whom such amounts are owed and shall provide certified copies of the relevant Initial Settlement Statement T+38BD and the Initial Settlement Statement Reissue and Recalculation~~Preliminary and Final~~ Settlement Statements, ~~i~~Invoices, Payment Advices, and other documentation on which the CAISO's certificate was based to the CAISO Debtor and the relevant CAISO Creditors. A CAISO certificate given under this Section 11.29.21.2 may be used as prima facie evidence of the amount due by a CAISO Debtor to CAISO Creditors in any legal proceedings.

11.29.22 Data Gathering and Storage.

11.29.22.1 Required Capabilities.

The CAISO shall ensure that the Settlement process shall contain, at a minimum, the following data gathering and storage capabilities:

(a) the accurate, time-sequenced, end-to-end traceability of the Settlements process so that Scheduling Coordinators, CRR Holders and Participating TOs can fully verify their Settlement Statements;

(b) the ability to specify and accept data that is specifically needed for audit trail requirements; and

(c) the archiving of Meter Data, Settlement runs and other information used to prepare Settlement Statements to be consistent with the time frame required to re-run the Settlement process by state laws and the rules of the Local Regulatory Authority.

* * *

11.29.23 Communications.

The Initial Settlement Statement T+38BD, any Initial Settlement Statement Reissue, the Recalculation~~Preliminary Settlement Statements, Final~~ Settlement Statements and ~~i~~Invoices, and Payment Advices will be considered issued to CAISO Creditors or CAISO Debtors when released by the CAISO's secure communication system. Communications on a Payment Date relating to payment shall be made by the fastest practical means including by telephone. If there is a failure of a communication system and it is not possible to communicate by electronic means, then the CAISO or CAISO Creditor or CAISO Debtor, as the case may be, shall communicate by facsimile but only if the recipient is first advised by telephone to expect the facsimile. Methods of communication between the CAISO and Market Participants may be varied by the CAISO giving not less than ten (10) days notice to Market Participants on the CAISO's secure communication system.

11.29.24 CAISO Payments Calendar.

11.29.24.1 Preparation.

In September of each year, the CAISO will prepare a draft CAISO Payments Calendar for the following calendar year showing for each Trading Day:

(a) The date by which Scheduling Coordinators are required to provide Settlement Quality Meter Data for all their Scheduling Coordinator Metered Entities for each Settlement Period in the Trading Day;

(b) The date on which the CAISO will issue ~~Preliminary~~ Initial Settlement Statements and ~~i~~Invoices and Payment Advices to Scheduling Coordinators or CRR Holders, Black Start Generators and Participating TOs for that Trading Day;

(c) The date by which Scheduling Coordinators, CRR Holders, Black Start Generators and Participating TOs are required to notify the CAISO of any disputes in relation to their ~~Preliminary~~ Initial Settlement Statements pursuant to Section 11.29.8.2;

(d) The date on which the CAISO will issue the Initial Settlement Statement Reissue and Recalculation~~Final~~ Settlement Statements for T+51BD, T+59BD

and T+76BD, and ~~i~~Invoices and Payment Advices to Scheduling Coordinators, CRR Holders, Black Start Generators and Participating TOs for that Trading Day;

(e) The date and time by which CAISO Debtors are required to have made payments into the CAISO Clearing Account in payment of ~~i~~Invoices for that Trading Day; and

(f) The dates and times on which CAISO Creditors will receive payments from the CAISO Clearing Account of amounts owing to them for that Trading Day.

(g) In relation to Reliability Must-Run Charges and ~~P~~payments, the details set out in paragraph 3 of Appendix N, Part J.

The CAISO will make a draft of the CAISO Payments Calendar available on the CAISO Website to Scheduling Coordinators, CRR Holders, Black Start Generators, Participating TOs and RMR Owners any of which may submit comments and objections to the CAISO within two weeks of the date of posting of the draft on the CAISO Website. No later than October 31st in each year, the CAISO will publish the final CAISO Payments Calendar for the following calendar year, after considering the comments and objections received from Scheduling Coordinators, CRR Holders, Black Start Generators, Participating TOs and RMR Owners. The final CAISO Payments Calendar will be posted on the CAISO Website, and will show for the period from 1 January to 31 December in the next succeeding year (both dates inclusive), the dates on which Settlement Statements shall be published by the CAISO and the Payment Dates on which the CAISO will pay the Participating TOs the Wheeling revenues allocated to them pursuant to Section 26.1.4.3 ~~of this CAISO Tariff~~.

* * *

11.29.24.3 Final Calendar Binding.

The final CAISO Payments Calendar shall be binding on the CAISO and on Scheduling Coordinators, CRR Holders, Black Start Generators, Participating TOs and RMR Owners.

* * *

11.29.24.5 Update the Final Payments Calendar.

If, as a result of an ~~tariff~~ amendment to the CAISO Tariff approved by FERC, the final CAISO Payments Calendar developed in accordance with Section 11.29.24 is rendered inconsistent with the timing set forth in this~~e~~ CAISO ~~t~~Tariff, the CAISO shall update the final CAISO Payments Calendar to make it consistent with the CAISO ~~t~~Tariff as approved by FERC on the date on which the CAISO ~~t~~Tariff amendment goes into effect. The CAISO shall simultaneously send out a Market ~~n~~Notice to Market Participants that the final CAISO Payments Calendar has been revised.

11.30 Auditing.

All of the data, information, and estimates the CAISO uses to calculate Settlement amounts shall be subject to the auditing requirements of Section 22.1. The CAISO shall calculate these amounts using the software referred to in Section 11.29.5.4 except in cases of system breakdown when it shall apply the procedures set out in 11.29.10.1 (Emergency Procedures).

* * *

14.4 Market Participant's Indemnity.

Each Market Participant, to the extent permitted by law, shall indemnify the CAISO and hold it harmless against all losses, damages, claims, liabilities, costs or expenses (including legal expenses) arising from any act or omission of the Market Participant except to the extent that they result from the CAISO's default under this CAISO Tariff or gross negligence or intentional wrongdoing on the part of the CAISO or of its officers, directors or employees.

14.5 Limitation on Liability.

14.5.1 Liability for Damages.

Except as provided for in Section 13.3.14, the CAISO shall not be liable in damages to any Market Participant for any losses, damages, claims, liability, costs or expenses (including legal expenses) arising from the performance or non-performance of its obligations under this CAISO Tariff, including but not limited to any adjustments made by the CAISO in Inter-Scheduling Coordinator Trades, except to the extent that they result from gross negligence or intentional wrongdoing on the part of the CAISO.

14.5.2 Exclusion of Certain Types of Loss.

The CAISO shall not be liable to any Market Participant under any circumstances for any consequential or indirect financial loss including but not limited to loss of profit, loss of earnings or revenue, loss of use, loss of contract or loss of goodwill except to the extent that it results from except to the extent that it results from gross negligence or intentional wrongdoing on the part of the CAISO.

14.6 Potomac Economics, Ltd. Limitation Of Liability.

Potomac Economics, Ltd. shall not be liable in damages to any Market Participant for any losses, damages, claims, liability, costs or expenses (including legal expenses) arising from its calculation of reference levels under its Consultant Agreement with the CAISO dated as of September 3, 2002, except to the extent that they result from gross negligence or intentional wrongdoing of Potomac Economics, Ltd.

* * *

16.4 Transmission Rights and Transmission Curtailment Instructions.

16.4.1 Responsibility to Create TRTC Instructions.

Each Participating TO and ~~holders of~~ Existing Rights holder will work with the CAISO to develop the Transmission Rights and Transmission Curtailment ("TRTC") Instructions that allow Existing Contracts to be exercised in a way that: (i) maintains the existing scheduling and curtailment priorities under the Existing Contract; (ii) is minimally burdensome to the CAISO (i.e., creates the least impact on the CAISO's preferred operational policies and procedures); (iii) to the extent possible, imposes no additional financial burden on either the Participating TO or the holder of Existing Rights (beyond that in the Existing Contract); (iv) consistent with the terms of the Existing Contracts, makes as much transmission capacity not otherwise utilized by the holder of Existing Rights ~~as possible~~ available as possible to the CAISO for allocation to Market Participants; (v) is minimally burdensome to the Participating TO and the Existing Rights holder from an operational point of view; and (vi) does not require the CAISO to interpret or underwrite the economics of the Existing Contract. The parties to Existing Contracts will attempt to jointly develop and agree on any TRTC Instructions that will be submitted to the CAISO. The parties to an Existing Contract shall also be responsible to submit to the CAISO any other necessary operating instructions based on their contract interpretations needed by the CAISO to enable the CAISO to perform its duties

* * *

16.4.3 Scheduling Coordinator Responsibilities

The Scheduling Coordinator designated by the parties to an Existing Contract as the responsible entity for submitting ETC Self-Schedules for the relevant Existing Contract shall submit ETC Self-Schedules consistent with the terms and conditions specified in the TRTC Instructions~~, which shall be validated as specified in Section 16.6~~.

16.4.4 Submission of TRTC Instructions.

For each Existing Contract, the Participating TO providing transmission service under the Existing Contract (or the ~~r~~Responsible PTO identified in Section 16.4.2) shall be obligated to submit the TRTC Instructions to the CAISO electronically on behalf of the holders of Existing Rights, unless the parties to

the Existing Contract agree otherwise. The Participating TO shall notify the CAISO in writing the identity of the responsible party for submission of the TRTC Instructions as decided by the parties to the Existing Contract and the term of such agreement between the parties to the Existing Contract. The Participating TO shall undertake all obligations with respect to the submission of the TRTC Instructions to the CAISO and any subsequent obligations that follow with respect to the creation, management and updates to the TRTC Instructions. The CAISO is responsible for implementing only one set of TRTC Instructions for each Existing Contract and only those TRTC Instructions that have been received and accepted by the CAISO. The Participating TO shall submit the TRTC Instructions to the CASIO associated with Existing Contracts or sets of interdependent Existing ~~c~~Contracts thirty (30) days prior to the date on which the scheduling or curtailment of the use of the Existing Rights is to change or commence.

16.4.5 TRTC Instructions Content.

TRTC Instructions will include the following information at a minimum and such other information as the CAISO may reasonably require the Participating TO to provide to enable the CAISO to carry out its functions under the CAISO Tariff, Operating Procedures and Business Practice Manuals:

(1) A unique ~~c~~Contract ~~r~~Reference ~~n~~Number for each source and sink combination applicable to the Existing Contract (~~Existing Contract reference number or~~i.e., the CRN that will be assigned by the CAISO and communicated to the Participating TO that references a single Existing Contract or a set of interdependent Existing Contracts for each source and sink combination);

(2) Whether the instruction can be exercised independent of the CAISO's day-to-day involvement ("Yes/No");

(3) Name of an operational single point of contact for instructions and a 24-hour a day telephone number for the Participating TO contact for Existing Contract issues or the agreed upon party;

(4) Name(s) and number(s) of Existing Contract(s) that are represented by the unique CRN;

(5) ~~Transmission path name(s) and location(s) (described in terms of the~~The following information as stored in the Master File: (a) the applicable Point(s) of Receipt and Point(s) of Delivery); (b) for each Point of Receipt, the resource names for the physical resources as the eligible sources (eligible physical sources include Generating Units and System Resources), and for each Point of Delivery, the resource names for the physical resources as the eligible sinks (eligible physical sinks include Load PNodes, Custom Load Aggregation Points and System Resources); (c) for each physical source or sink, the maximum Existing Rights capacity (MW) that can be scheduled as an Existing Right under the Existing Contract; and (d) for each physical source and sink, the Scheduling Coordinator(s) and their Business Associate Identification (BAID) that is(are) eligible to submit ETC Self-Schedules utilizing these sources and sinks;

(6) Names of the party(ies) to the Existing Contract(s);

(7) The Scheduling Coordinator ~~Business Associate Identification ("~~BAID~~")~~ that is entitled to the Settlement of reversal of Congestion Charges ~~(the BAID of the Scheduling Coordinator who will submit ETC Self-Schedules which make use of the Existing Contract(s))~~;

(8) Type(s) of service rights~~, amount of service right in MW,~~ by the holder of the Existing Rights, by type of service (firm, conditional firm, or non-firm), with priorities for firm and conditional firm transmission services and maximum amounts of service rights in MW;

(9) Instructions for the allowable timeframes at which the ETC Self-Schedules and ETC Self-Schedule changes may be submitted to the CAISO, which include whether the Scheduling Coordinator may submit ETC Self-Schedules or ETC Self-Schedule changes: (a) into the DAM; (b) into the HASP and the RTM; (c) after the close of the bidding into the HASP and the RTM, but before T-20 minutes for that Trading Hour of Trading Day; and (d) at or after T-20 minutes and into the Trading Hour of Trading Day; in addition, the TRTC Instructions may also include any additional comments and restrictions on the submission time of ETC Self-Schedules and ETC Self-Schedule changes~~For ETC Self-~~

~~Schedules submitted in the DAM: the time of the day preceding the Trading Day at which the Scheduling Coordinator submits ETC Self-Schedules to the CAISO referencing the Existing Contract(s) identified in the instructions and the section of the Existing Contract that provides this reference~~;

~~(10) For ETC Self-Schedules submitted in the HASP, for the HASP and RTM,: the number of minutes prior to the start of the Operating Hour at which the Scheduling Coordinator may submit ETC Self-Schedule adjustments to the CAISO regarding the Existing Rights under the Existing Contract(s) identified in the TRTC Instructions and the section of the Existing Contract that provides this right for reference;~~

~~(11) Whether or not Real-Time modifications to Schedules associated with Existing Rights are allowed at any time during the Operating Hour and the section of the Existing Contract that provides this right for reference;~~

(10~~2~~) Term or service period(s) of the Existing Contract(s);

(11~~3~~) Any special procedures that would require the CAISO to implement curtailments in any manner different ~~than~~from pro rata reduction of the transfer capability of the transmission line;~~.~~ ~~A~~any such TRTC ~~i~~Instructions submitted to the CAISO must be clear, unambiguous, and not require the CAISO to make any judgments or interpretations as to the meaning intent, results, or purpose of the curtailment procedures or the Existing Contract and the section of the Existing Contract that provides this right for reference, otherwise, they will not be accepted by the CAISO;~~.~~

(12) The forecasted usage patterns for each Existing Contract for the upcoming annual period of the annual CRR release processes as well as for the upcoming monthly period of the monthly CRR release processes, which will consist of hourly MWh data over the whole year for those resources that will use the Existing Contract; this information will be considered by the CAISO in managing its accounting for usage of Existing Rights in the release of CRRs; this information shall not be used by the CAISO to validate ETC Self-

Schedules when submitted by Scheduling Coordinators and therefore shall not affect the Existing Rights holder's ability to utilize its rights under the Existing Contract;

(13) Whether or not the Existing Contract provides for the right to self-provide Ancillary Services; and

(14) Specification of any contract requirements in the ETC that warrants special consideration in the implementation of the physical rights under the ETC.

16.4.6 Changes and Updates to TRTC Instructions.

Updates or changes to the TRTC Instructions must be submitted to the CAISO through a revised set of TRTC Instructions by the Participating TO, on an as needed or as required basis determined by the parties to the Existing Contracts. The CAISO will implement the updated or changed TRTC Instructions as soon as practicable but no later than seven (7) days after receiving clear and unambiguous details of the updated or changed instructions under normal conditions. If the CAISO finds the TRTC Instructions to be inconsistent with the CAISO Tariff, the CAISO will notify the Participating TO within forty-eight (48) hours after receipt of the updated or changed TRTC Instructions indicating the nature of the problem and allowing the Participating TO to resubmit the TRTC Instructions as if they were new, updated or changed TRTC Instructions. If the CAISO finds the updated or changed TRTC Instructions to be acceptable, the CAISO will time-stamp the updated TRTC Instructions as received, confirm such receipt to the Participating TO, and indicate the time at which the updated TRTC ~~i~~Instructions take effect if prior to the seven (7) day deadline referred to above. In the event of a System Emergency, the CAISO will implement such submitted changes to the TRTC Instructions as soon as practical.

* * *

16.4.7.2 TRTC Instructions Cannot Be Exercised Independently.

To the extent that the TRTC Instructions cannot be exercised independently of the CAISO and the results forwarded to the CAISO (because, for example, they require iteration with the CAISO's Bid submission and scheduling process, would unduly interfere with the CAISO's management of the Real-Time Market, including curtailments, or would unduly interfere with the ability of the holder of rights to exercise its

rights), the TRTC Instructions will be provided to the CAISO for day-to-day implementation. The TRTC Instructions will be provided by the Participating TO to the CAISO for implementation unless the parties to the Existing Contracts otherwise agree that the holder of the Existing Rights will do so. For these TRTC ~~i~~Instructions, the Scheduling Coordinators representing the holders of Existing Rights will submit their Bids to the CAISO for implementation in accordance with the TRTC ~~i~~Instructions. In this case, the CAISO shall act as the scheduling agent for the Participating TO with regard to Existing Rights.

* * *

16.4.9 Implementation of TRTC Instructions.

The CAISO shall determine, based on the information provided by the Participating TOs under TRTC Instructions, the transmission capacities that (i) must be reserved for firm Existing Rights at Scheduling Points, (ii) may be allocated for use as CAISO transmission service (i.e., new firm uses), (iii) must be reserved by the CAISO for conditional firm Existing Rights, and (iv) remain for any non-firm Existing Rights for which a Participating TO has no discretion over whether or not to provide such non-firm service.

The CAISO shall coordinate the scheduling of Existing Rights with the scheduling of CAISO transmission service, using the CAISO's Bid submission rules ~~described in Section 30~~. In doing so, the CAISO shall create an automated day-to-day verification process based on parameters provided by the Participating TO for the Existing Contract to serve as the basis for ETC Self-Schedule validation. The Participating TO will be responsible for: (1) the accuracy of the data files against which the CAISO will validate the ETC Self-Schedule; and (2) providing the data file to the holder of Existing Rights as well as the CAISO.

The CAISO shall recognize that the obligations, terms or conditions of Existing Contracts may not be changed without the voluntary consent of all parties to the contract (unless such contract may be changed pursuant to any applicable dispute resolution provisions in the contract or pursuant to Section 205 or Section 206 of the FPA and the FERC's Rules and Regulations or as otherwise provided by law).

The parties to Existing Contracts shall remain liable for their performance under the Existing Contracts. The CAISO shall be liable in accordance with the provisions of this CAISO Tariff for any damage or injury caused by its non-compliance with the TRTC Instructions submitted to it pursuant to this Section 16.4.

Unless specified otherwise, in the event that the dispute resolution mechanisms prescribed in an Existing Contract, including all recourses legally available under the contract, cannot, in the first instance, result in a resolution of such a dispute, the CAISO's ADR Procedures will be used to resolve any disputes between the CAISO and the Participating TO regarding any aspects of the implementation of this Section 16.4, including the reasonableness of a Participating TO's TRTC Instructions or any other decision rules which the Participating TO may submit to the CAISO as part of the TRTC Instructions. The holders of Existing Rights under the Existing Contract shall have standing to participate in the CAISO ADR Procedures.

* * *

16.5.1 System Emergency Exceptions.

As set forth in Section 4.2.1, all Market Participants, including Scheduling Coordinators, Utility Distribution Companies, Participating TOs, Participating Generators, Participating Loads, Control Area Operators (to the extent the agreement between the Control Area Operator and the CAISO so provides), and MSS Operators within the CAISO Control Area and all System Resources must comply fully and promptly with CAISO Dispatch Instructions and operating orders, unless such operation would impair public health or safety. The CAISO will honor the terms of Existing Contracts, provided that in a System Emergency and circumstances in which the CAISO considers that a System Emergency is imminent or threatened, holders of Existing Rights must follow CAISO operating orders even if those operating orders directly conflict with the terms of Existing Contracts, unless such operating orders are inconsistent with the terms of an agreement between the CAISO and a Control Area Operator. In the event of a conflict between the CAISO Tariff and an agreement between the CAISO and a Control Area Operator, the agreement will govern. For this purpose CAISO operating orders to shed Load shall not be considered as an impairment to public health or safety. This section does not prohibit a Scheduling Coordinator from modifying its Bid or re-purchasing Energy in the HASP/RT or Real-Time Market.

* * *

16.6.4 Notification to Scheduling Coordinators of CAISO Determination.

~~To the extent practicable, a~~After performing validation of the ETC Self-Schedule, and prior to taking any action pursuant to Section 16.6.2, the CAISO will make an automated validation notice available to~~notify~~ the Scheduling Coordinator indicating whether the ETC Self-Schedule is valid or invalid. If an ETC Self-Schedule involves more than one Scheduling Coordinator, the complete validation of the chain of ETC Self-Schedules will occur when the last Scheduling Coordinator submits its ETC Self-Schedule. At that time, the CAISO will make an automated validation notice available to each Scheduling Coordinator registered as associated with the chain of ETC Self-Schedules. The CAISO can accommodate corrections submitted by a Scheduling Coordinator to an ETC Self-Schedule up to Market Close of the Day-Ahead Market as further described in the applicable Business Practice Manual.

* * *

16.9 The HASP.

16.9.1 Scheduling Deadlines.

Those holders of Existing Rights who have Existing Rights as reflected in the TRTC Instructions that allow scheduling after the close of the Day-Ahead Market may submit ETC Self-Schedules for the use of those rights by the deadline for the Market Close for the HASP. ~~.~~ Submissions of schedule changes beyond the Market Close for the HASP permitted by the ETC will be treated as provided in Section 33.3.

* * *

17 Transmission Ownership Rights (“TORs”).

Transmission Ownership Rights represent transmission capacity on facilities that are located within the CAISO Control Area that are either wholly or partially owned by an entity that is not a Participating TO. This Section 17 shall apply to the TORs of Non-Participating TOs. In any case in which (i) the CAISO has entered into a bilateral agreement with a Non-Participating TO regarding its TORs~~,~~ or (ii) a Participating TO has entered into a bilateral agreement with a Non-Participating TO regarding its TORs, which

agreement has been accepted by FERC, the provisions of the agreement shall prevail over any conflicting provisions of this Section 17. Where the provisions of this Section 17 do not conflict with the provisions of the FERC-accepted agreement, the provisions of this Section 17 shall apply to the subject TORs.

17.1 Transmission Rights and Transmission Curtailment Instructions.

17.1.1 Responsibility to Create TRTC Instructions.

To enable the CAISO to exercise its responsibilities as Control Area Operator in accordance with Applicable Reliability Criteria, each Non-Participating TO holding a TOR must work with the CAISO to develop the ~~Transmission Rights and Transmission Curtailment Instructions (~~"TRTC"~~)~~ Instructions that allow the TOR to be accommodated in a way that: (i) maintains the existing scheduling and curtailment priorities of the TOR holder; (ii) is minimally burdensome to the CAISO (i.e., creates the least impact on the CAISO's preferred operational policies and procedures); (iii) to the extent possible, imposes no additional financial burden on the TOR holder (beyond that set forth in an applicable Existing Contract or any other contract pertaining to the TOR); (iv) is minimally burdensome to the TOR holder from an operational point of view; and (v) does not require the CAISO to interpret or underwrite the economics of any applicable Existing Contract. To enable the CAISO to exercise its responsibilities as Control Area Operator in accordance with Applicable Reliability Criteria, the parties holding joint ownership interests and Entitlements in facilities including TORs must attempt to jointly develop and agree on any TRTC Instructions that will be submitted to the CAISO, as provided in Section 17.1.6. ~~TOR holders and any other parties holding joint ownership interests and Entitlements in facilities including TORs shall also be responsible to submit to the CAISO any other necessary operating instructions based on their interpretations of the agreements applicable to those TORs and joint ownership interests and Entitlements needed by the CAISO to enable the CAISO to perform its duties.~~

17.1.2 TOR Scheduling Coordinator Responsibilities.

To enable the CAISO to exercise its responsibilities as Control Area Operator in accordance with Applicable Reliability Criteria, each TOR holder must designate a Scheduling Coordinator as the responsible entity for submitting TOR Self-Schedules for the relevant TOR. The designated Scheduling

Coordinator shall submit TOR Self-Schedules consistent with the terms and conditions specified in the TRTC Instructions~~, which shall be validated as specified in Section 17.3~~.

17.1.3 Submission of TRTC Instructions.

For each TOR, the Non-Participating TO holding the TOR shall be obligated to submit TRTC Instructions to the CAISO electronically, unless the Non-Participating TO specifies to the CAISO otherwise. The Non-Participating TO shall notify the CAISO in writing the identity of the responsible party for submission of the TRTC Instructions, subject to the terms of any applicable Existing Contract that may specify the responsible party for submission of the TRTC Instructions and the term of such agreement between the parties to the Existing Contract. The Non-Participating TO shall undertake all obligations with respect to the submission of the TRTC Instructions to the CAISO and any subsequent obligations that follow with respect to the creation, management and updates to the TRTC Instructions. The CAISO is responsible for implementing only one set of TRTC Instructions for each TOR and for implementing only those TRTC Instructions that have been received and accepted by the CAISO. The Non-Participating TO shall submit the TRTC Instructions to the CAISO associated with its TORs thirty (30) days prior to the date on which the scheduling or curtailment of the use of the TORs is to change or commence.

17.1.4 TRTC Instructions Content.

TRTC Instructions will include the following information at a minimum and such other information as the CAISO may reasonably require the Non-Participating TO holder of a TOR to provide to enable the CAISO to carry out its functions under the CAISO Tariff, Operating Procedures and Business Practice Manuals:

(1) A unique ~~c~~Contract ~~r~~Reference ~~n~~Number for each source and sink combination applicable to the TOR (~~TOR reference number or~~ i.e., the CRN that will be assigned by the CAISO and communicated to the Non-Participating TO that references a single TOR or a set of interdependent TORs for each source and sink combination);

(2) Whether the instruction can be exercised independent of the CAISO's day-to-day involvement ("Yes/No");

(3) Name of an operational single point of contact for instructions and a 24-hour a day telephone number for the Non-Participating TO contact for TOR issues or the agreed upon party;

(4) Name(s) and number(s) of TOR(s) that are represented by the unique CRN;

(5) The following information, as stored in the Master File: (a) the applicable~~Transmission path name(s) and location(s) (described in terms of the~~ Point(s) of Receipt and Point(s) of Delivery); (b) for each Point of Receipt, the resource names for the physical resources as the eligible sources (eligible physical sources include Generating Units and System Resources), and for each Point of Delivery, the resource names for the physical resources as the eligible sinks (eligible physical sinks include Load PNodes, Custom Load Aggregation Points and System Resources); (c) for each physical source or sink, the maximum capacity (MW) that can be scheduled as a TOR under the Existing Contract; and (d) for each physical source and sink, the Scheduling Coordinator(s) and their Business Associate Identification (BAID) that is(are) eligible to submit TOR Self-Schedules utilizing these sources and sinks;

(6) Names of the party(ies) holding the TOR(s) and the parties to any agreements applicable to the TORs;

(7) The Scheduling Coordinator ~~Business Associate Identification ("~~BAID~~")~~ that is entitled to the Settlement of reversal of Congestion Charges ~~(the BAID of the Scheduling Coordinator who will submit TOR Self-Schedules which make use of the TOR(s))~~;

(8) Amount of TORs,~~ownership rights~~ in maximum MW, ~~by the holder of the TORs~~that may be utilized under the relevant TRTC Instructions;

(9) Instructions for the allowable timeframes at which the TOR Self-Schedules and TOR Self-Schedule changes may be submitted to the CAISO, which include whether the Scheduling Coordinator may submit TOR Self-Schedules or TOR Self-Schedule changes: (a) into the DAM; (b) into the HASP and the RTM; (c) after the close of the

bidding into the HASP and the RTM, but before T-20 minutes for that Trading Hour of Trading Day; and (d) at or after T-20 minutes and into the Trading Hour of Trading Day; in addition, the Non-Participating TO may also provide any additional comments and restrictions on the submission time of TOR Self-Schedules and TOR Self-Schedule changes~~For TOR Self-Schedules submitted in the DAM: the time of the day preceding the Trading Day at which the Scheduling Coordinator submits TOR Self-Schedules to the CAISO referencing the TOR(s) identified in the TRTC~~;

~~(10) For TOR Self-Schedules submitted in the HASP, for the HASP and RTM, the number of minutes prior to the start of the Operating Hour at which the Scheduling Coordinator may submit TOR Self-Schedule adjustments to the CAISO regarding the TOR(s) identified in the TRTC;~~

(10~~1~~) Term of ownership interest in the TOR(s) and of any agreements applicable to the TOR(s);

(11~~2~~) Any special procedures that would require the CAISO to implement curtailments in any manner different than pro rata reduction of the transfer capability of the transmission line~~.~~; ~~A~~any such instructions submitted to the CAISO must be clear, unambiguous, and not require the CAISO to make any judgments or interpretations as to the meaning, intent, results, or purpose of the curtailment procedures or of any applicable Existing Contract, otherwise, they will not be accepted by the CAISO; and

(12) Whether or not the TOR provides the right to self-provide Ancillary Services.

17.1.5 Changes and Updates to TRTC Instructions.

Updates or changes to the TRTC Instructions must be submitted to the CAISO through a revised set of TRTC Instructions by the Non-Participating TO, on an as needed or as required basis. The CAISO will implement the updated or changed TRTC Instructions as soon as practicable but no later than seven (7) days after receiving clear and unambiguous details of the updated or changed instructions under normal conditions. If the CAISO finds the TRTC Instructions to be inconsistent with the CAISO Tariff, the CAISO

will notify the Non-Participating TO within forty-eight (48) hours after receipt of the updated or changed TRTC Instructions indicating the nature of the problem and allowing the Non-Participating TO to resubmit the TRTC Instructions as if they were new, updated or changed TRTC Instructions. If the CAISO finds the updated or changed TRTC Instructions to be acceptable, the CAISO will time-stamp the updated TRTC Instructions as received, confirm such receipt to the Non-Participating TO, and indicate the time at which the updated instructions take effect if prior to the seven (7) day deadline referred to above. In the event of a System Emergency, the CAISO will implement such submitted changes to the TRTC Instructions as soon as practical.

17.1.6 CAISO Role in Accepting TRTC Instructions.

The parties holding joint ownership interests and Entitlements in a facility including a TOR must, in the first instance, attempt jointly to agree on any TRTC Instructions that will be submitted to the CAISO. In the event that the parties holding joint ownership interests and Entitlements in a facility including a TOR cannot agree upon the TRTC Instructions, the dispute resolution provisions of any applicable Existing Contract shall be used to resolve the dispute; provided that, until the dispute is resolved, and unless the applicable Existing Contract specifies otherwise, the CAISO shall implement the Participating TO's TRTC Instructions, if one of the parties holding a joint ownership interest or an Entitlement in the facility is a Participating TO. If no party holding a joint ownership interest or Entitlement in a facility including a TOR is a Participating TO and the parties cannot agree to the TRTC Instructions to be submitted by the parties, until the dispute is resolved, the CAISO shall implement the TRTC Instructions of the Non-Participating TO with the greatest ownership interest in the TOR. The CAISO shall not be responsible for resolution of any disputes that arise over the accuracy of the TRTC Instructions consistent with its obligations in Section 17.1.4.

17.1.7 Implementation of TRTC Instructions.

The CAISO shall determine, based on the information provided by the Non-Participating TOs under TRTC Instructions, the transmission capacities that must be reserved for TORs at Scheduling Points.

The CAISO shall coordinate the scheduling of TORs with the scheduling of CAISO transmission service, using the CAISO's Bid submission rules ~~described in Section 30~~. In doing so, the CAISO shall create an

automated day-to-day verification process based on parameters provided by the Non-Participating TO for the TOR to serve as the basis for TOR Self-Schedule validation. The Non-Participating TO will be responsible for: (1) the accuracy of the data files against which the CAISO will validate the TOR Self-Schedule; and (2) providing the data file to the CAISO.

The TOR holders shall remain liable for their performance under any applicable Existing Contracts or other agreements pertaining to their TORs. The CAISO shall be liable in accordance with the provisions of this CAISO Tariff for any damage or injury caused by its non-compliance with the TRTC Instructions submitted to it pursuant to this Section 17.1.

Unless specified otherwise, in the event that the dispute resolution mechanisms prescribed in an Existing Contract applicable to a TOR, including all recourses legally available under the contract, cannot, in the first instance, result in a resolution of such a dispute, the CAISO ADR Procedures will be used to resolve any disputes between the CAISO and the Non-Participating TO regarding any aspects of the implementation of this Section 17.1, including the reasonableness of a Non-Participating TO's TRTC Instructions or any other decision rules which the Non-Participating TO may submit to the CAISO as part of the TRTC Instructions. The holders of TORs shall have standing to participate in the CAISO ADR Procedures.

17.2 Treatment of TORs.

The CAISO will accommodate TORs, so that the holders of TORs will receive the same priorities (in scheduling, curtailment, assignment and other aspects of transmission system usage) to which they are entitled under any applicable Existing Contracts or other agreements pertaining to the operation of their TORs.

In addition, scheduling deadlines and operational procedures associated with TORs will be honored by the CAISO, provided such information is explicitly included in the TRTC Instructions. The CAISO will accommodate and honor TORs as follows:

(1) The CAISO will reserve transmission capacity equal to the TOR transmission capacity and make a corresponding adjustment in its determination of ATC. The CAISO will not limit parallel flow

from flowing on TOR transmission capacity consistent with the redispatch provisions of Section 17.2(3), just as the CAISO does not limit TOR Self-Schedules from flowing on non-TOR transmission. There shall be no compensation for parallel flow for either the CAISO or the TOR holder.

(2) In the HASP, the CAISO will give valid TOR Self-Schedules priority over other non-TOR Day-Ahead Schedules and HASP Bids. In the event of a reduction in capacity on the transmission path associated with the TOR, the CAISO will honor the TOR priority in accordance with this Section 17.

(3) The CAISO will allow the holder of a TOR to make changes to the scheduled amounts of supply after the submission of HASP TOR Self-Schedules in accordance with the TRTC Instructions established for such changes. The CAISO will, as necessary, redispatch non-TOR resources to accommodate valid TOR Self-Schedule changes in Real-Time.

(4) The CAISO will allow the holder of a TOR to self-provide Ancillary Services, which will include the ability of the holder of a TOR to import Ancillary Services at Scheduling Points with the CAISO.

(5) The submission of a TOR Self-Schedule change that is authorized pursuant to an applicable existing agreement between the CAISO and the TOR holder shall not affect the application of the IFM Congestion Credit or the HASP and RTM Congestion Credit, and the IFM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules or the RTM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules for a TOR Self-Schedule that satisfies the applicable requirements of Sections 17.4.1 and 17.5.

17.2.1 System Emergency Exceptions.

As set forth in Section 4.2.1, all Market Participants, including Scheduling Coordinators, Utility Distribution Companies, Participating TOs, Participating Generators, Participating Loads, Control Area Operators (to the extent the agreement between the Control Area Operator and the CAISO so provides), and MSS Operators within the CAISO Control Area and all System Resources must comply fully and promptly with the CAISO's Dispatch Instructions and operating orders, unless such operation would impair public health or safety. The CAISO will honor the terms of TORs, provided that in a System Emergency and circumstances in which the CAISO considers that a System Emergency is imminent or threatened, to enable the CAISO to exercise its responsibilities as Control Area Operator in accordance with Applicable

Reliability Criteria, holders of TORs must follow CAISO operating orders even if those operating orders directly conflict with the terms of applicable Existing Contracts or any other contracts pertaining to the TORs, unless such operating orders are inconsistent with the terms of an agreement between the CAISO and a Control Area Operator. In the event of a conflict between the CAISO Tariff and an agreement between the CAISO and a Control Area Operator, the agreement will govern. For this purpose CAISO operating orders to shed Load shall not be considered as an impairment to public health or safety. This section does not prohibit a Scheduling Coordinator from modifying its Bid or re-purchasing Energy in the HASP or RTM.

* * *

17.3.3 Treatment of Valid TOR Self-Schedules

The resulting valid TOR Self-Schedules shall have the following Settlement treatment:

(1) The CAISO will apply the TOR Settlement treatment in Sections 11.2.1.5 and 11.5.7.~~1~~.

(2) The CAISO shall base the Marginal Cost of Losses on LMP differentials at the Points of Receipt and Points of Delivery ~~source(s) and sink(s)~~ identified in the valid TOR Self-Schedule; provided, however, that if a specific loss percentage exists in applicable agreement between the TOR holder and the CAISO, the CAISO will apply the IFM and RTM Marginal Cost of Losses Credit as provided in Sections 11.2.1.7 and 11.5.7.2.

(3) The CAISO will assess only charges applicable to Ancillary Services, Imbalance Energy, and Transmission Losses~~, and Grid Management Charges~~ for the use of a TOR and will not assess charges for neutrality, UFE, transmission Access Charges, Minimum Load Costs, or other charges that might otherwise be applicable to the Demand or exports served solely over the TOR. The CAISO will assess charges applicable to Ancillary Services for the use of a TOR only to the extent that the CAISO must procure Ancillary Services for the TOR holder because Ancillary Services are not self-provided by the TOR holder. The CAISO will assess charges applicable to Imbalance Energy for the use of a TOR only if the CAISO must procure Imbalance Energy for the TOR holder.

(4) The holders of TORs will not be entitled to an allocation of revenues from the CAISO, including Access Charge revenues; provided that the Scheduling Coordinator for the TOR holder shall be

allocated the applicable amount of IFM Marginal Losses Surplus Credit in accordance with the provisions of Section 11.2.1.6, except for any TOR Self-Schedule that received the IFM Marginal Cost of Losses Credit.

(5) Parties with TORs shall continue to pay for Transmission Losses or Ancillary Services requirements in accordance with any Existing Contracts applicable to those TORs as they may be modified or changed in accordance with the terms of the Existing Contract. Any affected Participating TOs shall continue to provide Transmission Losses and any other Ancillary Services to the holder of a TOR subject to an Existing Contract as may be required by the Existing Contract. As described in Section 17.3.3(3) above, the CAISO will charge Scheduling Coordinators submitting the TOR Self-Schedule the charges applicable to Transmission Losses, Ancillary Services, and Imbalance Energy~~, and Grid Management Charges~~ in accordance with the CAISO Tariff (e.g., the Transmission Losses Charge based on the Marginal Cost of Losses), and any shortfall or surplus between the CAISO charges and the provisions of any applicable Existing Contract shall be settled bilaterally between the Existing Contract parties or through the relevant TO Tariff. To enable holders of TORs to determine whether the CAISO's calculations result in any associated shortfall or surplus and to enable the parties to the Existing Contracts to settle the differences bilaterally or through the relevant TO Tariff, the CAISO shall calculate and provide the Scheduling Coordinator's Settlements the amounts paid for the MCL for the amounts MWh submitted with a valid TOR Self-Schedule. Each Participating TO will be responsible for recovering any deficits or crediting any surpluses associated with differences in Transmission Losses and Transmission Loss Requirements and/or Ancillary Services requirements, through its bilateral arrangements or its Transmission Owner Tariff.

17.3.4 Notification to Scheduling Coordinators of CAISO Determination.

~~To the extent practicable, a~~After performing validation of the TOR Self-Schedule, and prior to taking any action pursuant to 17.6.2, the CAISO will make an automated validation notice available to~~notify~~ 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 by Scheduling Coordinators shall be treated by the CAISO as confidential:

(a) individual Bids;

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

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

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

(e) The following information related to the resource adequacy program in accordance with Section 40 ~~of this CAISO Tariff~~:

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

(ii) Demand ~~f~~Forecasts; and

(iii) Information on existing import contracts ~~and any trades or sales of allocated import capacity~~.

* * *

20.4 Disclosure.

Notwithstanding anything in this Section 20 to the contrary,

(a) The CAISO: (i) shall publish individual Bids, provided that such data are published no sooner than six (6) months after the Trading Day with respect to which the Bid was submitted and in a manner that

does not reveal the specific resource or the name of the Scheduling Coordinator submitting the Bid, but that allows the bidding behavior of individual, unidentified resources and Scheduling Coordinators to be tracked over time; and (ii) may publish data sets analyzed in any public report issued by the CAISO or by the Market Surveillance Committee, provided that such data sets shall be published no sooner than six (6) months after the latest Trading Day to which data in the data set apply, and in a manner that does not reveal any specific resource or the name of any Scheduling Coordinator submitting Bids included in such data sets.

(b) If the CAISO is required by applicable laws or regulations, or in the course of administrative or judicial proceedings, to disclose information that is otherwise required to be maintained in confidence pursuant to this Section 20, the CAISO may disclose such information; provided, however, that as soon as the CAISO learns of the disclosure requirement and prior to making such disclosure, the CAISO shall notify any affected Market Participant of the requirement and the terms thereof. The Market Participant may, at its sole discretion and own cost, direct any challenge to or defense against the disclosure requirement and the CAISO shall cooperate with such affected Market Participant to the maximum extent practicable to minimize the disclosure of the information consistent with applicable law. The CAISO shall cooperate with the affected Market Participant to obtain proprietary or confidential treatment of confidential information by the person to whom such information is disclosed prior to any such disclosure.

(c) The CAISO may disclose confidential or commercially sensitive information, without notice to an affected Market Participant, in the following circumstances:

(i) If the FERC, or its staff, during the course of an investigation or otherwise, requests information that is confidential or commercially sensitive. In providing the information to FERC or its staff, the CAISO shall take action consistent with 18 C.F.R. §§ 1b.20 and 388.112, and request that the information be treated as confidential and non-public by the FERC and its staff and that the information be withheld from public disclosure. The CAISO shall provide the requested information to the FERC or its staff within the time provided for in the request for information. The CAISO shall notify an affected Market Participant within a reasonable time after the CAISO is notified by FERC or its staff that a

request for disclosure of, or decision to disclose, the confidential or commercially sensitive information has been received, at which time the CAISO and the affected Market Participant may respond before such information would be made public; or

(ii) In order to maintain reliable operation of the CAISO Control Area, the CAISO may share critical operating information, system models, and planning data with other WECC Reliability Coordinators, who have executed the Western Electricity Coordinating Council Confidentiality Agreement for Electric System Data, or are subject to similar confidentiality requirements; or

(iii) In order to maintain reliable operation of the CAISO Control Area, the CAISO may share individual Generating Unit Outage information with the operations engineering and~~/or~~ the outage coordination division(s) of other Control Area operators, Participating TOs, MSS Operators and other transmission system operators engaged in the operation and maintenance of the electric supply system whose system is significantly affected by the Generating Unit and who have executed the Western Electricity Coordinating Council Confidentiality Agreement for Electric System Data.

(d) Notwithstanding the provisions of Section 20.2(e), information submitted through Resource Adequacy Plans and Supply Plans in accordance with Section 40 ~~of the CAISO Tariff~~ may be provided to:

(i) the Scheduling Coordinator(s) and/or Market Participant(s) involved in a dispute or discrepancy ~~pursuant~~ as to whether a resource is properly identified in a Resource Adequacy Plan or a Supply Plan only to the limited extent necessary to identify the disputed transaction and the relevant counterparty or counterparties.

(ii) the regulatory entity, whether the CPUC, other Local Regulatory Authority, or federal agency, with jurisdiction over a Load Serving Entity involved in a dispute or discrepancy as to whether a resource is properly identified in a Resource Adequacy Plan or the Supply Plan, or otherwise identified by the CAISO as exhibiting a potential deficiency in demonstrating compliance with resource adequacy ~~rules~~requirements adopted by the

CPUC, other Local Regulatory Authority, ~~of~~or federal agency, as applicable. The information provided shall be limited to the particular dispute, discrepancy, or deficiency.

(iii) the California Energy Commission with respect to Demand Forecast information provided to the CAISO under Sections 40.2.2.3 and 40.2.3.3(b) to the extent the CAISO seeks, and the California Energy Commission grants, confidential treatment of such information pursuant to California Public Resources Code Section 25322 and related regulations.

Nothing in this Section 20 shall limit the ability of the CAISO to aggregate data for public release about the adequacy of supply.

* * *

22.4.3 Notice of Changes in Operating Procedure and Business Practice Manuals.

The effective date of any change or proposed change in any Operating Procedure or Business Practice Manual shall be established as part of the change management process set forth in Section 22.11 but will be no earlier than~~The CAISO shall give all Market Participants notice of~~ at least thirty (30) days from the date of publication of a Market Notice describing the~~any~~ change~~s~~ or proposed change~~s in its Operating Procedures or Business Practice Manuals~~, unless: (1) a different notice period is specified by state or Federal law, ~~or~~ (2) the change is reasonably required to address an emergency affecting the CAISO Controlled Grid or its operations, or (3) the change is to a provision of a Business Practice Manual that is necessitated by emergency circumstances specific to that Business Practice Manual. Such circumstances include, but are not limited to, any change necessary to ensure that the Business Practice Manual is consistent with the CAISO Tariff or any applicable law, regulation, NERC or WECC operating policies, guidelines and standards, or FERC order, in which case the CAISO shall give Market Participants as much notice as is reasonably practicable. Any notices issued under this provision shall be delivered in accordance with the procedures set out in ~~Section 22.4 of this CAISO Tariff and, in the case of the Operating Procedures and Business Practice Manuals,~~ Section 22.11 ~~of this CAISO Tariff~~.

* * *

22.11 Operating Procedures and Business Practice Manuals Development and Amendment Process.

The CAISO shall prepare, maintain, promulgate and update the Operating Procedures and Business Practice Manuals. The Operating Procedures and Business Practice Manuals shall be consistent with the CAISO Tariff, and any NERC or WECC operating policies, guidelines and standards, and shall be available on the CAISO's ~~w~~Website. The CAISO ~~Governing Board~~ shall establish a stakeholder process as set forth in Section 22.11.1 and in a Business Practice Manual for BPM change management in order to ensure that all affected parties have an opportunity to comment on and shape the proposed nature of any proposed changes to any Business Practice Manual. Under that process, the CAISO and stakeholders shall consider whether any amendments to the CAISO Tariff are necessary in order to ensure the consistency of the CAISO Tariff and the Business Practice Manuals. ~~The CAISO Governing Board may direct the CAISO to file for acceptance at the FERC of any necessary amendment to the CAISO Tariff to ensure that the Business Practice Manuals are supported by adequate authority under the CAISO Tariff.~~

22.11.1 Process for Revisions of Business Practice Manuals.

Revisions of Business Practice Manuals shall be made in accordance with the process set forth in this Section 22.11.1, provided that the details and procedures for submittal and consideration of a BPM Proposed Revision Request (PRR) and other elements of the BPM change management process shall be set forth in a separate Business Practice Manual for BPM change management.

22.11.1.1 BPM Proposed Revision Request Submittal.

A request to make any change to a BPM, including any attachments thereto that are incorporated by reference, and any changes to the BPM PRR must be initiated through a submittal of a BPM PRR, except as provided in Section 22.4.3 or 22.11.1.2.

The following entities may submit a BPM PRR:

(1) Any Market Participant;

(2) Local Regulatory Authority;

(3) CAISO management; and

(4) Any other entity that meets the following qualifications:

(a) The entity must represent a Market Participant in dealings with the CAISO or operate in the CAISO Markets, and

(b) The entity must demonstrate that the entity (or those it represents) is affected by the subject section(s) of the BPM.

BPM PRRs shall be submitted electronically to the CAISO in the form and manner described in the Business Practice Manual for BPM change management. The CAISO shall post each BPM PRR on the CAISO Website and publish a Market Notice of such posting. The BPM PRR shall include a description of the requested revision, the reason for the suggested change, the impacts and benefits of the suggested change, a list of affected BPM sections and subsections, general administrative information, suggested language for the requested revision, and for BPM PRRs submitted by CAISO management, a BPM PRR impact analysis. The CAISO may, as appropriate, prepare an impact analysis for BPM PRRs submitted by other entities eligible to submit BPM PRRs.

22.11.1.2 BPM Proposed Revision Request Processing.

The CAISO shall review the BPM PRR for completeness and shall notify the submitter if the BPM PRR is incomplete, including the reasons for its determination, based upon the timelines provided in the BPM for BPM change management. An incomplete BPM PRR shall not receive further consideration until it is completed. In order to pursue the revision requested, a submitter must submit a completed version of the BPM PRR with the deficiencies corrected. If a submitted BPM PRR is complete or once a BPM PRR is corrected, the CAISO shall post the completed or corrected BPM PRR to the CAISO Website and publish a Market Notice of such posting.

22.11.1.3 BPM PRR Coordinator.

The consideration and disposition of BPM PRRs shall be led by a BPM change management coordinator. The BPM change management coordinator shall be an identified employee of the CAISO with responsibility for ensuring that BPM PRRs are processed and reviewed in accordance with the provisions of the Business Practice Manual for BPM change management. The BPM change management coordinator shall also be responsible for submitting reports to the CAISO Governing Board at each regularly scheduled Board meeting, indicating the status of pending BPM PRRs, including a summary of

proposed revisions that have been accepted and the reason for any proposed revision that has been rejected, including the positions of stakeholders, and any decision on appeal as provided in Section 22.11.1.6.

22.11.1.4 Types and Treatment of BPM PRRs.

Each BPM PRR shall be preliminarily classified into one of the following categories by the BPM change management coordinator in consultation with internal CAISO business units, the submitter, and representatives from potentially affected stakeholders for purposes of review in accordance with its scope and significance.

(a) Category A – Clarifications of existing BPM language, grammatical errors, and revisions with minor significance that will be subject to the PRR review and action process described in Section 22.11.1.5 and in a Business Practice Manual, unless urgent or emergency circumstances exist pursuant to Section 22.4.3 or 22.11.1.7;

(b) Category B – Revisions that may be substantial significance, including changes to the CAISO or Market Participants' systems that will be subject to the BPM PRR review and action process described in Section 22.11.1.5 and in a Business Practice Manual, unless urgent or emergency circumstances exist pursuant to Section 22.4.3 or 22.11.1.7. In the case of a proposed change affecting the CAISO's systems, the CAISO will prepare a BPM PRR impact analysis, if not already prepared, in accordance with the procedures set forth in the Business Practice Manual; and

(c) Category C – For revisions that are beyond the scope of the BPM or that may require revisions to the CAISO Tariff, the CAISO will identify additional processes that may need to be undertaken in the consideration of the requested change beyond the BPM PRR process.

22.11.1.5 BPM PRR Review and Action.

Any interested stakeholder or CAISO management may comment on a posted BPM PRR in accordance with the process set forth in the Business Practice Manual for BPM change management. Comments

shall be posted to the CAISO Website. Pending BPM PRRs shall be considered by the CAISO at a regularly established monthly public meeting or specially-noticed meeting dedicated to that purpose. Following any meeting to consider pending BPM PRRs and subject to the standards set forth in Section 22.11.1.4, the BPM change management coordinator shall issue a recommendation for action on each pending BPM PRR and shall publish for public comment a report on the recommendation in accordance with the procedures set forth in the Business Practice Manual for BPM change management. The report shall be sufficiently detailed and shall be published in a timeframe that allows interested stakeholders a meaningful opportunity to provide written comment. The BPM change management coordinator shall, after considering stakeholder comments and all relevant impacts on their business needs, publish a final decision on any BPM PRR after a PRR recommendation report has been discussed at a BPM change management meeting at which comments received on the PRR recommendation report were discussed, in accordance with procedures set forth in the Business Practice Manual for BPM change management.

22.11.1.6 Right to Appeal to CAISO.

Any entity eligible to submit a BPM PRR under Section 22.11.1.1 may, within ten (10) Business Days, appeal in writing the outcome of any BPM PRR to a committee comprising at least three CAISO executives. The CAISO committee shall meet in public at the regularly scheduled monthly BPM PRR meeting or specially-noticed meeting to consider public comment by the appellant and any interested stakeholder. The executive sponsor of a BPM PRR may not sit in review of any appeal of a final decision regarding that same BPM PRR but may participate in and be present during the public discussion of any appeal. The CAISO committee will review the appeal and publish its decision to the appealing party and to the CAISO Website. If not satisfied with the decision on appeal, the appellant may raise concerns it may have with the Board of Governors at the next regularly scheduled Board meeting through the public comment period or through prior letter to the Governing Board.

22.11.1.7 CAISO Expedited Action in Emergency Circumstances.

Notwithstanding the provisions of Section 22.11.1.1, the CAISO may take expedited action to change or clarify a provision of a BPM under emergency circumstances. In addition to the circumstances identified in Section 22.4.3, emergency circumstances exist whenever the CAISO determines in good faith that (i)

failure to implement a change or clarification to a BPM on an expedited basis would substantially and adversely affect System Reliability or security or the competitiveness or efficiency of the CAISO Market, and (ii) there is insufficient time to comply with the BPM PRR procedures set forth in Section 22.11.1. The CAISO shall take reasonable steps to communicate with Market Participants and any other directly-affected entities prior to taking expedited action if practicable. If the CAISO takes expedited action to change or clarify a provision of a BPM in emergency circumstances, the CAISO shall promptly issue a Market Notice and submit a BPM PRR to examine the necessity of the change and its impacts.

22.11.2 Changes to Business Practice Manual for BPM Change Management.

Any changes to the Business Practice Manual for BPM change management shall require CAISO Governing Board approval.

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27 CAISO MARKETS AND PROCESSES.

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27.1 Locational Marginal Pricing.

The CAISO Markets are based on Locational Marginal Prices as provided below and further provided in Appendix C.

* * *

27.2.1 Metered Subsystems.

The CAISO shall define specific MSS- LAPs for each MSS. The MSS LAP shall be made up the PNodes within the MSS that have Load served off of those Nodes. The MSS- LAPs have unique Load Distribution Factors that reflect the distribution of the MSS Demand to the network nodes within the MSS. These MSS LAPs are separate from the Default LAPs, and the load distribution factors of the Default LAP do not reflect any MSS Load. As further provided in Sections 11.2.3 and 11.5, Metered Subsystems Demand is settled either at the price at the Default LAP for MSS Operators that have selected gross Settlement and at the price at the applicable MSS LAP for MSS Operators that have selected net Settlement.

* * *

27.4.1 Security Constrained Unit Commitment.

The CAISO uses SCUC to run the MPM-RRD processes associated with the DAM and the HASP, the IFM, the RUC, the HASP, the STUC and the RTUC. SCUC uses a multi-interval Time Horizon to commit and schedule resources and to meet Demand for which Bids have been submitted and procure AS in the IFM, and to meet the CAISO Forecast of CAISO Demand in the MPM-RRD, RUC, HASP, STUC and RTUC. In the Day-Ahead MPM-RRD, IFM and RUC processes the SCUC optimizes over the 24 hourly intervals of the next Trading Day. In the RTUC, which runs every 15 minutes, the SCUC optimizes over from four to seven 15-minute intervals comprising a portion of the current or imminent Trading Hour and the entire subsequent Trading Hour. In the HASP, which is a special run of the RTUC that runs once per hour just before the top of the hour, and its associated MPM-RRD process, the SCUC optimizes over seven 15-minute intervals comprising the last 45 minutes of the imminent Trading Hour and the entire subsequent Trading Hour. Following the HASP run of the RTUC, each of the next three runs of the RTUC successively drops one 15-minute interval from the front of the optimization Time Horizon. In the STUC the SCUC optimizes over seventeen fifteen-minute intervals comprising the last 15 minutes of the imminent Trading Hour and the entire next four Trading Hours. The CAISO will also utilize the SCUC algorithm on a two-day-ahead basis to commit Extremely Long Start Resources, for which commitment in the DAM does not provide sufficient time to start-up and be available to supply Energy during the next Trading Day as provided in Section 31.7~~27.4.3~~.

* * *

27.5 Full Network Model.

27.5.1 Description of FNM for CAISO Markets.

The FNM is a representation of the CAISO Control Area that enables the CAISO to conduct power flow analyses to identify transmission constraints for the optimization of the CAISO Markets. External Control Areas and external transmission systems are ~~not~~ modeled~~, except for transmission facilities for which Participating TOs have converted their scheduling rights~~ to the extent necessary to support the

commercial requirements of the CAISO Markets. External connections are retained between intertie branches within branch groups. Certain external loops are modeled, which allows the CAISO to increase the accuracy of the congestion management process. Resources are modeled at the appropriate network nodes. The pricing location (PNodes) of a Generating Unit generally coincides with the Node where the relevant revenue quality meter is connected or corrected, to reflect the point at which the Generating Units are connected to the CAISO Controlled Grid. The Dispatch, Schedule and LMP of a Generating Unit refers to a PNode, but the Energy injection is modeled in the FNM for network analysis purposes at the corresponding Generating Unit(s) (at the physical interconnection point), taking into account any losses in the transmission network leading to the point where Energy is delivered to Demand. For the CAISO Markets Processes, the FNM incorporates Transmission Losses and models and enforces all network Constraints, which are reflected in the Day-Ahead Schedules, AS and RUC Awards, HASP Intertie Schedules, Dispatch Instructions and the LMPs resulting from each CAISO market process. For the HASP, STUC, RTUC and the RTD processes, the Real-Time power flow parameters developed from the State Estimator are applied to the FNM. ~~In the FNM the Scheduling Points on the boundaries of the CAISO Controlled Grid and CAISO Control Area are modeled radially, except as described in Section 27.5.3 regarding embedded and adjacent Control Areas.~~

* * *

27.5.4 Accounting for Changes in Topology in FNM.

The CAISO will incorporate into the FNM information received pursuant to Section 24 for transmission expansion and Section 25 for generation interconnection to account for changes to the CAISO Controlled Grid and other facilities located within the CAISO Control Area. This information will be incorporated into the network model data base in which the electrical network model is maintained for use by the State Estimator and which forms the basis for the FNM used by the CAISO Markets. The updated power system network model will be transferred at periodic model update cycle intervals established by the CAISO and incorporated into the FNM for use in the CAISO Markets. The Business Practice Manual for Managing Full Network Model will describe the information to be provided by Market Participants, ~~and~~ the process by which the CAISO incorporates this information in the FNM, and operational details of the

FNM. If the CAISO becomes aware of a material error or omission in the FNM, it will make a timely correction of the FNM.

27.5.5 Load Distribution Factors.

The CAISO will maintain a library of system-wide Load Distribution Factors for use in distributing Demand scheduled at the Default LAPs. The system Load Distribution Factors are derived from the State Estimator and are stored in the Load Distribution Factor library, and are updated periodically. For IFM the Load Distribution Factor library uses a similar-day methodology for smoothing the most recent Load Distribution Factors. The similar-day methodology uses data separately for each type of day. More recent days are weighted more heavily in the smoothing calculations. The market application then uses the set of Load Distribution Factors from the library that best represents the Load distribution conditions expected for the market Time Horizon. For the RTM, the State Estimator solution is used as a source for determining Load Distribution Factors. The Load Distribution Factor are also maintained for use for Demand scheduled at Custom LAPs. These custom Load Distribution Factors are not generated from the State Estimator and are fixed quantities representing the characteristics of the Custom LAP.

* * *

28.1.3 Submission of Inter-SC Trades of Energy.

A Scheduling Coordinator may submit Inter-SC Trades of Energy that it intends to have settled based on DAM LMPs at any time during the Day-Ahead Inter-SC Trade Period and may submit Inter-SC Trades of Energy for a particular hour that it intends to have settled based on the simple average of the Dispatch Interval LMPs during that hour at any time during the HASP Inter-SC Trade ~~p~~Period.

* * *

28.1.6.2 Physical Trade Pre-Market Validation.

The purpose of the pre-market validation is to determine whether the total MWh quantity of all submitted Physical Trades at a PNode of an individual Generating Unit exceeds the Generating Unit's Energy Bid MWh. Pre-market validation is performed on all Physical Trades that pass the submittal screening set forth in Section 28.1.6.1. Scheduling Coordinators are notified within a

reasonable time of their Physical Trades status as the CAISO conducts the pre-market validation to indicate, at a minimum, whether the Physical Trade is currently "valid" or "invalid." These Physical Trade notices are preliminary and subject to change until the final pre-market validation at the close of the HASP Inter-SC Trade Period. A Physical Trade with a "valid" status may be rendered "invalid" due to the actions of the Scheduling Coordinators to that Physical Trade or by other trading activities that are linked to the Generating Unit identified for the relevant Physical Trade whenever the quantities specified in the relevant Inter-SC Trades cannot be supported by the underlying Generating Unit's Bid. Scheduling Coordinators can use these status notices to make modifications to complete or correct invalid Physical Trades. The CAISO performs a final pre-market validation at the close of the HASP Inter-SC Trade Period. Physical Trades that are individually valid are concatenated (daisy chained) with other supporting Physical Trades at the same PNode of the Generating Unit. Once that concatenation is complete, the CAISO will determine whether the concatenated Physical Trades are physically supported by either another Inter-SC Trade of Energy at that same location or the Bid submitted in the relevant CAISO Market for the Generating Unit identified for that Physical Trade, individually and in the aggregate. If a Physical Trade is not adequately physically supported, the quantities in the Physical Trades of that Scheduling Coordinator and its downstream trading counter-parties are reduced on a pro-rata basis until those Physical Trades are valid. In performing physical pre-market validation of Inter-SC Trades of Energy in HASP, the CAISO also considers final ~~Day-Ahead~~ Inter-SC Trades of Energy for the DAM in determining whether the HASP Physical Trades are physically supported individually or in the aggregate. Specifically, the CAISO determines whether the Generating Unit's submitted Bid in HASP is greater than or equal to the sum of: (1) final Day-Ahead Inter-SC Trades of Energy at that location and (2) the additional Inter-SC Trades of Energy ~~submitted in the~~for the HASP at that location. If the amounts are greater than the Generating Unit's submitted Bids in HASP, the CAISO will adjust down on a prorated basis the HASP Physical Trades. Final Day-Ahead Physical Trades are not adjusted in the HASP pre-market validation. The CAISO does not perform any Settlement on Physical Trade quantities (MWh) that are curtailed during Physical Trade pre-market validation.

* * *

28.2 INTER-SC TRADES OF ANCILLARY SERVICES.

~~Scheduling Coordinators may submit Inter-SC Trades of Ancillary Services no later than the Market Close for the HASP.~~ Inter-SC Trades of Ancillary Services enable a Scheduling Coordinator to transfer any fixed quantity of Ancillary Services (MW) to another Scheduling Coordinator. An Inter-SC Trade of AS shall consist of a quantity in MWs traded between two Scheduling Coordinators for a specific hour and for a specific Ancillary Service type. The Inter-SC Trade of AS is a financial trade. The CAISO shall charge and pay the two parties of the trade based on the quantity (MW) of the Ancillary Service Obligation traded times the user rate for the Ancillary Service trades for the Trading Hour. Scheduling Coordinators may submit Inter-SC Trades of Ancillary Services for Regulation Up, Regulation Down, Spinning and Non-Spinning Reserves.

* * *

28.2.3 Submission of Inter-SC Trades of Ancillary Services.

Scheduling Coordinators may submit Inter-SC Trades of Ancillary Services at any time ~~prior to the time that the CAISO conducts its final validation run as specified in Section 28.2.2~~ during the HASP Inter-SC Trade Period.

* * *

28.3.3 Submission of Inter-SC Trades of IFM Load Uplift ~~Load~~ Obligation.

Scheduling Coordinators may submit Inter-SC Trades of IFM Load Uplift ~~Load~~ Obligations at any time ~~prior to the time that the CAISO conducts its final validation run as specified in Section 28.3.2~~ during the HASP Inter-SC Trade Period.

* * *

30.4 Election for Start-Up Costs and Minimum Load Costs.

Scheduling Coordinators for Generating Units~~,~~ and ~~Non-Dynamic and Dynamic~~Resource-Specific System Resources may elect on a semi-annual basis either of the two options provided below (the Proxy Cost option or the Registered Cost option) for specifying their Start-Up Costs and Minimum Load Costs to be used for those resources in the CAISO Markets Processes. Unless the Scheduling Coordinator has submitted ~~Bid-based~~ Start-Up Costs and Minimum Load Costs in accordance with the Registered Cost option, the CAISO will assume the Proxy ~~c~~Cost-based option as the default option.

(1) Proxy Cost Option ~~-based.~~ This option uses fuel-cost adjusted formulas for Start-Up Costs and Minimum Load Costs based on the resource's actual unit-specific performance parameters. The Start-Up Costs and Minimum Load Costs values ~~contained in the resource's Bids as~~ utilized in the CAISO Markets Processes will be these formulaic values adjusted for fuel-cost variation on a daily basis as calculated pursuant to a Business Practice Manual. ~~Resources~~ Scheduling Coordinators will not be able to submit Bids containing alternative values for Start-Up Costs and Minimum Load Costs. In the event that the Scheduling Coordinator for a unit does not provide sufficient data for the CAISO to determine ~~its~~the unit's Proxy ~~c~~Costs, the CAISO will assume that the unit's Start-Up Costs and Minimum Load Costs are zero.

(2) Registered Cost Option ~~Bid-based.~~ Under this option, ~~T~~the ~~resource~~ Scheduling Coordinator may submit values of its choosing for Start-Up Costs and Minimum Load Costs without regard to the resource's performance parameters or underlying costs. These Start-Up Cost and Minimum Load ~~c~~Cost values ~~contained in the resource's Bids as~~ utilized in the CAISO Markets Processes will be these pre-specified values and will be fixed for six months in the Master File. ~~Resources~~ Scheduling Coordinators will not be able to submit Bids containing alternative values for Start-Up Costs and Minimum Load Costs.

* * *

30.5 Bidding Rules.

30.5.1 General Bidding Rules.

(a) All Energy and Ancillary Services Bids of each Scheduling Coordinator submitted to the DAM for the following Trading Day shall be submitted at or prior to 10:00 a.m. on the day preceding the Trading Day, but no sooner than 7 days prior to the Trading Day. All Energy and Ancillary Services Bids of each Scheduling Coordinator submitted to the HASP for the following Trading Day shall be submitted starting from the time of publication, at 1:00 p.m. on the day preceding the Trading Day, of DAM results for the Trading Day, and ending seventy-five (75) minutes prior to each applicable Trading Hour in the RTM. The CAISO will not accept any Energy or Ancillary Services Bids for the following Trading Day between 10:00 a.m. on the day preceding the Trading Day and the publication, at 1:00 p.m. on the day preceding the Trading Day, of DAM results for the Trading Day;

(b) Bid prices submitted by Scheduling Coordinator for Energy accepted and cleared in the IFM and scheduled in the Day-Ahead Schedule cannot be decreased. Bid prices for Energy submitted but not

scheduled in the Day-Ahead Schedule may be increased or decreased in the HASP. Incremental Bid prices for Energy associated with Day-Ahead AS or RUC Awards in Bids submitted to the HASP may be revised. Scheduling Coordinators may revise ETC Self-Schedules for Supply only in the HASP to the extent such a change is consistent with TRTC Instructions provided to the CAISO by the Participating TO in accordance with Section 16 ~~of this CAISO Tariff~~. Scheduling Coordinators may revise TOR Self-Schedules for Supply only in the HASP to the extent such a change is consistent with TRTC Instructions provided to the CAISO by the Non-Participating TO in accordance with Section 17. Energy associated with awarded Ancillary Services capacity cannot be offered in the HASP or Real-Time Market;

(c) Scheduling Coordinators may submit Energy, AS and RUC Bids in the DAM that are different for each Trading Hour of the Trading Day;

(d) Bids for Energy or capacity that are submitted to one CAISO Market, but are not accepted in that market are no longer a binding commitment and Scheduling Coordinators may submit Bids in a subsequent CAISO Market at a different price; and

(e) The CAISO shall be entitled to take all reasonable measures to verify that Scheduling Coordinators meet the technical and financial criteria set forth in Section 4.5.1 ~~hereof~~ and the accuracy of information submitted to the CAISO pursuant to this Section 30.

30.5.2 Supply Bids.

* * *

30.5.2.2 Supply Bids for Participating Generators.

In addition to the common elements listed in Section 30.5.2.1, Supply Bids for Participating Generators shall contain the following components: Start-Up Bid, Minimum Load Bid, Ramp Rate, ~~m~~Minimum and ~~m~~Maximum Operating ~~l~~Limits; ~~Distribution Curve;~~ Regulatory Must-Take/Must-Run Generation; Contingency Flag; and Contract Reference Number (if any). Supply Bids for Physical Scheduling Plants and System Units must include the Generation Distribution Factors. If the Scheduling Coordinator has not submitted the Generation Distribution Factors applicable for the Bid, the CAISO will use default Generation Distribution Factors stored in the Master File. All Generation Distribution Factors used by the

CAISO will be normalized based on Outage data that is available to the automated market systems. Combined-cycle Generationg Units may only be registered under a single Resource ID.

30.5.2.3 Supply Bids for Participating Loads and Aggregated Participating Loads.

In addition to the common elements listed in Section 30.5.2.1, Scheduling Coordinators submitting Supply Bids for Participating Loads, which includes Pumping Load or Pumped-Storage Hydro Units, shall contain the following components: Pumping and Participating Load, Minimum Load Bid, Load Distribution CurveFactor, Ramp Rate, Energy Limit, Demand Reduction InitiationPumping Cost, and Participating Load and Pump Shut-Down Costs for resources registered as Pumped Storage Hydro Units. Aggregated Participating Loads that choose to submit a Supply Bid may only do so by submitting a Supply Bid as a Generating Unit for the Demand reduction capacity of the Aggregated Participating Load. The CAISO will use Load Distribution Factors the CAISO has created for the Aggregated Participating Load.

30.5.2.4 Supply Bids for System Resources.

In addition to the common elements listed in Section 30.5.2.1, Supply Bids for System Resources shall also contain: the relevant Ramp Rate; Start-Up CostsBid; and Minimum Load CostsBid. Start-Up CostsBids and Minimum Load CostsBids for System Resources, except for Dynamic or Non-Dynamic Resource-Specific System Resources, must be zero. Dynamic or Non-Dynamic Resource-Specific System Resources may elect the Proxy Cost option or Registered Cost option as provided in Section 30.4submit non-zero Start-Up and Minimum Loads Bids. Dynamic and Non-Dynamic Resource-Specific System Resources must register resource specific information in the Master File in a similar manner as Generating Units and are eligible to participate in the Day-Ahead Market on an equivalent basis as Generating Units and are not obligated to participate in RUC or the RTM if the resource did not receive a Day-Ahead Schedule unless the resource is a Resource Adequacy Resource. If the Resource-Specific System Resource is a Resource Adequacy Resource, the Scheduling Coordinator for the resource is obligated to make itself available to the CAISO mMarket as prescribed by Section 40.6. Dynamic Resource-Specific System Resources are also eligible to participate in the HASP and RTM on an equivalent basis as Generating Units. Non-Dynamic Resource-Specific System Resources will be treated like other System Resources in the HASP and RTM. The quantity (in MWh) of Energy categorized as Interruptible Imports (non-firm imports) can only be submitted through Self-Schedules in the Day-Ahead

Market and cannot be incrementally increased in the HASP or RTM. Bids submitted to the Day-Ahead Market for ELS Resources will be applicable for two days after they have been submitted and cannot be changed the day- after they have been submitted.

* * *

30.5.2.6.3 Non-Spinning Reserve Capacity.

In the case of Non-Spinning Reserve, the Ancillary Service Bid must also contain: (a) the MW capability available within 10 minutes; (b) the Bid price of the capacity reservation; (c) time of synchronization following notification (min); and (d) an indication whether the capacity reserved would be available to supply Imbalance Energy only in the event of the occurrence of an unplanned Outage, a Contingency or an imminent or actual System Emergency (Contingency Flag). In the case of Non-Spinning Reserve Capacity from System Resources, the Ancillary Services Bid must also contain: (a) Interchange ID code of the selling entity, (b) Schedule ID (NERC ID number); and (c) a Contract Reference Number, if applicable. In the case of Non-Spinning Reserve Capacity from Load within the CAISO Control Area, the Ancillary Service Bid must also contain: (a) a Load identification name and Location Code, (b) Demand reduction available within 10 minutes, (c) time to interruption following notification (min), and (d) maximum allowable curtailment duration (hr). An Aggregated Participating Load may only participate as a Generating Unit offering Non-Spinning Reserve capacity from the Demand reduction capacity of the Aggregated Participating Load through a Bid to provide Non-Spinning Reserve or a Submission to Self-Provide an Ancillary Service for Non-Spinning Reserve.

* * *

30.5.3 Demand Bids.

Each Scheduling Coordinator representing Demand, including Non-Participating Load and Aggregated Participating Load, shall submit Bids indicating the hourly quantity of Energy in MWh that it intends to purchase in the IFM for each Trading Hour of the Trading Day. Scheduling Coordinators must submit Demand Bids, including Self Schedules, for CAISO Demand at Load Aggregation Points except as provided in Section 30.5.3.2. Scheduling Coordinators must submit must submit a zero RUC Availability Bid for the portion of their qualified RA Capacity. If submitting Self-Schedules at Scheduling Points for

export in the IFM, the Scheduling Coordinator shall indicate whether or not the export is served from Generation from Resource Adequacy Capacity, and if submitting Self-Schedules at Scheduling Points for export in HASP the Scheduling Coordinator shall indicate whether or not the export is served from Generation from Resource Adequacy Capacity or RUC Capacity. The procedure for identifying the non-Resource Adequacy Capacity or non-RUC Capacity is specified in the Business Practice Manuals.

* * *

30.5.3.2 Exceptions to Requirement for Submission of Demand Bids and Settlement at the LAP.

The following are exceptions to the requirement that Demand Bids be submitted and settled at the LAP:

(a) ETC or TOR Self-Schedules submitted consistent with the submitted TRTC Instructions;

(b) Except for Aggregated Participating Loads, which may only participate as Non-Participating Load, Participating Load Bids for Supply and Demand may be submitted and settled at a PNode; and

(c) Export Bids are submitted and settled at Scheduling Points, which do not constitute a LAP.

* * *

30.7.3.2 Master File Data Update.

Except as otherwise prescribed in this tariff, ~~O~~once a day the Master File data is updated with changes to the Master File that were submitted between at least five~~seven~~ (~~7~~5) and up to eleven (11) Business Days in advance, after which all conditional Bids must be re-validated prior to the trading period when the Bid will take effect. After this re-validation takes place, the status of all conditionally modified and conditionally valid Bids may be changed to modified or valid, if the Bid period is for the next relevant DAM.

* * *

30.12 Format and Validation of Start Up and Shut Down Costs.

For a Generating Unit, the submitted Start-Up Cost expressed in dollars ($) as a function of down time expressed in minutes must be a staircase function with up to three (3) segments defined by a set of 1 to 4 down time and Start-Up Cost pairs. The Start-Up Cost is the cost incurred to start the resource if it is offline longer than the corresponding down time. The last segment will represent the cost to start the resource from cold Start-Up and will extend to infinity. The submitted Start-Up Cost function shall be validated as follows:

(a) The first down time must be 0 min.

(b) The down time entries must match exactly (in number, sequence, and value) the corresponding down time breakpoints of the ~~cost-based~~ Start-Up Cost function, as registered in the Master File for the relevant resource as either the Proxy Cost or Registered Cost.

(c) The Start-Up Cost for each segment must not be negative and must be equal to ~~not exceed~~ the Start-Up Cost of the corresponding segment of the ~~cost-based~~ Start-Up Cost function, as registered in the Master File for the relevant resource. ~~For gas-fired resources, the cost-based startup cost function shall be derived from the startup fuel function, as registered in the Master File for the relevant resource, and the applicable gas price index as approved by FERC.~~ If a value is submitted in a Bid for the Start-Up Cost, it will be overwritten by the Master File value as either the Proxy Cost or Registered Cost based on the option elected pursuant to Section 30.4. If no value for Start-Up Cost is submitted in a Bid, the CAISO will insert the Master File value, as either the Proxy Cost or Registered Cost based on the option elected pursuant to Section 30.4.

(d) The Start-Up Cost function must be strictly monotonically increasing, i.e., the Start-Up Cost must increase as down time increases.

For Participating Loads, a single Shut Down Cost in dollars ($) is the cost incurred to Shut-Down Cost the resource after receiving a Dispatch Instruction. The submitted Shut-Down Cost must not be negative.

30.13 Format and Validation of Minimum Load Costs.

For a Generating Unit, the submitted Minimum Load Cost expressed in dollars per hour ($/hr) is the cost incurred for operating the unit at minimum load. The submitted Minimum Load Cost must not be negative

and must be equal to~~not exceed~~ the ~~cost-based~~ Minimum Load Cost under the Proxy Cost option or Registered Cost option, as registered in the Master File for the relevant resource.

For Participating Loads, the submitted Minimum Load Cost ($/hr) is the cost incurred while operating the resource at reduced consumption after receiving a Dispatch Instruction. The submitted Minimum Load Cost must not be negative.

* * *

31.3.1 Market Clearing and Price Determination.

31.3.1.1 The IFM produces: (1) a set of hourly Day-Ahead Schedules, AS Awards, and AS Schedules for all participating Scheduling Coordinators that cover each Trading Hour of the next Trading Day; and (2) the hourly LMPs for Energy and the ASMPs for Ancillary Services to be used for settlement of the IFM. The CAISO will publish the LMPs at each PNode as calculated in the IFM. In determining Day-Ahead Schedules, AS Awards, and AS Schedules the IFM optimization will minimize total bid costs based on submitted and mitigated Bids while respecting the operating characteristics of resources, the operating limits of transmission facilities, and a set of scheduling priorities that are described in Section 31.4. In performing its optimization, the IFM first tries to complete its required functions utilizing Economic Bids without adjusting Self-Schedules, and adjusts Self-Schedules only if it is not possible to balance Supply and Demand and manage Congestion with available Economic Bids. The Day-Ahead Schedules are binding commitments, including the commitment to Start-Up, if necessary, to comply with the Day-Ahead Schedules. The CAISO will not issue separate Start-Up instructions for Day-Ahead commitments. A resource's status, however, can be modified as a result of additional market processes occurring in HASP, STUC and RTUC. In addition, in Real-Time, resources are required to follow Real-Time Dispatch Instructions.

* * *

31.3.3 Metered Subsystems.

In clearing the IFM, the CAISO will not enforce constraints within each MSS. The Full Network Model (FNM) includes a full model of MSS transmission networks used for power flow calculations and constraint management in the IFM and RTM. Network constraints (i.e. circuit ratings, thermal ratings,

etc.) within the MSS, or at ~~the~~ its boundaries, shall be monitored but not enforced in the CAISO's FNM. If overloads are observed in the forward markets are internal to the MSS or at the MSS boundaries and are attributable to MSS operations, the CAISO shall communicate such events to the Scheduling Coordinator for the MSS and coordinate any manual re-dispatch required in Real-Time. If, independent of the CAISO, the Scheduling Coordinator for the MSS is unable to resolve Congestion internal to the MSS or at the MSS boundaries in Real-Time, the CAISO will use Exceptional Dispatch Instructions on Resources that have been Bid into the HASP and RTM to resolve the congestion. Such costs will be allocated pursuant to the provisions specified in Section 11.5.6.2.5.2. The CAISO and MSS Operator shall develop specific procedures for each MSS to determine how network constraints will be handled. Costs associated with internal Congestion and Transmission Losses in the MSS will be the responsibility of the MSS Operator. The Scheduling Coordinator for the MSS shall be responsible for payment of Marginal Losses for transactions at any points of interconnection between the MSS and the CAISO Controlled Grid, and for the delivery of Energy to the MSS or from the MSS in accordance with the CAISO Tariff. For MSS Operators that elect Load following, the CAISO shall exclude the effect of Transmission Losses in the relevant MSS in the CAISO's calculation of loss sensitivity factors used to calculate LMPs.

* * *

31.4 Uneconomic Adjustments in the IFM.

All Self-Schedules are respected by SCUC to the maximum extent possible and are protected from curtailment in the Congestion Management process to the extent that there are Economic Bids that can relieve Congestion. If all Economic Bids in the IFM are exhausted, resource Self-Schedules between the resource's Minimum Load and the first Energy level of the first Energy Bid point will be subject to uneconomic adjustments based on the scheduling priorities listed below. Through this process, imports and exports may be reduced to zero, Demand Bids may be reduced to zero, price taker Demand (LAP load) may be reduced, and generation may be reduced to a lower operating (or regulating) limit (or lower regulating limit plus any qualified Regulation Down Award or Self-Provision of Ancillary Services, if applicable). Any schedules below the Minimum Load level are treated as fixed schedules and are not subject to uneconomic adjustments for Congestion management. The provisions of this section shall

apply only to the extent they do not conflict with any MSS Agreement. The scheduling priorities for the IFM from highest priority (last to be adjusted) to lowest priority (first to be adjusted) are as follows:

a) Reliability Must Run (RMR) pre-dispatch reduction;

b) Day-Ahead TOR (balanced demand and supply reduction);

c) Day-Ahead ETCs (balanced demand and supply reduction); Different ETC Priority Levels will be observed based upon global ETC priorities provided to the CAISO by the responsible PTOs;

d) Other Self Scheduled CAISO Demand reduction subject to Section 31.3.1.2, exports explicitly identified in a Resource Adequacy Plan to be served by Resource Adequacy Capacity explicitly identified and linked in a Supply Plan to the exports, and Self-Scheduled exports at Scheduling Points explicitly sourced by non-Resource Adequacy Capacity;

e) Self-Scheduled exports at Scheduling Points not explicitly sourced by non-Resource Adequacy Capacity, except those exports explicitly identified in a Resource Adequacy Plan to be served by Resource Adequacy Capacity explicitly identified and linked in a Supply Plan to the exports as set forth in Section 31.4(d);

f) Day-Ahead Ahead Regulatory Must Run and Regulatory Must Take reduction;

g) Other Self Scheduled Supply reduction; and

h) Economic Demand and Supply Bids.

31.5 Residual Unit Commitment.

The CAISO shall perform the RUC process after the IFM. In the event that the IFM did not commit sufficient resources to meet the CAISO Forecast of CAISO Demand ~~Forecast~~ and account for other factors such as ~~load~~Demand ~~f~~Forecast error, as described in the Business Practice Manuals, the RUC shall commit additional resources and identify additional RUC Capacity to ensure sufficient on-line resources to meet Demand for each hour of the next Trading Day. RUC Capacity is selected by a SCUC optimization that uses the same FNM used in the IFM to help ensure the deliverability of Energy from the RUC Capacity.

31.5.1 RUC Participation.

31.5.1.1 Capacity Eligible for RUC Participation.

RUC participation is voluntary for ~~C~~capacity that has not been designated as Resource Adequacy Capacity. Scheduling Coordinators may make such ~~C~~capacity available for participation in RUC by submitting a RUC Availability Bid, provided the Scheduling Coordinator has also submitted an Energy Bid for such Capacity into the IFM. Capacity from Non-Dynamic System Resources that has not been designated Resource Adequacy Capacity is not eligible to participate in RUC. Capacity from resources including System Resources that has been designated as qualified Resource Adequacy Capacity must participate in RUC. RUC participation is required for Resource Adequacy Capacity to the extent that Resource Adequacy Capacity is not committed following the IFM. System Resources eligible to participate in RUC will be considered on an hourly basis; that is, RUC will not observe any multi-hour block constraints that may have been submitted in conjunction with Energy Bids to the IFM. RMR Unit ~~C~~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 of the CAISO Tariff are binding and the RUC process will model such capacity as capacity that is under a contractual obligation to provide.

* * *

31.5.3 RUC Procurement Target.

The procurement target for RUC in any given Trading Hour will be determined based on the next day's hourly CAISO Forecast of CAISO Demand less the Energy scheduled in the Day-Ahead Schedule, and accounting for other factors, as appropriate, such as ~~load~~Demand ~~f~~Forecast error and estimated incremental HASP Bids including those from Participating Intermittent ~~RP r~~Resources. The adjustments listed ~~below~~ in Sections 31.5.3.1 to 31.5.3.6 will be made to the CAISO Forecast of CAISO Demand to account for the conditions as provided therein. Adjustments may be made on a RUC ~~z~~Zone basis to ensure that RUC results in adequate local capacity procurement. The RUC procurement target-setting procedure is designed to meet the requirements of reliable grid operation without unnecessary over-procurement of RUC Capacity or over-commitment of resources. Additional detail on the process for setting the RUC procurement target is specified in the Business Practice Manuals.

* * *

31.5.3.2 Demand Response Adjustments.

The CAISO shall account for ~~d~~Demand response that is clearly communicated to the CAISO as certain to be curtailed for the next Trading Day only for the two following types of ~~d~~Demand response: 1) ~~d~~Demand response triggered by a staged System ~~e~~Emergency event; and 2) ~~d~~Demand response that is triggered by a price or an event known in advance. If an LSE informs the CAISO of anticipated Demand response prior to Market ~~c~~Close of the DAM, the CAISO Forecast of CAISO Demand used as the RUC procurement target will be reduced accordingly.

31.5.3.3 MSS Adjustment.

As specified in section 31.5.2.1, MSS Operators are permitted to make an annual election to opt-in or opt-out of RUC participation. If the MSS Operator opts-in to the RUC procurement process, the CAISO considers the CAISO's Demand ~~f~~Forecast of the MSS Demand in setting the RUC procurement target. ~~and~~ ~~i~~If an MSS Operator opts-out of the RUC procurement process, the CAISO does not consider the CAISO's Demand ~~f~~Forecast of the MSS Demand in setting the RUC procurement target. An MSS Operator that has elected to opt-out of RUC, or has elected to Load follow and therefore has also elected to opt-out of RUC, is required to provide sufficient resources in the Day-Ahead Market, and in the case of a Load following MSS Operator, follow its Load within ~~a tolerance~~ the MSS Deviation ~~b~~Band. To reflect these options and to prevent committing additional capacity or resources for any differences between the CAISO Demand Forecast ~~of CAISO Demand~~ for the MSS and the MSS Self-Scheduled quantities in the IFM, the CAISO replaces the CAISO Demand Forecast ~~of CAISO Demand~~ for such MSS~~s~~ with the quantity of Demand self-scheduled by the Scheduling Coordinator for the MSS in the IFM.

31.5.3.4 Eligible Intermittent Resource Adjustment.

Scheduling Coordinators for Eligible Intermittent Resources may submit Bids, including Self-Schedules, in the Day-Ahead Market and the quantity ultimately scheduled from Eligible Intermittent Resources may differ from the CAISO forecasted deliveries from the Eligible Intermittent Resources. The CAISO may adjust the forecasted Demand either up or down for such differences by RUC ~~z~~Zone in ~~for~~ which the

Eligible Intermittent Resource resides. To the extent the scheduled quantity for an Eligible Intermittent Resource in the IFM is less then the quantity forecasted by CAISO, the CAISO makes a Supply side adjustment in RUC by using the CAISO forecasted quantity for the Eligible Intermittent Resource as the expected delivered quantity. To the extent the scheduled quantity for an Eligible Intermittent Resource in the IFM is greater ~~then~~than the quantity forecasted by the CAISO, the CAISO makes a Demand side adjustment to the RUC ~~z~~Zone Demand equal to the difference between the Day-Ahead Schedule and the CAISO forecasted quantity.

31.5.3.5 Real-Time Expected Incremental Supply Self-Schedule Adjustment.

In order to avoid over procurement of RUC, the CAISO shall, using a similar-day approach, estimate the HASP Self-Schedules for resources that usually submit HASP Self-Schedules that are greater than their Day-Ahead Schedules. The CAISO Operator may set the length of the Self-Schedule moving average window. Initially this moving average window shall be set by default to seven (7) days; in which case the weekday estimate is based on the average of five (5) most recent weekdays and the weekend estimate is based on the average of the two (2) most recent weekend days. To the extent weather conditions differ significantly from the historical days, additional adjustment may be necessary. After determining the estimate of Real-Time Self-Schedules, using a similar day forecasting approach, the CAISO adjusts the CAISO Forecast of CAISO Demand of a RUC ~~z~~Zone based on the forecasted quantity changes in Supply as a result of Self-Schedules submitted in the RTM. This adjustment for forecasted Real-Time Self-Schedules may result in positive or negative adjustments. Demand adjustments to the CAISO Forecast of CAISO Demand result when there is a net forecast decrease in Real-Time Self-Schedule Supply relative to the Day-Ahead Schedule Supply. Supply adjustments to the individual resources occur when there is a net forecast increase in Real-Time Self-Schedule Supply relative to the Day-Ahead Schedule Supply of the individual resource.

31.5.3.6 Day-Ahead Ancillary Service Procurement Deficiency Adjustment.

While the CAISO intends to procure one hundred percent (100%) of its forecasted ~~Ancillary Service~~Operating ~~r~~Reserve requirement in the IFM based on the CAISO Forecast of CAISO Demand as

specified in Section 8.3.1, the CAISO shall make adjustments to the CAISO Forecast of CAISO Demand used in RUC to ensure sufficient capacity is available or resources committed in cases that the CAISO is unable to procure one hundred percent (100%) of its forecasted Operating rReserve requirement in the IFM; provided, however, that the CAISO shall not procure specific Ancillary Services products in RUC, nor will the RUC optimization consider AS-related performance requirements of available capacity.

* * *

31.5.3.7 RUC Zones.

31.5.3.7.1 Use of RUC Zones.

The CAISO shall adjust the CAISO Forecast of CAISO Demand by RUC Zone for the conditions described in Sections 31.5.3.2 through 31.5.3.6. If any adjustments are made throughout the affected RUC Zone, such adjustments will be made consistent with the subset of system LDFs for the Nodes that define the RUC Zone(s). The CAISO will adjust the CAISO Forecast of CAISO Demand of each affected RUC Zone, preserving the LDFs within each RUC Zone, but the relative weighting of the LDFs across the system will deviate from the original LDFs. RUC costs will be pooled together to establish the RUC Compensation Costs. As described in Section 11.8.3, Settlement of RUC Compensation Costs will not be on a RUC Zone basis.

31.5.3.7.2 Designation of RUC Zones.

The CAISO shall define RUC Zones as areas that represent UDC or MSS Service Areas, Local Capacity Areas, or any other collection of Nodes. RUC Zones will be designated by the CAISO as necessary and to the extent that the CAISO has developed sufficient data on historical CAISO Demand and weather conditions to allow it to perform Demand Forecasts. The mapping of RUC Zones to Nodes shall be static data and shall be maintained in the Master File. The CAISO may add new Nodes to a RUC Zone if new Nodes are added to the FNM. The status of each RUC Zone shall remain active for as long as the CAISO maintains regional forecasting capabilities, but once a RUC Zone is designated the CAISO will only adjust the CAISO Forecast of CAISO Demand as necessary to address RUC procurement constraints and not as a normal course for all CAISO Market functions. The actual RUC Zones used by the CAISO in its operation of RUC are posted on the CAISO Website.

* * *

31.5.7 Rescission of Payments for Undispatchable and Undelivered RUC Capacity.

If capacity committed in RUC provided from a Generating Unit, Participating Load, System Unit or System Resource is Undispatchable Capacity or Undelivered Capacity during the relevant Settlement Interval, then payments will be rescinded as described in this Section 31.5.7 and settled in accordance with Section 11.2.2.2. If the CAISO determines that non-compliance of a Participating Load, Generating Unit, System Unit or System Resource, with an operating order or Dispatch Instruction from the CAISO, or with any other applicable technical standard under the CAISO Tariff, causes or exacerbates system conditions for which the WECC imposes a penalty on the CAISO, then the Scheduling Coordinator of such Participating Load, Generating Unit, System Unit or System Resource shall be assigned that portion of the WECC penalty which the CAISO reasonably determines is attributable to such non-compliance, in addition to any other penalties or sanctions applicable under the CAISO Tariff. The rescission of payments in this Section 31.5.7 shall not apply to a capacity payment for any particular RUC Capacity if the RUC Availability payment is less than or equal to zero.

31.5.7.1 Rescission of Payments for Undispatchable RUC Capacity.

The CAISO shall calculate the Real-Time ability of each Generating Unit, Participating Load, System Unit or System Resource to deliver Energy from or capacity committed in RUC for each Settlement Interval based on its maximum operating capability, actual telemetered output, and Operational Ramp Rate as described in Section 30.10. System Resources that receives an award for RUC Capacity in the Day-Ahead Market are required to electronically tag (E-Tag as prescribed by the WECC) RUC Capacity. If the amounts of RUC Capacity in an electronic tag differ from the amounts of RUC Capacity for the System Resource, the Undispatchable Capacity will equal the amount of the difference, and will be settled in accordance with the provisions of Section 11.2.2.2.1. If the Undispatchable Capacity is capacity committed in RUC and is from a Generating Unit, System Unit or System Resource that is a Resource Adequacy Resource, there is no payment obligation to the CAISO for the Undispatchable RUC Capacity. The CAISO will report the instance of non-compliance by the Resource Adequacy Resource to the appropriate Local Regulatory Authority.

31.5.7.2 Rescission of Payments for Undelivered RUC Capacity.

For each Settlement Interval in which a Generating Unit, Participating Load, System Unit or System Resource fails to supply Energy from capacity committed in RUC in accordance with a Dispatch Instruction, or supplies only a portion of the Energy specified in the Dispatch Instruction, the RUC Availability Payment will be reduced to the extent of the deficiency, in accordance with the provisions of Section 11.2.2.2.2.

* * *

33.3 Treatment of Self-Schedules in HASP.

Scheduling Coordinators may submit Self-Schedules for Supply of Energy to the HASP. This includes Self-Schedules by Participating Load that is submitting Bids as a negative generator. Scheduling Coordinators may not submit Self-Schedules for CAISO Demand in HASP. Scheduling Coordinators may submit Self-Schedules for exports at Scheduling Points ~~including but not limited to exports that utilize TORs and ETC rights that have post-Day-Ahead scheduling rights, and including Self-Schedules for wheel-throughs~~. The HASP optimization clears Bids, including Self-Schedules, while preserving all priorities in this process consistent with Section 31.4. –The HASP optimization does not adjust submitted Self-–Schedules unless it is not possible to balance Supply and the CAISO Forecast of CAISO Demand plus Export Bids and manage Congestion using the available Economic Bids, in which case the HASP performs non-economic adjustments to Self-Schedules. The MWh quantities of Self-Schedules~~d~~ of Supply that clear in the HASP constitute a feasible ~~d~~Dispatch for the RTM at the time HASP is run, but the HASP results do not constitute a final ~~s~~Schedule for Generating Units because these resources may be adjusted non-economically in the RTD if necessary to manage Congestion and clear Supply and Demand. Self-Schedules submitted for Generation Units that clear in the HASP will be issued HASP Advisory Schedules. Scheduling Coordinators representing ~~RA-PIRP~~Participating Intermittent ~~r~~Resources whose output is being used to satisfy a Resource Adequacy Requirement must submit Self-Schedules in HASP in accordance with the forecast provided by the independent ~~F~~forecast ~~S~~service ~~P~~provider. The submission of a change to an ETC Self-Schedule beyond the deadline specified in Section 16.9.1, that is permitted pursuant to the terms of the applicable ETC, shall not be deemed to be an unbalanced ETC Self-Schedule for the purposes of Settlement, consistent with the ETC and TOR Self-Schedule Settlement treatment described in Section 11.5.7.

* * *

34.9 Exceptional Dispatch.

* * *

34.9.3 Transmission-Related Modeling Limitations.

The CAISO may also manually Dispatch resources in addition to or instead of resources dispatched by the RTM optimization software, during or prior to the Real-Time as appropriate, to address transmission-related modeling limitations in the Full Network Model. Transmission-related modeling limitations for the purposes of Exceptional Dispatch, including for settlement of such Exceptional Dispatch as described in Section 11.5.6, shall consist of any FNM modeling limitations that arise from transmission maintenance, lack of voltage support at proper levels as well as incomplete or incorrect information about the transmission network, for which the Participating TOs have primary responsibility. The CAISO shall also manually Dispatch resources under this Section 34.9.3 in response to system conditions including threatened or imminent reliability conditions for which the timing of the Real-Time Market optimization and system modeling are either too slow or incapable of bringing the CAISO Controlled Grid back to reliable operations in an appropriate time-frame based on the timing and physical characteristics of available resources to the CAISO.

* * *

34.10.1 Increasing Supply.

The scheduling priorities as defined in the RTM optimization to meet the need for increasing Supply as reflected from higher to lower priority are as follows:

a) Non-Participating Load reduction, exports explicitly identified in a Resource Adequacy Plan to be served by Resource Adequacy Capacity explicitly identified and linked in a Supply Plan to the exports, or Self-Schedules for exports at Scheduling Points in HASP served by Generation from non-Resource Adequacy Capacity or from non-RUC Capacity;

b) Self-Schedules for exports at Scheduling Points in HASP not ~~served~~offered by Generation from non-Resource Adequacy Capacity or not ~~served~~offered by Generation from non-RUC Capacity, except those exports explicitly identified in a Resource Adequacy Plan to be served by Resource

Adequacy Capacity explicitly identified and linked in a Supply Plan to the exports as set forth in Section 34.10.1(a);

c) Contingency-Only Operating Reserve if activated by Operator to provide Energy (as indicated by the Contingency flag and the Contingency condition);

d) Economic Bids submitted in the HASP or RTM.

34.10.2 Decreasing Supply.

The scheduling priorities as defined in the RTM optimization to meet the need for decreasing supply as reflected from higher to lower priority are as follows:

a) Non-Participating Load increase;

b) Reliability Must Run (RMR) Schedule (Day-Ahead manual pre-dispatch or Manual RMR Dispatches or Dispatches that are flagged as RMR Dispatches following the MPM-RRD process);

c) Transmission Ownership Right (TOR) Self-Schedule;

d) Existing Rights (ETC) Self-Schedule;

e) Regulatory Must Run and Regulatory Must Take (RMT) Self-Schedule;

f) Participating Load increase;

g) Day-Ahead Supply Schedule;

h) Self-Schedule submitted in HASP; and

i) Economic Bids submitted in the HASP or RTM.

These dispatch priorities as defined in the RTM optimization may be superseded by operator actions and procedures as necessary to ensure reliable operations.

* * *

34.11.2 Failure to Conform to Dispatch Instructions.

In the event that, in carrying out the Dispatch Instruction, an unforeseen problem arises (relating to plant operations or equipment, personnel or the public safety), the recipient of the Dispatch Instruction must notify the CAISO or, in the case of a Generator, the relevant Scheduling Coordinator immediately. The relevant Scheduling Coordinator shall notify the CAISO of the problem immediately. If a resource is

unavailable or incapable of responding to a Dispatch Instruction, or fails to respond to a Dispatch Instruction in accordance with its terms, the resource shall be considered to be non-conforming to the Dispatch Instruction unless the resource has notified the CAISO of an event that prevents it from performing its obligations within 30 minutes of the onset of such event through a SLIC log entry. Notification of non-compliance via the Automated Dispatch System (ADS) will not supplant nor serve as the official notification mechanism to the CAISO. If the resource is considered to be non-conforming as described above, the Scheduling Coordinator for the resource concerned shall be subject to Uninstructed Imbalance Energy as specified in Section 11.5.2 and Uninstructed Deviation Penalties as specified in Section 11.23. This applies whether any Ancillary Service concerned are contracted or self-provided. For a ~~n~~Non-Dynamic System Resource Dispatch Instruction prior to the Trade Hour, the Scheduling Coordinator shall inform the CAISO of its ability to conform to a Dispatch Instruction via ~~"~~ADS~~"~~. The Non-Dynamic System Resource has the option to accept, partially accept, or decline the Dispatch Instruction, but in any case must respond within the timeframe specified in a Business Practice Manual. The Non-Dynamic System Resource can change its response within the indicated timeframe. If a Non-Dynamic System Resource does not respond within the indicated timeframe, the Dispatch Instruction will be considered declined. A decline of such a Non-Dynamic System Resource for a Dispatch Instruction received at least 40 minutes prior to the Trading Hour will be subject to Uninstructed Deviation Penalties as specific in Section 11.23. A decline of such a Non-Dynamic System ~~r~~Resource for a Dispatch Instruction received less than 40 minutes prior to the Trading Hour will not be subject to Uninstructed Deviation Penalties. A Non-Dynamic System Resource that only partially accepts a Dispatch Instruction is subject to Uninstructed Deviation Penalties for the portion of the Dispatch Instruction that is declined.

* * *

34.15 Rules For Real-Time Dispatch of Imbalance Energy Resources.

34.15.1 Resource Constraints.

The SCED shall enforce the following resource physical constraints:

(a) Minimum and maximum operating resource limits. Outages and limitations due to transmission clearances shall be reflected in these limits. The more restrictive operating or regulating limit shall be

used for resources providing Regulation so that the SCED shall not Dispatch them outside their regulating range.

(b) Forbidden Operating Regions. Resources can only be ramped through these regions. The SCED shall not Dispatch resources within their Forbidden Operating Regions unless at the maximum applicable ramp rate to clear the Forbidden Operating Region in consecutive Dispatch Intervals. Resources ramping through a Forbidden Operating Region shall not set LMP at its location and cannot provide Ancillary Services and will not be called upon to provide Ancillary Services, unless the resource can cross the Forbidden Operating Region in less than 20 minutes.

(c) Operational Ramp Rates and Start-Up times. The submitted Operational Ramp Rate for resources that are not providing Regulation, and the submitted Regulation Ramp Rate for resources that are providing Regulation shall be used for all Dispatch Instructions. –The Ramping Rate for Non-Dynamic System Resources cleared in the HASP will not be observed. Rather the ramp of the Non-Dynamic System Resource respect inter-Control Area ramping conventions established by WECC. Ramp Rates for Dynamic System Resources will be observed like Participating Generators in the RTD. Each Energy Bid shall be Dispatched only up to the amount of Imbalance Energy that can be provided within the Dispatch Interval based on the applicable Operational Ramp Rate or Regulation Ramp Rate. The Dispatch Instruction shall consider the relevant Start-Up time as, if the resource is off-line, the relevant Ramp Rate function, and any prior commitments such as schedule changes across hours and previous Dispatch Instructions. The Start-Up time shall be determined from the Start-Up time function and when the resource was last shut down. The Start-Up time shall not apply if the corresponding resource is on-line or expected to start.

(d) Maximum Number of Daily Start-Ups. The SCED shall not cause a resource to exceed its daily maximum number of start-ups.

(e) Minimum Up and Down time. The SCED shall not ~~S~~start ~~U~~up off-line resources before their minimum down time expires and shall not ~~S~~shut ~~D~~down on-line resources before their minimum up time expires.

(f) Operating (Spinning and Non-Spinning) Reserve. The SCED shall Dispatch Spinning and Non-Spinning Reserve subject to the limitations set forth in Section 34.16.3.

(g) Non-Dynamic System Resources. If Dispatched, each Non-Dynamic System Resource flagged for hourly pre-dispatch in the next Trading Hour shall be Dispatched to operate at a constant level over the entire Trading Hour. The HASP shall perform the hourly pre-dispatch for each Trading Hour once prior to the Operating Hour. The hourly pre-dispatch shall not subsequently be revised by the SCED and the resulting HASP Intertie Schedules are financially binding and are settled pursuant to section 11.4.

(h) Daily Energy use limitation to the extent that energy limitation is expressed in a resource's Bid. If the Energy Limits are violated for purposes of Exceptional Dispatches for System Reliability, the Bid will be settled as provided in Section 11.5.6.1.

* * *

34.16.2 Dispatch of Self-Provided Ancillary Services.

Where a Scheduling Coordinator has chosen to self-provide the whole of the additional Operating Reserve required to cover any Interruptible Imports which it has submitted through Self-Schedules in the Day-Ahead Market and has identified specific Generating Units, Participating Loads, System Units or System Resources as the providers of the additional Operating Reserve concerned, the CAISO shall Dispatch only the designated Generating Units, Participating Loads, System Units or System Resources in the event of the CAISO being notified that the On Demand Obligation is being curtailed. The Scheduling Coordinator scheduling an Interruptible Import will be responsible for Operating Reserves associated with the Interruptible Import, regardless of whether the Scheduling Coordinator is an LSE or not. For all other Ancillary Services which are being self-provided the Energy Bid shall be used to determine the Dispatch, subject to the limitation on the Dispatch of Spinning Reserve and Non-Spinning Reserve set forth in Section 34.10.

* * *

34.18 ~~Qualifying Facilities.~~[NOT USED]

~~Where a Qualifying Facility ("QF") has entered into an agreement with a PTO before March 31, 1997 for the supply of Energy to the PTO (an "Existing Agreement"), the CAISO will follow the instructions provided by the parties to the Existing Agreement regarding the provisions of the Existing Agreement in the performance of its functions relating to outage coordination, and not require a QF to take any action~~

~~that would interfere with the QF's obligations under the Existing Agreement. Each QF will make reasonable efforts to comply with the CAISO's instructions during a System Emergency without penalty for failure to do so.~~

* * *

34.19 Pricing Imbalance Energy.

34.19.1 General Principles.

Instructed and Uninstructed Imbalance Energy shall be paid or charged the applicable Resource-Specific Settlement Interval LMP except for hourly pre-dispatched Instructed Imbalance Energy, which shall be settled as set forth in Section 11.5.2 ~~Appendix N, Part D, Section 2.1.2~~. These prices are determined using the Dispatch Interval LMPs. The Dispatch Interval LMPs shall be based on the Bid of the marginal Generating Units, System Units, and Participating Loads dispatched by the CAISO to increase or reduce Demand or Energy output in each Dispatch Interval as provided in Section 34.19.2.1.

The CAISO will respond to the Dispatch Instructions issued by the SCED to the extent practical in the time available and acting in accordance with Good Utility Practice. The CAISO will record the reasons for any variation from the Dispatch Instructions issued by the SCED.

* * *

35 ~~[Not Used]~~Market Validation and Price Correction.

35.1 Market Validation.

The CAISO shall monitor the market clearing software solutions for the Day-Ahead Market, the RUC process, the Hour-Ahead Scheduling Process, and the Real-Time Market for all market intervals to determine whether prices are calculated accurately, consistent with the provisions of the CAISO Tariff. To the extent reasonably practicable, the CAISO shall correct erroneous prices identified through such monitoring and re-run the relevant CAISO Markets prior to publication of prices on its Open Access Same-Time Information System (OASIS) or provision of prices directly to Market Participants, if applicable.

35.2 Timing of the Price Correction Process.

Prices for each Trading Day shall become subject to the CAISO's price correction process once the CAISO publishes them on its OASIS or provides them directly to Market Participants, if applicable. The price correction process for each Trading Day shall end no later than 1700 hours of the eighth calendar day following that Trading Day. The CAISO may establish an earlier end-time for the price correction process in the applicable Business Practice Manual and may complete the price correction process for any Trading Day earlier than the end-time established in this Section 35 or in the Business Practice Manual. The CAISO shall provide notification on the CAISO Website when it has completed the price correction process for each Trading Day. If the CAISO does not provide such notification, the price correction process will be deemed complete at 1700 hours of the eighth calendar day following that Trading Day, unless an earlier time is established by the applicable Business Practice Manual.

35.3 Finality of Prices Subject to the Price Correction Process.

All prices shall be considered provisional until the CAISO has completed the price correction process regarding them. All prices for each Trading Day shall be considered final for purposes of this Section 35 once the price correction process for that Trading Day has ended, except that the CAISO may adjust, re-run, or otherwise correct such prices after the conclusion of the price correction process to the extent authorized by the provisions of the CAISO Tariff other than this Section 35.

35.4 Scope of Price Corrections.

The CAISO may correct all financially binding prices whenever the CAISO identifies an invalid market solution or invalid prices in an otherwise valid market solution. The circumstances in which the CAISO may determine that an invalid market solution or invalid prices exist include the following: the occurrence of data input failure; the occurrence of hardware or software failure; or a result that is inconsistent with the CAISO Tariff.

35.5 Price Correction Methodology.

The CAISO shall correct prices to conform with the relevant provisions of the CAISO Tariff to the extent such correction is practicable. To the extent such correction is not practicable, the CAISO shall correct prices so that they are as close as reasonably possible to the prices that should have resulted under the

relevant provisions of the CAISO Tariff, using the most accurate data available, and in a manner that is consistent with the prevalent system conditions existing at that time. The CAISO shall correct prices using the first applicable and practicable correction method of the following:

(a) The CAISO shall selectively recalculate incorrect financially binding prices when the invalid prices are isolated and can be corrected such that no other financially binding prices are affected by the correction.

(b) If the correction method in Section 35.5(a) is not applicable and practicable, the CAISO shall conduct a market re-run for an invalidated market interval when all market inputs applicable to the market interval to be re-run are either (i) preserved from the original market run, for data that was not the cause of the invalidated price, (ii) corrected, in the case of invalid initial data in the initial market clearing, or (iii) recreated or replicated data using the best available alternate data sources, in the case of missing data in the initial market clearing.

(c) If the correction methods in Sections 35.5(a) and 35.5(b) are not applicable and practicable, the CAISO shall use, in place of prices for the binding interval of an invalidated market solution, replicated prices from binding or advisory intervals from the validated market solution in which the market conditions were most similar to the market conditions in the invalidated market solution, for the affected interval. In no case will an invalidated Day-Ahead Market solution be replaced with a valid Day-Ahead Market solution from a previous Trading Day. The method set forth in this Section 35.5(c) shall apply in the Day-Ahead Market only when some but not all hourly market intervals within a valid market run are deemed to be invalid and the market is not re-run pursuant to the method set forth in Section 35.5(b), above.

The CAISO shall include details concerning the CAISO's price correction methodology in the applicable Business Practice Manual.

35.6 Weekly Price Correction Report.

The CAISO shall summarize all price corrections that occur within a week in a report that shall be posted on the CAISO Website by the seventh day of the following week. For all price corrections that occur

during each week, the price correction report shall specify: (a) which market intervals were affected, (b) which price locations were affected, (c) a brief description of the reason for the price correction, and (d) the method of price corrective action undertaken.

* * *

36 Congestion Revenue Rights.

36.1 Overview of CRRs and Procurement of CRRs.

The CAISO distributes CRRs through an allocation and auction process as described in this Section 36. CRR Holders and Market Participants eligible to become CRR Holders can also buy, sell, or trade CRRs bilaterally as described in Section 36.7. ~~CRRs are Day-Ahead instruments and provide their holders with a hedge against Congestion Charges from the Day-Ahead Market and not against Congestion Charges associated with HASP Intertie LMPs or Real-Time LMPs.~~

36.2 Types of CRR Instruments.

CRRs can be CRR Obligations or CRR Options. Each CRR is fully specified by its type (CRR Obligation or CRR Option), its CRR Source(s), its CRR Sink(s), its MW quantity, and the Trading Hours for which it is valid. The CRR Source(s) and CRR Sink(s) determine the direction of the CRR, which is from CRR Source(s) to CRR Sink(s).

36.2.1 CRR Obligations.

A CRR Obligation entitles its holder to receive a CRR Payment if the Congestion in a given Trading Hour is in the same direction as the CRR Obligation, and requires the CRR Holder to pay a CRR Obligation ~~C~~charge if the Congestion in a given Trading Hour is in the opposite direction of the CRR. The CRR Payment or CRR Obligation ~~C~~charge is equal to the per-MWh cost of Congestion (which equals the MCC at the CRR Sink minus the MCC at the CRR Source) multiplied by the MW quantity of the CRR. ~~CRR Obligations are settled pursuant to Section 11.2.4.2.2.~~

36.2.2 CRR Options.

A CRR Option entitles its CRR Holder to a CRR Payment if the Congestion is in the same direction as the CRR Option, but requires no CRR Obligation ~~C~~charge if the Congestion is in the opposite direction of the CRR. The CRR Payment is equal to the per-MWh cost of Congestion (which equals the MCC at the CRR

Sink minus the MCC at the CRR Source, when this quantity is positive and zero otherwise) multiplied by the MW quantity of the CRR. ~~CRR Options are settled pursuant to Section 11.2.4.2.1.~~

36.2.3 Point-to-Point CRRs.

A Point-to-Point CRR is a CRR Option or CRR Obligation defined from a single CRR Source to a single CRR Sink.

36.2.4 Multi-Point CRRs.

A Multi-Point CRR ~~("MPT-CRR")~~ is a CRR Obligation defined by more than one CRR Source and/or more than one CRR Sink, plus a specified distribution of the total MW value of the CRR over the multiple CRR Sources and/or multiple CRR Sinks such that the total MW assigned to all CRR Sources equals the total MW assigned to all CRR Sinks equals the MW value of the CRR. For the allocation of CRRs under this Section 36, an LSE seeking to be allocated a Multi-Point CRR must specify a single CRR Sink in its nomination.

36.2.5 Monthly CRRs.

Monthly CRRs have a term of one month, are differentiated by time-of-use periods (on-peak and off-peak), and are available through the monthly CRR Allocation and CRR Auction processes in advance of each month.

36.2.6 Seasonal CRRs.

Seasonal CRRs have a term of three months, and are differentiated by the different time-of-use periods (on-peak and off-peak) for each day within a season. Seasonal CRRs are made available through the annual CRR Allocation and CRR Auction processes conducted each year prior to the year in which the Seasonal CRR applies.

36.2.7 Long Term CRRs.

Long Term CRRs have a term of ten years. Long Term CRRs are seasonal and are differentiated by the different time-of-use periods (on-peak and off-peak) for each day within a season. When Long Term CRRs are nominated and allocated they apply to the same season and time-of-use period for each year of the ten-year term and represent binding ten-year commitments by the CRR Holders that hold Long Term CRRs. Long Term CRRs are nominated and allocated to LSEs in Tier LT that is one tier in the

sequence of tiers in the annual CRR Allocation process. Long Term CRRs are not available through the CRR Auction.

36.2.8 Full Funding of CRRs.

~~As set forth in Section 11.2.4, a~~All CRRs will be fully funded; provided however, that full funding of CRRs will be suspended if a System Emergency as described in Section 7.7.4, an Uncontrollable Force as described in Section 14, or a Participating TO's withdrawal of facilities or Entitlements from the CAISO Controlled Grid as described in Section 36.8.7 leaves the CAISO with inadequate revenues.

36.3 CRR Specifications.

36.3.1 Quantity.

CRRs are distributed and settled in no less than one-tenth of a MW denomination.

36.3.2 Term.

CRRs are Monthly CRRs, Seasonal CRRs, Long Term CRRs or Merchant Transmission CRRs~~ allocated to sponsors of merchant transmission as specified in Section 36.11~~. For CRR purposes, the applicable seasons are conventional calendar quarters as defined in the Business Practice Manual.

36.3.3 On-Peak and Off-Peak Specifications.

CRRs are defined either for on-peak or off-peak hours as specified by the CAISO in the applicable Business Practice Manuals consistent with the WECC standards at the time of the relevant CRR Allocation or CRR Auction.

36.4 FNM for CRR Allocation and CRR Auction~~Available CRR Capacity~~.

When the CAISO conducts its CRR Allocation and CRR Auction, the CAISO shall use the most up-to-date DC FNM which is based on the AC FNM used in the Day-Ahead Market. The Seasonal Available CRR Capacity shall be based on~~: (i)~~ the DC FNM, taking into consideration the following, all of which are discussed in the applicable Business Practice Manual: (i) any long-term scheduled transmission ~~o~~Outages, (ii) OTC adjusted for any long-term scheduled derates, and (iii) a downward adjustment due to TOR as determined by the CAISO. The Monthly Available CRR Capacity shall be based on~~: (i)~~ the DC FNM, taking into consideration: (i) any scheduled transmission ~~o~~Outages ~~for~~known at least thirty (30) days in advance of the start of that month, (ii) adjustments to compensate for the expected impact of

Outages that are not required to be scheduled thirty (30) days in advance, including unplanned transmission Outages, ~~and~~(iii) adjustments to restore Outages or derates that were applied for use in calculating Seasonal Available CRR Capacity but are not applicable for the current month, (iv) any new transmission facilities added to the CAISO Controlled Grid that were not part of the DC FNM used to determine the prior Seasonal Available CRR Capacity and that have already been placed in-service and energized at the time the CAISO starts the applicable monthly process, (v~~ii~~) OTC adjusted for any scheduled derates or Outages for that month, and (vi~~ii~~) a downward adjustment due to TOR as determined by the CAISO. For the first monthly CRR Allocation and CRR Auction for CRR Year One, to account for any planned or unplanned Outages that may occur for the first month of CRR Year One, the CAISO will derate all flow limits, including Transmission Interface limits and normal thermal limits based on statistical factors determined as provided in the Business Practice Manuals.

36.4.1 Transmission Capacity Available for CRR Allocation and CRR Auction.

With the exception of the Tier LT ~~allocation process~~, the CAISO makes available seventy-five percent (75%) of Seasonal Available CRR Capacity for the annual CRR Allocation and CRR Auction processes, and one hundred percent (100%) of Monthly Available CRR Capacity for the monthly CRR Allocation and CRR Auction processes. The CAISO makes available sixty percent (60%) of Seasonal Available CRR Capacity in the Tier LT ~~allocation process~~. Available capacity at Scheduling Points shall be determined in accordance with Section 36.8.4.2~~1~~ 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 ~~any~~ Merchant Transmission CRRs ~~to sponsors of merchant transmission projects in accordance with Section 36.11~~ and will model those as fixed injections and withdrawals on the DC FNM to be used in the allocation and auction. These fixed injections and withdrawals are not modified by the Simultaneous Feasibility Test. Similarly, before commencing the annual or monthly CRR Allocation and CRR Auction processes, the CAISO will model any previously allocated Long Term CRRs as fixed injections and withdrawals on the DC FNM to be used in the CRR Allocation and CRR Auction. These fixed injections and withdrawals are not modified by the Simultaneous Feasibility Test, which will ensure no degradation of previously allocated and outstanding Long Term CRRs due to the CRR Allocation and CRR Auction processes. Maintaining the feasibility of

allocated Long Term CRRs over the length of their terms also is accomplished through the transmission planning process in Section 24.1.3.

36.4.2 Simultaneous Feasibility.

The annual and monthly CRR Allocation processes release CRRs to fulfill CRR nominations as fully as possible subject to a Simultaneous Feasibility Test ~~("SFT")~~. To the extent that nominations are not simultaneously feasible, the nominations are reduced in accordance with the CRR Allocation optimization formulation until simultaneous feasibility is achieved. The CRR Allocation optimization formulation, detailed in the Business Practice Manuals, reduces ~~allocated~~nominated CRRs based on effectiveness in relieving overloaded constraints in order to minimize the total MW volume reduction of nominations while achieving simultaneous feasibility. In the event that there are two or more identical nominations for a specific combination of CRR Source and CRR Sink that affect an overloaded constraint, the CRR Allocation optimization formulation cannot distinguish these nominations based on effectiveness and, therefore, the CRR Allocation optimization will award each such Candidate CRR Holder a pro rata share of the CRRs that can be awarded based on each Candidate CRR Holder's nominated MW amounts. In addition to the adjustments in Section 36.4.1, ~~T~~the SFT for each CRR Allocation considers:

a. CRRs representing ETCs, Converted Rights~~ETCs~~ and any TOR capacity that was not captured in the adjustments described in Section 36.4, which the CAISO deems necessary to prevent the ~~c~~Congestion ~~s~~Settlement of ETCs, Converted Rights~~ETCs~~, and TORs from causing revenue inadequacy of allocated and auctioned CRRs;

b. In the case of the monthly CRR Allocation, the CRRs already released for that month in the annual CRR ~~a~~Allocation and ~~a~~Auction; and,

c. The CRRs allocated in previous CRR ~~a~~Allocation tiers as described in Sections 36.8.3.1 through 36.8.3.6.

In the event that transmission ~~o~~Outages and derates modeled for the monthly CRR Allocation and CRR Auction render previously issued Seasonal CRRs infeasible, the CAISO will increase the transfer capacity on the overloaded facilities just enough to render all Seasonal CRRs issued for the month feasible without creating any additional capacity beyond what is needed for the feasibility of the Seasonal CRRs. The

CAISO will announce these adjustments to the market prior to conducting the monthly CRR Allocation and CRR Auction so that Candidate CRR Holders can take these facts into consideration in preparing their nominations and bids.

36.5 Candidate CRR Holder and CRR Holder Requirements.

Any entity that holds or intends to hold CRRs must register and qualify with the CAISO and comply with the other terms of this Section, regardless of whether they acquire CRRs by CRR ~~a~~Allocation, CRR ~~a~~Auction, ~~or~~ the ~~s~~Secondary Registration System~~market~~, or are assigned CRRs for Load Migration.

36.5.1 Creditworthiness Requirements.

All CRR Holders and Candidate CRR Holders must comply fully with all ~~C~~creditworthiness requirements as provided in Section 12 ~~of the Tariff~~ and Section 12.6 and as further developed in the applicable Business Practice Manuals. The amount of available credit for participating in a CRR Auction cannot exceed the entity's Aggregate Credit Limit as provided in Section 12.

36.5.2 Required Training.

CRR Holders and Candidate CRR Holders must attend a training class at least once prior to participating in the CRR Allocations or CRR Auctions. The CAISO may update training requirements annually or on an as-needed basis. Unless granted a waiver by the CAISO, Candidate CRR Holders and CRR Holders shall at all times have in their employment a person that has attended the CAISO's CRR training class and shall notify the CAISO as soon as practicable of a change in such status.

36.6 [NOT USED]

36.7 Bilateral CRR Transactions.

36.7.1 Transfer of CRRs.

36.7.1.1 General Provisions of CRR Transfers.

A CRR Holder may ~~assign,~~ sell~~,~~ or otherwise transfer CRRs in increments of at least a tenth of a MW. Sales or other such ~~T~~transfers must be for at least a full day term consistent with the on-peak or off-peak specification of the CRR. The transferee may be any entity that is a Candidate CRR Holder or ~~eligible to be~~ a CRR Holder consistent with the~~is~~ CAISO Tariff and the applicable Business Practice Manuals. All

CRRs that are so ~~assigned, sold,~~ or otherwise transferred by the CRR Holder continue to be subject to the relevant terms and conditions set forth in the CAISO Tariff and the applicable Business Practice Manuals.

36.7.1.2 Specific Provisions for Transfer of Long Term CRRs.

A CRR Holder that holds Long Term CRRs may sell or transfer through the Secondary Registration System MW portions and temporal segments of a Long Term CRR corresponding to the current calendar year as well as the calendar year covered by the most recently completed annual CRR Allocation. For such sales or transfers the Long Term CRR will be subject to the same limits on granularity that apply to Seasonal CRRs and Monthly CRRs, as specified in Section 36.7.1. A CRR Holder that holds Long Term CRRs may not transfer or sell through the Secondary Registration System any temporal segment of a Long Term CRR beyond the calendar year covered by the most recently completed annual CRR Allocation. For temporal segments beyond the year covered by the most recently completed annual CRR Allocation, the CRR Holder to whom a Long Term CRR was originally allocated remains the holder of record of the entire Long Term CRR for CAISO Settlement purposes.~~, unless and until such segments of the Long Term CRR or MW portion thereof are transferred to another LSE due to Load migration as described in Section 36.8.5.~~ Allocated Long Term CRRs represent binding ten-year commitments by a CRR Holder that holds Long Term CRRs and may not be terminated or otherwise modified by the CRR Holder prior to the end of the Long Term CRR's ten-year term.

36.7.2 Responsibility of the CAISO.

The CAISO provides Market Participants a Secondary Registration System to facilitate and track CRR bilateral transactions. ~~The Secondary Registration System automatically posts on the CAISO Website the bilateral transactions entered by Market Participants.~~ The bulletin board of the Secondary Registration System enables any entity that wishes to purchase or sell CRRs to post that information.

36.7.3 CRR Holder Reporting Requirement.

CRR Holders must report to the CAISO by way of the Secondary Registration System all bilateral CRR transactions consistent with the terms of this CAISO Tariff and the Business Practice Manuals. Both the transferor and the transferee of the CRRs must register the transfer of the CRR with the CAISO using the

Secondary Registration System at least five (5) ~~b~~Business ~~d~~Days prior to the effective date of transfer of revenues associated with a CRR. The CAISO shall not transfer any Settlement related to any CRR until such time that the CRR transfer has been successfully recorded through the SRS and the transferee has met all the creditworthiness requirements as specified in ~~s~~Section 12 and Section 12.6. Both the transferor and transferee shall submit the following information to the Secondary Registration System: (i) the effective start and end dates of the transfer of the CRR; (ii) the identity of the transferor; (iii) the identity of the transferee; (iv) the quantity of CRRs being transferred; (v) the CRR Sources and CRR Sinks of the CRRs being transferred; and (vi) time of use period of the CRR. The transferee must meet all requirements of CRR Holders, including disclosure to the CAISO of all entities with which the transferee is affiliated that are CRR Holders or Market Participants as defined in Section 36.5.

36.8 CRR Allocation ~~to Load Serving Entities for Internal Load~~.

The CAISO allocates CRRs to Load Serving Entities serving ~~l~~Load internal to CAISO Control Area, ~~(~~including MSS Operators~~entities~~ as described in Section 36.10, as well as Qualified OCALSEs~~)~~. All CRRs allocated under the terms of this Section 36.8 will be CRR Obligations.

36.8.1 Structure of the CRR Allocation Process.

The CAISO conducts an annual CRR Allocation: (i) once a year for the entire year for Seasonal CRRs; and (ii) once a year for the ten-year term of Long Term CRRs. The annual CRR Allocation releases Seasonal CRRs and Long Term CRRs for four seasonal periods. The CAISO also conducts monthly CRR Allocations twelve times a year in advance of each month. Within each annual and monthly CRR Allocation process the CAISO performs distinct allocation processes for each on-peak and off-peak time of use specification. The CRR Allocation process for CRR Year One is a distinct process that differs from subsequent ~~annual~~ CRR Allocations as described in Sections 36.8.3.1 and 36.8.3.2. Each CRR ~~a~~Allocation procedure is based on nominations to the CAISO by LSEs or Qualified OCALSEs eligible to receive CRRs. The CAISO performs adjustments to the Seasonal and Long Term CRRs allocated to LSEs as necessary to reflect Load Migration between LSEs, as described in Section 36.8.5. A timeline of the CRR Allocation and CRR Auction processes is contained in the BPMs.

36.8.2 Load Eligible for CRRs and Eligible CRR Sinks.

Any entity that wishes to participate in the CRR Allocation process must provide information that demonstrates that it has an obligation to serve load. An LSE's eligibility for allocation of CRRs is measured by the quantity of Load that it serves that is exposed to Congestion Charges for the use of the CAISO Controlled Grid as determined in Sections 36.8.2.1 and 36.8.2.2. An OCALSE's eligibility for allocation of CRRs is also measured by the quantity of load that it serves that is exposed to Congestion Charges for the use of the CAISO Controlled Grid as determined in Section 36.9.3. For LSEs, the information necessary may include, but is not limited to, Settlement Quality Meter Data or relevant documents filed with the California Energy Commission. For OCALSEs, the necessary information may include, but is not limited to, historical tagged Real-Time Interchange Export Schedules and historical load data reflecting the load they serve that is exposed to Congestion Charges for the use of the CAISO Controlled Grid. In addition, each such OCALSE shall support its data submission with a written sworn affidavit by an executive authorized to represent the OCALSE attesting to the accuracy of the data, and the CAISO will have the right to audit the raw data and calculations used to develop the submitted data set. An LSE serving internal Load is eligible for CRRs up to its Seasonal or Monthly CRR Eligible Quantity, which is derived from its Seasonal or Monthly CRR Load Metric as ~~follows~~ described in Sections 36.8.2.1 and 36.8.2.2, respectively. Seasonal and Monthly CRR Eligible Quantities for Qualified OCALSEs are determined as provided in Section 36.9.3. These quantities are calculated for each LSE or Qualified OCALSE separately for each combination of season and time of use period for the annual CRR Allocation process, and for each time of use period for each monthly CRR Allocation process, and for each CRR Sink at which the eligible LSE serves Load or the Qualified OCALSE exports Energy from the CAISO Control Area. MSS eligibility for CRRs will account for net or gross MSS ~~s~~Settlement in accordance with Section 4.9.13.1. If the MSS Operator elects net ~~s~~Settlement, LSEs for such MSS Load Operator shall submit CRR Sink nominations at the MSS LAP., ~~and i~~ If the MSS elects for gross ~~s~~Settlement, LSEs for such MSS Load shall submit CRRs Sink nominations at the applicable Default LAP. Load that is Pumped-Storage Hydro Units but is not Participating Load may be scheduled and settled at a PNode or Custom Load Aggregation Point and therefore LSEs for such Load shall submit CRR Sink nominations at the applicable PNode or Custom Load Aggregation Point. Load that is a Participating Load that is also aggregated is scheduled and settled at a Custom Load Aggregation Point

that is customized specifically for such Load and, therefore, LSEs for such Participating Load shall submit CRR Sink nominations at the Custom Load Aggregation Point. Load that is Participating Load is scheduled and settled at an individual PNode, and therefore LSEs for such Load shall submit CRR Sink nominations at the applicable PNode. ~~As provided in Sections 30.5.3,~~ Load that is non-Participating Load, is not Pumped-Storage Hydro Units, and is not Load associated with ETCs, TORs, or MSS Operators that elects net ~~s~~Settlement, is scheduled and settled at the Default LAP. Therefore, LSEs for such Load shall submit CRR Sink nominations at their assigned Default LAP or Default LAPs if the Load they serve is located in more than one Default LAP. In tier 3 of the annual process and tier 2 of the monthly process, such LSEs may also submit CRR Sink nominations at a ~~s~~Sub-LAP of their assigned Default LAP. The CAISO will make available, prior to the beginning of the CRR Allocation process, a list of allowable CRR Sinks to be used in the allocation.

36.8.2.1 Seasonal CRR Eligible Quantity.

The CAISO constructs load duration curves by season and time of use periods for the annual CRR Allocation process for each LSE based on the LSE's submission to the CAISO of its historical hourly Load data for the prior year, for each LAP within which the LSE serves Load. An LSE's Seasonal CRR Load Metric for each season and time of use period is the MW level of Load that is exceeded only in 0.5% of the hours based on the LSE's historical Load data. In the event that the LSE has lost or gained net Load through Load ~~m~~Migration during the course of the prior year, the historical ~~l~~Load data will be adjusted to reflect the loss or gain in accordance with the applicable BPM. The CAISO calculates an LSE's Seasonal CRR Eligible Quantity by first subtracting from that LSE's Seasonal CRR Load Metric the quantity of Load served by its TORs, ETCs, and Converted ~~ETC~~Rights to form the LSE's Adjusted Load Metric, and then multiplying the result by 0.75.

36.8.2.2 Monthly CRR Eligible Quantity.

Each month the CAISO uses the LSE's submitted ~~monthly~~hourly load forecast data for the relevant month to calculate two load duration curves (one on-peak and one off-peak load duration curve for the applicable month) to form the basis for monthly allocations for each ~~LAP~~CRR Sink in which the LSE serves Load. Each LSEs submitted hourly forecast data should reflect any Load growth that is not due to Load Migration as well as the effect of net Load Migration for that LSE. The Monthly CRR Load Metric is

the MW level of Load that is exceeded only in 0.5% of the hours based on the LSE's submitted load forecast. The CAISO will calculate an LSE's Monthly CRR Eligible Quantity by subtracting from that LSE's Monthly CRR Load Metric the quantity of Load served by its TORs, ETCs, and Converted ~~ETC~~Rights. In addition the CAISO will adjust the LSE's Monthly CRR Eligible Quantity, if such an adjustment is determined to be necessary pursuant to Section 36.8.6.

36.8.3 CRR Allocation Process.

36.8.3.1 Annual CRR Allocation for CRR Year One.

The annual CRR Allocation process for CRR Year One consists of a sequence of four (4) tiers for each season and time of use period (on-peak and off-peak). Each tier will feature a SFT applied to the CRR nominations submitted by eligible LSEs or Qualified OCALSEs, the results of which are provided by the CAISO to the respective LSEs or Qualified OCALSEs prior to the LSEs or Qualified OCALSEs submitting their nominations to the next tier. Allocations of CRRs in each tier are considered final once they are provided by the CAISO to the respective LSEs or Qualified OCALSEs. After each tier, LSEs or Qualified OCALSEs will have an amount of time as specified in the Business Practice Manual after their receipt of the results of each tier to submit their nominations for the next tier, if there is one. The annual CRR Allocation allows LSEs or Qualified OCALSEs to submit nominations for Seasonal CRRs up to their Seasonal CRR Eligible Quantities for each season of the relevant year, each time of use ~~period and each LAP~~ CRR Sink as provided in Sections 36.8.3.1.1, 36.8.3.1.2 and 36.8.3.1.4. The annual CRR Allocation also allows LSEs to submit~~, and~~ nominations for Long Term CRRs up to ~~fifty~~twenty percent (~~5~~20%) of their Adjusted Load Metric for each season, time of use period and each LAP; except that an LSE that demonstrates that more than twenty percent (20%) of its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources is able to submit nominations for a greater amount as specified in Section 36.8.3.1.3. As provided in Section 36.8.3.1.3.2, the annual CRR Allocation allows a Qualified OCALSE to submit nominations for Long Term CRRs up to fifty percent (50%) of its Adjusted Load Metric for each season, time of use period and Scheduling Point provided that the Qualified OCALSE demonstrates that all of its nominated Long Term CRR Sources are covered by a combination of long-term procurement

arrangements of ten (10) years or greater and ownership of generation resources. The annual CRR Allocation for CRR Year One will be conducted in the following sequence of tiers:

36.8.3.1.1 Tier 1. In tier 1, an LSE~~s~~ or a Qualified OCALSE may nominate and the CAISO will allocate to the LSE~~s~~ or Qualified OCALSE Seasonal CRRs up to fifty percent (50%) of ~~their~~its Seasonal CRR Eligible Quantity for each season, time of use period and CRR Sink. An LSE or a Qualified OCALSE can nominate Seasonal CRRs sourced at Trading Hubs in accordance with the LSE's or Qualified OCALSE's verified CRR Sources. In running the SFT the CAISO shall disaggregate the Seasonal CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1. All allocated CRRs that result from such disaggregation will be Point-to-Point CRRs each of whose CRR Source is a Generating Unit PNode that is an element of the Trading Hub.

36.8.3.1.2 Tier 2. In tier 2, an LSE~~s~~ or a Qualified OCALSE may nominate and the CAISO will allocate to the LSE~~s~~ or Qualified OCALSE Seasonal CRRs up to seventy-five percent (75%) of ~~their~~its Seasonal CRR Eligible Quantity for each season, time of use period and CRR Sink, minus the quantity of CRRs allocated to that LSE or Qualified OCALSE in tier 1. An LSE or a Qualified OCALSE can nominate Seasonal CRRs sourced at Trading Hubs in accordance with the LSE's or Qualified OCALSE's verified CRR Sources. In tier 2 an LSE or a Qualified OCALSE with a verified Trading Hub CRR Source may nominate up to seventy-five (75%) of the Adjusted Verified CRR Source Quantity for that Trading Hub, minus the total MW quantity of Point-to-Point CRRs the LSE or Qualified OCALSE was allocated in tier 1 as a result of its tier 1 nomination of CRRs sourced at that Trading Hub. In running the SFT the CAISO shall disaggregate the Seasonal CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1. All allocated CRRs that result from such disaggregation will be Point-to-Point CRRs each of whose CRR Source is a Generating Unit PNode that is an element of the Trading Hub.

36.8.3.1.3 Tier LT. Tier LT will follow tier 2 for CRR Year One. In Tier LT, ~~eligible entities~~an LSE or a Qualified OCALSE may nominate Long Term CRRs from the Seasonal CRRs allocated in tiers 1 and 2 as provided in this Section 36.8.3.1. The cleared Point-to-Point CRRs awarded in tier 1 and tier 2 that resulted from disaggregated CRR nominations sourced at a Trading Hub may not be nominated in Tier LT in CRR Year One. Any Point-to-Point CRRs awarded as a result of disaggregated CRR nominations sourced at a Trading Hub, as described in Section 36.8.4.1, must be nominated as Trading Hub CRRs

as described in this Section 36.8.3.1.3. In running the SFT the CAISO shall disaggregate the Seasonal CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1. All allocated Long Term CRRs that result from such disaggregation will be Point-to-Point CRRs each of whose CRR Source is a Generating Unit PNode that is an element of the Trading Hub.

36.8.3.1.3.1 Tier LT for LSEs.

The ~~amount~~ quantity of Seasonal CRRs that an LSE can ~~be~~ nominate~~d~~ as Long Term CRRs is limited to ~~fifty~~twenty percent (~~5~~20%) of the LSE's~~eligible entity's~~ Adjusted Load Metric~~.~~, except that an LSE that can demonstrate that more than twenty percent (20%) of its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources is able to submit nominations for a greater amount as provided in this section. Such demonstrations shall be provided by the requesting LSE to the CAISO through the submission of a written sworn declaration by an executive employee authorized to represent the LSE and attest to the accuracy of the data demonstration. As necessary, the CAISO may request, and such LSE must produce in a timely manner, documents in support of such declaration. If the LSE has demonstrated that more than twenty percent (20%) of its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources, the amount of Long Term CRRs that it may nominate is equal to the minimum of: (i) the sum of the owned resources and long-term procurement arrangements of ten (10) years or more and (ii) fifty percent (50%) of the LSE's Adjusted Load Metric. Subject to the maximum quantities described above in this Section 36.8.3.1.3.1, an LSE can nominate CRRs sourced at a Trading Hub in Tier LT up to the total MW amount of the Point-to-Point CRRs the LSE was allocated in tiers 1 and 2 as a result of its disaggregated tier 1 and 2 nominations of CRRs sourced at that Trading Hub.

36.8.3.1.3.2 Tier LT for Qualified OCALSEs.

A Qualified OCALSE may submit nominations for Long Term CRRs up to fifty percent (50%) of its Adjusted Load Metric for each season, time of use period and Scheduling Point. The Qualified OCALSE must demonstrate that all of its nominated Long Term CRRs are supported by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources. Such demonstrations shall be provided by the requesting Qualified OCALSE to the CAISO through the

submission of a written sworn declaration by an executive employee authorized to represent the Qualified OCALSE attesting to the accuracy of the data demonstration. As necessary, the CAISO may request, and such Qualified OCALSE must produce in a timely manner, documents in support of such declaration.

36.8.3.1.3.3 Tier LT SFT.

After receiving nominations for Long Term CRRs from LSEs and Qualified OCALSEs, the CAISO will run SFTs to ensure the feasibility of the nominated Long Term CRRs for the remaining nine years of the ten-year term of the Long Term CRR. The SFT runs in Tier LT will test the feasibility of only the Long Term CRR nominations and will not include in the analysis those Seasonal CRRs allocated in tiers 1 and 2 that are not nominated as Long Term CRRs. The quantity of Long Term CRRs that can be allocated for any season and time-of-use period must be feasible for the entire ten-year term of the Long Term CRR. As a result of the Tier LT SFT runs, Long Term CRR nominations may not be fully allocated; however, such a result will not affect the CRR Year One validity of the Seasonal CRR allocated in tiers 1 and 2. The CAISO will inform the nominating entity of the results of the Tier LT SFTs before the deadline for submission of the tier 3 nominations.

36.8.3.1.4 Tier 3. In tier 3, an LSE~~s~~ or a Qualified OCALSE may nominate and the CAISO will allocate to the LSE~~s~~ or Qualified OCALSE Seasonal CRRs up to one hundred percent (100%) of ~~their~~its Seasonal CRR Eligible Quantity for each season, minus the quantity of CRRs allocated to that LSE or Qualified OCALSE in tiers 1 and 2. In tier 3, Sub-LAPs will be eligible CRR Sinks provided that the ~~s~~Sub-LAP is within the nominating LSE's Default LAP. An LSE or a Qualified OCALSE can nominate Seasonal CRRs sourced at Trading Hubs. In running the SFT the CAISO shall disaggregate the Seasonal CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1. All allocated CRRs that result from such disaggregation will be Point-to-Point CRRs each of whose CRR Source is a Generating Unit PNode that is an element of the Trading Hub. A Qualified OCALSE can only nominate CRRs from its verified CRR Sources as provided in Section 36.8.3.4.

36.8.3.2 Monthly CRR Allocation for CRR Year One.

The monthly CRR Allocation in CRR Year One shall consist of a sequence of two (2) tiers for each time of use period (on-peak and off-peak). The monthly CRR Allocation will distribute Monthly CRRs to each LSE or Qualified OCALSE up to one hundred percent (100%) of its Monthly CRR Eligible Quantity, minus

CRRs allocated to that LSE or Qualified OCALSE in the annual CRR Allocation for the relevant month and time of use period. The monthly CRR Allocation for CRR Year One will be conducted as follows:

36.8.3.2.1~~a.~~ Tier 1. In ~~T~~tier 1 of the monthly CRR Allocations, an LSE~~s~~ or a Qualified OCALSE may nominate and the CAISO will allocate to the LSE~~s~~ or Qualified OCALSE Monthly CRRs up to fifty percent (50%) of the difference between ~~their~~its Monthly CRR Eligible Quantity~~ies~~ and the quantity of Seasonal CRRs and previously allocated Long Term CRRs that apply to that month and time of use period~~;~~. An LSE or a Qualified OCALSE can nominate Monthly CRRs sourced at Trading Hubs in accordance with the LSE's or Qualified OCALSE's verified CRR Sources. In running the SFT the CAISO shall disaggregate the Monthly CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1. All allocated CRRs that result from such disaggregation will be Point-to-Point CRRs each of whose CRR Source is a Generating Unit PNode that is an element of the Trading Hub.

36.8.3.2.2~~b.~~ Tier 2. In ~~T~~tier 2 of the monthly CRR Allocations, an LSE~~s~~ or a Qualified OCALSE may nominate and the CAISO will allocate to the LSE~~s~~ or Qualified OCALSE Monthly CRRs up to one hundred percent (100%) of the difference between ~~their~~its CRR Eligible Quantity~~ies~~ and the quantity of Seasonal CRRs and previously allocated Long Term CRRs that apply to that month and time of use period, minus the quantity of CRRs the entity was allocated ~~to that LSE~~ in ~~T~~tier 1 of the CRR Year One monthly CRR Allocation. An LSE or a Qualified OCALSE can nominate Monthly CRRs sourced at Trading Hubs. In running the SFT the CAISO shall disaggregate the Monthly CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1. In ~~T~~tier 2 of the ~~M~~monthly CRR Allocation, ~~s~~Sub-LAPs will be eligible CRR Sinks provided that the ~~s~~Sub-LAP is within the nominating LSE's Default LAP. A Qualified OCALSE can only nominate CRRs from its verified CRR Sources as provided in Section 36.8.3.4.2.

36.8.3.3 [NOT USED]

36.8.3.4 Source Verification.

Source verification is required for LSE CRR nominations in tiers 1 and 2 of the CRR Year One annual allocation process and in tier 1 of each CRR Year One monthly allocation process. Source verification is required for all Qualified OCALSE CRR nominations in all tiers of all CRR Allocation processes.

36.8.3.4.1 CRR Year One Source Verification for LSEs.

In CRR Year One, nominations for tier 1 and tier 2 of the annual CRR Allocation and tier 1 of the monthly CRR Allocations must be source verified for all LSEs. The CAISO will make available, prior to the beginning of the allocation process, a list of allowable CRR Sources to be used in the allocation. ~~Through the source verification process described in the Business Practice Manuals, a~~An LSE must demonstrate that it could actually submit Bids, including Self-Schedules and Inter-SC Trades, for Energy ~~Schedule Energy~~ from the locations to be nominated as CRR Sources to serve its Load either through ownership of, or contractual rights to receive Energy from, the relevant Generating Units, or a contract to take ownership of power at the relevant source such as a Trading Hub or a Scheduling Point. Source verification will use data for the period beginning ~~September~~January 1, 2006~~4~~ and ending ~~August~~December 31, 2006~~5~~ as the basis for verification. Such demonstrations shall be provided by the requesting LSE to the CAISO through the submission of a written sworn declaration by an executive employee authorized to represent the LSE and attest to the accuracy of the data demonstration. As necessary, the CAISO may request, and such LSE must produce in a timely manner, documents in support of such declaration.

36.8.3.4.2 Source Verification for Qualified OCALSEs.

All CRR nominations by Qualified OCALSEs must be source verified. A Qualified OCALSE's source verification will be based on its legitimate need showing as specified in Section 36.9.1.

36.8.3.4.3 Calculation of Verified CRR Source Quantity.

The Verified CRR Source Quantity associated with each verified CRR Source for a particular LSE or Qualified OCALSE will be: (i) for an owned generation resource the PMax of the unit multiplied by the LSE's or Qualified OCALSE's ownership share; (ii) for a contract with a generation resource, the hourly MWh of Energy specified in the contract averaged over all hours of the relevant time of use period, but no greater than the PMax of the unit; or (iii) for a contract that delivers Energy to a Trading Hub or Scheduling Point, the hourly MWh of energy specified in the contract for delivery from the supplier to the LSE or Qualified OCALSE at the Trading Hub or Scheduling Point, averaged over all hours of the relevant time of use period. Energy contracts submitted by an LSE to demonstrate that the LSE can submit Bids, including Self-Schedules and Inter-SC Trades, for Energy from the nominated CRR Sources to serve its

Load must be at least one month in duration. Energy contracts submitted by a Qualified OCALSE to demonstrate that the Qualified OCALSE can submit Bids, including Self-Schedules and Inter-SC Trades, for Energy from the nominated CRR Sources to serve its Load must be at least one month in duration to support nominations of Monthly and Seasonal CRRs, and at least ten (10) years in duration to support nominations of Long Tem CRRs. Nominations of CRRs for which the~~whose~~ CRR Source is a Scheduling Point must be source verified in accordance with Section 36.8.4.2~~1~~.

36.8.3.4.4 Calculation of Adjusted Verified CRR Source Quantity.

For nominations by an LSE and a Qualified OCALSE, except for a Qualified OCALSE's nomination of Long Term CRRs, the CAISO will consider a contract that covers a portion of a season (but not less than one month) to be acceptable verification, with the adjustment described below, for the entire season for which a CRR is nominated. The CAISO will also consider a contract not less than one month in duration that covers portions of two consecutive months to be acceptable verification, with the adjustment described below, for both of the months that are partially covered. In such cases, for a contract that covers only a portion of the season or month for which the LSE or Qualified OCALSE wishes to nominate source-verified CRRs, the CAISO will calculate an Adjusted Verified CRR Source Quantity, which equals the Verified CRR Source Quantity times the ratio of the number of days covered by the contract for a particular month or season to the total number of days in that month or season, consistent with the time of use period of the CRRs being nominated. Contracts submitted by a Qualified OCALSE to support nomination of Long Term CRRs must be at least ten (10) years in duration and cover the entire season of the Long Term CRR being nominated, and therefore the Adjusted Verified CRR Source Quantity calculation does not apply to such nominations.

36.8.3.5 Annual CRR Allocation Beyond CRR Year One.

The annual CRR Allocation for years beyond CRR Year One consists of a sequence of four (4) tiers for each season and time of use period (on-peak and off-peak). Allocations of CRRs in each tier are considered final once they are provided by the CAISO to the respective LSEs or Qualified OCALSEs. After each tier, LSEs or Qualified OCALSEs will have an amount of time as specified in the Business Practice Manual after their receipt of the results of each tier to submit their nominations for the next tier, if there is one. The annual CRR Allocation will allow LSEs or Qualified OCALSEs to submit nominations up

to their Seasonal CRR Eligible Quantities minus the quantity of previously allocated Long Term CRRs for each season of the relevant year, each time of use period and each ~~LAP~~CRR Sink at ~~in~~ which they serve Load. Annual CRR Allocations for years beyond CRR Year One will be conducted in the following sequence of tiers:

36.8.3.5.1 Tier 1 – Priority Nomination Process.

Tier 1 of the annual CRR Allocation in years beyond CRR Year One will be a Priority Nomination Process ~~("PNP")~~ through which CRR Holders may nominate some of the same CRRs that they were allocated in the immediately previous year. As provided in Section 36.8.3.4.2, nominations by a Qualified OCALSE in the PNP are subject to source verification. In all ~~A~~annual CRR Allocations after CRR Year One, an LSE or a Qualified OCALSE may make PNP nominations up to the lesser of: (1) ~~66.7%~~two-thirds of its Seasonal CRR Eligible Quantity, minus the quantity of previously allocated Long Term CRRs for each season, time of use period and ~~LAP~~CRR Sink for that year; or, (2) the total quantity of Seasonal CRRs allocated to that LSE in the previous annual CRR Allocation, minus the quantity of previously allocated Long Term CRRs for ~~that~~each season, time of use period and ~~LAP~~CRR Sink, and minus any reduction for net loss of Load or plus any increase for net gain of Load through retail Load ~~m~~Migration as described in Section 36.8.5.1. In addition, an LSE's or Qualified OCALSE's nomination of any particular CRR ~~s~~Source-~~s~~Sink combination in the PNP may not exceed the MW quantity of CRRs having that CRR ~~s~~Source and CRR ~~s~~Sink that the LSE or Qualified OCALSE was allocated in the previous annual CRR ~~a~~Allocation for the same season and time of use period, and in the case of an LSE, adjusted for net Load loss or gain resulting from Load ~~m~~Migration as described in Section 36.8.5.2.2. An LSE or a Qualified OCALSE may not nominate CRRs sourced at Trading Hubs in the PNP. CRRs whose CRR Sink is a ~~s~~Sub-LAP are not eligible for nomination in the PNP. A CRR whose CRR Sink is a Custom LAP or PNode is eligible for nomination in the PNP. PNP Eligible Quantities are not affected by secondary transfers of CRRs, except as performed by the CAISO to reflect Load Migration as described in Section 36.8.5. That is, with the exception of transfers to reflect Load Migration: (i) an LSE or a Qualified OCALSE may nominate in the PNP a CRR it was allocated in the prior annual CRR Allocation even though it transferred that CRR to another party during the year, and (ii) an LSE or a Qualified OCALSE may not nominate in the PNP a CRR that it received through a secondary transfer from another party.

CRRs received through a CRR Auction are not eligible for nomination in the PNP. CRRs received as Offsetting CRRs to reflect Load Migration are not eligible for nomination in the PNP. ~~Eligible entities may, in the final year of the Long Term CRR, nominate the identical source, sink, and MW terms of the expiring Long Term CRR in this PNP. An eligible entity with an Existing Transmission Contract or Converted Rights that expire by the start of the year for which the CRR Allocation process is conducted may participate in the PNP as if their Existing Transmission Contract or Converted Rights sources and sinks were previously allocated Seasonal CRRs.~~ The maximum quantity of CRRs that ~~such~~ an LSE or a Qualified OCALSE ~~eligible entity~~ may nominate in the PNP is fifty percent (50%) of ~~the eligible entity's~~its Adjusted Load Metric, minus any previously allocated Long Term CRRs that are valid for the term of the CRRs being nominated. The CAISO does not guarantee that all CRR nominations in the PNP will be allocated. The CAISO will conduct an SFT to determine whether all CRR nominations in the PNP are simultaneously feasible. If the SFT determines that all priority nominations are not simultaneously feasible, the CAISO will reduce the allocated CRRs until simultaneous feasibility is achieved.

36.8.3.5.2 Tier LT.

In years subsequent to CRR Year One, Long Term CRRs will be allocated as provided in this section.

36.8.3.5.2.1 Tier LT for LSEs.

In Tier LT of CRR Year Two, ~~eligible entities~~an LSE may nominate Long Term CRRs from any of the Seasonal CRRs it was allocated in the PNP up to a maximum of ~~so long as the amount of the nominated Long Term CRRs is less than or equal to fifty~~thirty percent (~~5~~30%) of ~~the eligible entity's~~its Adjusted Load Metric, minus the quantity of previously allocated Long Term CRRs that are valid for that year; except that the LSE may nominate Long Term CRRs in amounts greater than thirty percent (30%) but no more than fifty percent (50%) of its Adjusted Load Metric if the LSE demonstrates that more than thirty percent (30%) of its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources. Such demonstrations shall be provided by the requesting LSE to the CAISO through the submission of a written sworn declaration by an executive employee authorized to represent the LSE and attest to the accuracy of the data demonstration. As necessary, the CAISO may request, and such LSE must produce in a timely manner,

documents in support of such declaration. If the LSE has demonstrated that more than thirty percent (30%) of its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources, the amount of Long Term CRRs that it may nominate is equal to the minimum of: (i) the sum of the owned resources and long-term procurement arrangements of ten (10) years or more, minus the quantity of previously allocated Long Term CRRs that are valid for that CRR year, and (ii) fifty percent (50%) of the LSE's Adjusted Load Metric, minus the quantity of previously allocated Long Term CRRs that are valid for that CRR year. In CRR Year Three, the limit on Long Term CRR nominations will increase by ten percent (10%) to forty percent (40%) of the eligible entity's Adjusted Load Metric but shall not exceed fifty percent (50%) of the Adjusted Load Metric. In CRR Year Three, an LSE may exceed the forty percent (40%) limit on Long Term CRR nominations if it demonstrates that its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources. The amount of Long Term CRRs that it may nominate is equal to the minimum of: (i) the sum of the owned resources and long-term procurement arrangements of ten (10) years or more, minus the quantity of previously allocated Long Term CRRs that are valid for that CRR year, and (ii) fifty percent (50%) of the LSE's Adjusted Load Metric, minus the quantity of previously allocated Long Term CRRs that are valid for that CRR year. In CRR Year Four and all subsequent years, an LSE may nominate Long Term CRRs from any of the Seasonal CRRs allocated in the PNP up to the maximum of fifty percent (50%) of its Adjusted Load Metric, minus the quantity of previously allocated Long Term CRRs that are valid for that year.

36.8.3.5.2.2 Tier LT for Qualified OCALSEs.

A Qualified OCALSE may submit nominations for Long Term CRRs up to the portion of its Adjusted Load Metric for which it has demonstrated coverage by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources, up to a maximum of fifty percent (50%) of its Adjusted Load Metric for each season, time of use period and Scheduling Point, minus the quantity of previously allocated Long Term CRRs that are valid for that CRR year. Such demonstrations shall be provided by the requesting Qualified OCALSE to the CAISO through the submission of a written sworn declaration by an executive employee authorized to represent the Qualified OCALSE and attest to the accuracy of the data demonstration. As necessary, the CAISO may request, and such Qualified

OCALSE must produce in a timely manner, documents in support of such declaration. Contracts submitted in support of OCALSE nominations of Long Term CRRs must cover the entire season of the Long Term CRR being nominated.

36.8.3.5.2.3 Tier LT SFT.

After receiving nominations for Long Term CRRs, the CAISO will run SFTs to ensure the feasibility of the nominated Long Term CRRs for the remaining nine years of the ten (10)- year term of the Long Term CRR. The SFT run in Tier LT will test the feasibility of only the Long Term CRR nominations and will not include in the analysis those Seasonal CRRs allocated in the PNP that were not nominated as Long Term CRRs. The quantity of Long Term CRRs that can be allocated for any season and time -of -use period must be feasible for the entire ten (10) -year term of the Long Term CRR. As a result of the Tier LT SFT runs, Long Term CRR nominations may not be fully allocated; however, such a result will not affect the validity of: (i) the Long Term CRRs allocated in previous years, or (ii) the Seasonal CRRs allocated in the PNP. The CAISO will inform nominating eligible entities of the results of the Tier LT SFTs before the deadline for submission of the tier 2 nominations.

36.8.3.5.3 Tier 2. In tier 2 of the annual CRR Allocation, the CAISO will allocate Seasonal CRRs to each LSE and Qualified OCALSE up to ~~66.7%~~two-thirds of its Seasonal CRR Eligible Quantity for each season, time of use period and ~~LAP~~CRR Sink, ~~plus 50% of the net Load gained by the LSE through Load migration during the year,~~ minus the quantity of: (i) CRRs allocated to that LSE or Qualified OCALSE in tier 1, and (ii) Long Term CRRs previously allocated to i~~tthat eligible entity~~ that are valid for the CRR term currently being allocated. An LSE or a Qualified OCALSE can nominate Seasonal CRRs sourced at Trading Hubs. In running the SFT the CAISO shall disaggregate the Seasonal CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1.

36.8.3.5.4 Tier 3. In tier 3 of the annual CRR Allocation, the CAISO will allocate Seasonal CRRs to each LSE or Qualified OCALSE up to one hundred percent (100%) of its Seasonal CRR Eligible Quantity for each season, time of use period and CRR Sink~~LAP~~, minus the quantity of: (i) CRRs allocated to that LSE or Qualified OCALSE in tiers 1 and 2, and (ii) Long Term CRRs previously allocated to that eligible entity that are valid for the CRR term currently being allocated. In tier 3 of the annual CRR Allocation, ~~s~~Sub-LAPs will be eligible CRR Sinks provided that the ~~s~~Sub-LAP is within the nominating LSE's Default

LAP. An LSE or a Qualified OCALSE can nominate Seasonal CRRs where the CRR Source is a Trading Hub. In running the SFT the CAISO shall disaggregate the Seasonal CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1.

36.8.3.5.5 Alternatives for Renewal of Long Term CRRs and for the Transition of Expiring ETCs and Converted Rights to Long Term CRRs.

Eligible entities may, in the final year of a Long Term CRR, nominate the identical CRR Source, CRR Sink, and MW terms of the expiring Long Term CRR in the PNP conducted that year, subject to any applicable quantity limitations specified in this Section 36. An eligible entity with an Existing Transmission Contract or Converted Rights that expire by the start of the year for which the CRR Allocation process is conducted may participate in the PNP as if its Existing Transmission Contract or Converted Rights sources and sinks were previously allocated Seasonal CRRs, subject to any applicable quantity limitations specified in this Section 36. In either case, if Seasonal CRRs are awarded to an LSE or a Qualified OCALSE in the PNP based on its nomination of its expiring rights, such entity may then nominate those Seasonal CRRs in Tier LT of the same year's annual CRR Allocation process, subject to any applicable quantity limitations specified in this Section 36. Alternatively, CRR Holders of expiring LT CRRs, expiring Existing Transmission Contracts or expiring Converted Rights may bypass the tier 1 Priority Nomination Process and nominate their expiring rights as Long Term CRRs in Tier LT one year prior to the year of expiration, subject to any applicable quantity limitations specified in this Section 36. This alternative allows the holder of the expiring rights to nominate Long Term CRRs in the first Tier LT SFT in which the capacity corresponding to the expiring rights becomes available for the full nine year period of the Tier LT SFT. For any entity who elects this alternative and obtains an allocated Long Term CRR, the length of the renewed Long Term CRR (or initial Long Term CRR in the case of expiring Existing Transmission Contracts or expiring Converted Rights) will be nine years, corresponding to the years included in the Tier LT SFT.

36.8.3.6 Monthly CRR Allocation Beyond CRR Year One.

The monthly CRR Allocation shall consist of a sequence of two (2) tiers of allocations for each time of use period (on-peak and off-peak). The monthly CRR Allocation will distribute Monthly CRRs ~~to~~and will allow an LSE~~s~~ and a Qualified OCALSE to nominate CRRs up to one hundred percent (100%) of ~~their~~its

Monthly CRR Eligible Quantity, minus the total of any Seasonal CRRs allocated in the annual CRR Allocation, and minus any holdings of Long Term CRRs that are valid for the month and time of use of the CRRs being nominated.~~to that LSE in the annual CRR Allocation~~. All CRR nominations by Qualified OCALSEs must be source verified.

36.8.3.6.1~~a.~~ **Tier 1.** In ~~T~~tier 1 of the monthly CRR Allocations, each LSE or Qualified OCALSE may nominate Monthly CRRs up to fifty percent (50%) of the difference between its Monthly CRR Eligible Quantity~~ies;~~ and the total of any Seasonal CRRs allocated in the annual CRR Allocation and any holdings of Long Term CRRs that are valid for the month and time of use of the CRRs being nominated. An LSE or a Qualified OCALSE can nominate Monthly CRRs where the CRR Source is a Trading Hub. In running the SFT the CAISO shall disaggregate the Monthly CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1.

36.8.3.6.2~~b.~~ **Tier 2.** In ~~T~~tier 2 of the monthly CRR Allocations, each LSE or Qualified OCALSE may nominate Monthly CRRs up to one hundred percent (100%) of the difference between its Monthly CRR Eligible Quantity~~ies~~ and the total of any Seasonal CRRs allocated in the annual CRR Allocation and any holdings of Long Term CRRs that are valid for the month and time of use of the CRRs being nominated, minus the quantity of CRRs allocated to that LSE or Qualified OCALSE in ~~T~~tier 1 of the current monthly CRR Allocation. In ~~T~~tier 2 of the ~~M~~monthly CRR Allocation, Sub-LAPs will be eligible CRR Sinks, provided that the Sub-LAP is within the nominating LSE's Default LAP. An LSE or a Qualified OCALSE can nominate Monthly CRRs sourced at Trading Hubs. In running the SFT the CAISO shall disaggregate the Monthly CRR nominations sourced at Trading Hubs as described in Section 36.8.4.1.

36.8.4 Eligible Sources for CRR Allocation.

In the CRR Allocation processes for Seasonal CRRs, Monthly CRRs, and Long Term CRRs, nominated CRR Sources can be either PNodes (including Scheduling Points) or Trading Hubs. An LSE or a Qualified OCALSE may nominate up to one hundred percent (100%) of its Adjusted Verified CRR Source Quantities for Seasonal or Monthly CRRs in the combined tiers of the annual and monthly CRR Allocation processes as provided in this Section. ~~In the CRR Allocation processes for Seasonal CRRs and Monthly CRRs, sources of CRR nominations can be either PNodes or Trading Hubs. For Long Term CRRs, a Trading Hub is not an eligible source.~~ For tiers 1 and 2 of the annual CRR Allocation in CRR Year One,

an LSEs may nominate CRRs from each of its verified CRR Sources in a quantity no greater than seventy-five percent (75%) of the Adjusted Verified CRR Source Quantity corresponding to each verified CRR Source. The LSE may then use tier 1 of the monthly CRR Allocations in CRR Year One to nominate up to the full one hundred percent (100%) of the Adjusted Verified CRR Source Quantity corresponding to each verified CRR Source. In tiers 1, 2 and 3 of the annual CRR Allocation in each year in which it participates, a Qualified OCALSE may nominate CRRs from each of its verified CRR Sources in a quantity no greater than seventy-five percent (75%) of the Adjusted Verified CRR Source Quantity corresponding to each CRR Source. The Qualified OCALSE may then use tiers 1 and 2 of the monthly CRR Allocations in the same year to nominate up to the full one hundred percent (100%) of the Adjusted Verified CRR Source Quantity corresponding to each verified CRR Source.~~requesting CRRs whose CRR Source is a specific Generating Unit will be limited to seventy-five percent (75%) of that Generating Unit's PMax, even if that Generating Unit is owned by or fully contracted to the LSE requesting the CRR. For tiers 1 and 2 of the annual CRR Allocation in CRR Year One, LSEs requesting CRRs whose CRR Source is a Trading Hub will be limited to seventy-five percent (75%) of the average hourly quantity of Energy contracted for delivery at that Trading Hub. A Scheduling Point can be a CRR Source for the annual and monthly CRR Allocation to the extent the requirements of Section 36.8.4.1 are satisfied.~~

36.8.4.1 CRRs with Trading Hub Sources.

For purposes of the CRR Allocation processes the CAISO shall disaggregate CRR nominations with Trading Hub CRR Sources into Point-to-Point CRR nominations each of whose CRR Source is a Generating Unit PNode that is an element of the Trading Hub. In performing this disaggregation the MW quantity of each Point-to-Point CRR nomination will equal the MW quantity of the CRR nomination multiplied by the weighting factor of the corresponding Generating Unit PNode in the defined Trading Hub. The disaggregated, individual Point-to-Point CRRs will be used by the CAISO in conducting the SFTs for the nominated CRRs. In CRR years other than CRR Year One, an LSE may nominate in the PNP any Point-to-Point CRRs it was allocated the previous year as a result of Seasonal CRR nominations with Trading Hubs as CRR Sources, and may then nominate those Seasonal CRRs awarded in the PNP as Long Term CRRs in Tier LT. In CRR Year One, an LSE that was allocated individual Point-to-Point CRRs in tiers 1 and 2 as a result of nominating CRRs sourced at a Trading Hub must nominate

CRRs sourced at Trading Hubs in Tier LT in accordance with Section 36.8.3.1.3.1. For Qualified OCALSEs, all nominated CRR Sources must be source verified as specified in Section 36.9.1. Any Long Term CRRs allocated by the CAISO as a result of nominations of CRRs sourced at Trading Hubs will be Point-to-Point CRRs each of whose CRR Sources is a Generating Unit PNode that is an element of the Trading Hub.

36.8.4.2~~1~~ Import CRRs.

An LSE~~s~~ or a Qualified OCALSE may nominate Seasonal, Monthly or Long Term CRRs whose CRR Source is a Scheduling Point in the annual and monthly CRR Allocation in accordance with this Section.

36.8.4.2.1 Scheduling Points as CRR Sources for LSEs in CRR Year One.

In CRR Year One, in ~~T~~tiers 1 and 2 of the annual CRR ~~a~~Allocation process an LSE may nominate ~~such~~ Seasonal CRRs whose CRR Source is a Scheduling Point to the extent that it can demonstrate to the CAISO that, for the verification period stated in Section 36.8.3.4~~5~~, it owned or was a party to a contract with a System Resource, and that it or the counter-party to the contract had procured appropriate transmission from the applicable transmission provider outside the CAISO to the Scheduling Point. In addition, also in ~~T~~tiers 1 and 2 of the annual CRR ~~a~~Allocation in CRR Year One, all LSEs eligible to nominate CRRs under this Section 36.8 may nominate as CRR Sources, without any verification, shares of the residual import CRR capacity at each Scheduling Point that remains after the completion of the CRR ~~s~~Source verification process. Each LSE's share of the residual import CRR capacity will be calculated as follows. Starting with the total capacity at each Scheduling Point that ~~wa~~is available in the DC FNM for the ~~A~~annual CRR Allocation and Auction process, the CAISO will calculate the residual amount of capacity that remains at each Scheduling Point after subtracting the capacity accounted for by those Scheduling Point CRR Sources submitted by LSEs for verification that have been verified. The CAISO will then set aside ~~50~~ fifty percent (50%) of this residual amount at each Scheduling Point for the ~~A~~annual CRR Auction, and will allow LSEs to nominate pro rata shares of the other ~~50~~ fifty percent (50%) in proportion to their Seasonal CRR Eligible Quantities. In each ~~M~~monthly CRR Allocation during CRR Year One, CRR ~~s~~Source verification will be required in ~~T~~tier 1 as in the annual CRR ~~a~~Allocation process. Following the verification process, the CAISO will calculate and set aside for the ~~M~~monthly CRR Auction ~~50~~ fifty percent (50%) of the import capacity that remains at each Scheduling Point after accounting for

the verified Scheduling Point CRR Source submissions to the monthly process and the ~~A~~annual CRR Allocation and Auction results for that month, and will allow LSEs to nominate in tier 1 ~~m~~Monthly CRRs with CRR Sources at each Scheduling Point in quantities up to their pro rata shares of the other ~~50~~ fifty percent (50%) in proportion to their Monthly CRR Eligible Quantities.

36.8.4.2.2 Scheduling Points as CRR Sources for LSEs Beyond CRR Year One.

In the ~~A~~annual CRR Allocation processes subsequent to CRR Year One, there will be no special provisions regarding CRR Sources at Scheduling Points in ~~T~~tiers 1 and 2 for LSEs. For ~~T~~tier 3 the CAISO will calculate and set aside for the ~~A~~annual CRR Auction ~~50~~ fifty percent (50%) of the import capacity at each Scheduling Point that remains after the ~~T~~tier 1 and ~~T~~tier 2 CRR ~~a~~Allocations and after considering any previously allocated Long Term CRRs that are valid for that month as described in Section 36.4.1. In the ~~M~~monthly CRR Allocation processes subsequent to CRR Year One there will be no special provisions regarding CRR Sources at Scheduling Points in ~~T~~tier 1 for LSEs. For ~~T~~tier 2 the CAISO will calculate and set aside for the ~~M~~monthly CRR Auction ~~50~~ fifty percent (50%) of the import capacity that remains at each Scheduling Point after accounting for the ~~A~~annual CRR ~~a~~Allocation and ~~a~~Auction results for that month, any previously allocated Long Term CRRs that are valid for that month, and the results of ~~T~~tier 1 of the monthly CRR Allocation.

36.8.4.2.3 Scheduling Points as CRR Sources for Qualified OCALSEs.

In the annual CRR Allocation process a Qualified OCALSE may nominate CRRs whose CRR Source is a Scheduling Point to the extent it meets the requirements of Section 36.9.1.

36.8.5 Load Migration Between LSEs.

The CAISO shall track Load Migration between LSEs through Load Migration data provided to the CAISO by each UDC, MSS Operator or other entity that provides distribution serve to customers. Load ~~m~~Migration ~~between LSEs~~ will be reflected in the hourly Load data and load forecasts used by the CAISO to calculate the CRR Load Metrics and Seasonal and Monthly CRR Eligible Quantities for each LSE, in accordance with procedures set forth in the applicable Business Practice Manual. ~~When Load migration occurs during an annual CRR cycle, such~~ Load ~~m~~Migration will be reflected in appropriate adjustments to each affected LSE's Seasonal and Monthly CRR Eligible Quantities in subsequent annual and monthly

CRR Allocations, as well as its PNP Eligible Quantities in the next annual CRR ~~a~~Allocation. LSEs ~~with~~ that hold Seasonal CRRs or Long Term CRRs and that lose or gain Load through Load ~~m~~Migration must comply with Section 36.8.5.3~~2~~ regarding the transfers of current CRR holdings to reflect Load Migration.

36.8.5.1 Tracking of Load Migration by CAISO.

The CAISO will implement all appropriate adjustments due to Load Migration on a monthly basis. In order to enable the CAISO to track Load Migration and determine the appropriate adjustments, each UDC, MSS Operator, and other entity that provides distribution service to customers will provide to the CAISO the following minimum information on each customer that migrates between LSEs: (i) customer identification information, (ii) information to establish the customer's retail customer class, (iii) the original and new LSEs serving the customer, (iv) the effective date of the Load Migration, and (v) the most recent twelve (12) months of billing data for the customer. Each UDC, MSS Operator and other entity that provides distribution service to customers will also provide to the CAISO the number of customers served by each LSE in each retail customer class as of the start of each month, plus information on the average consumption by customers in each retail customer class. Further details regarding the information to be supplied to the CAISO is set forth in the applicable Business Practice Manual. The CAISO will receive information from each UDC, MSS Operator, and other entity providing distribution service on an ongoing daily basis, and will perform the calculations for any appropriate adjustments due to Load Migration on a monthly basis. New CRRs allocated due to Load Migration in accordance with Section 36.8.5.3 will be made effective on the first day of the first month, following the CAISO's performance of the calculations, in which the Load Migration is effective by the first of the month.

36.8.5.~~2~~1 Adjustments to CRR Eligible Quantities to ~~Reflected in the Annual Allocation Process Due To~~ Load Migration.

An LSE who loses or gains net Load through Load ~~m~~Migration in a given year will have its Seasonal CRR Eligible Quantities in the next ~~A~~annual CRR Allocation reduced or increased, respectively, in proportion to the net Load lost or gained through Load ~~m~~Migration. In addition, an LSE ~~who~~that loses Load through Load ~~m~~Migration in a given year will have its PNP Eligible Quantities reduced in proportion to the gross amount of Load lost through Load ~~m~~Migration. An LSE that gains Load through Load Migration in a given year will have its PNP Eligible Quantities increased in proportion to the amount of Load gained through

Load Migration.~~The reduction in PNP Eligible Quantities will be applied as a constant percentage to all CRRs allocated to that LSE in the prior annual CRR Allocation. There is no increase in an LSE's PNP Eligible Quantities due to an increase in Load due to Load migration. Such an LSE may acquire additional CRRs for net Load gained in tiers 2 and 3 of the subsequent annual CRR Allocation. The CAISO will reserve CRRs in the annual PNP corresponding to the CRRs released by LSEs whose PNP Eligible Quantities were reduced, and will then release these CRRs for tiers 2 and 3. This mechanism will ensure, in the event that changes to the DC FNM prevent the full allocation of PNP Eligible Quantities, that CRRs nominated in the PNP undergo the same proportional reduction as CRRs released by the LSEs who lose Load due to Load migration, so as not to unfairly disadvantage those LSEs who gain Load through Load migration. The Load-gaining LSE will not be required to request the precise CRRs released by the relevant Load-losing LSE but will be able to nominate its preferred CRRs in tiers 2 and 3.~~

36.8.5.~~3~~2 Adjustments to ~~Transfers of Allocated~~Current CRRs Holdings to Reflect Load Migration.

Because in between CRR Allocations each LSE can both lose Load and gain Load between itself and multiple other LSEs, the CAISO will calculate and perform appropriate adjustments to current CRR holdings for each pair of LSEs affected by Load Migration to reflect the net amount of Load that migrated between those two LSEs during each Load Migration tracking period and for each LAP in which the LSEs serve Load. The CAISO will perform such calculations in accordance with the appropriate Business Practice Manual, and will perform the adjustments by creating and allocating equal and opposite sets of new CRRs for each pair of LSEs affected by Load Migration. The net Load gaining LSE of the pair will receive a set of new CRRs that match the CRR Sources and CRR Sinks of all the Seasonal and Long Term CRRs previously allocated to the net Load losing LSE of the pair, in MW quantities proportional to the net amount of the net Load losing LSE's Load that migrated to the net Load gaining LSE of the pair within each LAP in which the LSEs serve Load. The net Load losing LSE of the pair will receive a set of new Offsetting CRRs. After the assignment of Offsetting CRRs, the net Load losing LSE will still hold the CRRs it held before it was assigned the Offsetting CRRs. The Load gaining LSE may nominate its new Seasonal CRRs in the Priority Nomination Process of the next annual CRR Allocation process. The net Load losing LSE may not nominate in the Priority Nomination Process either: (i) the Seasonal CRRs

corresponding to the new CRRs allocated to the Load gaining LSE, or (ii) the Offsetting CRRs allocated due to Load Migration.~~LSEs that have been allocated Seasonal CRRs or Long Term CRRs and that lose Load through Load migration must transfer allocated Seasonal CRRs and Long Term CRRs in accordance with this Section 36.8.5.2.~~ An LSE to which the CAISO allocates new CRRs to reflect ~~that receives shares of allocated CRRs due to~~ Load ~~m~~Migration must be either a Candidate CRR Holder or a CRR Holder and meet all requirements applicable to such entities~~CRR Holders~~.

~~36.8.5.2.1 Mid-Year Adjustments in Seasonal CRRs.~~

~~If an LSE loses Load through Load migration to another LSE at any time between annual CRR Allocations, the Load-losing LSE must compensate the Load-gaining LSE in one of the following two manners: 1) using the SRS, the Load-losing LSE may transfer a percentage of each of the Seasonal CRR that it was allocated for the remainder of the annual CRR cycle and for both on-peak and off-peak periods, to the Load-gaining LSE in a quantity proportionate to the percentage of its Load lost to the other LSE through migration; or 2) the LSE who loses Load through Load migration to another LSE may make cash payments to the relevant Load-gaining LSE in a value commensurate with the hourly CRR Payment stream that would have accrued to the CRRs transferred, based on the quantity of CRRs awarded to the Load-losing LSE.~~

~~36.8.5.2.2 Load Migration and Allocated Long Term CRRs.~~

~~An LSE that is a CRR Holder that holds a Long Term CRR and that loses Load to Load migration must transfer a proportionate share of each of its Long Term CRRs to the Load-gaining LSE, in a quantity proportionate to the percentage of its Load lost to the other LSE through Load migration. After the transfer of the Long Term CRR (or the proportionate share thereof) to the Load-gaining LSE, the Load-gaining LSE is the holder of record for the transferred Long Term CRR for CAISO Settlement purposes.~~

~~36.8.5.2.3 Load Migration That Occurs After Completion of the Annual Allocation Process.~~

~~If Load migration occurs after the annual CRR Allocation process has been completed for the following year, a CRR Holder that holds Long Term CRRs may transfer the following year's segment of the Long Term CRR using the options set forth in Section 36.8.5.2.1. For all of the other remaining years of the Long Term CRR, the CRR Holder that holds Long Term CRRs may not use the options set forth in~~

~~Section 36.8.5.2.1 to transfer the Long Term CRR (or the proportionate portion thereof) to the Load-gaining LSE.~~

36.8.5.4 Load Migration and Compliance with CAISO Credit Requirements.

To the extent that the credit requirements of an LSE as specified in Section 12 are updated by the allocation of new CRRs to reflect Load Migration, the CAISO will do the following. For new CRRs that result in net charges to the affected LSE over a Settlement period these charges will appear on the LSE's Settlement Statement irrespective whether the LSE has met the updated credit requirement. For new CRRs that result in net payments to the affected LSE over a Settlement period and that LSE has not met the updated credit requirements affected by the allocation of new CRRs to reflect Load Migration, the CAISO shall withhold payment until those updated credit requirements are met. At the end of each Settlement period, if the LSE has not met the updated credit requirements resulting from Load Migration CRR transfers, the CAISO will add any net payments that accrued to the transferred CRRs to the CRR Balancing Account to be included in the end-of-month clearing of the CRR Balancing Account, and those net payments will no longer be recoverable by the LSE. The CAISO may place new allocated CRRs into CRR Auctions if the non-compliance with credit or applicable Financial Security requirements is persistent.

36.8.5.5 Load Migration Adjustment for CRR Year One.

For the CRR Year One CRR Allocation process, the CAISO will account for the cumulative Load Migration that takes place between the beginning of the CRR Year One CRR Allocation process and the first date that the Day-Ahead Market is operational as a single adjustment as described in the Business Practice Manuals.

36.8.5.~~6~~3 Load Migration Reflected in the Monthly CRR Allocation Process.

An LSE who loses or gains net Load through Load ~~m~~Migration must reflect that loss or gain in the monthly Load forecasts it submits to the CAISO for determining its monthly CRR Eligible Quantities for future monthly CRR ~~a~~Allocations.

~~**36.8.5.4 Adjustments for Load Growth.**~~

~~LSEs who experience Load growth that is not due to Load migration will reflect such Load growth in the data submitted to the CAISO for determining Seasonal and Monthly CRR Eligible Quantities for the CRR Allocation processes.~~

36.8.6 Load Forecasts Used to Calculate CRR MW Eligibility.

The CAISO will work closely with appropriate state and Local Regulatory Authorities and agencies to ensure that historical ~~l~~Load data and load forecasts used to establish Seasonal and Monthly CRR Eligible Quantities are consistent with the data and forecasts used to establish ~~R~~resource ~~A~~adequacy ~~R~~requirements.

36.8.7 ~~——~~Long Term CRRs and Participating TO Withdrawals from the CAISO Controlled Grid.

In the event a Participating TO gives the required notice and withdraws facilities or Entitlements from the CAISO Controlled Grid, the CAISO will reconfigure Long Term CRRs as necessary to reflect the CAISO Controlled Grid after the withdrawal. After reconfiguration, the CAISO will run SFTs on the reconfigured Long Term CRRs and, if necessary, reduce some of the reconfigured Long Term CRRs to ensure their feasibility. If the CRR Source and CRR Sink for an allocated Long Term CRR both are located within a departing Participating TO Service Territory, the Long Term CRR would expire on the effective date of the Participating TO's withdrawal.

36.9 CRR Allocation to OCALSEs ~~serving External Load~~.

OCALSEs ~~serving Load outside the CAISO Control Area~~ who wish to nominate and be allocated CRR Obligations in the same annual and monthly CRR ~~a~~Allocation processes described in Section 36.8 may do so subject to the provisions of this Section 36.9 and if such OCALSEs are qualified and registered as Candidate CRR Holders or CRR Holders. An OCALSE~~s~~ ~~serving Load outside the CAISO Control Area~~ may participate in the CRR Allocation processes and be allocated CRRs to the extent that: (1) such OCALSE~~s~~ makes a showing of legitimate need for the CRRs nominated as provided by Section 36.9.1; (2) such ~~entities~~OCALSE pre-pays or commits to pay the appropriate Wheeling Access Charge in the amount of MWs of CRRs nominated as provided in Section 36.9.2; (3) the ~~nominated CRRs clear the relevant SFTs~~external load for which CRRs are nominated will be exposed to CAISO Congestion charges

because it is not served by Supply resources other than exports from the CAISO Control Area; ~~and~~ (4) the external load for which CRRs are nominated is not served through an ETC, TOR or Converted Rights by which it has been designated as eligible to receive the reversal of Congestion ~~C~~charges; (5) such OCALSE complies with the verification requirements in Section 36.9.4; and (6) the nominated CRRs clear the relevant SFTs. ~~Such~~ An LSE~~s~~ that participates in the CRR Allocation processes will be subject to the applicable rules governing the tiered structure of these processes ~~as described in Sections 36.8~~. All CRRs allocated under the terms of this Section 36.9 will be CRR Obligations.

36.9.1 Showing of Legitimate Need.

An OCALSE~~s serving load outside the CAISO Control Area~~ must make a showing to the CAISO of legitimate need to enable the CAISO to verify the CRR Sources it wants to nominate. All CRR nominations by OCALSEs in all CRR years must be source verified based on the showing of legitimate need~~for the CRRs requested~~. The CAISO's verification~~determination~~ of legitimate need will be based on demonstration by the OCALSE of an ~~existing~~executed Energy contract ~~for~~from a Generating~~on~~ Unit or System Resource ~~internal to the CAISO Control Area~~ that covers the time period of the CRRs nominated, or ownership of ~~a~~ such Generating Unit or System Resource ~~internal to the CAISO Control Area~~. For such CRR Sources the showing of legitimate need must be made for each CRR term for which the OCALSE wants to nominate CRRs in a timely manner prior to the start of the relevant annual or monthly CRR Allocation process. For CRR Sources that will be verified based on generating resources located outside the CAISO Control Area, a Scheduling Point must be nominated as the corresponding CRR Source. Generating resources located outside of the CAISO Control Area to be used by the OCALSE to verify a Scheduling Point as a CRR Source must not be located within the OCALSE's own Control Area. The Verified CRR Source Quantity and Adjusted Verified CRR Source Quantity corresponding to any CRR Source nominated by an OCALSE will be calculated in accordance with Section 36.8.3.4, with the modification that for an OCALSE these quantities will be calculated for each CRR Allocation process in which the Qualified OCALSE wants to participate, consistent with the requirement for ongoing source verification based on a forward showing in conjunction with the OCALSE's annual showing of legitimate need. For a CRR Source that is a Scheduling Point, pursuant to the legitimate need showing requirement, an OCALSE must demonstrate that it has procured the appropriate transmission service

from the transmission provider outside the CAISO Control Area to the Scheduling Point that the OCALSE intends to nominate as a CRR Source for the term of the CRR being nominated. Such demonstrations shall be provided by the OCALSE to the CAISO through the submission of a written sworn declaration by an executive employee authorized to represent the OCALSE and attest to the accuracy of the data demonstration. As necessary, the CAISO may request, and such OCALSE must produce in a timely manner, documents in support of such declaration.

36.9.2 Prepayment of Wheeling Access Charges.

36.9.2.1 Prepayment of Wheeling Access Charges for Allocated CRRs.

An OCALSE~~s serving load outside the CAISO Control Area~~ will be required to prepay relevant Wheeling Access Charges, to be calculated as described in this section and further specified in the Business Practice Manual, for the full term of the Monthly, Seasonal and Long Term CRRs it intends to nominate in order to participate in the CRR Allocation processes and be allocated CRRs. To be eligible for the allocation of Seasonal CRRs or Monthly CRRs the OCALSE must submit the full required prepayment and have it accepted by the CAISO prior to the OCALSE's submission of nominations for the relevant annual or monthly CRR Allocation, except as provided below in Section 36.9.2.2. To be eligible for nominations of Long Term CRRs, the OCALSE must submit the full prepayment and have it accepted by the CAISO prior to the OCALSE's submission of nominations of Long Term CRRs in Tier LT, except as provided below in Section 36.9.2.2. For each MW of Monthly, Seasonal or Long Term CRR to be nominated the nominating OCALSE must prepay one MW of the relevant Wheeling Access Charge, which equals the per-MWh WAC that is associated with the Scheduling Point the OCALSE intends to nominate as a CRR Sink and that is expected at the time the CRR ~~a~~Allocation process is conducted to be applicable for the period of the CRR nominated, times the number of hours comprising the period of the CRR nominated as further specified in the applicable Business Practice Manual. ~~To the extent that an LSE prepays a quantity of the WAC and is not allocated the full amount of CRRs nominated, WAC prepayment for CRRs not allocated will be refunded by the CAISO within a reasonable time following the completion of the relevant allocation process.~~

36.9.2.2~~1~~ Eligibility for Prepayment of ~~Wheeling Access~~ Charges on an Annual or Monthly Basis ~~for Long Term CRRs~~.

~~An entity serving load outside the CAISO Control Area that wants to nominate an allocated Seasonal CRR as a Long Term CRR must execute a contract with the CAISO committing the entity to make annual Wheeling Access Charge payments for each year of the term of a Long Term CRR. Each year's payment will be made at the beginning of the annual CRR Allocation process for the following year.~~ An OCALSE deemed creditworthy pursuant to the requirements of Section 12 may elect to prepay the determined WAC responsibility on a monthly basis for the Seasonal or Long Term CRRs that it seeks to be allocated, provided that such OCALSE has demonstrated a commitment to pay the required WAC for the entire term of the CRRs sought by submitting to the CAISO a written sworn statement by an executive that can bind the entity. In order to be eligible for this option, the OCALSE must submit and the CAISO must accept this sworn statement prior to the applicable CRR Allocation process in which the OCALSE intends to nominate a CRR. An OCALSE choosing to pay on a monthly basis shall make its monthly payments on a schedule specified in the applicable Business Practice Manual. An OCALSE deemed creditworthy pursuant to the requirements of Section 12 may also elect to prepay its determined WAC responsibility associated with an allocated Long Term CRR on an annual basis, provided that such OCALSE has demonstrated a commitment to pay for the entire term of the Long Term CRRs sought by submitting to the CAISO and the CAISO accepting a written sworn statement by an executive that can bind the entity. An OCALSE choosing to pay such WAC obligation on an annual basis shall make its payment each year on a schedule specified in the applicable Business Practice Manual.

36.9.2.3 Refund of Prepaid WAC for Unallocated CRRs.

To the extent that an OCALSE prepays a quantity of the WAC and is not allocated the full amount of CRRs nominated, WAC prepayment for CRRs not allocated will be refunded by the CAISO within thirty (30) days following the completion of the relevant CRR Allocation process.

36.9.3 CRR Eligible Quantities.

The CAISO will calculate the Seasonal and Monthly CRR Eligible Quantities for OCALSEs ~~serving external Load~~ as described in Section 36.8.2 with the following modifications. The OCALSE ~~Load~~must submit two sets of hourly data ~~submitted by the LSE~~ from which the CAISO will construct load duration curves for determining the Seasonal and Monthly CRR Eligible Quantities. One set of hourly data must reflect the OCALSE's historical hourly exports at the Scheduling Point that is the CRR Sink of the

nominated CRRs. The historical hourly exports shall be based on the tagged Real-Time Interchange Export Schedules for the OCALSE. An OCALSE~~s~~ that wishes to nominate multiple Scheduling Points as CRR Sinks in the CRR ~~a~~Allocation process will have distinct CRR Eligible Quantities for each nominated Scheduling Point, and prior to each annual CRR Allocation process must submit historical hourly export data at each such Scheduling Point from which the CAISO will calculate the associated CRR Eligible Quantities. The second set of hourly data must reflect the prior year's hourly metered load for the end-use customers the OCALSE served outside the CAISO Control Area and that were not served from sources other than exports from the CAISO Control Area. The OCALSE's Seasonal and Monthly CRR Eligible Quantities will be based on the lesser of (1) the total historical hourly export data for all Scheduling Points submitted as CRR Sinks, and (2) the hourly metered load for the external end-use customers served by the OCALSE and that were not served from sources other than exports from the CAISO Control Area. An OCALSE also must demonstrate that it has firm transmission rights pursuant to the tariffs of intervening transmission providers from its Scheduling Point sink to the end-use customers in the OCALSE's Control Area. The OCALSE shall support its data submission and the demonstration of transmission rights to its end-use customers with a sworn affidavit by an executive employee authorized to represent the OCALSE and attest to the accuracy of the data and demonstration. As necessary, the CAISO may request, and such OCALSE must produce in a timely manner, the raw data and calculations used to develop the submitted data set and the demonstration of transmission rights to its end-use customers.

36.9.4 Eligible CRR Sources and Sinks.

Eligible CRR Sources will be the PNodes of the Generating Units or Scheduling Points for which the OCALSE has made a legitimate need showing as described above in Section 36.9.1. Eligible CRR Sinks will be the Scheduling Points for which the CAISO has established Seasonal and Monthly CRR Eligible Quantities as described in Section 36.9.3~~based on the LSE's submitted historical hourly export data~~. An OCALSE~~External Load Serving Entities requesting~~ nominating CRRs having CRR Sources internal to the CAISO Control Area~~ whose CRR Source is a specific Generating Unit~~ will be limited to seventy-five percent (75%) of each of its corresponding Adjusted Verified CRR Source Quantities ~~that Generating Unit's PMax~~ in all T~~t~~iers ~~1 and 2~~ of the annual CRR Allocation process in CRR Year One and in

subsequent years. An OCALSE nominating CRRs having CRR Sources external to the CAISO Control Area will be limited to seventy-five percent (75%) of each of its corresponding Adjusted Verified CRR Source Quantities in all tiers of the annual CRR Allocation process in CRR Year One. In CRR years subsequent to CRR Year One, the OCALSE may renew previously allocated CRRs having external CRR Sources, subject to the applicable quantity limitations and other requirements specified in this Section 36.

36.9.5 Priority Nomination Process.

CRRs allocated pursuant to this Section 36.9 shall be eligible for nomination in the Priority Nomination Process to the extent that the requirements of this Section 36.9 are met at the time of the relevant CRR Allocation.

36.10 CRR Allocation to Metered Subsystems.

An MSS Operator that elects gross ~~s~~Settlement may participate in the CRR ~~a~~Allocation processes and be allocated CRR Obligations ~~in accordance with Section 36.8~~. An MSS Operator that elects net ~~s~~Settlement may participate in the CRR ~~a~~Allocation processes and be allocated CRRs ~~in accordance with Section 36.8~~, except that its Seasonal and Monthly CRR Eligible Quantities will reflect its net ~~l~~Load and its allocated CRRs will use MSS-LAPs as CRR Sinks. The MSS Operator will be required to submit to the CAISO the appropriate hourly historical net Load data and net Load forecast data from which the CAISO will construct net Load duration curves to determine the Seasonal and Monthly CRR Eligible Quantities.

36.11 CRR Allocation to Merchant Transmission Facilities~~Upgrades~~.

Project Sponsors of ~~m~~Merchant ~~t~~Transmission Facilities~~upgrades~~ who turn such facilities over to CAISO ~~o~~Operational ~~c~~Control and do not recover the cost of the transmission investment through the CAISO's ~~TAC~~ Access Charge or WAC or other regulatory cost recovery mechanism may be allocated, at the Project Sponsor's election, either CRR Options or Obligations that reflect the contribution of the facility~~upgrade~~ to grid transfer capacity as determined below~~in accordance with Section 24.7.3~~.

36.11.1 Eligibility for Merchant Transmission CRRs.

The Project Sponsor of a Merchant Transmission Facility shall be entitled to receive Merchant Transmission CRRs as determined in accordance with this Section 36.11. A Merchant Transmission CRR allocated through this process is effective for thirty (30) years or for the pre-specified intended life of

the Merchant Transmission Facility, whichever is less. Merchant Transmission CRRs represent binding commitments for thirty (30) years or for the pre-specified intended life of the Merchant Transmission Facility, whichever is less. The binding commitment by a CRR Holder that holds Merchant Transmission CRRs may not be terminated or otherwise modified by the CRR Holder prior to the end of the term of the Merchant Transmission CRR.

36.11.2 Procedure for Allocating Merchant Transmission CRRs.

No less than forty-five (45) days prior to the in-service date of a Merchant Transmission Facility, the Project Sponsor of the facility will inform the CAISO of the in-service date of the facility and that the Project Sponsor will be requesting Merchant Transmission CRRs associated with the Merchant Transmission Facility. The CAISO will complete the Merchant CRR Allocation after the in-service date of the facility and will allocate Merchant Transmission CRRs whose payment stream will be retroactive back to the in-service date.

36.11.3 Determination of Merchant Transmission CRRs to be Allocated to a Project Sponsor of a Merchant Transmission Facility.

36.11.3.1 Nominations of Merchant Transmission CRRs.

The Project Sponsor of a Merchant Transmission Facility must submit nominations for Merchant Transmission CRRs at least twenty-one (21) days prior to the in-service date of the facility. The Project Sponsor may nominate up to five individual, Point-to-Point CRRs for each of the two on-peak and off-peak time of use periods. Each of the individual, point-to-point nominations must specify: (i) a single CRR Source location; (ii) a single CRR Sink location, (iii) a MW quantity; (iv) a time of use period (on-peak or off-peak); and (v) a CRR type, either CRR Options or CRR Obligations.

36.11.3.2 Methodology to Determine Merchant Transmission CRRs.

The CAISO shall determine the incremental Merchant Transmission CRRs associated with a Merchant Transmission Facility pursuant to this Section 36.11.3.2. The determination will include an assessment of the simultaneous feasibility of the incremental Merchant Transmission CRRs and all other outstanding CRRs. The CAISO will determine the feasible incremental Merchant Transmission CRRs using a three-step process.

36.11.3.2.1 Step One: the Capability of the Existing Transmission System.

In step one the CAISO will determine the base CRR capability of the system using a Simultaneous Feasibility Test that incorporates as Fixed CRRs all existing encumbrances through the end of the CRR year for which the annual CRR Allocation and Auction process has already been conducted, including encumbrances for the month covered by the most recently conducted monthly CRR Allocation and Auction process. This analysis will determine the extent to which the nominated Merchant Transmission CRRs are feasible on the existing transmission system absent the Merchant Transmission Facility. As a result of this analysis, the CAISO will create temporary test CRR Options to reserve grid capacity that the Project Sponsor of the Merchant Transmission Facility is not eligible to receive. The temporary test CRR Options will have the same CRR Source and CRR Sink pairs as the Merchant Transmission CRR nominations submitted by the Project Sponsor.

36.11.3.2.2 Step Two: Mitigation of Impacts on Existing Encumbrances.

In the second step, the CAISO will add the proposed Merchant Transmission Facility to the DC FNM and run a SFT using the Fixed CRRs. The second step will ensure that the addition of a Merchant Transmission Facility does not negatively impact any existing encumbrances through the end of the CRR year for which the annual CRR Allocation and Auction process for Annual CRRs has already been conducted, including encumbrances for the month covered by the most recently conducted monthly CRR Allocation and Auction process. For any impacts identified in this step the Project Sponsor of the Merchant Transmission Facility will be required to mitigate the impacts for the same period. The mitigation can include having the Project Sponsor of the Merchant Transmission Facility hold counterflow CRRs that maintain the feasibility of the existing encumbrances over the same period.

36.11.3.2.3 Step Three: the Incremental Merchant Transmission CRRs.

In the third step, the CAISO will determine the Merchant Transmission CRRs to be allocated to the Project Sponsor of the Merchant Transmission Facility. The CAISO will determine the capability of the system to award incremental Merchant Transmission CRRs using a DC FNM that incorporates the proposed Merchant Transmission Facility. The CAISO will conduct separate SFTs for each time of use period. For each time of use period, the CAISO will perform a multi-period SFT that simultaneously evaluates two sets of grid conditions. The first set of grid conditions includes all existing encumbrances

for the month covered by the most recently conducted CRR Allocation and Auction process for Monthly CRRs including any temporary test CRRs from step one and any counterflow CRRs from step two. The second set of grid conditions models only Transmission Ownership Rights. Each SFT will consider the entire set of Merchant Transmission CRR nominations for the time of use period and will solve to maximize the MWs of Merchant Transmission CRRs to be allocated to the Project Sponsor of the Merchant Transmission Facility, subject to simultaneous feasibility. The nominated Merchant Transmission CRRs that are feasible in the multi-period SFTs for each time of use period will be allocated to the Project Sponsor of the Merchant Transmission Facility.

36.12 [NOT USED]

36.13 CRR Auction.

The CAISO shall conduct CRR Auctions on an annual and monthly basis subsequent to each annual and monthly CRR Allocation process. Candidate CRR Holders may bid to purchase and may acquire CRR~~s~~ Obligations through the CAISO's annual and monthly CRR Auctions in accordance with the provisions of this Section 36.13. CRR Auction results shall be settled as provided in Section 11.2.4.3.

36.13.1 Scope of the CRR Auctions.

The CAISO will conduct a CRR Auction corresponding to and subsequent to the completion of each CRR Allocation process, and prior to the start of the period to which the auctioned CRRs will apply. Each CRR Auction will release CRRs having the same seasons, months and time -of -use specifications as the CRRs released in the corresponding CRR Allocation. Each CRR Auction will utilize the same DC FNM that was utilized in the corresponding CRR Allocation. For each CRR Auction, the CRRs allocated in the corresponding CRR Allocation will be modeled as fixed injections and withdrawals on the DC FNM and will not be adjusted by the SFT in the CRR Auction process. Thus the CRR Auction will release only those CRRs that are feasible given the results of the corresponding CRR Allocation. CRRs released in a CRR Auction will be indistinguishable from CRRs released in the corresponding CRR Allocation for purposes of settlement and secondary trading. The following ~~limitations~~additional provisions apply. First, participants in the CRR Auctions will have more choices regarding CRR Sources and CRR Sinks than are eligible for nomination in the CRR Allocations, as described in Section 36.13.5. Second, to the extent a Market Participant receives CRRs in both a CRR Allocation and the corresponding CRR Auction, the

CRRs obtained in the CRR Auction will not be eligible for nomination in the PNP. Third, in CRR Year One the CRR Auction cannot be used by CRR Holders to offer for sale CRRs they acquired in a prior CRR Allocation, ~~or~~ CRR Auction or through the Secondary Registration System. In the annual and monthly CRR Auction processes for years following CRR Year One, ~~the~~ CRR Holders~~, including the CRR Holder holding Long Term CRRs,~~ may offer for sale any CRRs held by such holders, subject to the limitations on sale and transfer of Long Term CRRs specified in Section 36.7.1.2. Merchant Transmission CRRs that are CRR Options may be offered for sale in the annual and monthly CRR Auctions for years following CRR Year One, subject to the same temporal limitations that apply to Long Term CRRs as specified in Section 36.7.1.2.~~that portion of the CRR corresponding to the CRR Auction process.~~

36.13.2 Responsibilities of the CAISO Prior to Each CRR Auction.

The CAISO shall publish on the CAISO Website a notice of upcoming CRR Auctions at least seven (7) days prior to the CRR ~~a~~Auction. The CAISO will also provide additional information needed by CRR Auction participants in accordance with the provisions of Section 6.5.1.

36.13.3 CRR Holder Creditworthiness.

All Market Participants are eligible to acquire CRRs by participating in the CRR Auction, provided that the Market Participant has met all the CRR Holder requirements described in Section 36.5, the creditworthiness provisions in Section 12 and Section 12.6 and the relevant Business Practice Manual.

36.13.4 Bids in the CRR Auctions.

Bids to purchase CRRs shall be submitted in accordance with the requirements set out in this Section 36.13.4 and as further specified in the applicable Business Practice Manuals. Once submitted to the CAISO, CRR bids may not be cancelled or rescinded by the Market Participant after the CRR ~~a~~Auction is closed. Market Participants may bid for Point-to-Point CRRs and Multi-Point CRRs. Each bid for a Point-to-Point CRR shall specify:

a) The associated month or season and time-of-use period;

b) The associated CRR Source and CRR Sink;

c) A monotonically non-increasing piecewise linear bid curve in quantities (denominated in tenths of MW) and prices ($/MW).

Each bid for a Multi-Point CRR shall specify:

d) The associated month or season and time -of -use period;

e) The associated CRR Sources and CRR Sinks;

f) For each CRR Source, a monotonically non-decreasing piecewise linear bid curve in quantities (denominated in tenths of MW) and prices ($/MW).

g) For each CRR Sink, a monotonically non-increasing piecewise linear bid curve in quantities (denominated in tenths of MW) and prices ($/MW).

Bid prices in all CRR bids may be negative.

36.13.5 Eligible Sources and Sinks for CRR Auction.

Allowable CRR Sources for CRRs acquired in the CRR Auction will be ~~Generator~~ PNodes, Scheduling Points, Trading Hubs, LAPs, MSS-LAPs and ~~s~~Sub-LAPs. Allowable CRR Sinks for CRRs acquired in the CRR Auction will be ~~Generator~~ PNodes, Scheduling Points, Trading Hubs, LAPs, MSS-LAPs and Sub-LAPs.

36.13.6 Clearing of the CRR Auction.

The SFT used to clear the CRR Auction will utilize the same DC FNM and optimization algorithm as the corresponding CRR Allocation, except that nominations to the CRR Auction will have associated price-quantity bid curves. The CRR Auction SFT will use the bid prices in determining which CRRs to award when not all nominations are simultaneously feasible, will select the set of simultaneously feasible CRRs with the highest total auction value as determined by the CRR bids, and will calculate nodal prices at each PNode of the DC FNM. In the event that there are two or more identical bids for a specific combination of CRR Source and CRR Sink that affect an overloaded constraint, the CRR Auction optimization cannot distinguish these bids based on either effectiveness or price and therefore the CRR Auction optimization will award each CRR bidder~~, and there is insufficient network capacity to accommodate all of the identical bids, each such CRR bidder will receive~~ a pro rata share of the CRRs that can be awarded based on the bid MW amounts. Based on the nodal prices calculated by the CRR Auction SFT, the CRR Market Clearing Price per MW for a specific CRR will equal the nodal price at the CRR Sink minus the nodal price at the CRR Source. For a Multi-Point CRR the CRR Market Clearing

Price will equal the sum over all relevant CRR Sinks of the nodal price at each CRR Sink times that CRR Sink's share of the total MW of the CRR, minus the sum over all relevant CRR Sources of the nodal price at each CRR Source times that CRR Source's share of the total MW of the CRR Market Participants shall pay the associated CRR Market Clearing Prices for all CRRs bought through the CRR Auction.

36.13.7 Announcement of CRR Auction Results.

Within five (5) ~~b~~Business ~~d~~Days after the close of a CRR Auction, the CAISO shall post the results. The results shall include but are not limited to the MW quantity, the CRR Source and CRR Sink for each CRR awarded, the nodal prices calculated by the CRR Auction SFT, and the parties to whom the CRRs were awarded. The CAISO shall not disclose prices specified in any CRR bid.

* * *

39.3 Categories of Conduct that May Warrant Mitigation.

39.3.1 Mitigation Measures may be applied to bidding, scheduling or operation of an Electric Facility or as specified in Section 39.3.1. The following categories of conduct, whether by a single firm or by multiple firms acting in concert, may cause a material effect on prices or generally the outcome of the CAISO Markets if exercised from a position of market power. Accordingly, the CAISO shall monitor the CAISO Markets for the following categories of conduct, and shall impose appropriate Mitigation Measures if such conduct is detected and the other applicable conditions for the imposition of Mitigation Measures are met:

(1) Physical withholding of an Electric Facility, in whole or in part, that is, not offering to sell or schedule the output of or services provided by an Electric Facility capable of serving a CAISO Market. Such withholding may include, but not be limited to: (i) falsely declaring that an Electric Facility has been forced out of service or otherwise become totally or partially unavailable, (ii) refusing to offer Bids for an Electric Facility when it would be in the economic interest, absent market power, of the withholding entity to do so, (iii) declining Bids called upon by the CAISO (unless the CAISO is informed in accordance with established procedures that the relevant resource for which the Bid is submitted has undergone a forced outage or derate), or (iv) operating a Generating Unit in Real-Time to produce an output level that is less than the Dispatch Instruction.

(2) Economic withholding of an Electric Facility, that is, submitting Bids for an Electric Facility that are unjustifiably high (relative to known operational characteristics and/or the known operating cost of the resource) so that: (i) the Electric Facility is not or will not be dispatched or scheduled, or (ii) the Bids will set LMPs.

(3) Uneconomic production from an Electric Facility that is, increasing the output of an Electric Facility to levels that would otherwise be uneconomic in order to cause, and obtain benefits from, a transmission constraint.

(4) Bidding practices that distort prices or uplift charges away from those expected in a competitive market~~.~~, such as (i) submitting Demand Bids at prices that are unjustifiably low relative to the expected marginal cost of meeting total expected demand resulting in DAM prices that are significantly below competitive levels and DAM clearing demand that is significantly below total expected demand or (ii) registering Start-Up Cost and Minimum Load Cost data or submitting Bid Costs on behalf of an Electric Facility that are unjustifiably high (relative to known operational characteristics and/or the known operating cost of the resource) or misrepresenting the physical operating capabilities of an Electric Facility in uplift payments or prices significantly in excess of actual costs.

* * *

39.7.1.1 Variable Cost Option.

The Variable Cost option will calculate the Default Energy Bid as Variable Costs plus ten percent (10%). Variable Cost will be comprised of two components: Fuel Cost and Variable Operation and Maintenance Cost. The Fuel Cost portion will be calculated for each Bid segment using the Heat Rate supplied by the resource owner on file in the Master File and the applicable regional natural gas price indices calculated as follows and as specified in the Business Practice Manual. The CAISO will use different gas price indices for the Day-Ahead Market and the Real-Time Market and each gas price index will be calculated using at least two prices from two or more of the following publications: Natural Gas Intelligence, Btu Daily Gas Wire, Platt's Gas Daily and the Intercontinental Exchange. For the Day-Ahead Market, the CAISO will update the gas price index between 00:00 and 03:00 Pacific Time in the Day-Ahead using gas prices published on the prior day, unless gas prices are not published on that day, in which case the

CAISO will use the most recently published prices that are available. For the Real-Time Market, the CAISO will update gas price indices between the hours of 19:00 and 22:00 Pacific Time using gas prices published in the Day-Ahead, unless gas prices are not published on that day, in which case the CAISO will use the most recently published prices that are available. The default value for the Variable Operation and Maintenance Cost portion will be $2/MWh. Generating Units that are of the Combustion Turbine or Reciprocating Engine technology will be eligible for a default Variable Operation and Maintenance Cost of $4/MWh. Resource specific values may be negotiated with the Independent Entity charged with calculating the Default Energy Bid.

39.7.1.2 LMP Option.

The CAISO will calculate the LMP Option for the Default Energy Bid as a weighted average of the lowest quartile of LMPs at the Generating Unit PNode in periods when the unit was Dispatched during the preceding ninety (90) days. The weighted average will be calculated based on the quantities Dispatched within each segment of the Default Energy Bid curve. The LMP Option for Default Energy Bids will not be available until 90 days of LMP pricing has occurred. Each Bid segment created under the LMP Option for Default Energy Bids will be subject to a feasibility test, as set forth in a Business Practice Manual, to determine whether there are a sufficient number of data points to allow for the calculation of an LMP based Default Energy Bid. The feasibility test is designed to avoid excessive volatility of the Default Energy Bid under the LMP Option that could result when calculated based on a relatively small number of prices.

* * *

39.7.1.5 Temporary Default Energy Bid.

If the Scheduling Coordinator does not elect to use any of the other options available pursuant to Section 39.7.1, or if sufficient data do not exist to calculate a Default Energy Bid using any of the available options, the CAISO will first seek to obtain from the Scheduling Coordinator any additional data required for calculating the Default Energy Bid options available pursuant to 39.7.1. If the provision of additional data by a Scheduling Coordinator results in additional or modified Default Energy Bid options pursuant to 39.7.1, the Scheduling Coordinator will have another opportunity to elect one of these options as its

temporary Default Energy Bid. If the Scheduling Coordinator does not elect to use any of the other new options available pursuant to Section 39.7.1, or if sufficient data still do not exist to calculate a Default Energy Bid using any of the available options, the CAISO may establish a temporary Default Energy Bid based on one or more of the following: (1) operating cost data, opportunity cost, and other appropriate input from the Market Participant; (2) the CAISO's estimated operating costs of the Electric Facility, taking the best information available to the CAISO; (3) an appropriate average of competitive Bids of one or more similar Electric Facilities; or (4) any of the other options for determining a Default Energy Bid for which data are available.

39.7.1.6 Default Energy Bids for RMR Units.

The available capacity in excess of the Maximum Net Dependable Capacity (MNDC) specified in the RMR Contract up to the Maximum Generation Capacity (PMax) is subject to Local Market Power Mitigation. The Scheduling Coordinator for the RMR Unit must rank order its preferences between the Variable Cost Option, the LMP Option, and the Negotiated Rate Option, which shall be the default rank order if no rank order is specified by the Scheduling Coordinator. These preferences will be used to determine the Default Energy Bids for the capacity between the MNDC and P-Max. RMR Proxy Bids for RMR Units based on contractually specified costs are used in lieu of Default Energy Bids for the contractual RMR Unit capacity between the Minimum Generating Capacity (PMin) and the MNDC. The CAISO or Independent Entity will concatenate these two calculation methodologies (for calculating RMR Proxy Bids and Default Energy Bids for RMR Units) and will adjust them for monotonicity without lowering any price on either curve to create a single Energy Bid Curve to be used in the MPM-RRD processes as described in Sections 31 and 33 for the DAM and RTM, respectively. RMR Units are not eligible to receive a Bid Adder pursuant to Section 39.8 for contractual RMR Unit capacity between PMin and MNDC.

* * *

39.8.1 Bid Adder Eligibility Criteria.

To receive a Bid Adder, a Generating Unit must: (i) have a Mitigation Frequency that is greater than eighty (80) percent in the previous 12 months; ~~(ii) have run for more than 200 hours in the previous 12~~

~~months;~~ and (iii~~i~~) must not have an contract to be a Resource Adequacy Resource for its entire net dependable capacity or be subject to an obligation to make capacity available under this CAISO Tariff. Additionally, the Scheduling Coordinator for the Generating Unit must agree to be subject to the Frequently Mitigated Unit Option for a Default Energy Bid. Run hours are those hours during which a Generating Unit has positive metered output. During the first 12 months after the effective date of this Section, the Mitigation Frequency will be based on a rolling 12-month combination of RMR dispatches and incremental bids dispatched out of economic merit order to manage local congestion from the period prior to the effective date of this Section, which will serve as a proxy for being subject to Local Market Power Mitigation, and a Generating Unit's Local Market Power Mitigation frequency after the effective date of this Section. Generating Units that received RMR dispatches and/or incremental bids dispatched out of economic merit order to manage local Congestion in an hour prior to the effective date of this Section will have that hour counted as a mitigated hour in their Mitigation Frequency. After the first 12 months from the effective date of this Section, the Mitigation Frequency will be based entirely on a Generating Unit being mitigated under the MPM-RRD procedures in Sections 31 and 33.

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ARTICLE V – RESOURCE ADEQUACY

40 RESOURCE ADEQUACY DEMONSTRATION FOR ALL SCHEDULING COORDINATORS SCHEDULING DEMAND IN THE CAISO CONTROL AREA.

40.1 Applicability.

A Load Serving Entity, and its Scheduling Coordinator, shall be exempt from this Section 40 during the next Resource Adequacy ~~c~~Compliance ~~y~~Year, ~~as defined in the Business Practice Manual,~~ if the metered peak Demand of the Load Serving Entity did not exceed one (1) MW during the twelve months preceding the last date on which the Load Serving Entity can make the election in Section 40.1.1 for the next Resource Adequacy ~~c~~Compliance ~~y~~Year. This Section 40 shall apply to all other Load Serving Entities and their respective Scheduling Coordinators. For purposes of Section 40, a Load Serving Entity shall not include any entity satisfying the terms of California Public Utilities Code Section 380(j)(3).

40.1.1 Election of Load Serving Entity Status.

On an annual basis, in the manner and schedule set forth in the Business Practice Manual, the Scheduling Coordinator for a Load Serving Entity, not exempt under Section 40.1, shall inform the CAISO whether each such LSE elects to be either: (i) a Reserve Sharing LSE or ~~a~~ (ii) a Modified Reserve Sharing LSE. A Scheduling Coordinator for a Load-following MSS is not required to make an election under this Section. Scheduling Coordinators for Load-following MSSs are subject solely to Sections 40.2.4 and 40.3.

The CAISO may confirm with the CPUC, Local Regulatory Authority, or federal agency, as applicable, the accuracy of the election by the Scheduling Coordinator for any LSE under its respective jurisdiction, or, in the absence of any election by the Scheduling Coordinator, the desired election for any LSE under its jurisdiction. The determination of the CPUC, Local Regulatory Authority, or federal agency will be deemed binding by the CAISO on the Scheduling Coordinator and the LSE. If the Scheduling Coordinator and CPUC, Local Regulatory Authority, or federal agency, as appropriate, fail to make the election on behalf of an LSE in accordance with the Business Practice Manual, the LSE shall be deemed a Reserve Sharing LSE.

40.2 Information Requirements Regarding Resource Adequacy Programs.

40.2.1. Reserve Sharing LSEs.

~~(a)~~40.2.1.1 Requirements for CPUC Load Serving Entities Electing Reserve Sharing LSE Status.

(a) The Scheduling Coordinator~~s~~ for a CPUC Load Serving Entity electing Reserve Sharing LSE status must provide the CAISO with all information or data to be provided to the CAISO as required by the CPUC and pursuant to the schedule adopted by the CPUC~~, including, but not limited to, annual and monthly Resource Adequacy Plans~~.

(b) Where the information or data provided to the CAISO under Section 40.2.1.1(a) does not include Reserve Margin(s), then the provisions of Section 40.2.2.1(b) shall apply.

(c) Where the information or data provided to the CAISO under Section 40.2.1.1(a) does not include criteria for determining qualifying resource types and their Qualifying Capacity, then the provisions of Section 40.8 shall apply.

(d) Where the information or data provided to the CAISO under Section 40.2.1.1(a) does not include annual and monthly Demand Forecast~~s~~ requirements, then the provisions of Section 40.2.2.3 shall apply.

(e) Where the information or data provided to the CAISO under Section 40.2.1.1(a) does not include annual and monthly Resource Adequacy Plan requirements, then Section 40.2.2.4 shall apply.

40.2.2 Requirements for Non-CPUC Load Serving Entities Electing Reserve Sharing LSE Status, Including Default Provisions for CPUC Load Serving Entities.

40.2.2.1 Reserve Margin.

(a) The Scheduling Coordinator for a Non-CPUC Load Serving Entity electing Reserve Sharing LSE status must provide the CAISO with the Reserve Margin(s) adopted by the appropriate Local Regulatory Authority or federal agency for use in the annual Resource Adequacy Plan and monthly Resource Adequacy Plans listed as a percentage of the Demand Forecasts developed in accordance with Section 40.2.2.3.

(b) For the Scheduling Coordinator for a ~~n~~Non-CPUC Load Serving Entity for which the appropriate Local Regulatory Authority or federal agency has not established a Reserve Margin(s) or a CPUC Load Serving Entity subject to Section 40.2.1.1(b) that has elected Reserve Sharing LSE status, the Reserve Margin for each month shall be no less than 15% of the ~~applicable~~ LSE's ~~month's~~ peak hourly Demand for the applicable month, ~~of the LSE~~ as determined by the Demand Forecasts developed in accordance with Section 40.2.2.3.

* * *

40.2.2.3 Demand Forecasts.

The Scheduling Coordinator for a Non-CPUC Load Serving Entity or CPUC Load Serving Entity subject to Section 40.2.1.1(b) electing Reserve Sharing LSE status must provide annual and monthly Demand Forecasts on the schedule and in the reporting format(s) set forth in the Business Practice~~s~~ Manual. The annual and monthly Demand Forecasts shall ~~set forth the Load Serving Entity's respective annual and~~

~~monthly non-coincident peak Demand for its Service Area, MSS area, or TAC Area in which the Load Serving Entity serves Load, unless either (i) the Load Serving Entity agrees to~~ utilize the annual and monthly coincident peak Demand determinations provided by the California Energy Commission for such Load Serving Entity, which will be calculated from the Demand Forecast information submitted to the California Energy Commission by each Reserve Sharing LSE; or (ii) if the California Energy Commission does not produce coincident peak Demand ~~f~~Forecasts for the Load Serving Entity, the annual and monthly coincident peak Demand ~~f~~Forecasts produced by the CAISO for such Load Serving Entity in accordance with its Business Practice Manual. Scheduling Coordinators must provide data and~~/or supporting~~ information, as may be requested by the CAISO, necessary to develop or support ~~for~~ the Demand Forecasts required by this Section. ~~for each Load Serving Entity and a description of the criteria upon which the Demand Forecasts were developed, if applicable, and any modifications thereto as they are implemented from time to time.~~

40.2.2.4 Annual and Monthly Resource Adequacy Plans.

The Scheduling Coordinator for a ~~n~~Non-CPUC Load Serving Entity or a CPUC Load Serving Entity~~ies~~ subject to Section 40.2.1.1(b) electing Reserve Sharing LSE status must provide annual and monthly Resource Adequacy Plans for such Load Serving Entity, on a schedule and in the reporting format(s) set forth in the ~~CAISO's~~ Business Practice Manual~~, for such Load Serving Entity~~. The annual Resource Adequacy Plan must, at a minimum, set forth the Local Capacity Area Resources, if any, procured by the Load Serving Entity as described in Section 40.3. The monthly Resource Adequacy Plan should identify ~~the~~all resources, including Local Capacity Area Resources, the Load Serving Entity will rely upon to satisfy the applicable month's peak hour Demand of the Load Serving Entity as determined by the Demand Forecasts developed in accordance with Section 40.2.2.3~~.~~ and applicable Reserve Margin. Resource Adequacy Plans must utilize the Net Qualifying Capacity requirements of Section 40.4.

40.2.3 Modified Reserve Sharing LSEs.

40.2.3.1 Reserve Margin.

(a) The Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status must provide the CAISO with the Reserve Margin(s) adopted by the CPUC, ~~appropriate~~ Local Regulatory Authority, or federal agency, as appropriate, for use in the

annual Resource Adequacy Plan and monthly Resource Adequacy Plans listed as a percentage of the Demand Forecasts developed in accordance with Section 40.2.3.3.

(b) For the Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status for which the CPUC, Local Regulatory Authority, or federal agency, as appropriate, has not established a Reserve Margin~~(s)~~, the Reserve Margin shall be no less than fifteen percent (15%) of the applicable month's peak hour Demand of the Load Serving Entity, as determined by the Demand Forecasts developed in accordance with Section 40.2.3.3.

* * *

40.2.3.3 Demand Forecasts.

~~(a) The Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status must submit, as part of its monthly Resource Adequacy Plan as, a Demand Forecast reflecting the non-coincident peak hour Demand to be served by the Modified Reserve Sharing LSE for the relevant month, measured in megawatts. This Demand Forecast plus the applicable Reserve Margin as set forth in Section 40.2.3.1 shall establish the Scheduling Coordinator's monthly Resource Adequacy Plan demonstration for each Modified Reserve Sharing LSE for the relevant month.~~

(a~~b~~) The Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status must provide annual and monthly Demand Forecasts on the schedule and in the reporting format(s) set forth in the Business Practice Manual. The annual and monthly Demand Forecasts shall utilize the annual and monthly coincident peak Demand determinations provided by the California Energy Commission for such Load Serving Entity, which will be calculated from Demand Forecast data submitted to the California Energy Commission by each Modified Reserve Sharing LSE; or (ii) if the California Energy Commission does not produce coincident peak Demand Forecasts for the Load Serving Entity, the annual and monthly coincident peak Demand Forecasts produced by the CAISO for such Load Serving Entity in accordance with its Business Practice Manual.

Scheduling Coordinators must provide data and information, as may be requested by the CAISO, to develop or support the Demand Forecast required by this Section 40.2.3.3(b).

(b) The Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status must submit, on the schedule and in the reporting format~~manner~~ set forth in the Business Practice Manual, hourly Demand Forecasts for each Trading Hour of the next Trading Day for each Modified Reserve Sharing LSE represented.

~~(c)~~ The Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status must provide data or supporting information, as requested by the CAISO, for the Demand Forecasts required by this Section 40.2.3.3(b) for each Modified Reserve Sharing LSE served by the Scheduling Coordinator and a description of the criteria upon which the Demand Forecast was developed, and any modifications thereto as they are implemented from time to time.

40.2.3.4 Annual and Monthly Resource Adequacy Plans.

The Scheduling Coordinator for a Load Serving Entity electing Modified Reserve Sharing LSE status must provide annual and monthly Resource Adequacy Plans, on a schedule and in the reporting format(s) set forth in the Business Practice Manual, for each Modified Reserve Sharing LSE served by the Scheduling Coordinator. The annual Resource Adequacy Plan ~~should~~ must, at a minimum, set forth the Local Capacity Area Resources, if any, procured by the Modified Reserve Sharing LSE as described in Section 40.3. The monthly Resource Adequacy Plan ~~should~~ must identify the resources the Modified Reserve Sharing LSE will rely upon to satisfy its ~~monthly~~ forecasted monthly Demand and Reserve Margin as set forth in Section 40.2.3.1, for the relevant reporting period and must utilize the Net Qualifying Capacity requirements of Section 40.4.

40.2.4 Load-Following MSS.

A Scheduling Coordinator for a Load-following MSS must provide an annual Resource Adequacy Plan that sets forth, at a minimum, the Local Capacity Area Resources, if any, procured by the Load-following MSS as described in Section 40.3. The annual Resource Adequacy Plan shall utilize the annual coincident peak Demand determination provided by the California Energy Commission for such Load-

following MSS using Demand Forecast data submitted to the California Energy Commission by the Load-following MSS, or, if the California Energy Commission does not produce coincident peak Demand Forecasts for the Load-following MSS, the annual coincident peak Demand Forecast produced by the CAISO for such Load-following MSS in accordance with its Business Practice Manual using Demand Forecast data submitted to the CAISO by the Load-following MSS.

40.3 Local Capacity Area Resource Requirements Applicable to Scheduling Coordinators for All Load Serving Entities.

40.3.1 ~~CAISO~~ Local Capacity Technical Study.

On an annual basis, pursuant to the schedule set forth in the Business Practice Manual, ~~T~~the CAISO will perform, and publish on the CAISO Website the Local Capacity Technical Study. The Local Capacity Technical Study shall identify Local Capacity Areas, ~~on an annual basis, perform and publish on the CAISO Website a technical study that~~ determine~~s~~ the minimum amount of Local Capacity Area Resources in MW that must be available to the CAISO within each identified Local Capacity Area, ~~identified in the technical study~~ and identify the Generating Units within each identified Local Capacity Area. The CAISO shall collaborate with the CPUC, Local Regulatory Authorities within the CAISO Control Area, federal agencies, and ~~other m~~Market ~~p~~Participants to ~~establish the parameters, assumptions, and other criteria to be used~~ensure that the Local Capacity Technical Study is performed in accordance with this Section 40.3 and to establish for inclusion in the Business Practice Manual other parameters and assumptions applicable to the Local Capacity Technical Study and a schedule that provides for: (i) reasonable time for review of a draft Local Capacity Technical Study, (ii) reasonable time for Participating TOs to propose operating solutions, and (iii) release of the final Local Capacity Technical Study no later than 120 days prior to the date annual Resource Adequacy Plans must be submitted under this Section 40. ~~and described in the technical study that permit compliance with Applicable Reliability Criteria.~~

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 for in the version of the WECC Reliability Criteria, NERC/WECC Planning Standard I.A, in effect as of the date that the Local Capacity Technical Study is commenced to the extent such application will not result in a violation of Reliability Criteria adopted by the CAISO in accordance with Section 5.1.5 of the Transmission Control Agreement.

40.3.1.2 Local Capacity Technical Study Contingencies.

The Local Capacity Technical Study shall assess the following Contingencies:

Contingency Component(s)	Reference Notes
NERC/WECC Performance Level A – No Contingencies	
NERC/WECC Performance Level B – Loss of a single element 1. Generator (G-1) 2. Transmission Circuit (L-1) 3. Transformer (T-1) 4. Single Pole (dc) Line 5. G-1 system readjusted L-1	 1 1 1,2 1
NERC/WECC Performance Level C – Loss of two or more elements 3. L-1 system readjusted G-1 3. G-1 system readjusted T-1 or T-1 system readjusted G-1 3. L-1 system readjusted T-1 or T-1 system readjusted L-1 3. G-1 system readjusted G-1 3. L-1 system readjusted L-1 4. Bipolar (dc) Line 5. Two circuits (Common Mode) L-2 9. SLG fault (stuck breaker or protection failure) for Bus section WECC-S3. Two generators (Common Mode) G-2	
D – Extreme event – loss of two or more elements Any B1-4 system readjusted (Common Mode) L-2 All other extreme combinations D1-14.	3
NOTES 1 System must be able to readjust to a safe operating zone in order to be able to support the loss of the next system element that would constitute a Contingency. Manual readjustment is the time required for an operator to take all actions necessary to prepare the system for the next Contingency. Under CAISO Grid Planning Standards, this time must be less than 30 minutes. However, if remote capability does not exist and a person must be dispatched in the field to perform switching, an exemption may be approved for small Local Capacity Areas as described in approved operating procedures and the approved operating procedure will be assumed in the performance of the studies under this Section.	

The involuntary interruption of Load shall not constitute an action for readjustment after a Category B event. 2 A thermal or voltage criterion violation resulting from a transformer Outage may not be cause for a Local Capacity Area reliability requirement if the violation is considered marginal (e.g., acceptable loss of facility life or low voltage), otherwise, such a violation will necessitate creation of a requirement. 3 Evaluate for risks and consequence, per NERC/WECC standards. No voltage collapse or dynamic instability allowed.	

40.3.2 Allocation of Local Capacity Area Resource Obligations.

The CAISO will allocate responsibility for Local Capacity Area Resources to Scheduling Coordinators for Load Serving Entities in the following sequential manner:

~~i.~~(a) The responsibility for the aggregate Local Capacity Area Resources required for all Local Capacity Areas within each TAC Area as determined by the Local Capacity Technical Study will be allocated to all Scheduling Coordinators for Load Serving Entities that serve Load in the TAC Area in accordance with the Load Serving Entity's proportionate share of the LSE's TAC Area Load at the time of the CAISO's annual coincident peak Demand set forth in the annual peak Demand Forecast for the next Resource Adequacy Compliance Year as determined by the California Energy Commission. Expressed as a formula, the allocation of Local Area Capacity Resource obligations will be as follows: (∑ Local Capacity Area MW in TAC Area from the Local Capacity Technical Study) * (LSE Demand in TAC Area at CAISO annual coincident peak Demand)/(Total TAC Area Demand at the time of CAISO annual coincident peak Demand).~~share, on a gross Load basis, of the previous annual peak Demand in the TAC Area under the conditions used in the technical study.~~ This will result in a MW responsibility for each Load Serving Entity for ~~the entire~~each TAC Area in which the LSE serves Load. The LSE may meet its MW responsibility, as assigned under this Section, for each TAC Area in which the LSE serves Load ~~that may be met~~ by procurement of that MW quantity in any Local Capacity Area in the TAC Area.

~~ii.~~(b) For Scheduling Coordinators for Non-CPUC Load Serving Entities, the Local Capacity Area Resource obligation will be allocated based on Section 40.3.2(a~~i~~) above.

~~iii.~~(c) For Scheduling Coordinators for CPUC Load Serving Entities, the CAISO will allocate the Local Capacity Area Resource obligation based on an allocation methodology, if any, adopted by the CPUC. However, if the allocation methodology adopted by the CPUC does not fully allocate the total sum of each CPUC Load Serving Entity's proportionate share calculated under Section 40.3.2(a~~i~~), the CAISO will allocate the difference to all Scheduling Coordinators for CPUC Load Serving Entities in accordance with their proportionate share calculated under 40.3.2(a~~i~~). If the CPUC does not adopt an allocation methodology, the CAISO will allocate Local Capacity Area Resources to Scheduling Coordinators for CPUC Load Serving Entities based on Section 40.3.2(a~~i~~).

Once the CAISO has ~~determined~~ allocated the total responsibility for Local Capacity Area Resources, the CAISO will inform ~~each~~the Scheduling Coordinator for each LSE of the LSE's~~its~~ specific allocated responsibility for Local Capacity Area Resources in each TAC Area in which the LSE serves Load.

* * *

40.3.4 Procurement of Local Capacity Area Resources by the CAISO.

The CAISO may procure Local Capacity Area Resources, pursuant to applicable provisions of the CAISO Tariff, including any mechanism incorporated into the CAISO Tariff specifically to permit procurement of Local Capacity Area Resources by the CAISO, to the extent:

(a~~i~~) a Scheduling Coordinator representing a Load Serving Entity ~~with~~serving Load in the TAC Area in which the Local Capacity Area is located fails to demonstrate in an annual Resource Adequacy Plan procurement of the Load Serving Entity's share of Local Capacity Area Resources~~-~~, as determined in Section 40.3.2, in which case the CAISO may procure Local Capacity Area Resources to remedy the deficiency ~~pursuant to Section 41~~2.1.5 ~~and allocate the costs of such procurement pursuant to Section 42.1.8(a)~~; provided that the CAISO shall not procure Local Capacity Area Resources to remedy the deficiency of the Load Serving Entity unless in the aggregate a deficiency in the Local Capacity Area exists that results in the failure to comply with ~~Applicable~~ the Reliability Criteria applied in the Local Capacity Technical Study, ~~in the Local Capacity Area~~ after ~~taking into account~~assessing the effectiveness of Generating Units under Reliability Must-Run Contracts, if any, and all Resource Adequacy Resources reflected in all submitted annual Resource Adequacy Plans and any supplements thereto, as may be permitted

by the CPUC, Local Regulatory Authority, or federal agency and provided to the CAISO in accordance with Section 40.7, whether or not such Resource Adequacy Resources are located in the applicable Local Capacity Area; or.

(bii) the Local Capacity Area Resources specified in the annual Resource Adequacy Plans of all Scheduling Coordinators fail to permit or ensure compliance in one or more Local Capacity Areas with Applicable the Reliability Criteria applied in the Local Capacity Technical Study, in one or more Local Capacity Areas, regardless of whether such resources satisfy, for the deficient Local Capacity Area, the minimum amount of Local Capacity Area Resources identified in the Local Capacity tTechnical sStudy performed under Section 40.3.1 and after assessing the effectiveness of taking into account Generating Units under Reliability Must-Run Contracts, if any, and all Resource Adequacy Resources reflected in all submitted annual Resource Adequacy Plans, whether or not such Resource Adequacy Resources are located in the applicable Local Capacity Area, in which case, the CAISO will procure Local Capacity Area Resources in the Local Capacity Area in an amount and location sufficient to permit or ensure compliance with such theApplicable Reliability Criteria applied in the Local Capacity Technical Study. in the Local Capacity Area. The CAISO will procure any Local Capacity Resources required by this Section 40.3.4(ii) pursuant to Section 41 to the extent the failure to satisfy Applicable Reliability Critiera constitutes a violation of the technical evaluations performed pursuant to Section 41.3. The CAISO will procure any Local Capacity Area Resources required by this Section 40.3.4(ii) pursuant to Section 42.1 and will allocate the costs of such procurement pursuant to 42.1.8(b) to the extent the failure to satisfy Applicable Reliability Critiera constitutes a violation of the technical evaluations performed pursuant to Section 40.3.1, but not the technical evaluations performed pursuant to 41.3. .

The cost of CAISO procurement under this Section shall be allocated in accordance with Section 11.20.

To the extent the cost of CAISO procurement under this Section is allocated to a Scheduling Coordinator, on behalf of a Load Serving Entity, that Scheduling Coordinator will receive credit toward its Local Capacity Area Resource obligation for the Load Serving Entity's pro rata share of the procured Local Capacity Area Resources. Whether or not the share of the Local Capacity Area Resources procured by the CAISO under this Section may count towards satisfaction of a Load Serving Entity's

Reserve Margin shall be determined by the CPUC, Local Regulatory Authority, or federal agency with jurisdiction ~~of~~ over the Load Serving Entity, unless the CPUC, Local Regulatory Authority, or federal agency has failed to establish a Reserve Margin, in which case the CAISO will assign the Load Serving Entity's share of the Local Capacity Area Resources towards satisfaction of its Reserve Margin pursuant to Sections 40.2.1.1(b), 40.2.2.1(b), and 40.2.3.1(b). For each Scheduling Coordinator that is allocated the cost of CAISO procurement under this Section on behalf of an LSE, the CAISO will provide information, including the quantity of capacity procured in MW, necessary to allow the CPUC, Local Regulatory Authority, or federal agency with jurisdiction over the LSE on whose behalf costs were allocated to determine whether the LSE should receive credit toward its Reserve Margin for the CAISO's procurement under this Section.

40.3.4.1 Factors for Procuring Local Capacity Area Resources.

The CAISO shall procure Local Capacity Area Resources under Section 40.3.4 considering the effectiveness of the capacity at meeting ~~Applicable~~ the Reliability Criteria, set forth in 40.3.1, in the Local Capacity Area and the costs associated with the capacity. The CAISO is permitted to procure a Generating Unit or Participating Load resource even where only a portion of capacity of the Generating Unit or Participating Load resource is needed to meet ~~Applicable~~ the Reliability Criteria applied in the Local Capacity Technical Study ~~in~~for the Local Capacity Area.

40.3.4.2 Local Capacity Area Procurement Report.

Within ninety (90) days of any initial procurement of Local Capacity Area Resources by the CAISO for any Resource Adequacy Compliance Year, ~~T~~the CAISO shall publish a report on the CAISO Website ~~which shall~~ showing the Local Capacity Area Resources procured under Section 40.3.4, the megawatts of capacity procured, the duration of the procurement, the reason(s) for the procurement, and all payments in dollars, itemized for each Local Capacity Area. The CAISO will provide a ~~m~~Market ~~n~~Notice regarding~~of~~ the availability of this~~e~~ report, and shall update the report within ninety (90) days of any Local Capacity Area Resource that is procured after the posting of the report.

40.4 General Requirements on Resource Adequacy Resources.

* * *

40.4.2 Net Qualifying Capacity Report.

The CAISO shall produce an annual report posted to the CAISO Website on the schedule set forth in the Business Practice Manual that setsting forth the Net Qualifying Capacity of all Participating Generators. All other Resource Adequacy Resources may be included in the annual report under Section 40.4.2 upon their request. The Net Qualifying Capacity of any resource included in the annual report, once posted to the CAISO Website, shall not be reduced by the CAISO for the next Resource Adequacy Compliance Year. Any change proposed to be made to a Net Qualifying Capacity value for a resource included in a prior annual report shall be explained, and any test results or analyses underlying the change provided, to the Scheduling Coordinator upon request at least fifteen (15) days prior to the posting on the CAISO Website of the annual report. Any disputes as to the CAISO's determination regarding Net Qualifying Capacity shall be subject to the CAISO ADR Procedures.

40.4.3 General Qualifications for Supplying Net Qualifying Capacity.

Resource Adequacy Resources included in a Resource Adequacy Plan submitted by a Scheduling Coordinator on behalf of a Load Serving Entity serving Load in the CAISO Control Area must:are subject to the following:

(1) Be available for testing by the CAISO to validate Qualifying Capacity and determine Net Qualifying Capacity for the next Resource Adequacy Compliance Year;

(2) Provide any information requested by the CAISO to apply the performance criteria to be adopted by the CAISO pursuant to Section 40.4.5;

(3) Submit Bids into the CAISO Markets as required by this CAISO Tariff;

(4) Be in compliance, as of the date that the CAISO performs any testing or otherwise determines Net Qualifying Capacity for the next Resource Adequacy Compliance Year, with the criteria for Qualifying Capacity established by the CPUC, relevant Local Regulatory Authority, or federal agency and provided to the CAISO; and

(5) Be subject to sSanctions for non-performance as specified in the CAISO Tariff.

40.4.4. Reductions for Testing.

In accordance with the procedures specified in the Business Practice Manual, the Generating Unit of a Participating Generators or other Generating Units, or System Units or Loads of Participating Loads included in a Resource Adequacy Plan submitted by a Scheduling Coordinator on behalf of a Load Serving Entity serving can have its Qualifying Capacity reduced, for purposes of the Net Qualifying Capacity annual report under Section 40.4.2 for the next Resource Adequacy Compliance Year, if a CAISO testing program determines that it is not capable of supplying the full Qualifying Capacity amount.

40.4.5 Reductions for Performance Criteria.

No later than 12 months after the effective date of this Section 40, the CAISO will issue a report outlining a proposal with respect to performance criteria for Resource Adequacy Resources. The CAISO will collaborate with the CPUC and other Local Regulatory Authorities to develop the performance criteria to be submitted to FERC. The Scheduling Coordinator ofor a Resource Adequacy Resource shall provide or make available to the CAISO, subject to the confidentiality provisions of this CAISO Tariff, all documentation requested by the CAISO to determine, develop or implement the performance criteria, including, but not limited to, NERC Generating Availability Data System data. The CAISO will begin reducing Qualifying Capacity based on performance criteria after adoption of performance criteria by the CPUC and/or Local Regulatory Authorities.

40.4.6 Reductions for Deliverability.

40.4.6.1 Deliverability Within the CAISO Control Area.

In order to determine Net Qualifying Capacity from Resource Adequacy Resources subject to this Section 40.4, the CAISO will determine that a Resource Adequacy Resource is available to serve the aggregate of Load by means of a deliverability study. Documentation explaining the CAISO's deliverability analysis will be posted on the CAISO Website. The deliverability study will be performed annually and shall focus on peak Demand conditions. The results of the deliverability study shall be incorporated into the Net Qualifying Capacity annual report under Section 40.4.2 and will be effective for the next Resource Adequacy Compliance Yeara period no shorter than a compliance year. To the extent the deliverability study shows that the Qualifying Capacity is not deliverable to the aggregate of Demand under the conditions studied, the Qualifying Capacity of the Resource Adequacy Resource will be reduced on a MW basis for the capacity that is undeliverable.

40.4.6.2 Deliverability of Imports.

~~The CAISO shall, by means of an annual deliverability study, establish the total import capacity for each import path to be allocated to Scheduling Coordinators for Load Serving Entities. The study results shall be posted on the CAISO Website. For the purpose of accounting for import Resource Adequacy Capacity, the import capability of the system will be allocated by branch group to Scheduling Coordinators for Non-CPUC Load Serving Entities individually and to the Scheduling Coordinators for CPUC Load Serving Entities as an aggregated allocation, which will be subject to the allocation rules of the CPUC. The allocation to Scheduling Coordinators for CPUC Load Serving Entities will be the total import value by branch group minus import capacity associated with (i) Existing Transmission Contracts, (ii) Encumbrances and Transmission Ownership Rights, and (iii) resource commitments outside the CAISO Control Area of Non-CPUC Load Serving Entities, as of October 27, 2005. The allocation to Scheduling Coordinators for Non-CPUC Load Serving Entities will be the resource commitments outside the CAISO Control Area of Scheduling Coordinators for Non-CPUC Load Serving Entities, as of October 27, 2005. Import capacity associated with (i) Existing Transmission Contracts and (ii) Encumbrances and Transmission Ownership Rights shall be reserved for holders of such commitments as part of the deliverability study and will not be subject to allocation under these rules. Resource commitments outside the CAISO Control Area of any Load Serving Entity entered into after October 27, 2005 will be given identical allocation priority. This allocation does not guarantee or result in any actual transmission service being allocated and is only used for determining the maximum Resource Adequacy Capacity that can be credited towards satisfying a Scheduling Coordinator's obligations under its Resource Adequacy Plan. Upon the request of the CAISO, Scheduling Coordinators must provide the CAISO with information on existing Energy or capacity import contracts and any trades or sales of their Load share allocation. Such information will be subject to the confidentiality provisions of this CAISO Tariff. The CAISO will inform the CPUC if a Resource Adequacy Plan submitted by a Scheduling Coordinator for a CPUC Load Serving Entity exceeds its allocation of import capacity. The CAISO will inform the Scheduling Coordinator for a Non-CPUC Load Serving Entity if its Resource Adequacy Plan exceeds the Non-CPUC Load Serving Entity's allocation of import capacity and will either: (i) reduce all Resource Adequacy Capacity from imports of that Scheduling Coordinator on a pro rata basis or (ii) reduce a specific Resource Adequacy~~

~~Capacity from imports as instructed by the Scheduling Coordinator so as to equal the allocated amount of import capacity.~~

40.4.6.2.1 Available Import Capability Assignment Process.

For Resource Adequacy Plans covering any period after December 31, 2007, total Available Import Capability will be assigned on an annual basis for a one-year term to Load Serving Entities serving Load in the CAISO Control Area and other Market Participants through their respective Scheduling Coordinators, as described by the following sequence of steps. However, should the CPUC modify by decision its compliance period from January to December of the calendar year to May through April of the calendar year, the CAISO shall extend the effectiveness of the assignment for Resource Adequacy Compliance Year 2008 through April 2009.

Step 1: Determination of Maximum Import Capability on Interties into the CAISO Control Area: The CAISO shall establish the Maximum Import Capability for each Intertie into the CAISO Control Area, and will post those values on the CAISO Website in accordance with the schedule and process set forth in the Business Practice Manual.

Step 2: Determination of Available Import Capability by Accounting for Existing Contracts and Transmission Ownership Rights Held by Out-of-CAISO Control Area LSEs: For each Intertie, the Available Import Capability will be determined by subtracting from the Maximum Import Capability established in Step 1 for each Intertie the import capability on each Intertie associated with (i) Existing Contracts and (ii) Transmission Ownership Rights held by load serving entities that do not serve Load within the CAISO Control Area. The remaining sum of all Intertie Available Import Capability is the Total Import Capability. Total Import Capability shall be used to determine the Load Share Quantity for each Load Serving Entity that serves Load within the CAISO Control Area.

Step 3: Determination of Existing Contract Import Capability by Accounting for Existing Contracts and Transmission Ownership Rights Held by In-CAISO Control Area LSEs: From the Available Import Capability remaining on each Intertie after Step 2 above, Existing Contracts and Transmission Ownership Rights held by Load Serving Entities that serve Load within the CAISO Control Area shall be reserved for the holders of such commitments and will not be subject to reduction under any

subsequent steps in this Section. The import capability reserved pursuant to this Step 3 is the Existing Contract Import Capability.

Step 4: Assignment of Pre-RA Import Commitments: From the Available Import Capability remaining on each Intertie after reserving Existing Contract Import Capability under Step 3 above, the CAISO will assign to Load Serving Entities serving Load within the CAISO Control Area Pre-RA Import Commitment Capability on a particular Intertie based on Pre-RA Import Commitments in effect (where a supplier has an obligation to deliver the Energy or make the capacity available) at any time during the Resource Adequacy Compliance Year for which the Available Import Capability assignment is being performed. The Pre-RA Import Commitment will be assigned to the Intertie selected by the Load Serving Entity during the Resource Adequacy Compliance Year 2007 import capability assignment process, which was required to be based on the Intertie upon which the Energy or capacity from the Pre-RA Import Commitment had been primarily scheduled or, for a Pre-RA Import Commitment without a scheduling history at the time of the Resource Adequacy Compliance Year 2007 import capability assignment process, the primary Intertie upon which the Energy or capacity was anticipated to be scheduled. To the extent a Pre-RA Import Commitment was not presented during the Resource Adequacy Compliance Year 2007 import capability assignment process, the Load Serving Entity shall select the Intertie upon which the Pre-RA Import Commitment is primarily anticipated to be scheduled during the term of the Pre-RA Import Commitment and that selection shall be utilized in future annual Available Import Capability assignment processes. If a Pre-RA Import Commitment submitted on behalf of a LSE with Existing Contract Import Capability is assigned under this Section to the same Intertie on which the LSE holds Existing Contract Import Capability, the Pre-RA Import Commitment will be assumed to deliver over the Existing Contract Import Capability until exhausted, unless the LSE can demonstrate otherwise.

To the extent a particular Intertie becomes over requested with Pre-RA Import Commitments due to either Pre-RA Import Commitments not included in the Resource Adequacy Compliance Year 2007 import capability assignment process or changes in system conditions that decrease the Maximum Import Capability of the Intertie, such that the MW represented in all Pre-RA Import Commitments utilizing the Intertie exceed the Intertie's Available Import Capability in excess of that reserved for

Existing Contracts and Transmission Ownership Rights under Steps 2 and 3, the Pre-RA Import Commitments will be assigned Pre-RA Import Commitment Capability, based on the Import Capability Load Share Ratio of each Load Serving Entity submitting Pre-RA Import Commitments on the particular Intertie. To the extent this initial assignment of Pre-RA Import Commitment Capability has not fully assigned the Available Import Capability of the particular over requested Intertie, the remaining Available Import Capability on the over requested Intertie will be assigned until fully exhausted based on the Import Capability Load Share Ratio of each Load Serving Entity whose submitted Pre-RA Import Commitment has not been fully satisfied by the previous Import Capability Load Share Ratio assignment iteration. The Available Import Capability assigned pursuant to this Step 4 is the Pre-RA Import Commitment Capability.

Step 5: Assignment of Remaining Import Capability Limited by Load Share Quantity: The Total Import Capability remaining after Step 4 will be assigned only to Load Serving Entities serving Load within the CAISO Control Area that have not received Existing Contract Import Capability and Pre-RA Import Commitment Capability under Steps 3 and 4, that exceed the Load Serving Entity's Load Share Quantity. Only the MW quantity of any Pre-RA Import Commitment Capability assigned to Existing Contract Import Capability under Step 4 that exceeds the Existing Contract Import Capability on the particular Intertie will be counted for purposes of this Step 5. This Total Import Capability will be assigned until fully exhausted to those Load Serving Entities eligible to receive an assignment under this Step based on each Load Serving Entity's Import Capability Load Share Ratio up to, but not in excess of, its Load Share Quantity. The quantity of Total Import Capability assigned to the Load Serving Entity under this Step is the Load Serving Entity's Remaining Import Capability. This Step 5 does not assign Remaining Import Capability on a specific Intertie.

Step 6: CAISO Posting of Assigned and Unassigned Capability: Following the completion of Step 5, the CAISO will post to the CAISO Website, in accordance with the schedule set forth in the Business Practice Manual the following information:

a. The Total Import Capability;

b. The quantity in MW of Existing Contracts and Transmission Ownership Rights assigned to each Intertie, distinguishing between Existing Contracts and Transmission Ownership Rights held by Load Serving Entities within the CAISO Control Area and those held by load serving entities outside the CAISO Control Area;

c. The aggregate quantity in MW, and identity of the holders, of Pre-RA Import Commitments assigned to each Intertie; and

d. The aggregate quantity in MW of Available Import Capability after Step 4, the identity of the Interties with Available Import Capability, and the MW quantity of Available Import Capability on each such Intertie.

Step 7: CAISO Notification of LSE Assignment Information: Following the completion of Step 5, in accordance with the schedule set forth in the Business Practice Manual, the CAISO will notify the Scheduling Coordinator for each Load Serving Entity of:

a. The Load Serving Entity's Import Capability Load Share;

b. The Load Serving Entity's Load Share Quantity; and

c. The amount of, and Intertie on which, the Load Serving Entity's Existing Contract Import Capability and Pre-RA Import Commitment Capability, as applicable, has been assigned; and

d. The Load Serving Entity's Remaining Import Capability.

Step 8: Transfer of Import Capability: In accordance with the schedule set forth in the Business Practice Manual, a Load Serving Entity shall be allowed to transfer some or all of its Remaining Import Capability to any other Load Serving Entity or Market Participant. The CAISO will accept transfers among LSEs and Market Participants only to the extent such transfers are reported to the CAISO, in accordance with the schedule set forth in the Business Practice Manual and through the CAISO's Import Capability Transfer Registration Process, by the entity receiving the Remaining Import Capability who must set forth (1) the name of the counter-parties, (2) the MW quantity, (3) term of transfer, and (4) price on a per MW basis. The CAISO will post to the CAISO Website by August 8,

2007 for Resource Adequacy Compliance Year 2008 and for subsequent Resource Adequacy Compliance Years in accordance with the schedule set forth in the Business Practice Manual the information on transfers of Remaining Import Capability received under this Step 8.

Step 9: Initial Scheduling Coordinator Request to Assign Remaining Import Capability by Intertie: In accordance with the schedule set forth in the Business Practice Manual, the Scheduling Coordinator for each Load Serving Entity or Market Participant shall notify the CAISO of its request to assign its post-trading Remaining Import Capability on a MW basis per available Intertie. Total requests for assignment of Remaining Import Capability by a Scheduling Coordinator cannot exceed the sum of the post-traded Remaining Import Capability of its Load Serving Entities. The CAISO will honor the requests to the extent an Intertie has not been over requested. If an Intertie is over requested, the requests for Remaining Import Capability on that Intertie will be assigned based on each Load Serving Entity's Import Capability Load Share Ratio in the same manner as set forth in Step 4. A Market Participant without an Import Capability Load Share will be assigned the Import Capability Load Share equal to the average Import Capability Load Share of those Load Serving Entities from which it received transfers of Remaining Import Capability.

Step 10: CAISO Notification of Initial Remaining Import Capability Assignments and Unassigned Capability: In accordance with the schedule set forth in the Business Practice Manual, the CAISO will:

a. Notify the Scheduling Coordinator for each Load Serving Entity or Market Participant of the Load Serving Entity or Market Participant's accepted request(s) for assigning Remaining Import Capability under Step 9; and

b. Publish on the CAISO Website aggregate unassigned Available Import Capability, if any, the identity of the Interties with unassigned Available Import Capability, and the MW quantity of Available Import Capability, on each such Intertie.

Step 11: Secondary Scheduling Coordinator Request to Assign Remaining Import Capability by Intertie: To the extent Remaining Import Capability remains unassigned as disclosed by Step 10, in accordance with the schedule set forth in the Business Practice Manual, Scheduling Coordinators for Load Serving Entities or Market Participants shall notify the CAISO of their requests to assign any

remaining Remaining Import Capability on a MW per available Intertie basis. The CAISO will honor the requests to the extent an Intertie has not been over requested. If an Intertie is over requested, the requests on that Intertie will be assigned based on each Load Serving Entity or Market Participant's Import Capability Load Share Ratio, as used in Steps 4 and 9.

Step 12: Notification of Secondary Remaining Import Capability Assignments and Unassigned Capability: In accordance with the schedule set forth in the Business Practice Manual, the CAISO will:

a. Notify the Scheduling Coordinator for each Load Serving Entity or Market Participant of the Load Serving Entity or Market Participant's accepted request(s) for assigning Remaining Import Capability under Step 11; and

b. Publish on the CAISO Website unassigned aggregate Available Import Capability, if any, the identity of the Interties with Available Remaining Import Capability, and the MW quantity of Availability Import Capability on each such Intertie.

Step 13: Requests for Balance of Year Unassigned Available Import Capability: To the extent total Available Import Capability remains unassigned as disclosed by Step 12, Scheduling Coordinators for Load Serving Entities or Market Participants may notify the CAISO at any time, except as limited herein, of a request for unassigned Available Import Capability on a specific Intertie on a per MW basis. Each request must include the identity of Load Serving Entity or Market Participant on whose behalf the request is made. The CAISO will accept only two (2) requests per calendar week from any Scheduling Coordinator on behalf of a single Load Serving Entity or other Market Participant. The CAISO will honor requests in priority of the time requests from Scheduling Coordinators were received until the Intertie is fully assigned and without regard to any Load Serving Entity's Load Share Quantity. Any honored request shall be for the remainder of the Resource Adequacy Compliance Year; however, any notification by the CAISO of acceptance of the request in accordance with this Section after the 20th calendar day of any month shall not be permitted to be included in the Load Serving Entity's Resource Adequacy Plan submitted in the same month as the acceptance.

The CAISO shall provide an electronic means, either through the Import Capability Transfer Registration Process or otherwise, of notifying the Scheduling Coordinator of the time the request

was deemed received by the CAISO and, within seven (7) days of receipt of the request, whether the request was honored. If honored, it shall be the responsibility of the Scheduling Coordinator and its Load Serving Entity to notify the CPUC or applicable Local Regulatory Authority of the acceptance of the request for unassigned Available Import Capability. If the request is not honored because the Intertie requested was fully assigned, the request will be deemed rejected and the Scheduling Coordinator, if it still seeks to obtain unassigned Available Import Capability, will be required to submit a new request for unassigned Available Import Capability on a different Intertie. The CAISO will update on its website the list of unassigned Available Import Capability by Intertie in accordance with the schedule set forth in the Business Practice Manual.

This multi-step process for assignment of Total Import Capability does not guarantee or result in any actual transmission service being assigned and is only used for determining the import capability that can be credited towards satisfying the Reserve Margin of a Load Serving Entity under this Section 40. Upon the request of the CAISO, Scheduling Coordinators must provide the CAISO with information on Pre-RA Import Commitments and any transfers or sales of assigned Total Import Capability.

40.4.6.2.2 Bilateral Import Capability Transfers and Registration Process.

40.4.6.2.2.1 Eligibility Registration for Bilaterial Import Capability Transfers.

To be eligible to engage in any bilateral assignment, sale, or other transfer of Remaining Import Capability under Step 8 of Section 40.4.6.2.1 or Section 40.4.6.2.2.2 or Existing Contract Import Capability, and Pre-RA Import Commitment Capability under Section 40.6.2.2.2, a Load Serving Entity or other Market Participant must provide the CAISO through the Import Capability Transfer Registration Process the following information:

a. Name of the Load Serving Entity or Market Participant

b. E-mail contact information

The CAISO will post to the CAISO Website the information received under this Section on a monthly basis in accordance with the schedule set forth in the Business Practice Manual. Any assignment, sale, or other transfer of Existing Contract Import Capability, Pre-RA Import Commitment Capability, or

Remaining Import Capability may only be made by or to a Load Serving Entity or Market Participant whose information received under this Section has been posted to the CAISO Website prior to the date of the assignment, sale, or other transfer of the Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability. It shall be the exclusive responsibility of the Scheduling Coordinator for the Load Serving Entity or Market Participant to ensure that the information posted to the CAISO Website under this Section is accurate and up to date.

40.4.6.2.2.2 Reporting Process for Bilateral Import Capability Transfers.

This Section shall apply to all transfers of Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability other than that provided for in Step 8 of Section 40.4.6.2.1. Any Load Serving Entity or other Market Participant that has obtained Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability may assign, sell, or otherwise transfer such Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability in MW increments. The import capability subject to each transfer shall remain on the Intertie assigned pursuant to Section 40.4.6.2.1.

The Scheduling Coordinator for the Load Serving Entity or Market Participant receiving the transferred Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability must report the transfer to the CAISO through the CAISO's Import Capability Transfer Registration Process by providing the following information:

a. Identity of the counter-party(ies);

b. The MW quantity;

c. The Intertie on which the Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability was assigned;

d. The term of the transfer;

e. Price on a per MW basis; and

f. Whether the import capability assignment being transferred is Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability.

The CAISO will promptly post to the CAISO Website the information on transfers received under this Section except for the information received pursuant to subpart f of this Section. On a quarterly basis, the CAISO shall also report to FERC the transfer information received under this Section and Step 8 of Section 40.4.6.2.1. Transfer information received in accordance with this Section after the 20th calendar day of any month shall not be permitted to be included in the Load Serving Entity's Resource Adequacy Plan submitted in the same month as the transfer submission.

40.4.6.2.2.3 Other Import Capability Information Postings.

The CAISO will post to the CAISO Website on a monthly basis in accordance with the schedule set forth in the Business Practice Manual, for each Intertie, the holder and that holder's quantity in MW of import capability assigned on the particular Intertie as of the reporting date.

The CAISO will also post to the CAISO Website following submission of the annual Resource Adequacy Plans under Sections 40.2.1.1, 40.2.2.4, 40.2.3.4, and 40.2.4, for each Intertie, by a "yes" or "no" designation, whether each holder of import capability assigned on the particular Intertie has fully included the assigned import capability in the holder's annual Resource Adequacy Plans.

40.4.7 Submission of Supply Plans.

Scheduling Coordinators representing Resource Adequacy Resources supplying Resource Adequacy Capacity shall provide the CAISO with ~~an~~ annual and~~/or~~ monthly Supply ~~p~~Plans, ~~as applicable,~~ on the schedule set forth in the Business Practice~~s~~ Manual verifying their agreement to provide ~~the~~ Resource Adequacy Capacity during the next Resource Adequacy Compliance Year or relevant month, as applicable~~listed on the annual and/or monthly Resource Adequacy Plan, as applicable, submitted by a Scheduling Coordinator for a Load Serving Entity~~. The Supply Plan must be in the form of the template provided on the CAISO Website, which shall include an affirmative representation by the Scheduling Coordinator submitting the Supply Plan that the CAISO is entitled to rely on the accuracy of the information provided in the Supply Plan to perform those functions set forth in this Section 40. The CAISO shall be entitled to take reasonable measures to validate the accuracy of the information submitted in Supply Plans under this Section.

40.5 Requirements Applicable to Modified Reserve Sharing LSEs Only.

40.5.1 Day Ahead Scheduling and Bidding Requirements.

(1) Scheduling Coordinators on behalf of Modified Reserve Sharing LSEs serving Load within the CAISO Control Area for whom they submit Demand Bids~~:~~

~~(1) shall S~~submit into the IFM~~,~~ a Self-Schedule or Bid equal to 115% of the hourly Demand Forecasts for each Modified Reserve Sharing LSE it represents for each Trading Hour for the next Trading Day. Subject to Section 40.5.5, the resources included in a Self-Schedule~~d and/~~or a ~~b~~Bid in each Trading Hour to satisfy 115% of the Modified Reserve Sharing LSE's hourly Demand Forecasts will be deemed Resource Adequacy Resources and (~~i~~a) shall be those resources listed in the Modified Reserve Sharing LSE's monthly Resource Adequacy Plan and (~~ii~~b) shall include all Local Capacity Area Resources listed in the Modified Reserve Sharing LSE's annual Resource Adequacy Plan, if any, except to the extent the Local Capacity Area Resources, if any, are unavailable due to any ~~o~~Outages or reductions in capacity reported to the CAISO in accordance with this CAISO Tariff.

i. A Local Capacity Area Resource that has not fully submitted a Bid or Self-Schedule for all of its Resource Adequacy ~~c~~Capacity ~~of~~ will be subject to the CAISO's optimization for the remainder of its capacity, which must be Bid into the Day-Ahead Market; however, to the extent the Generating Unit providing Local Capacity Area Resource capacity constitutes a Use-Limited Resource under Section 40.6.4, the provisions of Section 40.6.4 will apply.

ii. If the Resource Adequacy Resource submits a Bid for Ancillary Services, the Energy Bid associated with the Bid for Ancillary Services will be optimized by the CAISO. However, pursuant to Section 8.6.2, to the extent the Local Capacity Area Resource ~~S~~self-~~P~~provides Ancillary Services and local ~~c~~Constraints result ~~is~~ in a solution in the MPM-RRD that involves Load reduction, then Self-Provided AS from the Local Capacity Area Resource will be converted into Ancillary Service Bids at the ~~M~~minimum Bid ~~P~~price for Ancillary Services as prescribed in Section 39.6.1.5.

iii. Resource Adequacy Resources must participate in the RUC to the extent that the resource has not submitted a Self-Schedule or already committed to provide Energy or capacity in the IFM. Resource Adequacy Resources will be required to offer into RUC and will be considered based on a $0 RUC Availability Bid.

iv. Capacity from Resource Adequacy Resources selected in RUC will not be eligible to receive a RUC Availability Payment.

(2) Resource Adequacy Resources of Modified Reserve Sharing LSEs that do not clear in the IFM or are not committed in RUC shall have no further offer requirements in HASP or Real-Time, except under System Emergencies as provided in this CAISO Tariff.

(3) Resource Adequacy Resources committed by the CAISO must maintain that commitment through Real-Time. In the event of a ~~f~~Forced ~~o~~Outage on a Resource Adequacy Resource committed in the Day-Ahead Market to provide Energy, the Scheduling Coordinator for the Modified Reserve Sharing LSE will have up to the next HASP bidding opportunity, plus one hour, to replace the lesser of: (i) the committed resource suffering the ~~f~~Forced ~~o~~Outage, (ii) the quantity of Energy committed in the Day-Ahead Market, or (iii) 107% of the hourly forecast ~~load~~Demand.

40.5.2 Demand Forecast Accuracy.

On a monthly basis, the CAISO will review ~~m~~Meter ~~d~~Data to evaluate the accuracy or quality of the hourly Day-Ahead Demand Forecasts submitted by the Scheduling Coordinator on behalf of Modified Reserve Sharing LSEs. If the CAISO determines, based on its review, that one or more Demand Forecasts materially under-forecasts the ~~Load~~ Demand of the Modified Reserve Sharing LSEs for whom the Scheduling Coordinator schedules, after accounting for weather adjustments, the CAISO will notify the Scheduling Coordinator of the deficiency and will cooperate with the Scheduling Coordinator and Modified Reserve Sharing LSE(s) to revise its Demand Forecast protocols or criteria. If the material deficiency ~~persists for three (3) consecutive months with respect to the monthly Demand Forecast or~~ affects ten (10) hourly Demand Forecasts~~occurrences~~ over a minimum of two (2) non-consecutive ~~week~~ Business ~~d~~Days within a month, the CAISO may: (i) inform State of California authorities including, but not necessarily limited to the California Legislature, and identify the Modified Reserve Sharing LSE(s) represented by the Scheduling Coordinator and (ii) assign to the Scheduling Coordinator responsibility for all Tier 1 RUC charges as specified in Section 11.8.6.5 to address the uncertainty caused by the Scheduling Coordinator's deficient hourly Demand Forecasts until the deficiency is addressed.

40.5.3 Requirement to Make Resources Available During System Emergencies.

Scheduling Coordinators for Modified Reserve Sharing LSEs that are MSS Operators shall make resources available to the CAISO during a System Emergency in accordance with the provisions of ~~Section 4.9 and~~ their Metered Subsystem Agreement. Scheduling Coordinators for all other Modified Reserve Sharing LSEs shall make available to the CAISO upon a warning or emergency notice of an actual or imminent System Emergency all resources that have not submitted a Self-Schedule or Economic Bid in the IFM that were listed in the Modified Reserve Sharing LSE's monthly Resource Adequacy Plan that are physically capable of operating without violation of any applicable law.

40.5.4 Consequence of Failure to Meet Scheduling Obligation.

(1) If the Scheduling Coordinator for the Modified Reserve Sharing LSE fails to submit a Self-Schedule or submit Bids equal to 115% of its hourly Demand Forecasts for each Trading Hour for the next Trading Day in the IFM and RUC, the Scheduling Coordinator will be charged a capacity surcharge of three times the price of the relevant Day-Ahead Hourly LAP LMP in the amount of the shortfall. To the extent the Scheduling Coordinator for the Modified Reserve Sharing LSE schedules imports on one or more Scheduling Points in an aggregate megawatt amount greater than its aggregate import deliverability allocation under Section 40.4.6.2, the quantity of megawatts in excess of its import deliverability allocation will not count toward satisfying the Modified Reserve Sharing LSE's scheduling obligation, unless it clears the Day-Ahead Market.

(2) If the Scheduling Coordinator for the Modified Reserve Sharing LSE cannot fulfill its obligations under Section 40.5.1(3) ~~of this CAISO Tariff~~, the Scheduling Coordinator for the Modified Reserve Sharing LSE will be charged a capacity surcharge of two times the average of the six (6) Settlement Interval LAP prices for the hour in the amount of the shortfall. Energy scheduled in the HASP will not net against, or be used as a credit to correct, any failure to fulfill the Day-Ahead IFM hourly scheduling and RUC obligation in Section 40.5.1~~2~~(1).

(3) Any Energy surcharge received by the CAISO pursuant to this Section 40.5.4~~,~~ shall be allocated to Scheduling Coordinators representing other Load Serving Entities in proportion to each such Scheduling Coordinator's Measured~~metered~~ Demand during the relevant Trading Hour(s) to the aggregate CAISO Measured Demand during the relevant Trading Hour(s).

40.5.5 Substitution of Resources.

Subject to the provisions of this Section 40.5, the Scheduling Coordinator for a Modified Reserve Sharing LSE may substitute for its Resource Adequacy Resources listed in its monthly Resource Adequacy Plan provided:

1) Substitutions must occur no later than the close of the IFM; and
2) Resources eligible for substitution are either imports or capacity from ~~N~~non-Resource Adequacy Resources or Resource Adequacy Resources with additional available capacity defined as Net Qualifying Capacity in excess of previously sold Resource Adequacy Capacity; however ~~the~~a Local Capacity Area Resource may be substituted only with capacity from ~~N~~non-Resource Adequacy Resources located in the same Local Capacity Area.

40.6 Requirements Applicable to Scheduling Coordinators for Reserve Sharing LSEs and Resources Providing Resource Adequacy Capacity to Reserve Sharing LSEs.

This Section 40.6 does not apply to Resource Adequacy Resources of Load-following MSSs and those entities that participate in the Modified Reserve Sharing LSE program ~~in~~under Section 40.5. Scheduling Coordinators supplying Resource Adequacy Capacity shall make the Resource Adequacy Capacity listed in the Scheduling Coordinator's monthly Supply Plans under Section 40.4.7 available to the CAISO each hour of each day of the report~~ing~~ month in accordance with this Section 40.6.

40.6.1 Day-Ahead Availability.

Scheduling Coordinators supplying Resource Adequacy Capacity shall make the Resource Adequacy Capacity, except for that subject to Section 40.6.4, available Day-Ahead to the CAISO as follows:

(1) Resource Adequacy Resources physically capable of operating must ~~Self-Schedule or~~ submit Economic Bids or Self-Schedules for their Resource Adequacy Capacity into the IFM and RUC.

(2) Resource Adequacy Resources that are Extremely Long-Start Resources must make themselves available to the CAISO by complying with the Extremely Long-Start Commitment Process under Section 31.7 or otherwise committing the ELS Resource upon instruction from the CAISO, if physically capable.

(~~2~~3) Any inter-temporal constraints such as Minimum Run ~~t~~Times must not be more restrictive than those pre-specified in the Master File limitations or as otherwise required by this CAISO Tariff or by Good Utility Practice.

(~~3~~4) Resource Adequacy Resources that do not submit Self-Schedules or Economic Bids reflecting all of their Resource Adequacy Capacity will be subject to the CAISO's optimization for the remainder of their Resource Adequacy Capacity Bids into the Day-Ahead Market. If the Resource Adequacy Resource submits a Bid for Ancillary Service(s), the Energy Bid associated with the Bid for Ancillary Services will be optimized by the CAISO.

(4~~5~~) Resource Adequacy Resources must participate in the RUC to the extent that the resource has available Resource Adequacy Capacity that is not reflected in a Self-Schedule~~d~~ is already committed to provide Energy or capacity in the IFM. Resource Adequacy Resources will be subject to RUC and will be optimized at a zero dollar RUC Availability Bid.

(~~5~~6) Capacity from Resource Adequacy Resources selected in RUC will not be eligible to receive a RUC Availability Payment.

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40.6.3 Additional Availability Requirements ~~F~~for Short -Start Units and Dynamic System Resources.

Short Start Units and Dynamic System Resources, unless a Dynamic System Resource is demonstrated to be incapable of meeting the definition of a Short Start Unit based on physical operating characteristics, that supply Resource Adequacy Capacity not committed under Section 40.6.1, and therefore are subject to Section 40.6.2, and Use–Limited Resources subject to Section 40.6.4 to the extent consistent with their applicable use plan, must ~~meet the following Real-Time availability requirements:~~

~~1)Submit a Bid for the resource in the HASP; or~~

~~S~~submit ~~a~~Economic Bids or Self-Schedules for the Resource Adequacy Capacity ~~resource~~ into the Real-Time Market.

The CAISO may waive these availability obligations for Short- Start Units and Dynamic System Resources that ~~not~~ have not submitted a ~~Bid or~~ Self-Schedule or otherwise been selected in the IFM or RUC based on the procedure to be published on the CAISO Website.

40.6.4 Additional Availability Requirements for Use-Limited Resources.

40.6.4.1 Registration of Use-Limited Resources.

Scheduling Coordinators for Use-Limited Resources, other than for hydroelectric Generating Units and Participating Load, including Pumping Load, must provide the CAISO an application in the form specified on the CAISO Website requesting registration of a specifically identified resource as a Use-Limited Resource. This application shall include specific operating data and supporting documentation including, but not limited to;

1) a detailed explanation of why the resource~~unit~~ is subject to operating limitations;
2) historical data to show attainable MWhs for each 24-hour period during the preceding year, ~~. This data should~~ including~~e~~, as applicable, environmental restrictions for NOx, SOx, or other factors; and~~.~~
3) further data or other information as may be requested by the CAISO to understand the operating characteristics of the unit.

Within~~,~~ five (5) Business ~~d~~Days ~~upon~~after receipt of the application, the CAISO will respond to the Scheduling Coordinator as to whether or not the CAISO agrees that the facility is eligible to be a Use-Limited Resource. If the CAISO determines the facility is not a Use-Limited Resource, the Scheduling Coordinator may challenge that determination in accordance with the CAISO ADR Procedures.

40.6.4.2 Use Plan.

~~With regard to Use-Limited Resources, t~~The Scheduling Coordinator ~~will~~shall provide ~~by September~~ for the following Resource Adequacy Compliance ~~y~~Year~~,~~ a proposed annual use plan for each Use-Limited Resource that is a Resource Adequacy Resource. The proposed annual use plan will delineate on a month-by-month basis the total MWhs of ~~g~~Generation, total run hours, expected daily supply capability (if greater than four hours) and the daily ~~e~~Energy limit, operating constraints, and the timeframe for each constraint. The CAISO will have an opportunity to discuss the proposed annual use plan with the

Scheduling Coordinator and suggest potential revisions to meet reliability needs of the system. The Scheduling Coordinator shall then submit its final annual use plan ~~by October of each year~~. Scheduling Coordinators for Use-Limited Resources must submit the proposed and final annual use plans in accordance with the schedule set forth in the Business Practice Manual. The Scheduling Coordinator will be able to update the projections made in the annual use plan in the monthly Resource Adequacy Plans. Hydroelectric Generating Units and Pumping Load will be able to update use plans intra-monthly as necessary to reflect evolving hydrological and meteorological conditions. The annual use plan must reflect the potential operation of the Use-Limited Resource at a level no less than the minimum criteria set forth by the Local Regulatory Authority for qualification of the resource.

40.6.4.3 Bidding Requirements on Use-Limited Resources.

40.6.4.3.1 Non-Hydro and Dispatchable Use- Limited Resources.

Use-Limited Resources, other than those subject to the provisions of 40.6.4.3.2, must submit a Supply Bid or Self-Schedule for their Resource Adequacy Capacity in the Day-Ahead Market whenever the Use-Limited Resources are physically capable of operating in accordance with their operating criteria, including environmental or other regulatory requirements. Use-Limited Resources will also provide a daily ~~e~~Energy limit as part of ~~its~~ their Day-Ahead Market offer to enable the CAISO to schedule them for the period in which they are capable of providing the Energy. To the extent that the daily Energy limit has been reached through Self-Schedules~~d~~, no further action ~~is necessary~~will be taken by the CAISO, unless rescheduling of the Energy is necessary for ~~s~~System ~~r~~Reliability. Use-Limited Resources will attempt to reschedule the Energy in recognition of the ~~s~~System ~~r~~Reliability concern, to the extent that the change is possible without violating a Use-Limited Resource's operating criteria.

40.6.4.3.2 Hydro and Non-Dispatchable Use- Limited Resources.

Hydroelectric Generating Units, Pumping Load, ~~resources~~ and Non-Dispatchable Use-Limited Resources shall submit Self-Schedules or Bids in the Day-Ahead Market for their expected available Energy or their expected as-available Energy, as applicable, in the Day-Ahead Market and HASP. Such ~~R~~resources shall also revise their Self-Schedules or submit additional Bids in HASP based on the most current information available regarding expected Energy deliveries. Hydroelectric Generating Units, Pumping Load, ~~resources~~ and Non-Dispatchable Use-Limited Resources will not be subject to commitment in the

RUC process. The CAISO will retain discretion as to whether a particular resource should be considered a Non-Dispatchable Use-Limited Resource, and this decision will be made in accordance with the provisions of Section 40.6.4.1.

40.6.4.3.3 Availability of Use- Limited Resources During System Emergencies.

All Use-Limited Resources remain subject to Section 7.7.2.3 regarding System Emergencies to the extent the Use-Limited Resource is owned or controlled by a Participating Generator.

40.6.4.3.4 Availability of Intermittent Resources.

Any Eligible Intermittent Resource that provides Resource Adequacy Capacity may, but is not required to, submit Bids in the Day-Ahead Market.

40.6.5 Additional Availability Requirements for System Resources.

In the IFM, the multi-hour block constraints of ~~the~~ a System Resource, other than a System Resource capable of submitting a Dynamic Schedule, are honored in the optimization. ~~The CAISO anticipates that m~~Multi-hour block System Resources that are not capable of submitting a Dynamic Schedule and are Resource Adequacy Resources must be capable of hourly selection by the CAISO in RUC if not fully committed in the IFM. If selected in the RUC, the System Resource must be dispatchable in those hours in the HASP and Real Time Market. For existing System Resources with a call-option that expires prior to the completion of the IFM, such System Resources listed on a Resource Adequacy Plan must be reported to the CAISO for consideration in ~~any CAISO~~the Extremely Long-Start ~~Resource c~~Commitment ~~p~~Process.

40.6.5.1 Additional Availability Requirements for Dynamic Resource-Specific System Resources.

A Dynamic Resource-Specific System Resource that supplies Resource Adequacy Capacity, and is not otherwise a Use-Limited Resource under Section 40.6.4, will be subject to either Section 40.6.3 as a Short Start Unit or Section 40.6.7 as a Long Start Unit based upon the Dynamic Resource-Specific System Resource's registered physical operating characteristics.

40.6.6 Availability Requirements for Partial Resource Adequacy Resources.

~~A Partial Resource Adequacy Resource has capacity that is not committed to meet a Resource Adequacy obligation in the CAISO Control Area.~~ Only that output of ~~the~~ a Partial Resource Adequacy ~~r~~Resource that is designated by a Scheduling Coordinator as Resource Adequacy Capacity in its monthly or annual ~~Resource Adequacy~~Supply Plan shall have an availability obligation to the CAISO. Exports being supported by non-Resource Adequacy Capacity from a Partial Resource Adequacy Resource that becomes unavailable or unusable shall be considered as an export of non-Resource Adequacy Capacity based on the pro-rata allocation of derated capacity of the Partial Resource Adequacy Resource as follows:

a. Resource Adequacy Capacity – [(Resource Adequacy Capacity/PMax Capacity of Resource Adequacy Resource) x MW Derate or Outage]; or

b. [1- (Resource Adequacy Capacity/PMax Capacity of Resource Adequacy Resource)] x De-rated PMax].

40.6.7 Availability Requirements for Long Start Units.

40.6.7.1 Release of Long -Start Units.

Long -Start Units not committed in the Day-Ahead Market will be released from any further obligation to submit Self-Schedules or Bids for the relevant Operating Day. Scheduling Coordinators for Long -Start Units are not precluded from self-committing the unit after the Day-Ahead Market and submitting a Self-Schedule for~~a~~ Wheeling-Out in the HASP, unless precluded by terms of ~~its~~ their contracts.

40.6.7.2 Obligation of Long -Start Units to Offer Remaining Capacity in Real-Time.

Long Start Units that have been committed by the CAISO in the Day-Ahead Market or the RUC for part of their Resource Adequacy Capacity or have submitted a Self-Schedule for part of their Resource Adequacy Capacity must remain available to the CAISO through Real-Time for the full value of their Resource Adequacy Capacity.

40.6.8 Use of Default Energy Bids.

Prior to completion of the Day-Ahead Market, the CAISO will determine if dispatchable Resource Adequacy Capacity from Resource Adequacy Resources has not been reflected in a Bid and will insert a Default Energy Bid for any dispatchable Resource Adequacy Capacity that is not reflected in a Bid into

the CAISO Day-Ahead Market and for which the CAISO has not received notification of an Outage. In addition, the CAISO will determine if all dispatchable Resource Adequacy Capacity from Short- Start Units, not otherwise selected in the IFM or RUC, is reflected in a Bid into the HASP ~~process~~ and will insert a Default Energy Bid for any remaining dispatchable Resource Adequacy Capacity for which the CAISO has not received notification of an Outage.

40.6.9 Availability Requirements for Grandfathered Firm Liquidated Damages Contracts.

Resource Adequacy Capacity represented by a Firm Liquidated Damages Contract and relied upon by a Scheduling Coordinator in a monthly or annual Resource Adequacy Plan shall be submitted as a Self-Schedule~~d~~ or Bid in the Day-Ahead IFM to the extent such scheduling right exists under the Firm Liquidated Damages Contract. ~~For purposes of this Section, Firm Liquidated Damages Contracts are those transactions utilizing or consistent with Service Schedule C of the Western Systems Power Pool Agreement or the Firm Liquidated Damages product of the Edison Electric Institute pro forma agreement, or any other similar firm energy contract that does not require the seller to source the energy from a particular unit, and specifies a delivery point internal to the CAISO Control Area.~~

* * *

40.6.11 Curtailment of Exports in Emergency Situations.

At its sole discretion, the CAISO may curtail exports from ~~a~~ Resource Adequacy Capacity~~Resource~~ to prevent or alleviate a System Emergency. An Export Bid or a Self-Schedule to provide exports included in a binding Schedule accepted in the IFM or HASP will not be distinguished from a Demand Bid or Self-Schedule to serve Load within the CAISO Control Area included in a binding Schedule accepted in the IFM or HASP for purposes of curtailment under this Section, except as consistent with Good Utility Practice.

* * *

40.7 Compliance.

The CAISO will evaluate whether each annual and monthly Resource Adequacy Plan submitted by a Scheduling Coordinator on behalf of a Load Serving Entity demonstrates Resource Adequacy Capacity sufficient to satisfy the Load Serving Entity's (i) allocated responsibility for Local Capacity Area Resources

under Section 40.3.2 and (ii) applicable Demand and Reserve Margin requirements. If the CAISO determines that a Resource Adequacy Plan does not demonstrate Local Capacity Area Resources sufficient to meet its allocated responsibility under Section 40.3.2, compliance with applicable Demand and Reserve Margin requirements, or compliance with any other resource adequacy requirement in this Section 40 or adopted by the CPUC, Local Regulatory Authority, or federal agency, as applicable, the CAISO will notify the relevant Scheduling Coordinator, CPUC, Local Regulatory Authority, or federal agency with jurisdiction over the relevant Load Serving Entity, or in the case of a mismatch between Resource Adequacy Plan(s) and Supply Plan(s), the relevant Scheduling Coordinators, in an attempt to resolve any deficiency in accordance with the procedures set forth in the Business Practice Manual. The notification will include the reasons the CAISO believes a deficiency exists. If the deficiency relates to the demonstration of Local Capacity Area Resources in a Load Serving Entity's annual Resource Adequacy Plan, and the CAISO does not provide a written notice of resolution of the deficiency as set forth in the Business Practices Manual, the Scheduling Coordinator for the Load Serving Entity may demonstrate that the identified deficiency is cured by submitting a revised annual Resource Adequacy Plan within thirty (30) days of the beginning of the Resource Adequacy Compliance Year. For all other identified deficiencies, at least ten (10) days prior the effective month of the relevant Resource Adequacy Plan, the Scheduling Coordinator for the Load Serving Entity shall (i) demonstrate that the identified deficiency is cured by submitting a revised Resource Adequacy Plan or (ii) advise the CAISO that the CPUC, Local Regulatory Authority, or federal agency, as appropriate, has determined that no deficiency exists. In the case of a mismatch between Resource Adequacy Plan(s) and Supply Plan(s), if resolved, the relevant Scheduling Coordinator(s) must provide the CAISO with revised Resource Adequacy Plan(s) or Supply Plans, as applicable, at least ten (10) days prior to the effective month. If the CAISO is not advised that the deficiency or mismatch is resolved at least ten (10) days prior to the effective month, the CAISO will use the information contained in the Supply Plan to set the obligations of Resource Adequacy Resources under this Section 40 and/or to assign any costs incurred under this Section 40.~~If the CAISO's review of an annual or monthly Resource Adequacy Plan reveals resource deficiencies, the CAISO will report the deficiencies to the CPUC or Local Regulatory Authority and Scheduling Coordinator submitting Bids for~~

~~the Load Serving Entity and will coordinate with the CPUC or Local Regulatory Authority to request that the Scheduling Coordinator scheduling Demand revise the plan, as appropriate.~~

40.7.1 Other Compliance Issues.

Scheduling Coordinators representing Generating Units, System Units or System Resources supplying Resource Adequacy Capacity that fail to provide the CAISO with an annual ~~and/~~or monthly Supply ~~p~~Plan, as applicable, as set forth in Section 40.7, shall be subject to Section 37.6.1. Further, Scheduling Coordinators representing Generating Units, System Units or System Resources supplying Resource Adequacy Capacity that fail to provide the CAISO with information required for the CAISO to determine Net Qualifying Capacity shall not be eligible for inclusion in the Net Qualifying Capacity annual report under Section 40.4.2 for the next Resource Adequacy Compliance Year and may be subject to Sanctions under Section 37.6.1.

40.7.2 Penalties for Non-Compliance.

The failure of a Resource Adequacy Resource or Resource Adequacy Capacity to ~~make itself~~be available to the CAISO in accordance with the requirements of this Section~~s~~ 40 and~~/or~~ the failure to operate ~~the~~a Resource Adequacy Resource by placing it online ~~and/~~or in a manner consistent with a submitted Bid or Default Energy Bid shall be subject to the ~~s~~Sanctions set forth in Section 37.2. However, any failure of the Resource Adequacy Resource to satisfy any obligations prescribed under this Section 40 during a Resource Adequacy Compliance Year for which Resource Adequacy Capacity has been committed to a Load Serving Entity shall not limit in any way, except as otherwise established under Section 40.4.5 or requirements of the CPUC, Local Regulatory Authority, or federal agency, as applicable, the ability of the Load Serving Entity to whom the Resource Adequacy Capacity has been committed to use such Resource Adequacy Capacity for purposes of satisfying the resource adequacy requirements of the CPUC, Local Regulatory Authority, or federal agency, as applicable. In addition, a Reserve Sharing LSE shall not be subject to any sanctions, penalties, or other compensatory obligations under this Section 40 on account of a Resource Adequacy Resource's satisfaction or failure to satisfy its obligations under this Section 40.

40.8 CAISO Default Qualifying Capacity Criteria.

40.8.1 Applicability.

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

40.8.1.2 Nuclear and Thermal.

Nuclear and thermal Generating ~~u~~Units, other than Qualifying Facilities with effective contracts under the Public Utility Regulatory Policies Act addressed in Section 40.8.1.8 below, must be a Participating Generator or a System Unit. The Qualifying Capacity of nuclear and thermal units, other than Qualifying Facilities addressed in Section 40.8.1.8, will be based on net dependable capacity defined by ~~North American Electric Reliability Council (~~"NERC"~~)~~ Generating Availability Data System ~~("GADS")~~ information.

40.8.1.3 Hydro.

Hydroelectric Generating ~~u~~Units, other than Qualifying Facilities with contracts under the Public Utility Regulatory Policies Act, must be either Participating Generators or System Units. The Qualifying Capacity of a pond or ~~p~~Pumped~~- s~~Storage ~~h~~Hydro ~~u~~Unit, other than a QF, will be determined based on net dependable capacity defined by NERC GADS minus variable head derate based on an average dry year reservoir level. The Qualifying Capacity of a pond or ~~p~~Pumped~~- s~~Storage ~~h~~Hydro ~~u~~Unit that is a QF will be determined based on historic performance during the ~~Standard Offer 1 peak~~ hours of noon to 6:00 p.m., using a three-year rolling average.

The Qualifying Capacity of all run-of-river hydro units, including Qualifying Facilities, will be based on net dependable capacity defined by NERC GADS minus an average dry year conveyance flow, stream flow, or canal head derate. As used in this section, average dry year reflects a one-in-five year dry hydro scenario (for example, using the 4th driest year from the last 20 years on record).

* * *

40.8.1.5 Contracts with Liquidated Damage Provisions.

Firm ~~e~~Energy contracts with liquidated damages provisions, as generally reflected in Service Schedule C of the Western Systems Power Pool Agreement or the Firm LD product of the Edison Electric Institute pro forma agreement, or any other similar firm ~~e~~Energy contract that does not require the seller to source the ~~e~~Energy from a particular unit, and specifies a delivery point internal to the CAISO Control Area entered into before October 27, 2005 shall be eligible to count as Qualifying Capacity until the end of 2008. A Scheduling Coordinator, however, cannot have more than ~~7~~25% of its portfolio of Qualifying Capacity met by contracts with liquidated damage provisions for 2008~~6~~. ~~This percentage will be reduced to 50% for 2007 and 25% for 2008.~~

40.8.1.6 Wind and Solar.

As used in this Section, wind units are those wind Generating Units without backup sources of ~~g~~Generation and solar units are those solar Generating Units without backup sources of ~~g~~Generation. Wind and ~~S~~solar units, other than Qualifying Facilities with effective contracts under the Public Utility Regulatory Policies Act, must be ~~participants in the CAISO's~~ Participating Intermittent Resources ~~Program ("PIRP")~~ or subject to availability provisions of Section 40.6.4.3.4.

The Qualifying Capacity of all wind or solar units, including Qualifying Facilities, for each month will be based on their monthly historic performance during that same month during the ~~Standard Offer 1 peak~~ hours of noon to 6:00 p.m., using a three-year rolling average. For wind or solar units with less than three years operating history, all months for which there is no historic performance data will utilize the monthly average production factor of all units (wind or solar, as applicable) within the TAC Area in which the Generating Unit is located.

40.8.1.7 Geothermal.

Geothermal Generating ~~u~~Units, other than Qualifying Facilities addressed in Section 40.8.1.8, must be Participating Generators or System Units. The Qualifying Capacity of geothermal units, other than Qualifying Facilities addressed in Section 40.8.1.8, will be based on NERC GADS net dependable capacity minus a derate for steam field degradation.

40.8.1.8 Treatment of Qualifying Capacity for Qualifying Facilities.

Qualifying Facilities must be ~~Participating Generators (signed a~~subject to an effective Participating Generator Agreement or QF Participating Generator Agreement~~)~~ or must be System Units, unless they have a PURPA contract. Except for hydro, wind, and solar Qualifying Facilities addressed pursuant to Sections 40.8.1.3 and 40.8.1.6 ~~above~~, the Qualifying Capacity of Qualifying Facilities under PURPA contracts, will be based on historic monthly ~~g~~Generation output during ~~Standard Offer 1 peak~~the hours of noon to 6:00 p.m. (net ~~behind the meter~~of Self-provided ~~l~~Load~~s~~) during a three-year rolling average.

40.8.1.9 Participating Loads.

The Qualifying Capacity of Participating Loads shall be the average reduction in ~~d~~Demand ~~for~~ over a three-year period on a per ~~d~~Dispatch basis or, if the ~~Participating~~ Load does not have three years of performance history, based on comparable evaluation data using similar programs. Loads of Participating Loads must be available at least 48 hours, and if the ~~Participating~~ Loads can only be dispatched for a maximum of two hours per event, the~~a~~n only 0.89 percent of a Scheduling Coordinator's portfolio may be made up of such ~~Participating~~ Loads.

40.8.1.10 Jointly-Owned Facilities.

A jointly-owned facility must be either a Participating Generator or a System Unit. The Qualifying Capacity for the entire facility will be determined based on the type of resource as described elsewhere in this Section 40.8.1. In addition, the Scheduling Coordinator must provide the CAISO with a demonstration of its entitlement to the output of the jointly-owned facility's Qualified Capacity and an explanation of how that entitlement may change if the facility's output is restricted.

40.8.1.11 Facilities under Construction.

The Qualifying Capacity for facilities under construction will be determined based on the type of resource as described elsewhere in this Section 40.8. In addition, the facility must have been in commercial operation for no less than one month to be eligible to be included as a Resource Adequacy Resource in a Scheduling Coordinator's monthly Resource Adequacy ~~p~~Plan.

40.8.1.12 System Resources.

40.8.1.12.1 Dynamic System Resources.

Dynamic System Resources shall be treated similar to resources within the CAISO Control Area, except with respect to the deliverability screen under Section 40.4.6.1. However, eligibility as a Resource Adequacy ~~r~~Resource is contingent upon a showing by the Scheduling Coordinator that the Dynamic System Resource has secured transmission through any intervening Control Areas for the ~~o~~Operating ~~h~~Hours that cannot be curtailed for economic reasons or bumped by higher priority transmission and that the Load Serving Entity ~~upon~~ for which the Scheduling Coordinator is submitting Demand Bids has an allocation of import capacity at the import Scheduling Point under Section 40.4.6.2 ~~of the CAISO Tariff~~ that is not less than the Resource Adequacy Capacity provided by the Dynamic~~ally Scheduled~~ System Resource.

40.8.1.12.2 Non-Dynamic System Resources.

For Non-Dynamic System Resources, the Scheduling Coordinator must demonstrate that the Load Serving Entity ~~upon~~ for which the Scheduling Coordinator is scheduling Demand has an allocation of import capacity at the import Scheduling Point under Section 40.4.6.2 ~~of the CAISO Tariff~~ that is not less than the Resource Adequacy Capacity from the Non-Dynamic System Resource. The Scheduling Coordinator must also demonstrate that the Non-Dynamic System Resource is covered by Operating Reserves, unless~~,~~ unit contingent, in the sending Control Area. Eligibility as Resource Adequacy Capacity ~~would be~~is contingent upon a showing by the Scheduling Coordinator of the System Resource that it has secured transmission through any intervening Control Areas for the ~~o~~Operating ~~h~~Hours that cannot be curtailed for economic reasons or bumped by higher priority transmission. With respect to Non-Dynamic System Resources, any inter-temporal constraints, such as multi-hour run blocks, must be explicitly identified in the monthly Resource Adequacy ~~p~~Plan, and no constraints may be imposed beyond those explicitly stated in the plan.

41. Procurement of RMR.

* * *

41.3 ~~On a yearly basis, the CAISO will carry out technical evaluations based upon historic patterns of the operation of the CAISO Controlled Grid and the CAISO's forecast requirements for maintaining the reliability of the CAISO Controlled Grid in the next year~~In addition to the Local Capacity Technical Study

under 40.3.1, the CAISO may perform additional technical studies, as necessary, to ensure compliance with Reliability Criteria. The CAISO will then determine which Generating Units it requires to continue to be Reliability Must-Run Units, which Generating Units it no longer requires to be Reliability Must-Run Units and which Generating Units it requires to become the subject of a Reliability Must-Run Contract which had not previously been so contracted to the CAISO. None of the Generating Units owned by Local Publicly Owned Electric Utilities are planned to be designated as Reliability Must-Run Units by the CAISO as of the CAISO Operations Date but are expected to be operated in such a way as to maintain the safe and reliable operation of the interconnected transmission system comprising the CAISO Control Area. However, in the future, Local Publicly Owned Electric Utilities may contract with the CAISO to provide Reliability Must-Run Generation.

* * *

42 Assurance of Adequate Generation and Transmission to meet Applicable Operating and Planning Reserve.

42.1 Generation Planning Reserve Criteria.

* * *

42.1.4 If Ancillary Services, short-term Generation supply contracts or curtailment contracts are required to meet Applicable Reliability Criteria, the CAISO shall select the Bids that permit the satisfaction of those Applicable Reliability Criteria at the lowest cost.

42.1.5 Notwithstanding the foregoing, if the CAISO concludes that it may be unable to comply with the Applicable Reliability Criteria, the CAISO shall, acting in accordance with Good Utility Practice, take such steps as it considers to be necessary to ensure compliance, including the negotiation of contracts through processes other than competitive solicitations. These steps can include the negotiation of contracts for Generation or Ancillary Services on a Real-Time basis. ~~If the CAISO is unable to obtain such Ancillary Services from within the CAISO Controlled Grid, the CAISO may solicit Ancillary Services from other Control Areas on a Real-Time basis.~~

* * *

42.1.8 ~~(a) Except where and to the extent that such costs are recovered from Scheduling Coordinators pursuant to Section 8, all costs incurred by the CAISO pursuant to any contract entered into~~

~~pursuant to Section 42.1 for Local Capacity Area Resources pursuant to Section 40.3.4(i) shall be charged first on a pro rata basis to each Scheduling Coordinator that failed to procure sufficient Local Capacity Area Resources to satisfy its obligation, as determined pursuant to Section 40.3.2, based on each Scheduling Coordinator's relative amount of Local Capacity Area Resource deficiency up to the quantity of the Scheduling Coordinator's Local Capacity Area Resource deficiency. A Scheduling Coordinator's deficiency pursuant to this Section 42.1.8(a) shall be determined as the difference between the Scheduling Coordinator's obligation pursuant to Section 40.3.2 and the quantity of Local Capacity Area Resources included in the annual or monthly Resource Adequacy Plan.~~

~~(b) To the extent the capacity of Local Capacity Area Resources procured by the CAISO pursuant to Section 40.3.4(i) exeeds the total quantity of Resource Adequacy Capacity by which all Scheduling Coordinators are deficient in the Local Capacity Area, the costs of such Local Capacity Area Resources will be allocated in accordance with Section 42.1.8(c).~~

~~(c) Except where and to the extent that such costs are recovered from Scheduling Coordinators pursuant to Section 8, all costs incurred by the CAISO pursuant to any contract entered into pursuant to Section 42.1 for Local Capacity Area Resources pursuant to Section 40.3.4(ii) or as set forth in Section 42.1.8(b) on a pro rata basis to each Scheduling Coordinator that serves Load in the TAC Area in accordance with the Load Serving Entity's proportionate coincident share, on a gross Load basis, of the previous annual peak Demand in the TAC Area.~~

~~(d)~~ Except where and to the extent ~~that such~~ costs incurred by the CAISO for any contract entered into under Section 42.1.5 are recovered from Scheduling Coordinators pursuant to Sections 11.5.8, 11.10 or 42.1.9, all costs incurred by the CAISO in any Trading Hour shall be charged to each Scheduling Coordinator pro rata based upon the same proportion as the Scheduling Coordinator's Measured Demand bears to the total Measured Demand served in that hour. ~~pursuant to any contract entered into pursuant to Section 42.1 for Resource Adequacy Capacity, other than Local Capacity Area Resources, shall be charged on a pro rata basis to each Scheduling Coordinator based on each Scheduling Coordinator's relative amount of deficiency to satisfy the Scheduling Coordinator's applicable Demand Forecast and Reserve Margin pursuant to Section 40 up to the quantity of the Scheduling Coordinator's deficiency as determined as the difference between the Scheduling Coordinator's applicable Demand~~

~~Forecast and Reserve Margin and Resource Adequacy Resources included in the annual or monthly Resource Adequacy Plan. Second, to the extent Local Capacity Area Resource capacity procured by the CAISO exceeds the amount of total Resource Adequacy Resource deficiency, the costs of such capacity will be allocated on a pro rata basis to each Scheduling Coordinator upon the same proportion as the Scheduling Coordinator's metered hourly Demand (including exports) bears to the total metered hourly Demand (including exports) served in that hour in the CAISO Control Area.~~

~~Whether or not the share of the Resource Adequacy Capacity procured by the CAISO under this Section may count towards satisfaction of a Load Serving Entity's Reserve Margin shall be determined by the CPUC, Local Regulatory Authority, or federal agency with jurisdiction of the Load Serving Entity, unless the CPUC, Local Regulatory Authority, or federal agency has failed to establish a Reserve Margin, in which case the CAISO will assign the Load Serving Entity's share of the Resource Adequacy Capacity towards satisfaction of its Reserve Margin.~~

* * *

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

California Independent System Operator Corporation	)	Docket No. ER06-615- _____

CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION MODIFICATIONS TO MARKET REDESIGN AND TECHNOLOGY UPGRADE TARIFF

VOLUME 3

August 3, 2007

* * *

CAISO TARIFF APPENDIX A

Master Definitions Supplement

* * *

Appendix A Master Definitions Supplement

ACA	Adjacent Control Area
Access Charge	A charge paid by all Utility Distribution Companies, Small Utility Distribution Companies, and ~~Metered Subsystems~~ MSS Operators with Gross Load in a Participating TO Service Territory, as set forth in Article II. The Access Charge includes the High Voltage Access Charge, the Transition Charge and the Low Voltage Access Charge. The Access Charge will recover the Participating TO's Transmission Revenue Requirement in accordance with Appendix F, Schedule 3.
ACE	Area Control Error
ACR	All Constraints Run
Adjacent Control Area (ACA)	A Control Area that is tightly interconnected with the CAISO Control Area, but also has direct interconnections with other Control Areas, possibly including other ACAs, such that power flows in one Control Area significantly affect power flows in the other Control Area.
	* * *
Adjusted Verified CRR Source Quantity	The MW amount eligible for nomination by an LSE or Qualified OCALSE in a verified tier of the CRR Allocation process, determined by reducing a Verified CRR Source Quantity to account for circumstances where the ownership or contract right to a generating resource is effective only for a portion of a particular season or month for which CRRs are being nominated.
	* * *
ADR	Alternative Dispute Resolution
ADS	Automated Dispatch System
	* * *
AGC	Automatic Generation Control
Aggregated Participating Load	An aggregation of two or more Participating Load Locations, created

	by the CAISO in consultation with the relevant Participating Load, for the purposes of enabling participating of the Participating Load in the CAISO Markets like Generation by submitting Supply Bids when offering Curtailable Demand and as non-Participating Load by submitting Demand Bids to consume in the Day-Ahead Market only.
	* * *
Alert, Warning ~~and~~ or Emergency (AWE) Notice	A CAISO operations communication issued to Market Participants and the public, under circumstances and in a form specified in CAISO Operating Procedures, when the operating requirements of the CAISO Controlled Grid are marginal because of Demand exceeding forecast, loss of major Generation sources, or loss of transmission capacity that has curtailed imports into the CAISO Control Area, or if ~~the a shortage of~~ insufficient Bids for the Supply of Energy and Ancillary Services have been submitted in the HASP for the CAISO Control Area.
All Constraints Run (ACR)	The second optimization run of the MPM-RRD process through which all known transmission ~~c~~Constraints are enforced.
~~**Ancillary Services (AS)**~~	~~Regulation, Spinning Reserve, Non-Spinning Reserve, Voltage Support and Black Start together with such other interconnected operation services as the CAISO may develop in cooperation with Market Participants to support the transmission of Energy from Generation resources to Loads while maintaining reliable operation of the CAISO Controlled Grid in accordance with WECC standards and Good Utility Practice.~~
Ancillary Services Award or AS Award	The notification by the CAISO indicating that a Bid to supply an Ancillary Service has been selected to provide such service in the DAM, HASP, or RTM.
~~**Ancillary Service Regions or AS Regions**~~	~~The System Region, the Expanded System Region, or and any Sub-Regions identified by the CAISO for procurement of ancillary services.~~
~~**Ancillary Service Regional Limit(s)**~~	~~A maximum or a minimum, or both a maximum and a minimum, amount of (or boundary of) Ancillary Services to be obtained within an AS Rregion. Limits can be expressed as either megawatt amounts or percentages.~~
~~**Ancillary Service Schedule or AS Schedule**~~	~~The notification by the CAISO indicating that a Submission to Self-Provide an Ancillary Service has been selected to provide such service in the DAM, HASP, or RTM.~~

Ancillary Service Bid or AS Bid	The Bid component that indicates the quantity in MW~~s~~ and a price in dollars per MW for a specific Ancillary Service~~s~~, including Regulation- Up, Regulation– Down, Spinning Reserve and Non-Spinning Reserve, that a Scheduling Coordinator is offering to supply in a CAISO Market from a Generating Unit~~, and~~ or System Resource~~s~~, and only for Non-Spinning Reserve from the Load of a Participating Load~~s~~.
Ancillary Service Bid Cost or AS Bid Cost	An amount equal to the product of the AS Award from each accepted AS Bid, reduced by ~~the~~ any applicable No Pay ~~C~~capacity, ~~with~~ and the relevant AS Bid ~~P~~price.
Ancillary Service Marginal Price (ASMP)	The marginal cost of providing an Ancillary Service in the relevant resource ~~l~~Location ($/MW).
Ancillary Service Obligation or AS Obligation	A Scheduling Coordinator's hourly obligation~~s~~ for Regulation Down, Regulation Up, Spinning Reserves, and Non-Spinning Reserves calculated pursuant to Section 11.10.2.1.~~2~~3, 11.10.2.2.2, 11.10.3.2, and 11.10.4.2, respectively.
Ancillary Service Provider	A Participating Generator or Participating Load ~~who~~ that is certified to provide an Ancillary Service~~s~~.
Ancillary Service Regional Limit	A maximum or a minimum, or both a maximum and a minimum, amount of (or boundary of) Ancillary Services to be obtained within an AS Region. Limits can be expressed as either megawatt amounts or percentages.
Ancillary Service Region or AS Region	The System Region, the Expanded System Region, or any Sub-Region identified by the CAISO for procurement of Ancillary Services.
Ancillary Services (AS)	Regulation, Spinning Reserve, Non-Spinning Reserve, Voltage Support and Black Start together with such other interconnected operation services as the CAISO may develop in cooperation with Market Participants to support the transmission of Energy from Generation resources to Loads while maintaining reliable operation of the CAISO Controlled Grid in accordance with WECC standards and Good Utility Practice.
Ancillary Service Schedule or AS Schedule	The notification by the CAISO indicating that a Submission to Self-Provide an Ancillary Service has been selected to provide such service in the DAM, HASP, or RTM.
Annual Peak Demand Forecast	A Demand Forecast of the highest Hourly Demand ~~in any hour~~ in a calendar year, in MW.

Applicable Reliability Criteria	The ~~r~~Reliability ~~s~~Standards and reliability criteria established by NERC~~,~~ and WECC~~,~~ and Local Reliability Criteria, as amended from time to time, including any requirements of the NRC.
	* * *
Area Control Error (ACE)	The sum of the instantaneous difference between the actual net Interchange and the scheduled net Interchange between the CAISO Control Area and all ~~adjacent~~interconnected Control Areas, taking into account the effects of ~~Control Areas and~~ the CAISO Control Area's frequency bias, correction of ~~M~~meter error, and time error correction obligations.
AS	Ancillary Services
ASMP	Ancillary Service Marginal Price
ATC	Available Transfer Capacity
Automated Dispatch System (ADS)	The CAISO systems application to communicate Dispatch Instructions to Scheduling Coordinators.
~~-~~**Automatic Generation Control (AGC)**	Generation equipment that automatically responds to signals from the CAISO's EMS control in Real-Time to control the Power output of Generating Units within a prescribed area in response to a change in system frequency, tie-line loading, or the relation of these to each other, so as to maintain the target system frequency and~~/or~~ the established ~~i~~Interchange with other Control ~~a~~Areas within the predetermined limits.
Available Import Capability	The Maximum Import Capability of an Intertie into the CAISO Control Area in MW deliverable to the CAISO Control Area based on CAISO study criteria minus the sum in MW of all Existing Contracts and Transmission Ownership Rights over that Intertie held by load serving entities that do not serve Load within the CAISO Control Area.
Available Transfer Capacity (ATC)	The available capacity ~~rating~~ of a given transmission path, in MW after allocation of rights associated with Existing Contracts and Transmission Ownership Rights, to that path's Operating Transfer Capabilit~~ies~~y established consistent with CAISO and WECC transmission capacity rating guidelines.
AWE Notice	Alert, Warning or Emergency Notice
Backup CAISO Control Center	The CAISO Control Center located in Alhambra, California.
Backup Meter	A redundant revenue quality meter which is identical to and of equal

	accuracy to the primary revenue quality meter connected at the same metering point which must be certified in accordance with the CAISO Tariff.
BAID	Business Associate Identification
~~Backup CAISO Control Center~~	~~The CAISO Control Center located in Alhambra, California.~~
	* * *
Base Case	The base case power flow, short circuit, and stability data bases used for the Interconnection Studies.
	* * *
BCR	Bid Cost Recovery
	* * *
Bid Costs	The costs for resources manifested in the Bid ~~C~~components submitted, which include the Start-Up Cost, ~~The~~ Minimum Load Cost, Energy Bid Cost, Pump Shut-Down Cost, Pumping Cost, Ancillary Services Bid Cost and RUC Availability Payment.
Black Start	The procedure by which a Generating Unit self-starts without an external source of electricity thereby restoring a source of power to the CAISO ~~Controlled Grid~~ Control Area following system or local area blackouts.
	* * *
BPM	Business Practice Manual
BPM PRR	Business Practice Manual Proposed Revision Request
	* * *
Business Associate Identification (BAID)	Identification characters assigned to each Business Associate by the CAISO.
	* * *
Business Practice Manual Proposed Revision Request (BPM PRR)	A request to make any change to a BPM, including any attachments thereto, as described in Section 22.11.1.
Business Practice Manuals (BPMs)	A collection of documents made available by the CAISO on the CAISO Website that contain the rules, polices, procedures and guidelines established by the CAISO for operational, planning, accounting and settlement requirements of CAISO Market activities, consistent with the CAISO Tariff.
CAISO	The California Independent System Operator Corporation, a state

	chartered, California non-profit public benefit corporation that operates the transmission facilities of all Participating TOs and dispatches certain Generating Units and Loads.
	* * *
CAISO ADR Procedures	The procedures for resolution of disputes or differences set out in Section 13.
CAISO Alternative Dispute Resolution Committee (CAISO ADR Committee)	The Committee appointed by the CAISO ADR Committee pursuant to Article IV, Section 3 of the CAISO bylaws to perform functions assigned to the CAISO ADR Committee in the ADR process in Section 13. ~~of the CAISO Tariff.~~
~~**CAISO ADR Procedures**~~	~~The procedures for resolution of disputes or differences set out in Section 13 of the CAISO Tariff, as amended from time to time.~~
~~**CAISO Application File Template**~~	~~All information (administrative, financial and technical) pertaining to Scheduling Coordinators which must be maintained in a current form by the CAISO and the Scheduling Coordinator.~~
CAISO Audit Committee	A committee of the CAISO Governing Board appointed pursuant to Article IV, Section 5 of the CAISO bylaws to (1) review the CAISO's annual independent audit (2) report to the CAISO Governing Board on such audit, and (3) ~~to~~ monitor compliance with the CAISO Code of Conduct.
CAISO Authorized Inspector	A person authorized by the CAISO to certify, test, inspect and audit meters and Metering Facilities in accordance with the procedures established by the CAISO pursuant to ~~the~~ Section~~s~~ 10 ~~of this CAISO Tariff on metering~~.
	* * *
~~**CAISO Control Area**~~	~~The Control Area operated by the CAISO.~~
CAISO Control Center	The control center established by the CAISO pursuant to Section 7.1.
	* * *
CAISO Creditor	A Business Associate to which amounts are payable under the terms of the CAISO Tariff and agreement~~s~~ with the CAISO.
	* * *
CAISO Emissions Cost Trust Account	The CAISO Account established pursuant to Section 11.18.2.
	* * *
~~**CAISO Generated Bid**~~	~~A CAISO post-market Clean Bid generated in accordance with the~~

~~provisions of the Resource Adequacy Requirements of the CAISO Tariff and is based solely on the Master File data which was submitted by a Scheduling Coordinator for its Generating Unit located within the CAISO Control Area.~~

~~* * *~~

~~CAISO Website~~

~~The CAISO internet home page at~~ http://www.caiso.com ~~/ or such other internet address as the CAISO shall publish from time to time.~~

* * *

CAISO Metered Entity

(a) any one of the following entities that is directly connected to the CAISO Controlled Grid:

i. a Generator other than a Generator that sells all of its Energy (excluding any Energy consumed by auxiliary load equipment electrically connected to that Generator at the same point) and Ancillary Services to the Utility Distribution Company or Small Utility Distribution Company in whose Service Area it is located;

ii. ~~an Eligible Customer~~MSS Operator; or

iii. ~~an End-User other than an End-User that purchases all of its Energy from the~~ Utility Distribution Company or Small Utility Distribution Company ~~in whose Service Area it is located~~; and

(b) any one of the following entities:

i. a Participating Generator;

ii. a Participating TO in relation to its Tie Point Meters with other TOs or Control Areas;

iii. a Participating Load;

iv. a Participating Intermittent Resource; or

v. a utility that requests that Unaccounted for Energy for its Service Area be calculated separately, in relation to its meters at points of connection of its Service Area with the systems of other utilities.

~~CAISO Metered Entity Meter Service Agreements~~

~~An agreement entered into between the CAISO and a CAISO Metered Entity consistent with the provisions of Section 10.~~

* * *

CAISO Outage Coordination Office

The office established by the CAISO to coordinate Maintenance Outages in accordance with Section 9.3 ~~of the CAISO Tariff~~.

CAISO Payments Calendar

A calendar published by the CAISO showing the dates on which Settlement Statements will be published by the CAISO and the

	Payment Dates by which ~~i~~Invoices issued under the CAISO Tariff must be paid.
	* * *
CAISO Protocols	The rules, protocols, procedures and standards promulgated by the CAISO (as amended from time to time) to be complied with by the CAISO, Scheduling Coordinators, Participating TOs and all other Market Participants in relation to the operation of the CAISO Controlled Grid and the participation in the markets for Energy and Ancillary Services in accordance with the CAISO Tariff.
CAISO Security Amount	The level of security provided in accordance with Section 12.1 ~~of the CAISO Tariff~~ by a Scheduling Coordinator Applicant who does not have an Approved Credit Rating. The CAISO Security Amount may be separated into two components: (i) the level of security required to secure payment of the Grid Management Charge; and (ii) the level of security required to secure payment of all charges other than the Grid Management Charge.
	* * *
CAISO Website	The CAISO internet home page at http://www.caiso.com or such other internet address as the CAISO shall publish from time to time.
~~**CAISO**~~	~~The California Independent System Operator Corporation, a state chartered, California nonprofit public benefit corporation that operates the transmission facilities of all Participating TOs and dispatches certain Generating Units and Loads.~~
Candidate CRR Holder	An entity that is registered~~s~~ and qualified ~~with~~ by the CAISO to participate in the ~~become a CRR Holder through~~ CRR Allocation, the CRR Auction, or ~~through a transaction registered in~~ the Secondary Registration System to become a CRR Holder and is a party to a fully executed CRR Entity Agreement, and therefore must comply with the requirements for Candidate CRR Holders under the CAISO Tariff.
CCR	Competitive Constraints Run
Certificate of Compliance	A certificate issued by the CAISO which states that the Metering Facilities referred to in the certificate satisfy the certification criteria for Metering Facilities contained in the CAISO Tariff.
	* * *
~~**Certificate of Compliance**~~	~~A certificate issued by the CAISO which states that the Metering~~

	~~Facilities referred to in the certificate satisfy the certification criteria for Metering Facilities contained in the CAISO Tariff.~~
Charge Code	A numeric identifier used to specify Settlement calculations in the Business Practice Manual.
~~Check Meter~~	~~A redundant revenue quality meter which is identical to and of equal accuracy to the primary revenue quality meter connected at the same metering point which must be certified in accordance with the CAISO Tariff.~~

* * *

Clean Bid	A valid Bid submitted by a Scheduling Coordinator that requires no modification, a Default Modified Bid, ~~and~~ or a ~~CAISO Constructed~~ Generated Bid deemed to be acceptable for submission to the CAISO Market applications.

* * *

COG	Constrained Output Generator

* * *

~~Compatible Meter Data System~~	~~A Meter Data acquisition and processing system which is capable of passing Revenue Quality Meter Data and/or Settlement Quality Meter Data to the CAISO via CAISO approved methods and which has been certified by the CAISO or its authorized representative.~~
~~Competition Transition Charge (CTC)~~	~~A non-bypassable charge that is the mechanism that the California Legislature and the CPUC mandated to permit recovery of costs stranded as a result of the shift to the new market structure.~~
Commitment Interval	The fifteen minute period of time for which the CAISO commits units through the Real-Time Unit Commitment process.
Competitive Constraints Run (CCR)	The first optimization run of the MPM-RRD process through which all pre-designated competitive constraints are enforced.
Condition 1 RMR Unit	A ~~R~~resource~~s~~ operating pursuant to Condition 1 of its RMR ~~c~~Contract.
Condition 2 RMR Unit	A ~~R~~resource~~s~~ operating pursuant to Condition 2 of its RMR ~~c~~Contract.
Congestion	~~-~~A characteristic of the transmission system produced by a binding constraint to the optimum economic dispatch to meet ~~d~~Demand such that the LMP, exclusive of Marginal Cost of Losses, at different ~~l~~Locations of the transmission system is not equal.

* * *

Congestion Management	The alleviation of Congestion in accordance with ~~A~~applicable CAISO procedures, the CAISO Tariff, and Good Utility Practice.

* * *

Contingency	A potential Outage that is ~~unexpected~~ unplanned, viewed as possible or eventually probable, which is taken into account when considering approval of other requested Outages or while operating the CAISO Control Area.
Contingency Flag	The daily Bid component that indicates that the Spinning Reserves and Non-Spinning Reserves being offered in the CAISO Market are C~~c~~ontingency~~-~~ O~~o~~nly reserves.
Contingency Only	A resource providing Operating Reserve capacity that may be Dispatched by the CAISO only in the event of a Contingency or System Emergency.
Contract Reference Number (“CRN”)	The Bid component that indicates the specific contract identification number issued by the CAISO to Scheduling Coordinators transactions under Existing Contracts or TORs.

* * *

Control Area Gross Load	For the purpose of calculating and billing Minimum Load Costs, Emission Costs, ~~Charge~~ and Start-Up ~~Fuel~~ Costs ~~Charge~~, Control Area Gross Load is all Demand for Energy within the CAISO Control Area. Control Area Gross Load shall not include Energy consumed by: (a) generator auxiliary Load equipment that is dedicated to the production of Energy and is electrically connected at the same point as the Generating Unit (e.g., auxiliary Load equipment that is served via a distribution line that is separate from the switchyard to which the Generating Unit is connected will not be considered to be electrically connected at the same point); and (b) Load that is isolated electrically from the CAISO Control Area (*i.e.*, Load that is not synchronized with the CAISO Control Area).

* * *

Converted Rights	Those transmission service rights as defined in Section 4.3.1.6 ~~of the CAISO Tariff~~.

* * *

CPUC Load Serving Entity	Any entity serving retail Load in the CAISO Control Area under the jurisdiction of the CPUC, including an ~~E~~electrical corporation under section 218 of the California Public Utilities Code ~~(hereinafter "PUC")~~, an ~~E~~electric service provider under section 218.3 of the California Public Utilities Code ~~PUC~~, and a ~~C~~community ~~C~~choice ~~A~~aggregator under section 331.1 of ~~the PUC~~the California Public Utilities Code.
	* * *
CRN	Contract Reference Number
CRR	Congestion Revenue Rights
CRR Allocation	The process of nominations and awards held monthly and annually through which the CAISO will distribute CRRs to Candidate CRR Holders.~~according to the provisions of Section 36 of the CAISO Tariff.~~
	* * *
CRR Auction	The annual and monthly market process that will follow CRR Allocation through which the CAISO makes CRRs available to Candidate CRR Holders~~parties~~ that submit offers to purchase CRRs.
CRR Balancing Account	The financial account held by the CAISO for CRRs that is administered in accordance with Section 11.2.4 ~~of the CAISO Tariff~~.
CRR Charge	The charge assessed by the CAISO on the holder of a CRR Obligation when Congestion is in the opposite direction of the CRR Source to CRR Sink specification as described in Section 11.2.4.
CRR Entity Agreement	An agreement between the CAISO and a Candidate CRR Holder or CRR Holder that must be fully executed in order for such an entity to participate in the CRR Allocation, CRR Auction, or Secondary Registration System, a *pro forma* version of which is set forth in Appendix B.11.
CRR Holder	A Candidate CRR Holder~~n entity that has registered with the CAISO and otherwise meets the requirements of Sections 12 and 36 and~~ that has acquired C~~ongestion R~~evenue R~~ight~~(s) either through the CRR Allocation, the CRR Auction, or through a transaction registered in the Secondary Registration System.
CRR Load Metric	The Seasonal CRR Load Metric or Monthly CRR Load Metric.

* * *

~~**CRR Charge**~~	~~The Ccharge assessed by the CAISO on the holder of a CRR Obligation when congestion is in the opposite direction of the CRR Source to CRR Sink specification as described in Section 11.2.4.~~

* * *

CRR Payment	A ~~P~~ppayment from the CAISO to a CRR Holder ~~based~~ as specified in Section 11.2.4.

* * *

CRR Year Four	The fourth period of time for which the CAISO conducts an annual CRR Allocation, as defined in the Business Practice Manual.

* * *

CRR Year Three	The third period of time for which the CAISO conducts an annual CRR Allocation, as defined in the Business Practice Manual.
CRR Year Two	The second period of time for which the CAISO conducts an annual CRR Allocation, as defined in the Business Practice Manual.
Curtailable Demand	Demand from a Participating Load or Aggregated Participating Load that can be curtailed at the direction of the CAISO in the Real-Time Dispatch of the CAISO Controlled Grid. Scheduling Coordinators with Curtailable Demand may offer it to the CAISO to meet Non-Spinning Reserve or Imbalance Energy.
Custom Load Aggregation Point (Custom LAP)	An aggregation of Load PNodes created by the CAISO based on a set of custom LDFs submitted by a Scheduling Coordinator, at which such Scheduling Coordinator may submit a single Bid and settle Demand consistent with the CAISO Tariff rules, and for which the Scheduling Coordinator is required to submit to the CAISO Meter Data for the nodal Load represented in such aggregation.
DAM	Day-Ahead Market

* * *

Day-Ahead Inter-SC Trade Period	The period commencing seven (7) days prior to the applicable Trading Day and ending at 12:00 p.m. noon on the day prior to that Trading Day, during which time the CAISO will accept Inter-SC Trades of Energy for the DAM from Scheduling Coordinators.
Day-Ahead Market (DAM)	A series of processes conducted in the Day-Ahead that includes the Market Power Mitigation-Reliability Requirement Determination, the Integrated Forward Market and the Residual~~liability~~ Unit Commitment.

Day-Ahead Schedule	A Schedule ~~prepared~~ issued by the CAISO one day prior to the target Trading Day indicating the levels of Supply and Demand for Energy cleared through the IFM and scheduled for each Settlement Period, for each PNode or Aggregated Pricing Node, including Scheduling Points of that Trading Day.
	* * *
Default Energy Bid	~~A price ($/MWh)~~The Energy Bid Curve used in Loca~~tiona~~al Market Power Mitigation pursuant to Section 39.
	* * *
Default Modified Bid	A Bid that is submitted by a Scheduling Coordinator and is deemed valid and qualifies for modification under the provisions of ~~Resource Adequacy Requirements of this Tariff~~Section 40.
	* * *
Demand Bid	The Bid c~~C~~omponent in a Bid submitted in the DAM that indicates the MWh of Energy the Scheduling Coordinator is willing to purchase, the price at which it is willing to purchase the specified Energy, and the applicable Trading Hours for the next day.
Demand Forecast	An estimate of Demand over a designated period of time.
~~**Load Reduction Initiation**~~	~~The Bid component that indicates the Load reduction initiation time and cost for a Participating Load.~~
~~**Load Reduction Initiation Payment**~~	~~Compensation calculated for Scheduling Coordinators for capacity committed by the CAISO through the IFM, RUC, HASP or Real-Time Market procedures associated with Load Reduction Initiation Bid.~~
	* * *
~~**Direct Access Demand**~~	~~The Demand of Direct Access End-Users.~~
	* * *
Dispatch Instruction	An instruction by the CAISO for an action with respect to specific equipment, or to a resource for increasing or decreasing its ~~e~~Energy Supply or Demand from the Day-Ahead Schedule, RUC Schedule, and Day-Ahead AS Award to a specified Dispatch ~~o~~Operating ~~p~~Point pertaining to Real-Time operations.
Dispatch Interval	The ~~t~~Time ~~p~~Period, which may range between five (5) and thirty (30) minutes, over which the Real-Time Dispatch measures deviations in Generation and Demand, and selects Ancillary Service and

	supplemental energy resources to provide balancing Energy in response to such deviations. The Dispatch Interval shall be five (5) minutes. Following a decision by the CAISO Governing Board, the CAISO may, by seven (7) days' notice published on the CAISO~~'s~~ Website, increase or decrease the Dispatch Interval within the range of five (5) to thirty (30) minutes.
Dispatch Interval LMP	The price of Imbalance Energy determined at each Dispatch Interval in accordance with Section 11.5.4.
Dispatch Operating Point	The expected operating point of a resource that has received a Dispatch Instruction. The resource is expected to operate at the Dispatch Operating Point after completing the Dispatch Instruction, taking into account any relevant ~~r~~Ramp ~~r~~Rate and time delays. Energy expected to be produced or consumed above or below the Day-Ahead Schedule in response to a Dispatch Instruction constitutes Instructed Imbalance Energy. For resources that have not received a Dispatch Instruction, the Dispatch Operating Point defaults to the corresponding Day-Ahead Schedule.
~~**Distribution Curve**~~	~~The Bid Template component that indicates an integration distribution factor to demonstrate how the Bid is distributed for the resources participating in the Physical Scheduling Plants or System Units, or for Aggregated Load Resources in the case of Participating Loads.~~
	* * *
Dynamic Resource-Specific System Resource	A Dynamic System Resource that is ~~physically connected to an actual~~ a specific generation resource outside the CAISO Control Area.
Dynamic Schedule	A telemetered reading or value which is updated in Real-Time and which is used as a schedule in the CAISO Energy Management System calculation of Area Control Error and the integrated value of which is treated as a schedule for ~~i~~interchange accounting purposes.
Dynamic System Resource	A System Resource that ~~is capable of~~ has satisfied the CAISO's contractual and operational requirements for submitting a Dynamic Schedule, and for which a Dynamic Schedule has been submitted, including a Dynamic Resource-Specific System Resource.
E&P Agreement	Engineering & Procurement Agreement
ECA	Embedded Control Area

Economic Bids	A Supply and Demand Bid that includes quantity (MWh) and price ($) for specified Trading Hours, which is not a Self-Schedule.
EDI	Electronic Data Interchange
EEP	Electrical Emergency Plan
ELC Process	Extremely Long-Start Commitment Process
Economic Market Clearing Prices	For the purposes of Section 39, the market prices for a particular resource at the location of that particular resource at the time the resource was either Scheduled or was Dispatched by the CAISO. Economic Market Clearing Prices may originate from the Day-Ahead Market, the HASP or the RTM. The Economic Market Clearing Price for the RTM shall be the LMP, unless the resource cannot change output level within the hour (i.e., the resource is not amenable to intra-hours real-time Dispatch instructions) or it is a System Resource. Economic Market Clearing Prices for the RTM for resources that cannot change output level within one Dispatch Interval and System Resources shall be the simple average of the relevant Dispatch Interval LMPs for each hour.
Electric Facility	An electric resource, including a Generating Unit, System Unit, or a Participating Load.

* * *

Electric Facility	An electric resource, including a Generating Unit, System Unit, or a Participating Load.

* * *

ELS Resource	Extremely Long-Start Resource
Embedded Control Area (ECA)	A Control Area that has direct interconnections exclusively with the CAISO Control Area, and no other Control Area.
Emissions Costs	The mitigation fees, excluding capital costs, assessed against a Generating Unit by a state or federal agency, including air quality districts, for exceeding applicable NOx emission limitations.
Emissions Eligible Generator	A Generator with a Generating Unit that is a BCR Eligible Resource.
EMS	Energy Management System

* * *

Energy Management System (EMS)	A computer control system used by electric utility dispatchers to monitor the real-time performance of the various elements of an electric system and to control Generation and transmission

	facilities.
	* * *
E-Tag	An electronic tag associated with an Interchange schedule in accordance with the requirements of WECC.
ETC	Existing Transmission Contracts
	* * *
Exceptional Dispatch	A Dispatch Instruction issued to avoid ~~an intervention in~~ a ~~m~~Market Interruption~~operations~~ for the purposes specified in Section 34.9. Energy from Exceptional Dispatches shall not set any Dispatch Interval LMP.
	* * *
Excess Cost Payments	The ~~P~~payments made by the CAISO for costs associated with Exceptional Dispatches for 1) emergency conditions, to avoid ~~m~~Market ~~intervention~~ Interruption and avoid an imminent ~~s~~System ~~e~~Emergency as provided in Section 11.5.6.1.1; 2) transmission-related modeling limitations as provided in Section 11.5.6.2.3; 3) Condition 2 RMR Units as provided in Section 11.5.6.3.2; and 4) ~~E~~emergency Energy as provided in Section 11.5.8.1.1.
~~**Existing Agreement**~~	~~An agreement entered into between a Qualifying Facility and a PTO before March 31, 1997 for the supply of Energy to the PTO.~~
Existing Contract Import Capability	The quantity of Available Import Capability reserved for Existing Contracts and Transmission Ownership Rights held by Load Serving Entities that serve Load within the CAISO Control Area under Step 3 of Section 40.4.6.2.
Existing High Voltage Facility	A High Voltage Transmission Facility of a Participating TO that was placed in service on or before the TAC Transition Date ~~defined~~ described in Section 4.2 of Schedule 3 of Appendix F.
Existing QF Contract	An agreement for the sale of capacity, Energy, and/or Ancillary Services by a Participating Generator to an electric utility from a Qualifying Facility that became effective on or prior to December 20, 1995 or, in the case of a Participating Generator employing landfill gas technology, on or prior to December 31, 1996.
Existing Rights	Th~~os~~e transmission service rights ~~defined in Section 16. of the CAISO Tariff~~ and obligations of non-Participating TOs under Existing Contracts, including all terms, conditions, and rates of the Existing

	Contracts, as they may change from time to time under the terms of the Existing Contracts.
Existing Transmission Contracts (ETC) or Existing Contracts	The contracts which grant transmission service rights in existence on the CAISO Operations Date (including any contracts entered into pursuant to such contracts) as may be amended in accordance with their terms or by agreement between the parties thereto from time to time.
Existing Zone	A Rregions formallyerly referred to as NP15, SP15, and or ZP26 prior to implementation of the CAISO LMP market design.

* * *

Expanded System Region	The System Region and Inter-Ttie sScheduling pPoints with adjacentinterconnected cControl aAreas.
Expected Energy	Integrated Energy in a Settlement Interval that includes scheduled Energy and Dispatch Instructions for Imbalance Energy as determined by RTM applications.

* * *

Extremely Long-Start Commitment Process (ELC Process)	The CAISO process for Unit Commitment for Extremely Long-Start Resources, as set forth in Section 31.7.
Extremely Long-Start Resource (ELS Resource)	A Generating Unit that has a Start-Up Time greater than 18 hours or a System Resource that is either: 1) a non-Resource-Specific System Resource with contractual limitations that require the eEnergy be transacted (i.e., committed) prior to the publishing time of the Day-Ahead Market results (1300 hours on the day before the Trading Day) or 2) a Resource-Specific System Resource that has a Start-Up Time greater than 18 hours.
~~**Facility Owner**~~	~~An entity owning transmission, Generation, or distribution facilities connected to the CAISO Controlled Grid.~~

* * *

Fast Start Unit	A Generating Units that haves a Start--Up Time less than two hours and can be committed in the RTUC and STUC.

* * *

~~**FERC Annual Charges**~~	~~Those charges assessed against a public utility by the FERC pursuant to 18 C.F.R. § 382.201 and any related statutes or regulations, as they may be amended from time to time.~~

* * *

FERC Annual Charges	Those charges assessed against a public utility by the FERC pursuant to 18 C.F.R. § 382.201 and any related statutes or regulations, as they may be amended from time to time.
	* * *
Financial Security	Any of the types of financial instruments listed in Section 12 that are posted by a Market Participant, CRR Holder or Candidate CRR Holder.
Financial Security Amount	The level of Financial Security posted in accordance with Section 12 by a Market Participant, Candidate CRR Holder or CRR Holder.
Firm Liquidated Damages Contract	A contract utilizing or consistent with Service Schedule C of the Western Systems Power Pool Agreement or the Firm Liquidated Damages product of the Edison Electric Institute pro forma agreement, or any other similar firm Energy contract that does not require the seller to source the Energy from a particular unit, and specifies a delivery point internal to the CAISO Control Area.
Fixed CRRs	Congestion Revenue Rights that are used in the running of an SFT to represent known encumbrances on the transmission system and which may include some or all of the following: previously allocated or awarded Monthly, Seasonal, Long Term, and Merchant Transmission CRRs, Existing Transmission Contracts, and Converted Rights.
FNM	Full Network Model
	* * *
Forecast Fee	The charge imposed on a Participating Intermittent Resource pursuant to the terms of Appendix ~~Q and CAISO Tariff Appendix~~ F, Schedule 4.
	* * *
Frequently Mitigated Unit	A Generating Unit ~~that agrees to be subject to the Frequently Mitigated Unit Option~~ that is eligible for a Bid Adder ~~under~~ pursuant to Section 39.8~~.1 and (i) has a Mitigation Frequency that is greater than eighty (80) percent in the previous 12 months; (ii) has run for more than 200 hours in the previous 12 months; and (iii) must not have a Resource Adequacy contract for its entire net dependable capacity or be subject to a capacity tariff construct by way of the unit's PGA.~~
Full Network Model (FNM)	A computer-based model that includes all CAISO Control Area

	transmission network (~~l~~Load and ~~g~~Generati~~on~~ng Unit) busses, transmission constraints, and ~~interface~~ Intertie busses between the CAISO Control Area and ~~adjacent~~ interconnected Control Areas. The FNM models the transmission facilities internal to the CAISO Control Area~~s~~ as elements of a looped network and models the CAISO Control Area~~s~~ ~~i~~Interties with ~~adjacent~~interconnected Control Areas in a radial fashion.
GADS	Generating Availability Data System
~~**GCC**~~	~~The single point of contact at the grid control center of Southern California Edison Company.~~
GDF	Generation Distribution Factor
Generated Bid	A post-market Clean Bid generated by the CAISO in accordance with the provisions of Section 40 or other applicable provisions of the CAISO Tariff when a Bid is not submitted by the Scheduling Coordinator and is required for a resource adequacy requirement, an Ancillary Services Award, a RUC Award or a Day-Ahead Schedule.
Generation	Energy delivered from a Generating Unit.
Generation Distribution Factor (GDF)	The Bid template component that indicates the proportions of how the Bid is distributed for the resources participating in Physical Scheduling Plants or System Units.
	* * *
Generating Facility Capacity	The net capacity of the Generating Facility and the aggregate capacity of the Generating Facility where it includes multiple energy production devices.
Generating Unit	An individual electric generator and its associated plant and apparatus whose electrical output is capable of being separately identified and metered or a Physical Scheduling Plant that, in either case, is: (a) ~~-~~located within the CAISO Control Area; (b) ~~-~~connected to the CAISO Controlled Grid, either directly or via interconnected transmission, or distribution facilities; and (c) that is capable of producing and delivering net Energy (Energy in excess of a generating station's internal power requirements).
~~**Generation**~~	~~Energy delivered from a Generating Unit.~~

	* * *
GMC	Grid Management Charge
	* * *
HASP	Hour-Ahead Scheduling Process
HASP Advisory Schedule	The non-binding output of the HASP as it pertains to the Real-Time Market.
HASP and RTM Congestion Credit	A credit provided to Scheduling Coordinators to offset any HASP and RTM Congestions Charges that would otherwise be applied to the valid and balanced portions of any ETC or TOR Self-Schedules in the HASP and the Real-Time Market as provided in Section 11.5.7.
	* * *
~~**HASP Advisory Schedule**~~	~~The non-binding output of the HASP as it pertains to the Real-Time Market.~~
HASP Inter-SC Trade Period	The period commencing at midnight (0000 hours) on the applicable Trading Day and ending at forty-five (45) minutes prior to the start of the applicable Operating Hour, during which time the CAISO will accept from Scheduling Coordinators Inter-SC Trades of Energy for the HASP, Inter-SC Trades of Ancillary Services, and Inter-SC Trades of IFM Load Uplift Obligations.
HASP Intertie LMP	The average of four (4) 15-minute interval LMPs over a Trading Hour.
	* * *
High Voltage Access Charge (HVAC)	The Access Charge applicable under Section 26.1 to recover the High Voltage Transmission Revenue Requirements of each Participating TO in a Transmission Access Charge Area.
	* * *
High Voltage Transmission Revenue Requirement (HVTRR)	The portion of a Participating TO's Transmission Revenue Requirement associated with and allocable to the Participating TO's High Voltage Transmission Facilities and Converted Rights associated with High Voltage Transmission Facilities that are under the CAISO Operational Control.
High Voltage Utility Specific Rate	A Participating TO's High Voltage Transmission Revenue Requirement divided by such Participating TO's forecasted Gross Load.
	* * *
~~**Hourly CAISO Demand**~~	~~The average of the instantaneous CAISO Demand integrated over a~~

	~~single clock hour, in MWh.~~
	* * *
~~**Hourly LAP Adjustment Price**~~	~~The price used for settlement of UIE as specified in Section 11.5.2.2.~~
~~**HASP Intertie LMP**~~	~~The average of four (4) 15-minute interval~~ Dispatch-Interval LMP~~s over a Trading Hour as determined by the RTUC process.~~
	* * *
~~**Hourly UIE Adjustment Amount**~~	~~The adjustment made in the settlement of Tier 2 UIE, as calculated in section 11.5.2.2, to account for Energy quantity cancellations in the denominator of the calculation of the Hourly Real-Time LAP Price.~~
HVAC	High Voltage Access Charge
HVTRR	High Voltage Transmission Revenue Requirement
Hydro Spill Generation	Hydro-electric Generation in existence prior to the CAISO Operations Date that: i) has no storage capacity and that, if backed down, would spill; ii) has exceeded its storage capacity and is spilling even though the generators are at full output; ~~or~~ iii) has inadequate storage capacity to prevent loss of hydro-electric Energy either immediately or during the forecast period, if hydro-electric Generation is reduced; or iv) has increased regulated water output to avoid an impending spill.
ICAOA	Interconnected Control Area Operating Agreement
~~**Independent Entity**~~	~~The entity, not affiliated with the CAISO or any Market Participant, that assists the CAISO in the determination of reference prices.~~
	* * *
IFM	Integrated Forward Market
IFM Bid Cost	The sum of a BCR Eligible Resource's IFM Start-Up Cost ~~(or the IFM Load Reduction Initiation Cost for Participating Loads)~~, IFM Minimum Load Cost ~~(or the IFM Minimum Curtailable Demand for Participating Loads)~~, IFM Pump Shut-Down Cost~~and Participating Load Shut-Down Cost~~, IFM Pumping Cost ~~and Participating Load Bid Cost~~, IFM Energy Bid Cost, and IFM AS Bid Cost.
~~**IFM Commitment Period**~~	~~A Commitment Period determined by the IFM.~~
~~**IFM Self-Commitment Period**~~	~~A Time Period determined by the CAISO pursuant to the rules in Section 11.8.1.1 for the purposes of deriving any Bid Cost Recovery amounts, related to the IFM.~~

* * *

IFM Commitment Period	A Commitment Period determined by the IFM.
IFM Congestion Charge	The Congestion Charge calculated by the CAISO for each Settlement Period of the IFM as the IFM MCC for Demand minus the IFM MCC for Supply.
IFM Congestion Credit	A credit provided to Scheduling Coordinators to offset any IFM Congestions Charges that would otherwise be applied to the valid and balanced portions of any ETC, TOR or Converted Rights Self-Schedule in the IFM as provided in Section 11.2.1.5.
IFM Congestion Fund	The funds the CAISO shall have available in each Settlement Period from which the CAISO will pay CRR Holders for the CRR(s) they hold in any Settlement Period, which shall determined as provided in Section 11.2.4.1.2.
IFM Load Uplift Obligation	The obligation of a Scheduling Coordinator to pay its share of unrecovered IFM Bid Costs paid to resources through Bid Cost Recovery.
IFM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules	A credit provided to Scheduling Coordinators pursuant to Section 17.3.3 to offset any IFM Marginal Cost of Losses that would otherwise be applied to the valid and balanced portions of any TOR Self-Schedule in the IFM as provided in Section 11.2.1.5.
IFM Marginal Losses Surplus	For each Settlement Period of the IFM the CAISO, the IFM Marginal Losses Surplus is the difference between: (1) the Net Hourly Energy Charge; and (2) the total IFM Congestion Charges which do not include Congestion Charges Credits collected by the CAISO as specified in Section 11.2.1.5.
IFM Marginal Losses Surplus Credit	The amount of money distributed to ~~excess marginal losses collected by the CAISO and returned to~~ Scheduling Coordinators in the allocation of IFM Marginal Losses Surplus in proportion to Scheduling Coordinator's ~~their~~ Measured Demand in accordance with Section 11.2.1.6.

* * *

IFM MSS Price	Either (1) The IFM LAP price for the MSS when the MSS scheduled internal Demand exceeds the MSS scheduled internal Supply; or (2) the weighted average of the IFM LMPs for all applicable PNodes within the relevant MSS when MSS scheduled internal Supply exceeds MSS scheduled internal Demand where weighting factors

	for computing the weighted average are based on the scheduled Supply at the corresponding PNodes.
IFM Pumping Bid Cost	For the applicable Settlement Interval, the Pumping Cost submitted to the CAISO in the IFM divided by the number of Settlement Intervals in a Trading Hour as further provided in Section 11.8.2.1.4.
IFM Self-Commitment Period	A Time Period determined by the CAISO pursuant to the rules in Section 11.8.1.1 for the purposes of deriving any Bid Cost Recovery amounts, related to the IFM.
~~**IFM Load Uplift Obligation**~~	~~The obligation of a Scheduling Coordinators to pay its share of unrecovered IFM Bid Costs paid to resources through Bid Cost Recovery.~~
IIE	Instructed Imbalance Energy
IIE Settlement Amount	The ~~P~~payment due a Scheduling Coordinator for positive Instructed Imbalance Energy or the ~~C~~charge assessed on a Scheduling Coordinator for negative Instructed Imbalance Energy, as calculated pursuant to Section 11.5.1.
	* * *
Import Capability Load Share	A Load Serving Entity's proportionate share of the forecasted Resource Adequacy Compliance Year coincident peak Demand for the CAISO Control Area relative to the total coincident peak Demand for the CAISO Control Area as determined by the California Energy Commission.
Import Capability Load Share Ratio	A Load Serving Entity's Import Capability Load Share divided by the sum of the Import Capability Load Shares of all Load Serving Entities with unfulfilled requests for Available Import Capability on a particular Intertie.
Import Capability Transfer Registration Process	The electronic means by which Load Serving Entities and Market Participants must register with the CAISO any bilateral transfers of Existing Contract Import Capability, Pre-RA Import Commitment Capability, or Remaining Import Capability.
~~**In-Service Date**~~	~~The date upon which the Interconnection Customer reasonably expects it will be ready to begin use of the Participating TO Interconnection Facilities to obtain back feed power.~~
	* * *
Independent Entity	The entity, not affiliated with the CAISO or any Market Participant, that assists the CAISO in the determination of reference prices.

Independent System Operator (ISO)	See California Independent System Operator Corporation.
Initial Settlement Statement Reissue	The reissue of an Initial Settlement Statement T+38BD by the CAISO on the fifty-first (51st) Business Day from the relevant Trading Day (T+51BD) if T+51BD falls on a calendar day that is on or before the day the Invoice or Payment Advice for the bill period containing the relevant Trading Day is scheduled to publish.
Initial Settlement Statement T+38BD	A Settlement Statement generated by the CAISO for the calculation of Settlements for a given Trading Day, which is published on the thirty-eight Business Day from the relevant Trading Day (T+38BD) and is prior to the Invoice or Payment Advice published for the relevant bill period.
~~**Interchange**~~	~~Imports and exports between the CAISO Control Area and other Control Areas.~~
In-Service Date	The date upon which the Interconnection Customer reasonably expects it will be ready to begin use of the Participating TO Interconnection Facilities to obtain back feed power.
	* * *
Integrated Forward Market (IFM)	The pricing run conducted by the CAISO using SCUC in the Day-Ahead Market, after the MPM-RRD process, which includes Unit Commitment, Ancillary Service procurement, Congestion Management and Energy procurement based on Supply and Demand Bids.
Interchange	Imports and exports between the CAISO Control Area and other Control Areas.
~~**Inter-SC Trade**~~	~~A trade between Scheduling Coordinators of Energy, or Ancillary Services, or IFM Load Uplift Obligation in accordance with the CAISO Tariff.~~
~~**Integrated Forward Market (IFM)**~~	~~The pricing run conducted by the CAISO using SCUC in the Day-Ahead Market, after the MPM-RRD process, which includes u~~Unit ~~c~~Commitment, ~~Ancillary Service procurement, Congestion Management and Energy procurement based on Supply and Demand Bids.~~
Interconnected Control Area Operating Agreement (ICAOA)	An agreement entered into between the CAISO and a Control Area Operator of a Control Area interconnected to the CAISO Control Area to govern operation of their interconnected electric systems, a *pro forma* version of which has been accepted by FERC as a CAISO

	rate schedule in 87 FERC ¶ 61,231 (1999).
	* * *
Interconnection Request	An Interconnection Customer's request, in the form of Part 1 to the Standard Large Generator Interconnection Procedures, in accordance with Section 25.1 ~~of the CAISO Tariff~~.
Interconnection Service	The service provided by the Participating TO and CAISO associated with interconnecting the Interconnection Customer's Generating Facility to the CAISO Controlled Grid and enabling it to receive electric ~~e~~Energy and capacity from the Generating Facility at the Point of Interconnection, pursuant to the terms of the Standard Large Generator Interconnection Agreement, the Participating TO's TO Tariff, and the CAISO Tariff.
	* * *
Inter-SC Trade	A trade between Scheduling Coordinators of Energy, Ancillary Services, or IFM Load Uplift Obligation in accordance with the CAISO Tariff.
Intertie	A Scheduling Point at a point of interconnection between the CAISO Control Area and an interconnected Control Area.
	* * *
Invoice	A document published as a result of an invoicing run pursuant to the CAISO Payments Calendar in which a Business Associate's current net financial obligation is a positive Settlement amount.
	* * *
ISO	Independent System Operator
LAP	Load Aggregation Point
	* * *
LDF	Load Distribution Factor
LFDP	Load Following Deviation Penalty
LGIA	Standard Large Generator Interconnection Agreement
LGIP	Standard Large Generator Interconnection Procedures
	* * *
LMP	Locational Marginal Price
LMPM	Local Market Power Mitigation
	* * *

Load	An end-use device of an End-Use Customer that consumes ~~p~~Power. Load should not be confused with Demand, which is the measure of ~~p~~Power that a Load receives or requires.
	* * *
Load Following Deviation Penalty (LFDP)	The penalty assignable to an MSS Operator for deviations from Expected Energy outside the MSS Deviation Band.
	* * *
Load Migration	The transfer of the responsibility to serve Load from one Load Serving Entity to another.
Load- Serving Entity (LSE)	Any entity (or the duly designated agent of such an entity, including, e.g. a Scheduling Coordinator), including a load aggregator or power marketer, that (a) (i) serves End Users within the CAISO Control Area and (ii) has been granted authority or has an obligation pursuant to California state or local law, regulation, or franchise to sell electric energy to End Users located within the CAISO Control Area; (b) is a federal power marketing authority that serves End Users; or (c) is the State Water Resources Development System commonly known as the State Water Project of the California Department of Water Resources.
Load Share Quantity	The product of Total Import Capability and Import Capability Load Share.
	* * *
~~**Load Zone**~~	~~A standard set of nodes located within the CAISO Control Area that has been designated by the CAISO to simplify the submission of Demand Bids and Settlement.~~
Local Capacity Area	Transmission constrained area as defined in the study referenced in Section 40.3.1 ~~of this CAISO Tariff~~.
	* * *
Local Capacity Technical Study	The study performed by the CAISO pursuant to Section 40.3.
	* * *
Local Market Power Mitigation (LMPM)	The mitigation of market power that could be exercised by an entity when it is needed for local reliability services due to its location on the grid and a lack of competitive supply at that location pursuant to Section 39.7.

* * *

Local Publicly Owned Electric Utilities	A municipality or municipal corporation operating as a public utility furnishing electric services, a municipal utility district furnishing electric services, a public utility district furnishing electric services, an irrigation district furnishing electric services, a state agency or subdivision furnishing electric services, a rural cooperative furnishing electric services, or a joint powers authority that includes one or more of these agencies and that owns Generation or transmission facilities, or furnishes electric services over its own or its members' electric Distribution System.
Local Regulatory Authority (LRA)	The state or local governmental authority, or the board of directors of an electric cooperative, responsible for the regulation or oversight of a utility.

* * *

~~**Location-Specific Settlement Interval LMP**~~	~~For a specific Location, the Energy-weighted average of the Dispatch Interval Locational Marginal Prices of the relevant Pricing Node for the Settlement Interval taking into account the resource's IIE excluding Energy for Regulation.~~

* * *

Long Start Unit	A Generating Unit that requires between five and 18 hours to Start-Up and synchronize to the grid.

* * *

~~**Loop Flow**~~	~~Energy flow over a transmission system caused by parties external to that system.~~
Low Voltage Access Charge (LVAC)	The Access Charge applicable under Section 26.1 to recover the Low Voltage Transmission Revenue Requirement of a Participating TO.

* * *

Low Voltage Transmission Revenue Requirement (LVTRR)	The portion of a Participating TO's TRR associated with and allocable to the Participating TO's Low Voltage Transmission Facilities and Converted Rights associated with Low Voltage Transmission Facilities that are under the CAISO Operational Control.
Low Voltage Wheeling Access Charge	The Wheeling Access Charge associated with the recovery of a Participating TO's Low Voltage Transmission Revenue Requirement in accordance with Section 26.1.

LRA	Local Regulatory Authority
LSE	Load-Serving Entity
LVAC	Low Voltage Access Charge
LVTRR	Low Voltage Transmission Revenue Requirement
Maintenance Outage	A period of time during which an Operator (i) takes its transmission facilities out of service for the purposes of carrying out routine planned maintenance, or for the purposes of new construction work or for work on de-energized and live transmission facilities (e.g., relay maintenance or insulator washing) and associated equipment; or (ii) limits the capability of or takes its Generating Unit or System Unit out of service for the purposes of carrying out routine planned maintenance, or for the purposes of new construction work.
	* * *
Marginal Cost of Losses (MCL)	The component of LMP at a P~~n~~Node that accounts for the marginal real power losses, as measured between that Node and a Reference Bus.
	* * *
Market Clearing Price	The price in a market at which supply equals ~~D~~demand. All ~~D~~demand prepared to pay at least this price has been satisfied and all supply prepared to operate at or below this price has been purchased.
	* * *
Market Interruption	The disruption of the normal operations of a CAISO Market.
Market Intervention	An action taken by the CAISO to override or augment the operation of a CAISO Market.
	*** * ***
Market Notice	An electronic notice issued by the CAISO that the CAISO posts on the CAISO Website and provides by e-mail to those registered with the CAISO to receive CAISO e-mail notices.
Market Participant	An entity, including a Scheduling Coordinator, who either: (1) participates in the CAISO Markets through the buying, selling, transmission, or distribution of Energy, Capacity, or Ancillary Services into, out of, or through the CAISO Controlled Grid; or (2) is a CRR Holder or Candidate CRR Holder ~~participates in the allocation of or auctions for CRRs or hold CRRs~~.

Market Power Mitigation – Reliability Requirement Determination (MPM-RRD)	The two-optimization run process conducted in both the Day-Ahead Market and the HASP that determines the need for the CAISO to employ market power mitigation measures or Dispatch RMR Units.
	* * *
Material Modification	~~Those~~ A modification~~s~~ that ha~~ves~~s a material impact on the cost or timing of any Interconnection Request or any other valid interconnection request with a later queue priority date.
	* * *
Maximum Import Capability	A quantity in MW determined by the CAISO for each Intertie into the CAISO Control Area to be deliverable to the CAISO Control Area based on CAISO study criteria.
Maximum Net Dependable Capacity (MNDC)	A term defined in and used in association with an RMR Contract.
~~**Maximum Demand Response Capacity**~~	~~Difference between the Base Load and the RTM Self-Schedule or DAM Self-Schedule.~~
Maximum Operating Limit (MOL_{max})	The lower of the maximum allowable output when the resource is operating or the upper bound of the ~~r~~Regulati~~on~~ng ~~r~~Range if the resource is providing ~~r~~Regulation service.
MCC	Marginal Cost of Congestion
MCL	Marginal Cost of Losses
MDT	Minimum Down Time
Measured Demand	The metered CAISO Demand plus Real-Time Interchange Export Schedules.
	* * *
Merchant Transmission CRRs	Incremental CRRs that are created by the addition of a Merchant Transmission Facility. Merchant Transmission CRRs are effective for thirty (30) years or for the pre-specified intended life of the facility, whichever is less.
Merchant Transmission Facility	A transmission facility or upgrade that is part of the CAISO Controlled Grid and whose costs are paid by a Project Sponsor that does not recover the cost of the transmission investment through the CAISO's Access Charge or WAC or other regulatory cost recovery mechanism.
	* * *
~~**Meter Data Request Format**~~	~~The format for requesting Meter Data from the CAISO which will be published by the CAISO on the CAISO Website or available on~~

	~~request.~~
~~**Meter Points**~~	~~Locations on the CAISO Controlled Grid at which the CAISO requires the collection of Meter Data by a metering device.~~
	* * *
~~**Measured Demand**~~	~~The metered CAISO Demand plus Real-Time Interchange export schedules.~~
	* * *
Metered Subsystem Agreement (MSS Agreement)	A negotiated agreement between the CAISO and an MSS Operator regarding the operation of an MSS in relation to the CAISO entered into pursuant to Section 4.9, which MSS Agreement will incorporate the provision of Section 4.9, unless otherwise agreed.
Metered Subsystem (MSS)	A geographically contiguous system located within a single zone which has been operating as an electric utility for a number of years prior to the CAISO Operations Date as a municipal utility, water district, irrigation district, ~~S~~state agency or ~~F~~federal power ~~administration~~ marketing authority subsumed within the CAISO Control Area and encompassed by CAISO certified revenue quality meters at each interface point with the CAISO Controlled Grid and CAISO certified revenue quality meters on all Generating Units or, if aggregated, each individual resource and Participating Load internal to the system, which is operated in accordance with a MSS Agreement described in Section 4.9.1.
	* * *
Meter Points	Locations on the CAISO Controlled Grid at which the CAISO requires the collection of Meter Data by a metering device.
Meter Service Agreement for CAISO Metered Entities (MSA CAISOME)	An agreement entered into between the CAISO and a CAISO Metered Entity consistent with the provisions of Section 10, a *pro forma* version of which is set forth in Appendix B.6.
Meter Service Agreement for Scheduling Coordinators (MSA SC)	An agreement entered into between the CAISO and a Scheduling Coordinator consistent with the provisions of Section 10, a *pro forma* version of which is set forth in Appendix B.7.
	* * *
~~**Minimum Curtailable Demand Bid**~~	~~The dollar per MWh representing the minimum payment per hour of curtailment at the highest MS level stated in a Participating Load's Energy Bid Curve.~~

Minimum Load	The minimum sustained ~~O~~operating ~~L~~level of a resource at which it can operate at a continuous sustained level.
	* * *
Minimum Load Costs	The costs a Generating Unit or a Participating Load incurs operating at ~~m~~Minimum ~~l~~Load.
	* * *
~~**Minimum Load Energy Revenue**~~	~~The product of Integrated Forward Market Locational Marginal Price or Real-Time Locational Marginal Price and Minimum Load MW quantity committed by the CAISO.~~
Minimum Operating Limit (MOL_{mln})	The greater of the ~~m~~Minimum ~~l~~Load or the lower bound of the ~~r~~Regulati~~o~~ng ~~r~~Range if the resource offers ~~r~~Regulation service.
	* * *
MNDC	Maximum Net Dependable Capacity
	* * *
MOL_{max}	Maximum Operating Limit
MOL_{mln}	Minimum Operating Limit
Monthly Available CRR Capacity	The upper limit of network capacity that will be used in the monthly CRR Allocation and monthly CRR Auctions calculated by using OTC adjusted for Outages, derates, and Transmission Ownership Rights for the relevant month in accordance with Section 36.4.
	* * *
~~**Monthly Available CRR Capacity**~~	~~The upper limit of network capacity that will be used in the monthly CRR Allocation and monthly CRR Auctions calculated by using OTC adjusted for outages, derates, and Transmission Ownership Rights for the relevant month in accordance with Section 36.4.~~
Monthly CRR Eligible Quantity	The MW quantity of CRRs ~~an LSE~~ a CRR Holder or Candidate CRR Holder is eligible to nominate for the relevant month in a monthly CRR Allocation.~~.~~
Monthly CRR Load Metric	The MW level of Load on a~~n~~ Load Serving Entity's load duration curve that is exceeded only 0.5% of the time in the relevant month based on ~~Load~~ Demand ~~f~~Forecast data.
~~**Monthly Peak Load**~~	~~The maximum hourly Demand on a Participating TO's transmission system for a calendar month, multiplied by the Operating Reserve Multiplier.~~
MORC	Minimum Operating Reliability Criteria

MPM-RRD	Market Power Mitigation-Reliability Requirement Determination
MSA CAISOME	Metered Service Agreement for CAISO Metered Entities
MSA SC	Metered Service Agreement for Scheduling Coordinators
MSC	Market Surveillance Committee
MSS	Metered Subsystem
MSS Aggregation	Either (1) a Metered Subsystem or (2) a collection of Metered Subsystems represented by a single MSS Aggregator.
MSS Aggregation Net Measured Demand	The sum of the net metered CAISO Demand from all the Net-Load MSSs in the MSS Aggregation plus any exports out of the CAISO Control Area from the MSS Aggregation. Net metered CAISO Demand of a MSS is defined as the algebraic difference between the CAISO Demand and Generation internal to the MSS.
MSS Aggregation Net Non-ETC/TOR Measured Demand	The sum of the net metered non-ETC/TOR CAISO Demand from all of the non-ETC/TOR Net-Load MSSs in the MSS Aggregation plus any non-ETC/TOR exports out of the CAISO Control Area from the MSS Aggregation. Net metered non-ETC/TOR CAISO Demand of an MSS is defined as the algebraic difference between the non-ETC/TOR CAISO Demand and the non-ETC/TOR Generation within the MSS.
MSS Aggregator	An entity that has executed an agreement with the CAISO that enables it to represent individual MSS Operators in the CAISO Markets on an aggregated basis, which agreement has been accepted by FERC.
MSS Aggregator CRR Entity Agent Agreement	An agreement between the CAISO and an MSS Aggregator by which the MSS Aggregator commits to act as agent for aggregation of MSS Operators in the CRR Allocation, CRR Auction, and Secondary Registration System process, a *pro forma* version of which is set forth in Appendix B.12.
MSS Demand	CAISO Demand specified in an MSS ~~a~~Agreement as being within the MSS.
MSS Deviation Band	The amount by which a Load following MSS Operator can deviate from Expected Energy without incurring a Load Following Deviation Penalty, equal to three percent (3%) of an MSS Operator's metered Demand in the MSS and exports from the MSS, adjusted for Forced Outages and any CAISO directed firm Load Shedding for the MSS's portfolio as a whole.

* * *

MSS Supply	Supply specified in an MSS ~~a~~Agreement as supplying an MSS.
	* * *
Negative Operating Reserve Obligation Credit Adjustment Factor (NOROCAF)	The adjustment factor specified in Section 11.10.5.
~~**Negotiated Rate**~~	~~The rate for a Default Energy Bid arrived at under the Negotiated Rate Option.~~
	* * *
NERC	The North American Electric Reliability ~~Council~~Corporation or its successor.
NERC Generating Availability Data System (GADS)	The NERC standard for determination of generation resource net dependable capacity.
Net Hourly Energy Charge	Total Charges to all Demand minus total Payments to all Supply both based on the product of MWh amounts specified in all Day-Ahead Schedules and the relevant LMPs at the applicable P~~n~~Nodes or Aggregated Pricing Node.
Net IFM Bid Cost Uplift	The amount of IFM-related Bid Costs resulting from the sequential netting in Section 11.8.6.2 and allocated to Scheduling Coordinators in accordance with Section- 11.8.6.4.
Net-Load MSS	An MSS with positive net metered CAISO Demand of the MSS within the MSS Aggregation.
Net Negative CAISO Demand Deviation ~~CAISO Demand~~	The difference between metered CAISO Demand and the total CAISO Demand scheduled in the Day-Ahead Schedule, if positive.
	* * *
Net Negative Uninstructed Deviation	The real-time change in Generation or Demand associated with underscheduled Demand (i.e., Demand that appears unscheduled in Real-Time) and overscheduled Generation (i.e., Generation that is scheduled in the DAM and does not appear in Real-Time), which are netted for each Settlement Interval, apply to a Scheduling Coordinator~~'~~'s entire portfolio, and include Demand, Generation, imports and exports.
Net Procurement	The awarded amount (MWs) of a given Ancillary Service in the Day-Ahead, HASP, and Real-Time Markets, minus, (ii) the- amount of that Ancillary Service associated with payments rescinded pursuant to any of the provisions of Section 8.10.2~~ of the CAISO Tariff~~.

* * *

Net RTM Bid Cost Uplift	The amount of RTM-related Bid Costs resulting from the sequential netting in Section 11.8.6.2 and allocated to Scheduling Coordinators in accordance with Section -11.8.6.6.
Net RUC Bid Cost Uplift	The amount of RUC-related Bid Costs resulting from the sequential netting in Section 11.8.6.2 and allocated to Scheduling Coordinators in accordance with Section- 11.8.6.5.
Net Scheduled QF	A Qualifying Facility identified in a QF PGA operated as a single unit such that the Energy scheduled with the CAISO is the net value of the aggregate electrical net output of the Qualifying Facility and the Self-provided Load.
Network Upgrades	The additions, modifications, and upgrades to the CAISO Controlled Grid required at or beyond the Point of Interconnection to accommodate the interconnection of the Large Generating Facility to the CAISO Controlled Grid. Network Upgrades shall consist of Delivery Network Upgrades and Reliability Network Upgrades.
New High Voltage Facility	A High Voltage Transmission Facility of a Participating TO that is placed in service after the beginning of the TAC ~~t~~Transition ~~p~~Period described in Section 4 of Schedule 3 of Appendix F, or a capital addition made and placed in service after the beginning of the TAC ~~t~~Transition ~~p~~Period described in Section 4.2 of Schedule 3 of Appendix F to an Existing High Voltage Facility.

* * *

New Responsibility~~ility~~le Utility	A Responsible Utility that executes a TCA after April 1, 1998.
Node	A point in the Full Network Model representing a physical location within the CAISO Control Area or the CAISO Controlled Grid, which includes the Load and Generati~~on~~ng Unit busses in the CAISO Control Area and at the ~~Interface~~ Intertie busses between the CAISO Control Area and ~~adjacent~~ interconnected Control Areas.
Nomogram	A set of operating or scheduling rules which are used to ensure that simultaneous operating limits are respected, in order to meet NERC and WECC Reliability Standards and operating criteria.
Non-CPUC Load Serving Entity	Any entity serving retail Demand in the CAISO Control Area not within the jurisdiction of the CPUC, including (i) a local publicly owned electric utility under section 9604 of the ~~PUC~~ California Public Utilities Code and (ii) any ~~F~~federal entities, including but not limited to ~~F~~federal ~~P~~power ~~M~~marketing ~~A~~authorities, that serve retail

	Load.
Non-Dispatchable Use Limited Resource	A Use- -Limited Resource that cannot be increased or curtailed at the direction of the CAISO in the Real-tTime Dispatch of the CAISO Control Area to Supply or consume Energy, such as certain Qualifying Facilities.
	* * *
Non-Dynamic Resource-Specific System Resource	A Non-Dynamic System Resource that is ~~physically connected to a~~ specific ~~an actual~~ generation resource outside the CAISO Control Area.
Non-Dynamic System Resource	A System Resource that is not capable of submitting a Dynamic Schedule, or for which a Dynamic Schedule has not be submitted, which may be a Non-Dynamic Resource-Specific System Resource.
	* * *
~~**Non-Participating Generator**~~	~~A Generator that is not a Participating Generator.~~
Non-Participating TO	A TO that is not a party to the Transmission Control Agreement or, for the purposes of Section 16.1, ~~of the CAISO Tariff~~ the holder of transmission service rights under an Existing Contract that is not a Participating TO.
Non-Spinning Reserve	The portion of ~~off-line~~ generating capacity that is capable of being synchronized and Ramping to a specified load in ten minutes (or ~~l~~Load that is capable of being interrupted in ten minutes) and that is capable of running (or being interrupted) ~~for at least two hours~~.
Non-Spinning Reserve Cost	The revenues paid to the suppliers of the total awarded Non-Spinning Reserve capacity in the Day-Ahead Market, HASP, and Real-Time Market, minus, (ii) the payments rescinded due to either the failure to conform to CAISO Dispatch Instructions or the unavailability of the Non-Spinning Reserves under Section 8.10.8 ~~of the Tariff~~.
	* * *
No Pay	The rescission of a payment made for provision of Spinning Reserve and/or Non-Spinning Reserve when, subsequent to the AS Award for such Ancillary Service and payment, the Ancillary Service becomes Undispatchable Capacity, Unavailable Capacity, Undelivered Capacity, or, in certain circumstances, unsynchronized capacity.

NOROCAF	Negative Operating Reserve Obligation Credit Adjustment Factor
	* * *
OASIS	Open Access Same-Time Information System
OCALSE	Out-of-Control Area Load Serving Entity
	* * *
Offsetting CRR	One of the pair of new equal and opposite CRRs created and allocated by the CAISO to reflect Load Migration between two LSEs pursuant to the provisions in Section 36.8.5 of this Appendix, which is allocated to the Load losing LSE and is opposite in direction to the corresponding CRR previously allocated to that LSE and is denominated in a MW quantity that reflects the net amount of Load Migration between the two LSEs.
	* * *
Open Access Same-Time Information System (OASIS)	The electronic posting system for transmission access data that the CAISO maintains on the CAISO Website that allows all Market Participants to view the data simultaneously.
	* * *
Operating Day	The day when the Real-Time Market runs and Energy is supplied to Load.
	* * *
Operating Reserve	The combination of Spinning and Non-Spinning Reserve required to meet WECC and NERC Reliability Standards and requirements for reliable operation of the CAISO Control Area.
	* * *
Operating Reserve Ramp Rate	A single number included in Ancillary Service Bids and Submissions to Self-Provide Ancillary Services for Spinning Reserves and Non-Spinning Reserves that represent the ~~r~~Ramp ~~r~~Rate of a resource used in the procurement of Operating Reserve capacity.
	* * *
Operational Ramp Rates	A staircase function of up to 4 segments (in addition to ~~r~~Ramp ~~r~~Rate segments needed for modeling Forbidden Operating Regions). Operational Ramp Rates are submitted with Energy Bid data.
	* * *
Operational Adjustment	The difference between the Energy scheduled in the Control Area

	check-out process for Non-Dynamic System Resources and the sum of Dispatch Interval IIE.
	* * *
~~**OPF (Optimal Power Flow)**~~	~~A computer optimization program which uses a set of control variables (which may include active power and/or reactive power controls) to determine a steady-state operating condition for the transmission grid for which a set of system operating Constraints (which may include active power and/or reactive power constraints) are satisfied and an objective function (e.g. total cost or shift of schedules) is minimized.~~
	* * *
Out-of-Control Area Load Serving Entity (OCALSE)	An entity serving end-users located outside the CAISO Control Area and that has been granted authority or has an obligation pursuant to Federal, State or local law, or under contracts to provide electric service to such end-users located outside the CAISO Control Area.
Overgeneration	A condition that occurs when total ~~Generation~~ Supply exceeds total Demand in the CAISO Control Area.
Partial Resource Adequacy Resource	A Resource Adequacy Resource that has capacity that is designated by its Scheduling Coordinator as Resource Adequacy Capacity in its monthly or annual Resource Adequacy Plan and has a related availability obligation to the CAISO, but also has capacity that is not committed to meet a r~~R~~esource a~~A~~dequacy obligation in the CAISO Control Area.
	* * *
~~**Participating Buyer**~~	~~A Direct Access End-User or a wholesale buyer of Energy or Ancillary Services through Scheduling Coordinators.~~
Participating Generator	A Generator or other seller of Energy or Ancillary Services through a Scheduling Coordinator over the CAISO Controlled Grid from a Generating Unit with a rated capacity of 1 MW or greater, or from a Generating Unit providing Ancillary Services and/or submitting Energy Bids through an aggregation arrangement approved by the CAISO, which has undertaken to be bound by the terms of the CAISO Tariff, in the case of a Generator through a Participating Generator Agreement.
Participating Generator	An agreement between the CAISO and a Participating Generator, a

Agreement (PGA)	*pro forma* version of which is set forth in Appendix B.2.
	* * *
Participating Load	An entity, including an entity with Pumping Load, providing Curtailable Demand, which has undertaken in writing by execution of a Participating Load Agreement to comply with all applicable provisions of the CAISO Tariff, as they may be amended from time to time.
Participating Load Agreement (PLA)	An agreement between the CAISO and a Participating Load, a *pro forma* version of which is set forth in Appendix B.4.
~~**Participating Seller or Participating Generator**~~	~~A Generator or other seller of Energy or Ancillary Services through a Scheduling Coordinator over the CAISO Controlled Grid from a Generating Unit with a rated capacity of 1 MW or greater, or from a Generating Unit providing Ancillary Services and/or submitting Energy Bids through an aggregation arrangement approved by the CAISO, which has undertaken to be bound by the terms of the CAISO Tariff, in the case of a Generator through a Participating Generator Agreement.~~
Participating TO (PTO)	A party to the Transmission Control Agreement whose application under Section 2.2 of the Transmission Control Agreement has been accepted and who has placed its transmission assets and Entitlements under the CAISO's Operational Control in accordance with the Transmission Control Agreement. A Participating TO may be an Original Participating TO or a New Participating TO.
Participating TO Service Territory	The area in which an IOU, a Local Public Owned Electric Utility, or federal power marketing ~~administration~~ authority that has turned over its transmission facilities and/or Entitlements to CAISO Operational Control is obligated to provide electric service to Load. A PTO Service Territory may be comprised of the Service Areas of more than one Local Publicly Owned Electric Utility, if they are operating under an agreement with the CAISO for aggregation of their MSS and their MSS Operator is designated as the Participating TO.
	* * *
Payment Advice	A document published as a result of an invoicing run pursuant to the CAISO Payments Calendars in which a Business Associate's current net financial obligation is a negative Settlement Amount.

~~**Payment**~~	~~A sum of money paid by the CAISO.~~
	* * *
PGA	Participating Generator Agreement
~~**Performance-Based Ratemaking (PBR)**~~	~~Regulated rates based in whole or in part on the achievement of specified performance objectives.~~
	* * *
PLA	Participating Load Agreement
	* * *
PMS	Power Management System
PNode	Pricing Node
PNP	Priority Nomination Process
	* * *
POD	Point(s) of Delivery
Point of Change of Ownership	The point, as set forth in Part A to the Standard Large Generator Interconnection Agreement, where the Interconnection Customer's Interconnection Facilities connect to the Participating TO's Interconnection Facilities.
Point of Demarcation	For a Net Scheduled QF, the point (1) where the electrical conductors from the Net Scheduled QF contact an electric utility system or the CAISO Controlled Grid; or (2) if dedicated utility distribution facilities are employed, where the dedicated facilities contact the electric utility system or the CAISO Controlled Grid.
	* * *
Point(s) of Delivery or Withdrawal (POD or Point(s) of Withdrawal)	Point(s) within the CAISO Control Area where Energy and Ancillary Services are made available to a receiving party under this CAISO Tariff.
Point(s) of Receipt or Injection (POR or Point(s) or Injection)	Point(s) within the CAISO Control Area where Energy and Ancillary Services are made available by a delivering party under this CAISO Tariff.
	* * *
POR	Point(s) of Receipt
	* * *
Power Transfer Distribution Factor (PTDF)	The percentage of a power transfer that flows on a transmission facility as a result of the injection of power at a specific bus and the

	withdrawal of power at another bus or a Reference Bus.
	* * *
Pre-RA Import Commitment	Any power purchase agreement, ownership interest, or other commercial arrangement entered into on or before March 10, 2006, by a Load Serving Entity serving Load in the CAISO Control Area for the procurement of Energy or capacity from a resource or resources located outside the CAISO Control Area. The Pre-RA Import Commitment shall be deemed to terminate upon the expiration of the initial term of the Pre-RA Import Commitment, notwithstanding any "evergreen" or other renewal provision exercisable at the option of the Load Serving Entity.
Pre-RA Import Commitment Capability	The quantity in MW assigned to a particular Intertie into the CAISO Control Area based on a Pre-RA Import Commitment.
	* * *
Pricing Node (P~~n~~Node)	A single network Node or subset of network Nodes where a physical injection or withdrawal is modeled and for which a Locational ~~Market~~ Marginal Price~~ing~~ is calculated and used for financial settlements.
	* * *
Project Sponsor	A Market Participant or group of Market Participants or a Participating TO that proposes the construction of a transmission addition or upgrade in accordance with Section 24~~ of the CAISO Tariff~~.
Proposal for Installation	A written proposal submitted by a~~-~~ CAISO Metered Entity to the CAISO describing a proposal for the installation of additional Metering Facilities.
Proxy Cost	The cost basis of a generating resource for which the operating cost is calculated as an approximation of the actual operating cost pursuant to Section 30.4(1).
PSS	Power System Stabilizers
PTDF	Power Transfer Distribution Factor
PTO	Participating Transmission Owner
PTO Service Territory	The area in which an IOU, a Local Public Owned Electric Utility, or federal power marketing ~~administration~~ authority that has turned over its transmission facilities and/or Entitlements to CAISO Operational Control is obligated to provide~~d~~ electric service to Load. A PTO Service Territory may be comprised of the Service Areas of

	more than one Local Publicly Owned Electric Utility, if they are operating under an agreement with the CAISO for aggregation of their MSS and their MSS Operator is designated as the Participating TO.
Public Utility Regulatory Policies Act (PURPA)	The Public Utility Regulatory Policies Act of 1978, incorporated in relevant part into the Federal Power Act.
Pumped-Storage Hydro Unit	A hydroelectric dam with the capability to produce electricity and the ability to pump water between reservoirs at different elevations to store such water for the production of electricity.
Pumping Cost	The hourly cost of pumping, expressed in $/hour, submitted by a Participating Load.~~Bid component that indicates the price at which the Pumping Load is offering to cease to pump.~~
	* * *
~~**Pumped-Storage Hydro Units**~~	~~A Hhydroelectric dams with the capability to produce electricity by and the ability to pumping water between reservoirs at different elevations to store such water for the production of electicity.~~
Pump Ramping Conversion Factor	A Master File entry submitted by Scheduling Coordinators that allows the Scheduling Coordinator to indicate the ratio of Energy expended to pump water into storage that can be used to produce Energy. A zero percent Pump Ramping Conversion Factor implies that no amount of Energy production capability is produced as a result of pumping water and the CAISO shall not use such unavailable Energy in its CAISO Markets optimization. A hundred percent Pump Ramping Conversion Factor indicates all the Energy expended to pump water is available for Generation and the CAISO shall use only ~~that~~the available portions in its CAISO Markets optimization. The Pump Ramping Conversion Factor submitted in the Master File need not be based on physical characteristics of the resource and is adjustable by the Scheduling Coordinator.
Pump Shut-Down Costs	A Bid Component submitted by Scheduling Coordinators for resources that are registered as a ~~Pumped Storage Hydro Unit~~ Participating Load that indicates the $/MWh that the Scheduling Coordinator is willing to be paid to not pump.
PURPA	Public Utility Regulatory Policies Act
QF	Qualifying Facility
QF PGA	Qualifying Facility Participating Generator Agreement
Qualified OCALSE	An OCALSE which the CAISO has certified has met all the

	requirements for eligibility for CRR Allocation in accordance with Section 39.
	* * *
Qualifying Facility (QF)	A qualifying co-generation facility or small power production facility ~~recognized by FERC~~, as defined in the Code of Federal Regulations, Title 18, Part 292 (18 C.F.R § 292).
Qualifying Facility Participating Generator Agreement (QF PGA)	An agreement between the CAISO and a Generator with a QF Generating Unit, a *pro forma* version of which is set forth in Appendix B.3.
	* * *
~~**RA-PIRP**~~	~~A Participating Intermittent Resource whose output is being used to satisfy a Resource Adequacy Requirement.~~
~~**Ramp Rate**~~	~~The Bid component that indicates the operational ramp rate, Regulating ramp rate, and Operating Reserve ramp rate for a Generating Unit, and the Load drop rate and Load pick-up rate for Participating Loads, for which the Scheduling Coordinator is submitting Energy Bids or Ancillary Services Bids.~~
Ramping	Changing the loading level of a Generating Unit in a constant manner over a fixed time (e.g., ~~r~~Ramping up or ~~r~~Ramping down). Such changes may be directed by a computer or manual control.
	* * *
Ramp Rate	The Bid component that indicates the operational Ramp Rate, Regulation Ramp Rate, and Operating Reserve Ramp Rate for a Generating Unit, and the Load drop rate and Load pick-up rate for Participating Loads, for which the Scheduling Coordinator is submitting Energy Bids or Ancillary Services Bids.
RAS	Remedial Action Schemes
~~**Reactive Power Control**~~	~~Generation or other equipment needed to maintain acceptable voltage levels on the CAISO Controlled Grid and to meet reactive capacity requirements at points of interconnection on the CAISO Controlled Grid.~~
	* * *
Real-Time Congestion Offset	A component of the neutrality adjustments as provided in Section 11.5.4.2 to account for the non-assessment Marginal Cost of Congestion to Measured Demand for ETCs and TOR Self-Schedules in ~~The Real-Time Congestion Fund net of~~ the Real-Time

	~~Congestion Credit calculated~~ as provided in Section 11.5.7.
Real-Time Contingency Dispatch (RTCD)	The mode of the Real-Time Dispatch that will be invoked when a transmission or generation ~~c~~Contingency occurs and will include all Contingency Only Operating Reserves in the optimization.
	* * *
Real-Time Economic Dispatch (RTED)	The mode of the Real-Time Dispatch that will optimally dispatch resources based on their Energy ~~b~~Bids, excluding Contingency Only Operating Reserves except when needed to avoid an imminent ~~s~~System ~~e~~Emergency.
~~**Real-Time Export**~~	~~Energy at Scheduling Points deemed deliverable outside of the CAISO Control Area.~~
Real-Time Interchange Export Schedule	~~An agreement~~ A final agreed-upon schedule of Energy to be ~~to~~ transferred ~~energy~~ from the CAISO Control Area to another ~~interconnected c~~Control ~~a~~Area ~~at a Scheduling Point~~ based on agreed-upon size (megawatts), start and end time, beginning and ending ramp times and rate, and type required for delivery and receipt of power and Energy between the source and sink ~~c~~Control ~~a~~Areas involved in the transaction.
~~**Real-Time Market (RTM)**~~	~~The spot market conducted by the CAISO using SCUC and SCED in the Real-Time, after the HASP is completed, which includes the RTUC, STUC and the RTD for the purpose of u~~Unit ~~c~~Commitment, ~~Ancillary Service procurement, Congestion Management and Energy procurement based on Supply Bids and CAISO Forecast of CAISO Demand.~~
	* * *
Real-Time Marginal Cost of Losses Offset	A component of the neutrality adjustments as provided in Section 11.5.4.2 to account for the non-assessment of Marginal Cost of Losses Charges to Measured Demand for TOR Self-Schedules eligible for the Real-Time Marginal Cost of Losses Credit as provided in Section 11.5.7.2.
Real-Time Market (RTM)	The spot market conducted by the CAISO using SCUC and SCED in the Real-Time, after the HASP is completed, which includes the RTUC, STUC and the RTD for the purpose of Unit Commitment, Ancillary Service procurement, Congestion Management and Energy procurement based on Supply Bids and CAISO Forecast of CAISO Demand.

Real-Time Market Pumping Bid Cost	For the applicable Settlement Interval, the Pumping Cost submitted to the CAISO in the HASP or RTM divided by the number of Settlement Intervals in a Trading Hour, as further provided in Section 11.8.4.1.4.
Real-Time Settlement Interval MSS Price	1) The Real-Time LAP price for the MSS when the MSS internal metered Demand exceeds the MSS internal measured Generation; or 2) the weighted average of the Real-Time LMPs for all applicable PNodes within the relevant MSS when MSS internal measured Generation exceeds MSS internal Measured Demand where weighting factors for computing the weighted average are based on the measured Energy of all Generation at the corresponding PNodes.
Real-Time Unit Commitment (RTUC)	An application of the RTM that runs every 15 minutes and commits Fast and Medium-Start Units using the SCUC to adjust from Day-Ahead Schedules and HASP Intertie Schedules.
Recalculation Settlement Statement	The reissue of an Initial Settlement Statement T+38BD by the CAISO on the fifty-first (51st) Business Day from the relevant Trading Day (T+51BD) if T+51BD falls on a calendar day that is after the day the Invoice or Payment Advice for the bill period containing the relevant Trading Day is scheduled to publish.
Recalculation Settlement Statement T+76BD	The reissue of an Initial Settlement Statement Reissue or the Recalculation Settlement Statement by the CAISO on the seventy-sixth (76th) Business Day from the relevant Trading Day (T+76BD).
	* * *
Registered Cost	The cost basis of a generating resource for which the operating cost is determined from registered values pursuant to Section 30.4(2).
	* * *
Regulating Range	The operating level range within which a generating resource may provide Regulation.
Regulation	The service provided either by Generating Units certified by the CAISO as equipped and capable of responding to the CAISO's direct digital control (AGC) signals, or by System Resources that have been certified by the CAISO as capable of delivering such service to the CAISO Control Area, in an upward and downward direction to match, on a ~~r~~Real-~~t~~Time basis, Demand and resources, consistent with established NERC and WECC Reliability Standards

	and operating criteria. Regulation is used to control the ~~p~~Power output of electric generators within a prescribed area in response to a change in system frequency, tie line loading, or the relation of these to each other so as to maintain the target system frequency and/or the established ~~i~~Interchange with other Control ~~a~~Areas within the predetermined Regulation ~~l~~Limits. Regulation includes both the increase of output by a Generating Unit or System Resource (~~"~~Regulation Up~~"~~) and the decrease in output by a Generating Unit or System Resource (~~"~~Regulation Down~~"~~). Regulation Up and Regulation Down are distinct capacity products, with separately stated requirements and ASMPs in each Settlement Period.
Regulation Down or Regulation Down Reserve	Regulation reserve provided by a resource that can decrease its actual operating level in response to a direct electronic (AGC) signal from the CAISO to maintain standard frequency in accordance with established ~~r~~Reliability ~~c~~Criteria.
Regulation Down Reserve Cost	The revenues paid to the suppliers of the total awarded Regulation Down Reserve capacity in the Day-Ahead, HASP, and Real-Time Markets for the Settlement Period, minus the payments rescinded in the Settlement Period due to the unavailability of the Regulation Down under any of the provisions of Section 8.10.8 ~~of the Tariff~~.
~~**Regulation Energy Payment Adjustment**~~ **Regulation Limits**	~~The additional value of regulating Energy.~~ The MW limits, up and down, set by a Generator for a Generating Unit's operation on Automatic Generation Control.
Regulation Up or Regulation Up Reserve	Regulation provided by a resource that can increase its actual operating level in response to a direct electronic (AGC) signal from the CAISO to maintain standard frequency in accordance with established ~~r~~Reliability ~~c~~Criteria.
	* * *
Regulatory Must-Run Generation	Hydro Spill Generation and Generation which is required to run by applicable ~~F~~federal or California laws, regulations, or other governing jurisdictional authority. Such requirements include but are not limited to hydrological flow requirements, environmental requirements, such as minimum fish releases, fish pulse releases and water quality requirements, irrigation and water supply requirements of solid waste Generation, or other Generation contracts specified or designated by the jurisdictional regulatory

	authority as it existed on December 20, 1995, or as revised by ~~F~~federal or California law or Local Regulatory Authority.
Regulatory Must-Take Generation	Those Generation resources identified by CPUC, or a Local Regulatory Authority, the operation of which is not subject to competition. These resources will be scheduled by the relevant Scheduling Coordinator directly with the CAISO on a must-take basis. Regulatory Must-Take Generation includes Generation from ~~q~~Qualifying ~~f~~Facility Generating Units subject to a mandatory purchase obligation as defined by federal law, nuclear units and pre-existing power purchase contracts with minimum energy take requirements.
Reliability Coordinator	The entity designated by WECC as responsible for ~~Security Monitoring~~ reliability coordination in Real-Time ~~for the California Area~~for the area defined by WECC.
	* * *
Reliability Must-Run Charge (RMR Charge)	The sum payable by a Responsible Utility to the CAISO pursuant to Section 41 for the costs, net of all applicable credits, incurred under the Reliability Must-Run Contract.
Reliability Must-Run Contract (RMR Contract)	A Must-Run Service Agreement between the owner of a Reliability Must-Run Unit and the CAISO.
Reliability Must-Run Generation (RMR Generation)	Generation that the CAISO determines is required to be on line to meet Applicable Reliability Criteria requirements. This includes i) Generation constrained on line to meet NERC and WECC reliability criteria for interconnected systems operation; ii) Generation needed to meet Load demand in constrained areas; and iii) Generation needed to be operated to provide voltage or security support of the CAISO or a local area.
Reliability Must-Run Unit (RMR Unit)	A Participating Generator which is the subject of a Reliability Must-Run Contract.
	* * *
Reliability Standard	A requirement approved by FERC under Section 215 of the Federal Power Act to provide for reliable operation of the bulk power system. The term includes requirements for the operation of existing bulk power system facilities, including cyber security protection, and the design of planned additions or modifications to such facilities to the extent necessary for reliable operation of the bulk power system; but

	the term does not include any requirement to enlarge such facilities or to construct new transmission capacity or generation capacity.
Remaining Import Capability	The quantity in MW of Total Import Capability assigned to a Load Serving Entity up to its Load Share Quantity after the assignment of Existing Contract Import Capability and Pre-RA Import Commitment. Capability.
	* * *
ReRrate Energy	Decremental IIE subsequent to a derate of a Generating Unit's PMax.
Reserve Margin	The amount of Resource Adequacy Capacity that a Scheduling Coordinator is required to maintain in accordance with Sections 40.
	* * *
Residual Imbalance Energy	The Instructed Imbalance Energy at the start or end of a Trading Hour and outside the sSchedule-change band for that Trading Hour that is due to: 1) a Dispatch Instruction that is in the opposite direction of a previously issued Dispatch Instruction in the previous Trading Hour, or 2) a Dispatch Instruction in the next Trading Hour. Residual Imbalance Energy may cross hourly boundaries, in which case the portion that lies between hourly transactions is classified and settled as a Ramping Energy Deviation.
	* * *
Resource Adequacy Compliance Year	A calendar year from January 1 through December 31.
Resource Adequacy Plan	A submission by a Scheduling Coordinator for a Load Serving Entity in the form required by the Business Practice Manual to satisfy the requirements of Section 40 of this CAISO Tariff.
Resource Adequacy Resource	A resource that is required to offer Resource Adequacy Capacity. The criteria for determining the types of resources that are eligible to provide Qualifying Capacity may be established by the CPUC or other applicable Local Regulatory and provided to the CAISO.
Resource ID	Identification characters assigned by the CAISO to Generating Units, Loads, Participating Loads, System Units, System Resources, and Physical Scheduling Plants.
	* * *
Resource-Specific ASMP	The Ancillary Services Marginal Price as determined pursuant to

	Section 11.10.
	* * *
Resource-Specific System Resource	A Dynamic or Non-Dynamic Resource-Specific System Resource.
Resource-Specific Tier 1 UIE Settlement Interval Price	The price used to settle Tier 1 UIE as calculated pursuant to ~~s~~Section 11.5.2.1.
~~**Resource Adequacy Resource**~~	~~A resource that is required to offer Resource Adequacy Capacity. The criteria for determining the types of resources that are eligible to provide Qualifying Capacity may be established by the CPUC or other applicable Local Regulatory Authority and provided to the CAISO.~~
~~**Resource-Specific ASMP**~~	~~The Ancillary Services Marginal Price as determined pursuant to Section 11.10.~~
Responsible Participating Transmission Owner (or Responsible Participating TO or Responsible PTO)	The party providing transmission service under an Existing Contract listed in Appendix A of a Responsible Participating Transmission Owner Agreement and that is the Scheduling Coordinator for each Existing Right holder listed in Appendix A of that RPTOA, unless that Scheduling Coordinator responsibility is transferred pursuant to the provisions of the RPTOA.
Responsible Participating Transmission Owner Agreement (RPTOA)	An agreement between the CAISO and a Responsible Participating Transmission Owner, a *pro forma* version of which has been accepted by FERC as a CAISO rate schedule in 88 FERC ¶ 61,077.
	* * *
Revised Adjusted RMR Invoice	The monthly invoice issued by the Reliability Must-Run Owner to the CAISO pursuant to the Reliability Must-Run Contract reflecting any appropriate revisions to the Adjusted Reliability Must-Run Invoice based on the CAISO's validation and actual data for the billing month.
Revised Estimated RMR Invoice	The monthly invoice issued by the Reliability Must-Run Owner to the CAISO pursuant to the Reliability Must-Run Contract reflecting appropriate revisions to the Estimated Reliability Must-Run Invoice based on the CAISO's validation of the Estimated Reliability Must-Run Invoice.
~~**Reliability Must-Run Charge (RMR Charge)**~~	~~The sum payable by a Responsible Utility to the CAISO pursuant to Section 41 of the CAISO Tariff for the costs, net of all applicable credits, incurred under the Reliability Must Run Contract.~~

~~**Reliability Must-Run Unit (RMR Unit)**~~	~~A Participating Generator which is the subject of a Reliability Must-Run Contract.~~
~~**Reliability Must-Run Contract (RMR Contract)**~~	~~A Must-Run Service Agreement between the owner of an Reliability Must Run Unit and the CAISO.~~
~~**Reliability Must-Run Generation (RMR Generation)**~~	~~Generation that the CAISO determines is required to be on line to meet Applicable Reliability Criteria requirements. This includes i) Generation constrained on line to meet NERC and WECC reliability criteria for interconnected systems operation; ii) Generation needed to meet Load demand in constrained areas; and iii) Generation needed to be operated to provide voltage or security support of the CAISO or a local area.~~
RMDAPS	Revenue Meter Data Acquisition and Processing System
RMR	Reliability Must-Run
RMR Dispatch	The megawatt amount that is mandated by the CAISO to be scheduled in a given market for a resource under the RMR Contract.
RMR Dispatch Notice	Notice received by an RMR Unit from the CAISO containing an RMR Dispatch.

* * *

RMR Proxy Bid	For RMR Condition 1 Units, an amount calculated based on the hourly variable costs as defined in Schedule C of the applicable RMR Contract in the form of a monotonically increasing function consistent with the bidding rules in Section 30, which is used in the MPM-RRD process described in Section 31.2. For RMR Condition 2 Units, the Energy Bid defined in Schedule M of the RMR Contract, which is used in the MPM-RRD process described in Section 31.2.
~~**RMR Dispatch**~~	~~The megawatt amount that is mandated by the CAISO to be scheduled in a given market for a resource under the RMR Contract.~~
~~**RMR Dispatch Notice**~~	~~Notice received by and RMR Unit from the CAISO containing an RMR Dispatch.~~
RPTOA	Responsible Participating Transmission Owner Agreement
RRD	Reliability Requirement Determination
RTCD	Real-Time Contingency Dispatch
RTD	Real-Time Dispatch
RTED	Real-Time Economic Dispatch
RTM	Real-Time Market
RTM AS Bid Cost	The Bid Cost of a BCR Eligible Resource for Ancillary Service capacity in the RTM.

RTM Bid Cost	The total of a resource's RTM Start–Up Cost, RTM Minimum Load Cost, RTM Pump Shut-Down Cost, RTM Pumping Cost, RTM Energy Bid Cost, and RTM AS Bid Cost.
~~**RTM Commitment Period**~~	~~A Commitment Period determined by the RTM; provided that if the RTM changes the Commitment Status of units scheduled in the IFM or committed in the RUC, an RTM Commitment Period may or may not partially overlap with IFM and RUC Commitment Periods.~~
~~**RTM Self-Commitment Period**~~	~~A time period determined by the CAISO for the purposes of deriving any Bid Cost Recovery amounts, related to the RTM.~~

* * *

RTM Commitment Period	A Commitment Period determined by the RTM; provided that if the RTM changes the Commitment Status of units scheduled in the IFM or committed in the RUC, an RTM Commitment Period may or may not partially overlap with IFM and RUC Commitment Periods.
~~**RTM AS Bid Cost**~~	~~The Bid Cost of a BCR Eligible Resource for Ancillary Service capacity in the RTM.~~
~~**RTM Bid Cost**~~	~~The total of a resource's RTM Start- Up Cost (or the RTM Load Reduction Initiation Cost for Participating Loads), RTM Minimum Load Cost (or the RTM Minimum Curtailable Demand for Participating Loads), RTM Pump and Participating Load Shut-Down Cost, RTM Energy Bid Cost, and RTM AS Bid Cost.~~
RTMD	Real-Time Manual Dispatch
RTM Marginal Cost of Losses Credit for Eligible TOR Self-Schedules	A credit provided to Scheduling Coordinators pursuant to Section 17.3.3 to offset any HASP and RTM Marginal Cost of Losses that would otherwise be applied to the valid and balanced portions of any TOR Self-Schedule in the IFM as provided in Section 11.5.7.2.

* * *

RTM Self-Commitment Period	A time period determined by the CAISO for the purposes of deriving any Bid Cost Recovery amounts, related to the RTM.
RTUC	Real-Time Unit Commitment
RUC	Residual Unit Commitment

* * *

RUC Availability Bid Cost	As provided in Section 11.8.3.1.3, the product of the RUC Award and the relevant RUC Availability Bid price, divided by the number of Settlement Intervals in a Trading Hour.

* * *

RUC Availability Quantity	A RUC Award (MW) excluding any RUC Capacity that is actually unavailable due to a unit derate or ~~o~~Outage.
RUC Award	The portion of the RUC Capacity from resources eligible to receive RUC Availability Payments, exclusive of Minimum Load, ~~C~~capacity designated as RMR, and ~~C~~capacity under Resource Adequacy requirements as specified in Section 40.
RUC Bid Cost	~~An amount equal to the product of the RUC Award, reduced by any applicable No Pay Capacity, with the relevant RUC Bid Price.~~ The total Bid Costs associated with commitment by the CAISO through the RUC process used for determination of Unrecovered Bid Cost Uplift Payments and RUC Bid Cost Uplift allocation.

* * *

RUC Bid Cost Uplift	The system-wide net of the RUC Bid Cost Shortfalls and RUC Bid Cost Surpluses for a Settlement Interval ~~of~~ for all BCR Eligible Resources with Unrecovered Bid Cost Uplift Payments. This amount will be netted according to Section 11.8.6.2 to calculate the Net RUC Bid Cost Uplift before allocation to Scheduling Coordinators.

* * *

RUC Commitment Period	A Commitment Period determined by the RUC; provided that because the RUC may not decommit units scheduled in the IFM, if the unit is scheduled by the IFM within that Time Period an IFM Commitment Period is always within a RUC Commitment Period; and a RUC Commitment Period may start earlier and/or may end later than an IFM Commitment Period if RUC issues an earlier Start-Up and/or later Shut-Down Instruction than the IFM, respectively.
RUC Compensation	The Payment to Scheduling Coordinators with RUC Awards, calculated as the sum of RUC Availability Payment and RUC Unrecovered Bid Costs.
RUC Compensation Cost	As provided in Section 11.8.6.5, for each Trading Hour of the RUC, the sum of the RUC Availability Payment and the hourly Net RUC Bid Cost Uplift, which is allocated as provided in Section 11.8.6.5.3.

* * *

RUC Price	The price calculated by the RUC optimization for each Trading Hour of the next Trading Day which reflects the price ($/MW per hour) for

	the next increment of RUC Capacity at a specified PNode for each Trading Hour.
RUC Schedule	The total MW per hour amount of ~~C~~capacity committed by RUC including the MW per hour amounts committed in the Day-Ahead Schedule.
RUC Zone	A forecast region representing a UDC or MSS Service Area, Local Capacity Area, or other collection of Nodes for which the CAISO has developed sufficient historical CASIO Demand and relevant weather data to perform a Demand Forecast for such area, for which as further provided in Section 31.5.3.7 the CAISO may adjust the CAISO Forecast of CAISO Demand to ensure that the RUC process produces adequate local capacity procurement.

* * *

SC	Scheduling Coordinator
SCA	Scheduling Coordinator Agreement
SCADA	Supervisory Control and Data Acquisition
SCED	Security Constrained Economic Dispatch
Schedule	A Day-Ahead Schedule, a HASP Advisory Schedule, or a HASP Intertie Schedule.
Scheduled Demand	The MW of Energy of Demand cleared through the IFM and set in the Day-Ahead Schedule for the next Trading Day.
Scheduled Generation	The MW of Energy of Generation cleared through the IFM and set in the Day-Ahead Schedule for the next Trading Day.
Scheduling and Logging system for the CAISO (SLIC)	A logging application that allows Market Participants to notify the CAISO when a Generating Unit's properties change due to physical problems. Users can modify the maximum and minimum output of a unit, as well as the Ramping capability of the unit.
Scheduling Coordinator (SC)	An entity certified by the CAISO for the purposes of undertaking the functions specified in Section 4.5.3.
Scheduling Coordinator Agreement (SCA)	An agreement between a Scheduling Coordinator and the CAISO whereby the Scheduling Coordinator agrees to comply with all CAISO rules, protocols and instructions, as those rules, protocols and instructions may be amended from time to time, a *pro forma* version of which is set forth in Appendix B.1.

* * *

Scheduling Coordinator ID Code (SCID)	The Bid component that indicates the individual identification ~~c~~Code provided by the CAISO to the Schedule~~e~~ing Coordinator.
~~Scheduling Coordinator Meter Service Agreement for Scheduling Coordinators (MSA SC)~~	~~An agreement entered into between the CAISO and a Scheduling Coordinator consistent with the provisions of Section 10 of the CAISO Tariff; a *pro forma* version of which is set forth in Appendix B.7.~~
	* * *
~~Schedule~~	~~A Day-Ahead Schedule, a HASP Advisory Schedule, or a HASP Intertie Schedule.~~
~~Scheduled Demand~~	~~The MW of Energy of Demand cleared through the IFM and set in the Day-Ahead Schedule for the next Trading Day.~~
~~Scheduled Generation~~	~~The MW of Energy of Generation cleared through the IFM and set in the Day-Ahead Schedule for the next Trading Day.~~
~~Scheduled Maintenance~~	~~Maintenance on Participating Generator, TO, Small Utility Distribution Company or Utility Distribution Company facilities scheduled more than twenty-four hours in advance.~~
~~Scheduling and Logging system for the CAISO of California (SLIC)~~	~~A logging application that allows Market Participants to notify the CAISO when a Generating Unit's properties change due to physical problems. Users can modify the maximum and minimum output of a unit, as well as the r~~Ramping capability of the unit.
~~Scheduling Coordinator (SC)~~	~~An entity certified by the CAISO for the purposes of undertaking the functions specified in Section 4.5.3 of this CAISO Tariff.~~
Scheduling Point	A location at which the CAISO Controlled Grid is connected, by a group of transmission paths for which a physical, non-simultaneous transmission capacity rating has been established for Congestion Management, to transmission facilities that are outside the CAISO's Operational Control. ~~A Scheduling Point typically is physically located at an "outside" boundary of the CAISO Controlled Grid (e.g., at the point of interconnection between a Control Area utility and the CAISO Controlled Grid). For most practical purposes, a Scheduling Point can be considered to be a zone that is outside the CAISO's Controlled Grid.~~
SCID	Scheduling Coordinator ID Code
	* * *
SCUC	Security Constrained Unit Commitment
Seasonal Available CRR	The upper limit of network capacity that will be used in the annual

Capacity	CRR Allocation and annual CRR Auction calculated by effectively reducing OTC for Transmission Ownership Rights as if all lines will be in service for the relevant year in accordance with Section 36.4.
	* * *
Seasonal CRR Eligible Quantity	The MW quantity of CRRs ~~an LSE~~ a CRR Holder or Candidate CRR Holder is eligible to nominate for ~~the relevant~~ a specific season and time-of-use period in the annual CRR Allocation.
Seasonal CRR Load Metric	The- MW level of Load that is exceeded only in .05 percent of the hours for each season and time of use period based on the LSE's historical Load~~lowest value among the Monthly CRR Load Metrics for a Load Serving Entity calculated across the relevant season~~.
	* * *
Security	The form of security provided by a Scheduling Coordinator pursuant to Section 12.1 ~~of the CAISO Tariff~~ (i.e., letter of credit, guarantee or cash deposit) to secure its trading obligations.
Security Constrained Economic Dispatch (SCED)	An algorithm performed by a computer program that simultaneously clears Energy Supply Bids, including Self-Schedules, against ~~CAISO~~ Demand to determine Dispatch Instructions.
Security Constrained Unit Commitment (SCUC)	An algorithm performed by a computer program over a multi-hour Time Horizon that determines the ~~c~~Commitment ~~s~~Status and Day-Ahead Schedules, AS Awards, RUC Awards, HASP Intertie Schedules and Dispatch Instructions for selected resources and minimizes production costs (Start-Up, Minimum Load and Energy Bid ~~c~~Costs in IFM, HASP and RTM; Start-Up, Minimum Load and RUC Availability Bid Costs) while respecting the physical operating characteristics of selected resources and transmission constraints.
	* * *
Self-Commitment Period	The portion of a Commitment Period of a unit with an Energy Self-Schedule or a Submission to Self-Provide an Ancillary Services, except for Non-Spinning Reserve ~~S~~self-~~P~~provision by a Fast-Start Unit ~~(FSU)~~. The Self-Commitment Period may include Time Periods without Energy Self-Schedules or AS ~~S~~self-~~P~~provision if it is determined by inference that the unit must be on due to Minimum ~~Up~~ Run Time ~~(MUT)~~, Minimum Down Time ~~(MDT)~~, or Maximum Daily Start-Up ~~(MDS)~~ constraints.
Self-Provided Ancillary Services	A Submission to Self-Provide Ancillary Services in the Day Ahead,

	HASP, or Real-~~-~~Time ~~m~~Market that has been accepted by the CAISO. Acceptance will occur prior to Ancillary Service Bid evaluation in the relevant market and indicates that the CAISO has determined the submission is feasible with regard to resource operating characteristics and regional constraints and is qualified to provide the Ancillary Service in the market for which it was submitted. Self-~~-~~Provided Ancillary Services consist of ~~S~~self-~~P~~provided Regulation Up reserves, ~~S~~self-~~-P~~provided Regulation Down reserves, ~~S~~self-~~-P~~provided Spinning Reserves, and ~~S~~self-~~P~~provided Non-Spinning Reserves.
Self-provided Load	The portion of Load that is served by a Net Scheduled QF listed in a QF PGA, consistent with Section 218(b) of the California Public Utilities Code.
	* * *
Settlement	Process of financial settlement for products and services purchased and sold undertaken by the CAISO under Section 11~~ of the CAISO Tariff~~. Each Settlement will involve a price and a quantity.
Settlement Account	An a~~A~~ccount held at a bank situated in California, designated by a Scheduling Coordinator, a CRR Holder or a Participating TO pursuant to the Scheduling Coordinator's Scheduling Coordinator Agreement, the CRR Holder's CRR Entity Agreement or in the case of a Participating TO, Section 2.2.1 of the Transmission Control Agreement, to which the CAISO shall pay amounts owing to the Scheduling Coordinator, the CRR Holder or the Participating TO under the CAISO Tariff.
Settlement Interval	The time period equal to or a multiple of the Dispatch Interval, over which the CAISO settles ~~C~~cost ~~C~~compensation amounts or deviations in Generation and Demand in CAISO Markets.
Settlement Interval Penalty Location Real-Time LMP	The optimal Instructed Imbalance Energy weighted average of the individual Dispatch Interval Real-Time LMPs for the resources in a UDP Aggregation established pursuant to Appendix R.
	* * *
~~**Settlement Statement**~~	~~Either or both of a Preliminary Settlement Statement or Final Settlement Statement.~~
~~**Settlement Statement Re-run**~~	~~The re-calculation of a Settlement Statement in accordance with the provisions of the CAISO Tariff.~~

* * *

Settlement Statement	Either or both of a Preliminary Settlement Statement or Final Settlement Statement.
Settlement Statement Re-run	The re-calculation of a Settlement Statement in accordance with the provisions of the CAISO Tariff.
~~Severance Fee~~	~~The charge or periodic charge assessed to customers to recover the reasonable uneconomic portion of costs associated with Generation-related assets and obligations, nuclear decommissioning, and capitalized Energy efficiency investment programs approved prior to August 15, 1996 and as defined in the California Assembly Bill No. 1890 approved by the Governor on September 23, 1996.~~
SFT	Simultaneous Feasibility Test

* * *

Short Start Unit	A Generating Unit that has a cycle time less than five hours (Start-Up Time plus Minimum Run Time is less than five hours), has a Start-Up Time less than two hours, and can be fully optimized with respect to this cycle time.
Short-Term Unit Commitment (STUC)	The ~~u~~Unit ~~c~~Commitment procedure run at approximately T-52.5 minutes for a ~~t~~Time ~~h~~Horizon of approximately five (5) hours. The STUC determines whether some Medium Start Units need to be started early enough to meet the ~~d~~Demand within the STUC ~~t~~Time ~~h~~Horizon using the CAISO ~~Demand~~ Forecast of CAISO Demand. The STUC produces a ~~u~~Unit ~~c~~Commitment solution for every 15-minute interval within the STUC ~~t~~Time ~~h~~Horizon and issues binding ~~s~~Start-~~u~~Up instructions only as necessary.
~~Short Start Unit~~	~~A Generating Units that that have~~has a cycle time less than five hours (Start-Up Time plus Minimum Run Time is less than five hours) have has a Start Up Time less than two hours, and that can be fully optimized with respect to this cycle time.
Shut-Down	A Commitment Status transition ~~form~~ from On to Off.
Shut- Down Cost	The Bid Component submitted by the Scheduling Coordinator indicating a single price at which the resource is willing to Shut-Down.
Shut-Down Instruction	An instruction issued by the CAISO to a resource to Shut-Down.
Simultaneous Feasibility ~~Study~~ Test (SFT)	The process that the CAISO will conduct to ensure that allocated and auction CRRs do not exceed relevant transmission system

	constraints as described in Section 36.4.2 and further described in the Business Practices Manuals.
	* * *
SLIC	Scheduling and Logging system for the CAISO
	* * *
SMEC	System Marginal Energy Cost
	* * *
Spinning Reserve Cost	The revenues paid to the suppliers of the total awarded Spinning Reserve capacity in the Day-Ahead Market, HASP, and Real-Time Market for the Settlement Period, minus the payments rescinded in the Settlement Period due to the unavailability of the Spinning Reserve under any of the provisions of Section 8.10.2 ~~of the Tariff~~.
	* * *
Standard Large Generator Interconnection Agreement (LGIA)	The form of interconnection agreement applicable to an Interconnection Request pertaining to a Large Generating Facility, a *pro forma* version of which is set forth in Appendix V.
Standard Large Generator Interconnection Procedures (LGIP)	The ~~CAISO Protocol that sets forth the~~ interconnection procedures applicable to an Interconnection Request pertaining to a Large Generating Facility that is set forth ~~included~~ in ~~the CAISO Tariff~~ Appendix U.
	* * *
Standby Service	Service provided by a Participating TO that also provides retail electric service, which allows a Standby Service Customer, among other things, access to High Voltage Transmission Facilities for the delivery of backup power on an instantaneous basis to ensure that Energy may be reliably delivered to the Standby Service Customer in the event of an ~~o~~Outage of a Generating Unit serving the customer's Load.
	* * *
Start-Up Bid	The Bid component that indicates the Start-Up ~~t~~Time and Start-Up Cost curves for the Generating Unit, which applies for the entire Trading Day for which it is submitted. Start-Up Cost curves are strictly monotonically increasing non-negative staircase curves, up to three segments, which represent a function of Start-Up Cost

	versus down time.
Start-Up Cost	The cost incurred by a particular Generating Unit during Start-Up from the time of first fire, the time of receipt of a CAISO Dispatch Instruction, or the time the unit was last synchronized to the grid, whichever is later, until the time the Generating Unit reaches its minimum operating level.
Start-Up Instruction	An instruction issued by the CAISO to a resource to Start-Up.
	* * *
~~**Start-Up Costs**~~	~~The cost incurred by a particular Generating Unit during Start-Up from the time of first fire, the time of receipt of an CAISO Dispatch iInstruction, or the time the unit was last synchronized to the grid, whichever is later, until the time the gGenerating uUnit reaches its minimum operating level.~~
	* * *
STUC	Short-Term Unit Commitment
Submission to Self-Provide an Ancillary Service	A submission to the CAISO containing all of the bidding requirements for an Ancillary Service with the exception of price information.
	* * *
Supply Plan	A submission by a Scheduling Coordinator for a Resource Adequacy Resource in order to satisfy the requirements of Section 40.
	* * *
System Marginal Energy Cost (SMEC)	The component of the LMP that reflects the marginal cost of providing Energy from a designated reference iLocation.
	* * *
System Resource	A group of resources, single resource, or a portion of a resource located outside of the CAISO Control Area, or an allocated portion of a Control Area's portfolio of generating resources that are either a static iInterchange schedule or directly responsive to that Control Area's Automatic Generation Control (AGC) capable of providing Energy and/or Ancillary Services to the CAISO Control Area, provided that if the System Resource is providing Regulation to the CAISO it is directly responsive to AGC.
	* * *

TAC	Transmission Access Charge
TAC Benefit	The amount, if any, for each year by which the cost of Existing High Voltage Transmission Facilities associated with deliveries of Energy to Gross Loads in the PTO Service Territory is reduced by the implementation of the High Voltage Access Charge described in Schedule 3 to Appendix F. The TAC Benefit of a New Participating TO shall not be less than zero.
TAC Transition Date	January 1, 2001, the date described in Section 4.2 of Appendix F, Schedule 3, when the first New Participating TO's execution of the Transmission Control Agreement took effect, which established the start of the TAC Transition Period for the calculation of the Access Charge.
	* * *
TCA	Transmission Control Agreement
TEA	Transmission Exchange Agreement
	* * *
Tier 1 UIE	The quantity of ~~u~~Uninstructed ~~energy d~~Deviation from the resource's Instructed Imbalance Energy.
Tier 2 UIE	The quantity of ~~u~~Uninstructed ~~energy d~~Deviation from the resource's Day-Ahead Schedule.
	* * *
TO	Transmission Owner
~~**TOC**~~	~~The single point of contact at the transmission operations center of Pacific Gas & Electric Company.~~
Tolerance Band	The permitted area of variation for performance requirements of resources used for various purposes as further provided in the CAISO Tariff. The ~~t~~Tolerance ~~b~~Band is expressed in terms of Energy (MWh) ~~for the performance requirement~~ for Generating Units, System Units and imports from ~~d~~Dynamic~~ally scheduled~~ System Resources for each Settlement Interval and ~~will~~ equals the greater of the absolute value of: (1) five (5) MW divided by number of Settlement Intervals per Settlement Period or (2) three percent (3%) of the relevant Generating Unit's, ~~d~~Dynamic~~ally scheduled~~ System Resource's or System Unit's maximum output (P~~m~~Max), as registered in the Master File, divided by number of Settlement Intervals per Settlement Period. The maximum output (P~~m~~Max) of a

	~~d~~Dynamic~~ally scheduled~~ System Resource will be established by agreement between the CAISO and the Scheduling Coordinator representing the Dynamic System Resource on an individual case basis, taking into account the number and size of the generating resources, or allocated portions of generating resources, that comprise the Dynamic System Resource. The ~~t~~Tolerance ~~b~~Band is expressed in terms of Energy (MWh) ~~for the performance requirement~~ for Participating Loads for each Settlement Interval and ~~will~~ equals the greater of the absolute value of: (1) five (5) MW divided by number of Settlement Intervals per Settlement Period or (2) three percent (3%) of the applicable HASP Intertie~~Final HASP~~ Schedule or CAISO Dispatch amount divided by number of Settlement Intervals per Settlement Period. The Tolerance Band shall not be applied to ~~n~~Non-~~d~~Dynamic~~ally scheduled~~ System Resources.
TOR	Transmission Ownership Right
	* * *
Total Import Capability	The aggregate Maximum Import Capability of all Interties into the CAISO Control Area in MW deliverable to the CAISO Control Area based on CAISO study criteria minus the aggregate sum in MW of all Existing Contracts and Transmission Ownership Rights held by load serving entities that do not serve Load within the CAISO Control Area.
	*** * ***
Trading Interval	A Settlement Period ~~as defined in the Master Definitions Supplement of the CAISO Tariff~~.
Trading Month	The period beginning at the start of the hour ending 0100 and ending at the end of the hour ending 2400 for each calendar month, except where there is a change to and from daylight savings time on the first or last day of a month.
	* * *
Transformer and Line Loss Correction Factor	The transformer and line loss correction factor as set forth in the applicable Business Practice Manual or Technical Specifications to be applied to revenue quality meters of CAISO Metered Entities which are installed on the low voltage side of step-up transformers.

* * *

Transmission Access Charge (TAC)	Access Charge
~~Transition Period~~	~~The period of time established by the California Legislature and CPUC to allow IOUs and Local Publicly Owned Electric Utilities an opportunity to recover Transition Costs or Severance Fees.~~
Transmission Access Charge~~ Area (TAC Area)	A portion of the CAISO Controlled Grid with respect to which Participating TOs' High Voltage Transmission Revenue Requirements are recovered through a High Voltage Access Charge. TAC Areas are listed in Appendix C.3.

* * *

Transmission Exchange Agreement (TEA)	The agreement among the CAISO, Western Area Power Administration and Pacific Gas and Electric Company establishing the terms and conditions of the treatment of Western Area Power Administration's interests in the Pacific AC Intertie, which agreement was originally accepted by FERC in Docket No. ER04-688.
Transmission Interface	A CAISO-defined set of transmission facilities that comprise an important transmission corridor for Energy or capacity.

* * *

~~Transmission Operations Center (TOC)~~	~~The single point of contact at the transmission operations center of Pacific Gas & Electric Company.~~

* * *

~~Transmission Owner Tariff (TO Tariff)~~	~~A tariff setting out a Participating TO's rates and charges for transmission access to the CAISO Controlled Grid and whose other terms and conditions are the same as those contained in the document referred to as the Transmission Owners Tariff approved by FERC as it may be amended from time to time.~~
Transmission Ownership Right (TOR)	The ~~A non-Participating TO~~ ownership or joint ownership right to transmission facilities within the CAISO Control Area of a Non-Participating TO that has not executed the Transmission Control Agreement, ~~and the~~which ~~-~~transmission facilities are not incorporated into the CAISO Controlled Grid.
Transmission Owner Tariff (TO Tariff)	A tariff setting out a Participating TO's rates and charges for transmission access to the CAISO Controlled Grid and whose other terms and conditions are the same as those contained in the document referred to as the Transmission Owners Tariff approved by FERC as it may be amended from time to time.

* * *

Transmission Revenue Credit	For an Original Participating TO, the proceeds received from the CAISO for Wheeling service, CRR Auction revenue and Congestion Charges, plus the shortfall or surplus resulting from any cost differences between Transmission Losses and Ancillary Service requirements associated with Existing Rights and the CAISO's rules and protocols. For a New Participating TO during the 10-year TAC ~~t~~Transition ~~p~~Period described in Section 4 of Schedule 3 of Appendix F, the proceeds received from the CAISO for Wheeling service and n~~N~~et CRR ~~R~~revenue, plus the shortfall or surplus resulting from any cost differences between Transmission Losses and Ancillary Service requirements associated with Existing Rights and the CAISO's rules and protocols. After the 10-year TAC ~~t~~Transition ~~p~~Period, the New Participating TO Transmission Revenue Credit shall be calculated the same as the Transmission Revenue Credit for the Original Participating TO.

* * *

Transmission Rights and Transmission Curtailment ~~Instructions (~~"TRTC"~~)~~ Instructions	Operational directives developed between Existing Rights ~~H~~holders, TOR holders, and holders of Converted Rights and the Participating TO, submitted to the CAISO b~~u~~y the Participating TO, unless otherwise agreed to by the Participating TO and the Existing Rights ~~H~~holder to facilitate the accommodation of Existing Rights in the CAISO Markets.
TRBA	Transmission Revenue Balancing Account

* * *

TRR	Transmission Revenue Requirement
TRTC Instructions	Transmission Rights and Transmission Curtailment Instructions

* * *

TTC	Total Transfer Capability
UDC	Utility Distribution Company
UDCOA	Utility Distribution Company Operating Agreement
UDP	Uninstructed Deviation Penalty
UDP Aggregation	Two or more units scheduled by the same Scheduling Coordinator with the same ~~r~~Resource ~~i~~ID~~dentification~~ that are to be considered interchangeable for calculating the Uninstructed Deviation Penalty.

UFE	Unaccounted for Energy
UIE	Uninstructed Imbalance Energy

* * *

Unavailable Capacity	~~Awarded~~ Ancillary Services capacity that receives an AS Award and Self-Provided Ancillary Services capacity that was not dispatched by the CAISO but where all or a portion of the capacity was not available for ~~d~~Dispatch to provide Energy in Real-Time.

* * *

Undelivered Capacity	~~Awarded~~ Ancillary Services capacity that receives an AS Award and Self-Provided Ancillary Services capacity, or capacity committed in RUC, that was dispatched by the CAISO to provide Energy but where a certain percentage or more of the E~~e~~xpected Energy was not provided in Real-Time, which percentage is determined as specified in the applicable Business Practice Manual.
Undispatchable Capacity	~~Awarded~~ Ancillary Services capacity~~,~~ that receives an AS Award and Self-~~-~~Provided Ancillary Services capacity, or ~~and~~ capacity committed in RUC, that is not available for use due to a derate or ~~o~~Outage of the ~~generating~~ resource. Undispatchable Capacity includes AS Awards for Spinning Reserve and Non-Spinning Reserve capacity that are not available for use due to ~~r~~Ramp ~~r~~Rate constraints (*e.g.*, operational Ramping ability is lower than Operating Reserve Ramp Rate).

* * *

Uninstructed Deviation Penalty (UDP)	The penalty as set forth in Section 11.23 ~~of this CAISO Tariff~~.

* * *

Unrecovered Bid Cost Uplift Payment	A payment made to Scheduling Coordinators for any Bid Costs in the IFM, RUC, and RTM not recovered by IFM, RUC, or RTM Market Revenues as provided in Section 11.8.5.

* * *

* * *

Utility Distribution Company Operating Agreement (UDCOA)	An agreement between the CAISO and a Utility Distribution Company, a *pro forma* version of which is set forth in Appendix B.8.

* * *

Validation, Estimation and Editing (VEE)	The procedures set forth in Section 10 ~~of this Tariff~~ that the CAISO applies to Revenue Quality Meter Data in order to develop Settlement Quality Meter Data.
~~**Value Added Network (VAN)**~~	~~A data communications service provider that provides, stores and forwards electronic data delivery services within its network and to subscribers on other VANs. The data is mostly EDI type messages.~~
Variable Cost~~s~~	The cost associated with fuel cost and variable operations and maintenance costs.
	* * *
VEE	Validation, Estimation and Editing
	* * *
WAC	Wheeling Access Charge
WECC	Western Electricity Coordinating Council
Weekly Peak Demand Forecast	Demand Forecast of the highest Hourly Demand ~~in any hour~~ in a period beginning at the start of the hour ending 0100 on Sunday and ending at the end of the hour ending 2400 the following Saturday, in MW.
Western Electricity Coordinating Council (WECC)	The Western Electricity Coordinating Council or its successor.
Western Interconnection	~~A~~ The network of transmission lines embodied within the WECC region.
~~**Western Electricity Coordinating Council (WECC)**~~	~~The Western Electricity Coordinating Council or its successor.~~
	* * *
Western Systems Coordinating Council (WSCC)	The Western Systems Coordinating Council or its successor, the WECC.
Western Systems Power Pool	An organization of participants in the electricity markets that have developed and maintain the Western Systems Power Pool Agreement.
Western Systems Power Pool Agreement	A standardized power sales agreement developed and maintained as a FERC rate schedule by the Western Systems Power Pool.
	* * *
Wheeling Access Charge (WAC)	The charge assessed by the CAISO that is paid by a Scheduling Coordinator for Wheeling in accordance with Section 26.1.

Wheeling Access Charges shall not apply for Wheeling under a bundled non-economy Energy coordination agreement of a Participating TO executed prior to July 9, 1996. The Wheeling Access Charge may consist of a High Voltage Wheeling Access Charge and a Low Voltage Wheeling Access Charge.

* * *

WSCC Western Systems Coordinating Council

* * *

* * *

CAISO TARIFF APPENDIX B.11

Pro Forma CRR Entity Agreement

CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

AND

[CONGESTION REVENUE RIGHTS ENTITY]

CRR ENTITY AGREEMENT

CRR ENTITY AGREEMENT

THIS AGREEMENT is dated this day of , , and is entered into, by and between:

(1) **[Full Legal Name]** having its registered and principal place of business located at **[Address]** (the "CRR Entity");

and

(2) **California Independent System Operator Corporation,** a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate, initially 151 Blue Ravine Road, Folsom, California 95630 (the "CAISO").

The CRR Entity and the CAISO are hereinafter referred to individually as a "Party" and collectively as the "Parties."

Whereas:

A. The CAISO Tariff provides that any entity that holds or intends to hold CRRs must register and qualify with the CAISO and comply with the terms of the CAISO Tariff, regardless of whether they are to acquire CRRs through the CRR Allocation or CRR Auction, or through the Secondary Registration System.

B. The CRR Entity has completed the Candidate CRR Holder application process and is eligible to participate in the CRR Allocation or CRR Auction or register as a CRR Holder through the Secondary Registration System.

C. The CAISO Tariff further provides that any entity who wishes to participate in the CRR Allocation or CRR Auction or register as a CRR Holder through the Secondary Registration System must meet all of the Candidate CRR Holder requirements and creditworthiness provisions in the CAISO Tariff and the relevant Business Practice Manual, including demonstration of its ability to accommodate the financial responsibility associated with holding CRRs.

D. The CRR Entity intends to obtain CRRs either through the CRR Allocation or CRR Auction or to register as a CRR Holder through the Secondary Registration System and, therefore, wishes to undertake to the CAISO that it will comply with the applicable provisions of the CAISO Tariff.

E. The Parties are entering into this Agreement in order to establish the terms and conditions pursuant to which the CAISO and the CRR Entity will discharge their respective duties and responsibilities under the CAISO Tariff.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, **THE PARTIES AGREE** as follows:

ARTICLE I

DEFINITIONS AND INTERPRETATION

1.1 Master Definitions Supplement. All terms and expressions used in this Agreement shall have the same meaning as those contained in the Master Definitions Supplement in Appendix A of the CAISO Tariff.

1.2 Rules of Interpretation. The following rules of interpretation and conventions shall apply to this Agreement:

(a) if there is any inconsistency between this Agreement and the CAISO Tariff, the CAISO Tariff will prevail to the extent of the inconsistency;

(b) the singular shall include the plural and vice versa;

(c) the masculine shall include the feminine and neutral and vice versa;

(d) "includes" or "including" shall mean "including without limitation";

(e) references to a Section, Article, or Schedule shall mean a Section, Article, or a Schedule of this Agreement, as the case may be, unless the context otherwise requires;

(f) a reference to a given agreement or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented, or restated through the date as of which such reference is made;

(g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced, or restated from time to time;

(h) unless the context otherwise requires, any reference to a "person" includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization, or other entity, in each case whether or not having separate legal personality;

(i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;

(j) any reference to a day, week, month, or year is to a calendar day, week, month, or year; and

(k) the captions and headings in this Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Agreement.

ARTICLE II
ACKNOWLEDGEMENTS OF CRR ENTITY AND CAISO

2.1 Scope of Application to Parties. The CRR Entity and CAISO acknowledge that all Candidate CRR Holders or CRR Holders must sign this Agreement in accordance with section 4.10.1.9.1 of the CAISO Tariff.

ARTICLE III

TERM AND TERMINATION

3.1 Effective Date. This Agreement shall be effective as of the later of the date it is executed by both Parties or the date accepted for filing and made effective by FERC if such FERC filing is required, and shall remain in full force and effect until terminated pursuant to Section 3.2 of this Agreement.

3.2 Termination

3.2.1 Termination by CAISO. Subject to Article V, the CAISO may terminate this Agreement by giving written notice to the CRR Entity of termination in the event that the CRR Entity commits any material default under this Agreement and/or the CAISO Tariff as it pertains to this Agreement which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given, to the CRR Entity, written notice of the default, unless excused by reason of Uncontrollable Forces in accordance with Article X of this Agreement or unless the CAISO agrees, in writing, to an extension of the time to remedy such material default. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement was filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the filing of the notice of termination is made after the preconditions for termination have been met and (2) the CAISO files the notice of termination within sixty (60) days after issuance of the notice of default or (3) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if filed with FERC, or thirty (30) days after the date of the CAISO's notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

3.2.2 Termination by CRR Entity. In the event that the CRR Entity is no longer a CRR Holder, it may terminate this Agreement, on giving the CAISO not less than ninety (90) days' written notice; provided, however any outstanding financial right or obligation or any other obligation under the CAISO Tariff of the Candidate CRR Holder or CRR Holder that have arisen while the CRR Entity was a Candidate CRR Holder or a CRR Holder, and any provision of this Agreement necessary to give effect to such right or obligation shall survive until satisfied. With respect to any notice of termination given pursuant to this Section, the ISO must file a timely notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the request to file a notice of termination is made after the preconditions for termination have been met and (2) the CAISO files the notice of termination within sixty (60) days after receipt of such request or (3) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if such notice is required to be filed with FERC, or upon ninety (90) days after the CAISO's receipt of the CRR Entity's notice of termination, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

ARTICLE IV
GENERAL TERMS AND CONDITIONS

4.1 CRR Holder Requirements. The CRR Entity must register and qualify with the CAISO and comply with all terms of the CAISO Tariff applicable to Candidate CRR Holders or CRR Holders, regardless of the manner in which they acquire CRRs whether by CRR Allocation, CRR Auction, or through the Secondary Registration System.

4.2 CRR Holder Creditworthiness Requirements. The CRR Entity must comply with the requirements for creditworthiness applicable to Candidate CRR Holders or CRR Holders, including the creditworthiness provisions of the CAISO Tariff and the relevant Business Practice Manual.

4.3 Settlement Account. The CRR Entity shall maintain at all times an account with a bank capable of Fed-Wire transfer to which credits or debits shall be made in accordance with the billing and Settlement provisions of Section 11 of the CAISO Tariff. Such account shall be the account referred to in Schedule 2 hereof or as notified by the CRR Entity to the CAISO from time to time by giving at least seven (7) days written notice before the new account becomes operational. Such changes to Schedule 2 shall not constitute an amendment to this Agreement.

4.4 Electronic Contracting. All submitted applications, bids, confirmations, changes to information on file with the CAISO and other communications conducted via electronic transfer (*e.g.*, direct computer link, FTP file transfer, bulletin board, e-mail, facsimile or any other means established by the CAISO) shall have the same legal rights, responsibilities, obligations and other implications as set forth in the terms and conditions of the CAISO Tariff as if executed in written format.

4.5 Agreement Subject to CAISO Tariff. The Parties will comply with all provisions of the CAISO Tariff applicable to Candidate CRR Holders or CRR Holders. This Agreement shall be subject to the CAISO Tariff, which shall be deemed to be incorporated herein.

ARTICLE V
PERFORMANCE

5.1 Penalties. The CRR Entity shall be subject to all penalties made applicable to Candidate CRR Holders and CRR Holders set forth in the CAISO Tariff. Nothing in this Agreement, with the exception of the provisions relating to ADR, shall be construed as waiving the rights of the CRR Entity to oppose or protest the specific imposition by the CAISO of any FERC-approved penalty on the CRR Entity.

5.2 Corrective Measures. If the CRR Entity or the CAISO fails to meet or maintain the requirements set forth in this Agreement and/or the CAISO Tariff as it pertains to this Agreement, the CAISO or the CRR Entity shall be permitted to take any of the measures, contained or referenced in the CAISO Tariff, which the Party seeking enforcement deems to be necessary to correct the situation.

ARTICLE VI
COSTS

6.1 Operating and Maintenance Costs. The CRR Entity shall be responsible for all its costs incurred in connection with all its CRR related activities.

ARTICLE VII
DISPUTE RESOLUTION

7.1 Dispute Resolution. The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the ISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is

incorporated by reference, except that any reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to the CRR Entity and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE VIII
REPRESENTATIONS AND WARRANTIES

8.1 Representation and Warranties. Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.

ARTICLE IX
LIABILITY

9.1 Liability. The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to the CRR Entity and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE X
UNCONTROLLABLE FORCES

10.1 Uncontrollable Forces Tariff Provisions. Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Agreement except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as a reference to the CRR Entity and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE XI
MISCELLANEOUS

11.1 Assignments. Either Party may assign or transfer any or all of its rights and/or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff and other CAISO Tariff requirements as applied to Candidate CRR Holders or CRR Holders. Such consent shall not be unreasonably withheld. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest was an original Party to this Agreement.

11.2 Notices. Any notice, demand, or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff. A Party must update the information in Schedule 1 of this Agreement as information changes. Such changes to Schedule 1 shall not constitute an amendment to this Agreement.

11.3 Waivers. Any waivers at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations,

in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.

11.4 Governing Law and Forum. This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in accordance with, the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement to which the ISO ADR Procedures do not apply, shall be brought in any of the following forums, as appropriate: (i) any court of the State of California, (ii) any federal court of the United States of America located in the State of California, except to the extent subject to the protections of the Eleventh Amendment of the United States Constitution or, (iii) where subject to its jurisdiction, before the Federal Energy Regulatory Commission.

11.5 Consistency with Federal Laws and Regulations. This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.

11.6 Merger. This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereto and supersedes all prior agreements, whether written or oral, with respect to such subject matter.

11.7 Severability. If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.

11.8 Section Headings. Section headings provided in this Agreement are for ease of reading and are not meant to interpret the text in each Section.

11.9 Amendments. This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. If the amendment does not require FERC approval, the amendment will be filed with FERC for informational purposes. Nothing herein shall be construed as affecting in any way the right of the CAISO to make unilateral application to FERC for a change in the rates, terms, and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder. The standard of review the Commission shall apply when acting upon proposed modifications to this Agreement by the CAISO shall be the "just and reasonable" standard of review rather than the "public interest" standard of review. The standard of review the Commission shall apply when acting upon proposed modifications to this Agreement by the Commission's own motion or by a signatory other than the CAISO or non-signatory entity shall also be "just and reasonable" standard of review. Schedules 1 and 2 are provided for informational purposes and revisions to those schedules do not constitute a material change in the Agreement warranting Commission review.

11.10 Counterparts. This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date hereinabove written.

California Independent System Operator Corporation

By: _____

Name: _____

Title: _____

Date: _____

[Name of CRR Entity]

By: _____

Name: _____

Title: _____

Date: _____

SCHEDULE 1

NOTICES

[Section 11.2]

CRR Entity

Name of Primary
Representative: _____

Title: _____

Company: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

Name of Alternative
Representative: _____

Title: _____

Company: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

CAISO

Name of Primary
Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email address: _____

Phone: _____

Fax: _____

Name of Alternative Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email address: _____

Phone: _____

Fax: _____

SCHEDULE 2

SETTLEMENT ACCOUNT

[SECTION 4.3]

CRR Entity Account Information

Settlement Account No:

_____

Title:

_____

Sort Code:

_____

Bank:

_____

* * *

CAISO TARIFF APPENDIX B.12

Pro Forma MSS Aggregator CRR Entity Agent Agreement

CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

AND

[METERED SUBSYSTEM AGGREGATOR]

MSS AGGREGATOR CRR ENTITY AGENT AGREEMENT

MSS AGGREGATOR CRR ENTITY AGENT AGREEMENT

THIS AGREEMENT is dated this day of , , and is entered into, by and between:

(1) **[INSERT NAME OF MSS AGGREGATOR],** a **[INSERT TYPE OF ENTITY]**, having its registered and principal place of business located at **[INSERT ADDRESS]**, acting as the agent on behalf of the following principals: **[INSERT NAMES OF MSS OPERATOR LSEs],** all of which are MSS Operators and Load Serving Entities, ("MSS Operators") pursuant to the terms of that certain **[INSERT TITLE OF MSS AGGREGATOR AGREEMENT]** ("MSSAA") dated (the "CRR Entity Agent");

and

(2) **California Independent System Operator Corporation,** a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate, initially 151 Blue Ravine Road, Folsom, California 95630 (the "CAISO").

The CRR Entity Agent and the CAISO are hereinafter referred to individually as a "Party" and collectively as the "Parties."

Whereas:

A. The CAISO Tariff provides that any entity that holds or intends to hold CRRs must register and qualify with the CAISO and comply with the terms of the CAISO Tariff (either directly or through its agent), regardless of whether they are to acquire CRRs through the CRR Allocation or CRR Auction, or through the Secondary Registration System.

B. The CRR Entity Agent pursuant to the terms of the MSSAA is authorized by the aggregated MSS Operators to act on the behalf of the MSS Operators with regard to matters relating to CRRs, including, but not limited to, allowing the CRR Entity Agent to participate in the CRR nomination process on behalf of the MSS Operators, to accept financial responsibility under this Agreement, to perform settlement functions, and to comply with CAISO Tariff requirements.

C. The CRR Entity Agent has completed the Candidate CRR Holder application process on behalf of its aggregated MSS Operators and pursuant to the terms of the MSSAA is eligible to participate on behalf of the MSS Operators in the CRR Allocation or CRR Auction or register through the Secondary Registration System on behalf of the MSS Operators. However, the CRR Entity Agent will not hold title to or ownership of any CRRs issued to any of its aggregated MSS Operators through the CRR Allocation, CRR Auction, or Secondary Registration System processes. Rather, the CRR Entity Agent will hold title for the CRRs allocated to the individual MSS Operator's Load in trust on behalf of the MSS Operator.

D. The CAISO Tariff further provides that any entity that wishes to participate in the CRR Allocation or CRR Auction or register as a CRR Holder through the Secondary Registration System must meet all of the Candidate CRR Holder requirements and creditworthiness provisions in the CAISO Tariff and the relevant Business Practice Manual, including demonstration of its ability to accommodate the financial responsibility associated with holding CRRs.

E. The aggregated MSS Operators desire to act through the CRR Entity Agent to comply with all requirements referenced in part D, above, in order to obtain CRRs through the CRR Allocation, CRR Auction, or Secondary Registration System.

F. The CRR Entity Agent, on behalf of its aggregated MSS Operators, wishes to undertake such necessary tasks and requirements set forth herein to comply with the applicable provisions of the CAISO Tariff in order to allow the MSS Operators to participate in the CRR Allocation, CRR Auction, and Secondary Registration System processes.

G. The Parties are entering into this Agreement in order to establish the terms and conditions pursuant to which the CAISO and the CRR Entity Agent will discharge their respective duties and responsibilities under the CAISO Tariff.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, **THE PARTIES AGREE** as follows:

ARTICLE I
DEFINITIONS AND INTERPRETATION

1.1 Master Definitions Supplement. All terms and expressions used in this Agreement shall have the same meaning as those contained in the Master Definitions Supplement in Appendix A of the CAISO Tariff, unless otherwise defined herein.

1.2 Rules of Interpretation. The following rules of interpretation and conventions shall apply to this Agreement:

(a) if there is any inconsistency between this Agreement and the CAISO Tariff, the CAISO Tariff will prevail to the extent of the inconsistency;

(b) the singular shall include the plural and vice versa;

(c) the masculine shall include the feminine and neutral and vice versa;

(d) “includes” or “including” shall mean “including without limitation”;

(e) references to a Section, Article, or Schedule shall mean a Section, Article, or a Schedule of this Agreement, as the case may be, unless the context otherwise requires;

(f) a reference to a given agreement or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented, or restated through the date as of which such reference is made;

(g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced, or restated from time to time;

(h) unless the context otherwise requires, any reference to a “person” includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization, or other entity, in each case whether or not having separate legal personality;

(i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;

(j) any reference to a day, week, month, or year is to a calendar day, week, month, or year; and

(k) the captions and headings in this Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Agreement.

ARTICLE II
ACKNOWLEDGEMENTS OF CRR ENTITY AGENT AND CAISO

2.1 Scope of Application to Parties. The CRR Entity Agent and CAISO acknowledge that all MSS Aggregators that are authorized by their aggregated MSS Operators to act as the agent of those MSS Operators in undertaking all obligations and responsibilities of Candidate CRR Holders or CRR Holders must sign this Agreement in accordance with section 4.10.1.9.1 of the CAISO Tariff.

ARTICLE III
TERM AND TERMINATION

3.1 Effective Date. This Agreement shall be effective as of the later of the date it is executed by both Parties or the date accepted for filing and made effective by FERC if such FERC filing is required, and shall remain in full force and effect until terminated pursuant to Section 3.2 of this Agreement.

3.2 Termination

3.2.1 Termination by CAISO. Upon notice that the agency relationship between all of the aggregated MSS Operators and the CRR Entity Agent has terminated, including any notice that the MSSAA has terminated, the CAISO may terminate this Agreement by giving written notice to the CRR Entity Agent of termination. Further, subject to Article V, the CAISO may terminate this Agreement by giving written notice to the CRR Entity Agent of termination in the event that the CRR Entity Agent commits any material default under this Agreement and/or the CAISO Tariff as it pertains to this Agreement which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given, to the CRR Entity Agent, written notice of the default, unless excused by reason of Uncontrollable Forces in accordance with Article X of this Agreement or unless the CAISO agrees, in writing, to an extension of the time to remedy such material default. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement was filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the filing of the notice of termination is made after the preconditions for termination have been met and (2) the CAISO files the notice of termination within sixty (60) days after issuance of the notice of default or (3) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if filed with FERC, or thirty (30) days after the date of the CAISO's notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

3.2.2 Termination by CRR Entity Agent. In the event that the CRR Entity Agent is no longer a CRR Holder as trustee for any or all of its aggregated MSS Operators, the CRR Entity Agent may terminate this Agreement, on giving the CAISO not less than ninety (90) days' written notice; provided, however, any outstanding financial right or obligation or any other obligation under the CAISO Tariff of the Candidate CRR Holder or CRR Holder (regardless of whether such obligation shall be borne by an aggregated MSS Operator or the CRR Entity Agent) that has arisen while the CRR Entity Agent was a Candidate CRR Holder or a CRR Holder as trustee for any or all of its MSS Operators, and any provision of this Agreement necessary to give effect to such right or obligation, shall survive until satisfied. With respect to any notice of termination given pursuant to this Section, CAISO must file a timely notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be

considered timely if: (1) the request to file a notice of termination is made after the preconditions for termination have been met and (2) the CAISO files the notice of termination within sixty (60) days after receipt of such request or (3) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if such notice is required to be filed with FERC, or upon ninety (90) days after the CAISO's receipt of the CRR Entity Agent's notice of termination, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

ARTICLE IV
GENERAL TERMS AND CONDITIONS

4.1 CRR Holder Requirements. The CRR Entity Agent acting on behalf of its aggregated MSS Operators must register and qualify on behalf of the MSS Operators with the CAISO and comply with all terms of the CAISO Tariff applicable to Candidate CRR Holders or CRR Holders, regardless of the manner in which it acquires the CRRs on behalf of its aggregated MSS Operators, whether by CRR Allocation or CRR Auction, or through the Secondary Registration System. The CRR Entity Agent shall participate in the CRR nomination process on an aggregated basis on behalf of each of its aggregated MSS Operators on the basis of that individual MSS Operator's Load ratio share set forth in Schedule 3. The CAISO shall allocate CRRs to each individual MSS Operator based on its Load ratio share set forth in Schedule 3, which CRRs will be held in the aggregate by the CRR Entity Agent on behalf of its aggregated MSS Operators. The CRR Entity Agent acknowledges and agrees that it shall not hold title to or ownership of any of the CRRs of its aggregated MSS Operators. Ownership and title of any obtained CRRs shall be held in trust by the CRR Entity Agent on behalf of the applicable MSS Operator in accordance with each MSS Operator's Load share ratio as set forth in Schedule 3.

4.2 CRR Holder Creditworthiness Requirements. The CRR Entity Agent acting on behalf of its aggregated MSS Operators must comply with the requirements for creditworthiness applicable to Candidate CRR Holders or CRR Holders, including the creditworthiness provisions of the CAISO Tariff and the relevant Business Practice Manual.

4.3 Settlement Account. The CRR Entity Agent on behalf of its aggregated MSS Operators shall maintain at all times an account with a bank capable of Fed-Wire transfer to which credits or debits shall be made in accordance with the billing and Settlement provisions of Section 11 of the CAISO Tariff. Such account shall be the account referred to in Schedule 2 hereof or as notified by the CRR Entity Agent to the CAISO from time to time by giving at least seven (7) days written notice before the new account becomes operational. Such changes to Schedule 2 shall not constitute an amendment to this Agreement.

4.4 CRR Entity Agent Responsibility for MSS Operator Load Share Ratio. The CRR Entity Agent shall track each aggregated MSS Operator's Load share ratio of CRRs separately as set forth in Schedule 3 and shall be solely responsible for tracking such allocations. The CRR Entity Agent acknowledges and agrees that CAISO shall have no responsibility with regard to such pro rata allocations of CRRs as set forth in Schedule 3. The CAISO shall issue CRRs allocated to the aggregated MSS Operators in aggregate to the CRR Entity Agent, and the CRR Entity Agent shall be solely responsible for ensuring the proper allocation of such CRRs to each aggregated MSS Operator. In the event the MSS Operator and CRR Entity Agent aggregation or agency relationship terminates, the CRR Entity Agent shall be solely responsible for ensuring that the appropriate pro rata share of every CRR Source is properly assigned to the applicable MSS Operator.

4.5 Provision of Evidence of CRR Entity Agent Authority. The CRR Entity Agent shall provide the CAISO with a copy of the MSSAA or other sufficient evidence to assure the CAISO of its authority to act as agent on behalf of its aggregated MSS Operators with regard to the matters addressed in this Agreement. The CRR Entity Agent shall provide the CAISO with the contact

name, address, e-mail address, and phone number of an individual representative of each of its aggregated MSS Operators whom the CAISO may contact regarding matters addressed in this Agreement. The CRR Entity Agent shall immediately notify the CAISO in writing of any revision to the terms of the MSSAA that affects its authority to act as agent on behalf of its aggregated MSS Operators or any other change in its relationship with any of its aggregated MSS Operators.

4.6 Electronic Contracting. All submitted applications, bids, confirmations, changes to information on file with the CAISO and other communications conducted via electronic transfer (*e.g.*, direct computer link, FTP file transfer, bulletin board, e-mail, facsimile or any other means established by the CAISO) shall have the same legal rights, responsibilities, obligations and other implications as set forth in the terms and conditions of the CAISO Tariff as if executed in written format.

4.7 Agreement Subject to CAISO Tariff. The Parties will comply with all provisions of the CAISO Tariff applicable to Candidate CRR Holders or CRR Holders. This Agreement shall be subject to the CAISO Tariff, which shall be deemed to be incorporated herein.

ARTICLE V
PERFORMANCE

5.1 Penalties. The CRR Entity Agent on behalf of its aggregated MSS Operators shall be subject to all penalties made applicable to Candidate CRR Holders and CRR Holders set forth in the CAISO Tariff. Nothing in this Agreement, with the exception of the provisions relating to ADR, shall be construed as waiving the rights of the CRR Entity Agent on behalf of its aggregated MSS Operators to oppose or protest the specific imposition by the CAISO of any FERC-approved penalty on the CRR Entity Agent or any MSS Operator.

5.2 Corrective Measures. If the CRR Entity Agent or the CAISO fails to meet or maintain the requirements set forth in this Agreement and/or the CAISO Tariff, the CAISO or the CRR Entity Agent shall be permitted to take any of the measures, contained or referenced in the CAISO Tariff as it pertains to this Agreement, which the Party seeking enforcement deems to be necessary to correct the situation.

ARTICLE VI
COSTS

6.1 Operating and Maintenance Costs. The CRR Entity Agent shall be responsible for all its costs and any costs of its aggregated MSS Operators incurred in connection with all its CRR related activities.

ARTICLE VII
DISPUTE RESOLUTION

7.1 Dispute Resolution. The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the ISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that any reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to one or more aggregated MSS Operators and/or the CRR Entity Agent (as applicable) and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE VIII
REPRESENTATIONS AND WARRANTIES

8.1 Representation and Warranties. Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law, and that the proper agreements providing for the CRR Entity Agent relationship with each aggregated MSS Operator, including, but not limited to, the MSSAA, are in full force and effect.

ARTICLE IX
LIABILITY

9.1 Liability. The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to one or more aggregated MSS Operators and/or the CRR Entity Agent (as applicable), and references to the CAISO Tariff shall be read as references to this Agreement. Further, in reliance on the agency relationship between the CRR Entity Agent and each aggregated MSS Operator, CAISO shall treat the CRR Entity Agent as the MSS Operators and shall not be liable to any aggregated MSS Operator for any claims, liabilities, or errors arising from this agency relationship, including, but not limited to, CRR ownership or Settlement Accounts, unless the CAISO causes such claim(s), liability(ies) or error(s) due to its gross negligence or willful conduct.

ARTICLE X
UNCONTROLLABLE FORCES

10.1 Uncontrollable Forces Tariff Provisions. Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Agreement except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as a reference to one or more aggregated MSS Operators and/or the CRR Entity Agent (as applicable) and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE XI
MISCELLANEOUS

11.1 Assignments. Either Party may assign or transfer any or all of its rights and/or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff and other CAISO Tariff requirements as applied to Candidate CRR Holders or CRR Holders. Such consent shall not be unreasonably withheld. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest was an original Party to this Agreement.

11.2 Notices. Any notice, demand, or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff. A Party must update the information in Schedule 1 of this Agreement as information changes. Such changes to Schedule 1 shall not constitute an amendment to this Agreement.

11.3 Waivers. Any waivers at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.

11.4 Governing Law and Forum. This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in accordance with, the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement to which the ISO ADR Procedures do not apply, shall be brought in any of the following forums, as appropriate: (i) any court of the State of California, (ii) any federal court of the United States of America located in the State of California, except to the extent subject to the protections of the Eleventh Amendment of the United States Constitution, or (iii) where subject to its jurisdiction, before the Federal Energy Regulatory Commission.

11.5 Consistency with Federal Laws and Regulations. This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.

11.6 Merger. This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereto and supersedes all prior agreements, whether written or oral, with respect to such subject matter.

11.7 Severability. If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.

11.8 Section Headings. Section headings provided in this Agreement are for ease of reading and are not meant to interpret the text in each Section.

11.9 Amendments. This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. If the amendment does not require FERC approval, the amendment will be filed with FERC for informational purposes. Nothing herein shall be construed as affecting in any way the right of the CAISO to make unilateral application to FERC for a change in the rates, terms, and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder. The standard of review the Commission shall apply when acting upon proposed modifications to this Agreement by the CAISO shall be the "just and reasonable" standard of review rather than the "public interest" standard of review. The standard of review the Commission shall apply when acting upon proposed modifications to this Agreement by the Commission's own motion or by a signatory other than the CAISO or non-signatory entity shall also be the "just and reasonable" standard of review. Schedules 1 and 2 are provided for informational purposes and revisions to those schedules do not constitute a material change in the Agreement warranting Commission review.

11.10 Counterparts. This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date hereinabove written.

California Independent System Operator Corporation

By: _____

Name: _____

Title: _____

Date: _____

[INSERT NAME OF CRR ENTITY AGENT]

By: _____

Name: _____

Title: _____

Date: _____

SCHEDULE 1

NOTICES

[Section 11.2]

CRR Entity Agent

Name of Primary
Representative: _____

Title: _____

Company: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

Name of Alternative
Representative: _____

Title: _____

Company: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

CAISO

Name of Primary
Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email address: _____

Phone: _____

Fax: _____

Name of Alternative
Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email address: _____

Phone: _____

Fax: _____

SCHEDULE 2

SETTLEMENT ACCOUNT

[Section 4.3]

CRR Entity Agent Account Information

Settlement Account No:

_____

Title:

_____

Sort Code:

_____

Bank:

_____

SCHEDULE 3

[Pro Rata Load Share per MSS Operator Represented by CRR Entity Agent]

[Section 4.4]

* * *

CAISO TARIFF APPENDIX C

Location Marginal Price

The CAISO shall calculate the price of Energy at Generation PNodes, Scheduling Points, and Aggregated Pricing Nodes, as provided in the CAISO Tariff. LMPs can be set by Bids to sell or purchase Energy. The CAISO establishes Trading Hub prices and LAPs as provided in the CAISO Tariff. The LMPs at PNodes, including Scheduling Points, and Aggregated Pricing Nodes include separate components for the marginal cost of Energy, Marginal Cost of Congestion, and Marginal Cost of Losses. As provided in Sections 6.5.3.2.2 and 6.5.5.2.4, Day-Ahead Market LMPs are calculated and posted on a Day-Ahead

basis for each hour of the Day-Ahead Market for Energy and for each Dispatch Interval for the Real-Time LMPs.

A. LMP Composition

In each hour of the Day-Ahead Market for Energy, the CAISO calculates the LMP for each PNode, which is equal to the marginal cost of Energy available at the PNode in the hour, based on the Bids of sellers and buyers selected in the Day-Ahead Market for Energy and specified in the Day-Ahead Schedule. The CAISO designates a Reference Bus, r, for calculation of the System Marginal Cost of Energy (SMECr). The CAISO uses a distributed Reference Bus to define an aggregate value of Energy for the CAISO Control Area. For each bus other than the Reference Bus, the Transmission Provider determines separate components of the LMP for the marginal cost of Energy, Marginal Cost of Congestion, and Marginal Cost of Losses relative to the Reference Bus, consistent with the following equation:

$LMP_i = SMEC_r + MCC_i + MCL_i$

$LMP_r = SMEC_r$

where:

- $SMEC_r$ is the LMP component representing the marginal cost of Energy (also referred to as λ) at the Reference Bus, r (System Marginal Energy Cost).
- MCC_i is the LMP component representing the Marginal Cost of Congestion (also referred to as ρ) at bus *i* relative to the Reference Bus.
- MCL_i is the LMP component representing the Marginal Cost of Losses (also referred to as γ) at bus *i* relative to the Reference Bus.

B. The System Marginal Energy Cost Component of LMP

The SMEC shall be the same for each location throughout the system. SMEC is the sensitivity of the power balance constraint at the optimal solution. The power balance constraint ensures that the physical law of conservation of Energy (the sum of Generation and imports equals the sum of Demand, including exports and Transmission Losses) is accounted for in the network solution. For the designated reference location the CAISO will utilize a distributed Reference Bus for which constituent PNodes are weighted in pre-specified proportions, referred to as Reference Bus distribution factors. The distribution factors are based on actual Demand at each PNode that represents Load. Once the Reference Bus is selected, and

Demand has dictated the distribution factors, the cost of economically providing the next increment of Energy, based on submitted Bids, at that Reference Bus becomes the System Marginal Energy Cost.

C. Marginal Congestion Component Calculation

The CAISO calculates the Marginal Costs of Congestion at each bus as a component of the bus-level LMP. The Marginal Cost of Congestion (MCC*i*) component of the LMP at bus *i* is calculated using the equation:

$$MCC_i = -\left(\sum_{k=1}^{K} PTDF_{ik} * FSP_k\right)$$

where:

- *K* is the number of thermal or interface transmission constraints.
- PTDF*ik* is the Power Transfer Distribution Factor for the generator at bus *i* on interface *k* which limits flows across that constraint when an increment of power is injected at bus *i* and an equivalent amount of power is withdrawn at the Reference Bus. The industry convention is to ignore the effect of losses in the determination of PTDFs.
- FSP*k* is the constraint Shadow Price on interface *k* and is equivalent to the reduction in system cost expressed in $/MWh that results from an increase of 1MW of the capacity on interface *k*.

The Shadow Price at a given binding constraint is the value per MW of the next increment of generation that would flow across the constrained path by relaxing the binding constraint. The PTDF of a PNode with respect to a transmission path (and direction on the path) measures the change in the power flow through the path (positive or negative, with respect to the designated direction on the path) as a result of an incremental injection at the Node, balanced by incremental change of Load at the Reference Bus.

D. Marginal Losses Component Calculation

The CAISO calculates the Marginal Cost of Losses (MCL*i*) at each bus *i* as described in Section 27.1.1.2. The MCL component of the LMP at any bus *i* within the CAISO's Control Area is calculated using the equation:

$$MCL_i = MLF_i * SMEC_r$$

Where:

- MLFi is the marginal loss factor for PNode *i* to the system Reference Bus, based on an AC power flow solution. The marginal loss factor at a PNode is the incremental change in the quantity (MW) of transmission losses in the network resulting when serving an increment of Load at the PNode from the Reference Bus.
    - MLF*i* is equal to 1 - ∂L/∂G*i*, where: L is system losses, G*i* is "generation injection" at PNode *i*, ∂L/∂G*i* is the partial derivative of system losses with respect to generation injection at bus *i*, that is, the incremental change in system losses associated with an incremental change in the generation injections at bus *i* holding constant other injection and withdrawals at all buses other than the Reference Bus and bus *i*.
- SMEC*r* is the SMEC at the Reference Bus, *r*.

E. Trading Hub Price Calculation

The CAISO calculates Existing Zone Generation Trading Hub prices, as provided in Section 27.3, based on the LMP calculations described in this Attachment and in Section 27.2.

$$\text{EZ Gen Trading Hub Price}_j = \sum_{i=1}^{NG} WG_{ist} * LMP_i$$

where:

- NG is the number of Generation buses defined in the Existing Zone Generation Trading Hub *j*.
- WG*ist* is the generation-weighting factor for bus *i* for season *s* for time period *t* representing peak or off-peak period in Existing Zone Generation Trading Hub *j*. The sum of the weighting factors must add up to 1. These weights are based on the previous years actual generation output as described in Section 27.3.

F. Load Zone Price Calculation

The CAISO calculates LAP prices based on the LMPs for a set of buses that comprise the LAP. These LAP prices represent the weighted average of the LMPs at the set of buses that comprise the LAP. The LAP bus weight is equal to the fractional share of each Load bus in the total Load in the LAP during the hour.

The price for LAP *j* is:

$$\text{LAP Price}j = \sum_{i=1}^{NZ} \text{WZ}i * \text{LMP}i)$$

where:

- NZ is the number of Load buses in LAP *j*.
- WZ*i* is the load-weighting factor for bus *i* in LAP *j*. The sum of the weighting factors must equal 1 (i.e., 100 percent). These weights are based on State Estimator results for similar day.

Each LAP one includes only the buses of Market Participants who are in the LAP and who have Load that is represented by that LAP's definition. Market Participants that have metered Load must either be settled at a Default LAP or a Custom LAP created for each Load point of the Market Participant (nodal Settlement).

G. Scheduling Point Price Calculation

The CAISO calculates LMPs for Scheduling Points, which are PNodes or an aggregation of PNodes that exist external to the CAISO Control Area through the same process that is used to calculate LMPs within the CAISO Control Area. A Scheduling Point typically is physically located at an "outside" boundary of the CAISO Controlled Grid (e.g., at the point of interconnection between a Control Area utility and the CAISO Controlled Grid). CAISO Controlled Grid that is external to the CAISO Control Area connects some Scheduling Points to the CAISO Control Area, and in these cases the Scheduling Points are within external Control Areas. In both of these cases, the CAISO places injections and withdrawals at the Scheduling Points, which represent Bids and Schedules whose physical location is unknown, and the LMPs for Settlement of Interchange schedules are established by the Scheduling Point's PNodes. The CAISO's FNM includes a full model of Embedded Control Areas and Adjacent Control Areas. The CAISO may place injections and withdrawals within the Embedded Control Areas and Adjacent Control Areas, which represent Bids and Schedules for the Embedded Control Areas' and Adjacent Control Areas' impact on transmission flows, to ensure the accuracy of power flow calculations and Congestion Management within the CAISO Control Area. The CAISO models the congestion and losses in Embedded Control Areas and Adjacent Control Areas as described in Section 27.5.3. The CAISO will establish PNodes for the Embedded Control Areas' and Adjacent Control Areas' Scheduling Points through consultation with the Embedded Control Areas and Adjacent Control Areas. The CAISO will use

Intertie scheduling constraints to limit the quantity of scheduled Energy and AS on a specified Intertie. An Intertie constraint is scheduled quantity limit as opposed to a flow based limit.

* * *

CAISO TARIFF APPENDIX J

[NOT USED]~~End-Use Meter Standards and Capabilities~~

~~CAISO TARIFF APPENDIX J~~

~~End-Use Meter Standards and Capabilities~~

~~End-Use Meter Standards & Capabilities Part A~~

~~**End Use Meter Standards.** All metering shall be of a revenue class metering accuracy in accordance with the ANSI C12 standards on metering and any other requirements of the relevant UDC or Local Regulatory Authority that may apply. Such requirements may apply to meters, current transformers and potential transformers, and associated equipment. ANSI C12 metering standards include the following:~~

~~ANSI C12.1 - American National Standard Code For Electricity Metering~~

~~ANSI C12.4 - American National Standard For Mechanical Demand Registers~~

~~ANSI C12.5 - American National Standard For Thermal Demand Meters~~

~~ANSI C12.6 - American National Standard For Marking And Arrangement Of Terminals For Phase-Shifting Devices Used In Metering~~

~~ANSI C12.7 - American National Standard For Watt-hour Meter Sockets~~

~~ANSI C12.8 - American National Standard For Test Blocks And Cabinets For installation Of Self-Contained A-Base Watt-hour Meters~~

~~ANSI C12.9 - American National Standard For Test Switches For Transformer-Rated Meters~~

~~ANSI C12.10 - American National Standard For Electromechanical Watt-hour Meters~~

~~ANSI C12.11 - American National Standard For Instrument Transformers For Revenue Metering, 10 kV BIL Through 350 kV BIL~~

~~ANSI C12.13 - American National Standard For Electronic Time-Of -Use Registers For Electricity Meters~~

~~ANSI C12.14 - American National Standard For Magnetic Tape Pulse Recorders For Electricity Meters~~

~~ANSI C12.15 - American National Standard For Solid-State Demand Registers For Electromechanical Watt-hour Meters~~

~~ANSI C12.16 - American National Standard For Solid-State Electricity Meters~~

~~ANSI C12.17 - American National Standard For Cartridge-Type Solid-State Pulse Recorders For Electricity Metering~~

~~ANSI C12.18 - American National Standard For Protocol Specification For ANSI Type 2 Optical Port~~

~~Part B~~

~~PARTICIPATING SELLERS METER STANDARDS AND CAPABILITIES~~

* * *

CAISO TARIFF APPENDIX O

[NOT USED]~~Metering~~

~~PART A~~

~~FAILURE OF CAISO FACILITIES~~

~~A 1 CAISO Secure Communication System Unavailable~~

~~A 1.1 Unavailable Functions of the CAISO Secure Communication System~~

~~During a total disruption of the CAISO secure communication system the CAISO will not be able to:~~

~~(a) communicate with CAISO Metered Entities or Scheduling Coordinators to acquire or provide any Meter Data or Settlement Quality Meter Data; and~~

~~(b) communicate general information.~~

~~A 1.2 Communications during the CAISO Secure Communication System Unavailability~~

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

~~(a) make all reasonable efforts to provide general information to CAISO Metered Entities and Scheduling Coordinators using voice communications; and~~

~~(b) inform CAISO Metered Entities and Scheduling Coordinators of the methods they must use to provide Meter Data and Settlement Quality Meter Data to the CAISO during that period.~~

~~A 2 Primary RMDAPS Master Station Completely Unavailable~~

~~A 2.1 Notification of Loss of Primary RMDAPS Master Station~~

In the event that the primary RMDAPS master station becomes completely unavailable, the CAISO will use alternate communications to notify the redundant RMDAPS master station that the primary RMDAPS master station is unavailable. The CAISO will post information on the situation on the CAISO secure communication system. Additional voice notifications will be made as time permits.

A 2.2 Notification of Restoration of Primary RMDAPS Master Station

The CAISO will post confirmation on the CAISO secure communication system that all computer systems are functioning normally (if such be the case) and use the redundant RMDAPS master station to take complete control of the all RMDAPS functions. Once the primary RMDAPS master station is again available, all functions will be transferred back to the primary RMDAPS master station and the CAISO will notify all CAISO Metered Entities and Scheduling Coordinators via the CAISO secure communication system.

PART B

CERTIFICATION PROCESS FOR METERING FACILITIES

Paragraphs B1 to B3 of this Part describe the steps that CAISO Authorized Inspectors and the CAISO will take to certify Metering Facilities of CAISO Metered Entities.

The steps described here will also be applicable to Scheduling Coordinator Metered Entities where no certification requirements are imposed on a Scheduling Coordinator Metered Entity by its Local Regulatory Authority.

Paragraph B5 of this Part describes the manner in which requests must be made to the CAISO to perform the certification of Metering Facilities.

B 1 Documentation to be Provided by CAISO/Scheduling Coordinator Metered Entity

The CAISO Metered Entity or Scheduling Coordinator Metered Entity shall provide the CAISO and the CAISO Authorized Inspector with schematic drawings (both detailed and one line) of the Metering Facilities being considered for CAISO certification. Such drawings shall be dated, bear the current drawing revision number and show all wiring, connections and devices in the circuits. Drawings shall also be provided for instrument transformers to the meter and the meter to the CAISO secure communication system.

In addition, the CAISO Metered Entity or Scheduling Coordinator Metered Entity will provide the CAISO and the CAISO Authorized Inspector with a completed CAISO Meter Certification Form (a copy of which forms part of this Part) in respect of each set of Metering Facilities being considered for CAISO certification.

B 2 Documentation to be completed by the CAISO Authorized Inspector

The CAISO Authorized Inspector will complete a CAISO approved site verification form (an internal CAISO document) in relation to each set of Metering Facilities that it inspects. The site verification form and the CAISO Meter Certification Form will be the official forms used to document whether Metering Facilities meet the CAISO certification criteria.

If there are any discrepancies between the CAISO certified drawings on file and the actual metering circuitry inspected by the CAISO Authorized Inspector or the CAISO, then the CAISO Authorized Inspector or the CAISO will document that discrepancy and revise the schematic drawings provided to the CAISO. The CAISO Authorized Inspector will notify the CAISO of the discrepancy and give the CAISO Metered Entity or

Scheduling Coordinator Metered Entity a notice detailing the discrepancies within 24 hours of that notification.

B 3 Review by the CAISO

The CAISO will review all documentation provided to it by the CAISO Metered Entity or Scheduling Coordinator Metered Entity (including the CAISO Meter Certification Form) and the site verification form prepared by the CAISO Authorized Inspector.

If the CAISO finds that the data is incomplete or fails to meet the relevant standards referred to in the CAISO Tariff and this Appendix, the CAISO shall provide written notice of the deficiencies to the CAISO Metered Entity or Scheduling Coordinator Metered Entity within seven days of receiving the documentation referred to above.

If the CAISO finds that the data is complete, it shall, subject to any exemptions granted under 10.3.18.5.1 in relation to providing Meter Data directly to RMDAPS, initiate tests to certify the RMDAPS interface with the relevant Metering Facilities.

Upon successful completion of the RMDAPS interface tests the CAISO will issue a Certificate of Compliance. The CAISO shall return the original schematic drawings, stamped by the CAISO as approved and certified, and the original CAISO Meter Certification Form and site verification form. The CAISO will retain copies of these documents. Once all conditions have been satisfied to the CAISO's satisfaction, the CAISO shall promptly issue an original Certificate of Compliance.

B 4 Provisional Certification

If the CAISO finds that:

(a) the data provided to it by the CAISO Metered Entity or Scheduling Coordinator Metered Entity is incomplete or fails to meet the relevant standards referred to in the CAISO Tariff and this Appendix; or

(b) the Metering Facilities fail the RMDAPS interface test,

the CAISO may, at its discretion, elect to issue a provisional Certificate of Compliance in respect of those Metering Facilities. The term of and conditions on which such a provisional Certificate of Compliance is issued shall be at the CAISO's discretion. However, the CAISO will not issue an original Certificate of Compliance to the CAISO Metered Entity until such time as all of the conditions of the provisional Certificate of Compliance have been fulfilled to the satisfaction of the CAISO.

B 5 Requests for the CAISO to Perform Certification

If a CAISO Metered Entity would like the CAISO to perform the certification of its Metering Facilities in accordance with Section 10.2.4.1, that CAISO Metered Entity shall submit a written request to the CAISO. The written request must:

(a) specify the Metering Facilities to be certified;

(b) provide the documentation referred to in paragraph B1 of this Part; and

(c) detail the reasons why it would be impossible or impractical for the CAISO Metered Entity to engage the services of a CAISO Authorized Inspector to perform the certification.

~~The CAISO will, within 14 days of receiving a request for it to certify Metering Facilities, inform the CAISO Metered Entity whether it will undertake the certification or require the CAISO Metered Entity to engage a CAISO Authorized Inspector to perform the certification.~~

CAISO Meter Certification Form							
Facility Information							
Name:				Unit Name:			
Address:				Drawing Numbers: (see note 1)			
CAISO Metered Entity Contact :				Phone Number:			
Scheduled CAISO Inspection Date:							
Generator Information							
Gross Output				Auxiliary Load			
Net Output				Voltage / Connections			
Revenue Billing Information							
Meter Manufacturer				Register Constant			
Meter Serial Number				Program ID Number			
Meter Type				Device ID			
Meter Form				IP Address/Router Port #			
Does meter have external pulse inputs for totalization purposes? Yes □ (info. is attached) No □							
Internal Mass Memory Constants							
Function	Channel	K_e	PRI KWH Constant	Interval Size	Display Sequence		
KWH DELIVERED							
KVARH DEL							
KVARH REC							
KWH RECEIVED							
Voltage Transformer Information				**Current Transformer Information**			
Name Plate	**A**□	**B**□	**C**□	Name Plate	**A**□	**B**□	**C**□
Manufacturer				Manufacturer			
Serial Number				Serial Number			
Type				Type			

Ratio				Ratio			
Voltage Class				Voltage Class			
BIL Rating				BIL Rating			
Accuracy Class				Accuracy Class			
Burden Rating				Rating Factor			
Connected Burden				Burden Rating			
				Connected Burden			
				Applied Test Burden			
				Burden Test	Pass □ Fail □	Pass □ Fail □	Pass □ Fail □

Instrument Transformer Correction Factors (FCF) (see note 2)		
Full Load	**Power Factor**	**Light Load**

Line Loss Compensation Values (at Full Load Meter Rating) (see note 2 and 3)	
% Watt Fe Loss	% Var Fe Loss
% Watt Cu Loss	% Var Cu Loss
Total Compensation Values (at Full Load Meter Rating)	
% Watt Total Loss	% Var Total Loss

Completed by:	Date:
Remarks:	
Reviewed by:	Date:

Notes:

1. CAISO Metered Entities shall provide a copy of the one line diagram and schematics detailing the connections from the instrument transformer to the meter, communication circuit and local meter data server (if applicable)in accordance with this Part.

2. CAISO Metered Entities shall attach a copy of the calculations used to determine these values.

3. For Power Transformer Loss Correction and Radial Line Loss Correction values the appropriate sign (+/-) should be utilized depending on the flow of Energy (delivered/received) and the location of the CAISO Meter Point.

PART C

METER CONFIGURATION CRITERIA

C 1 Power Flow Conventions

Meters shall be installed and configured in such a manner so as to define the 4 Quadrants referred to in Exhibit 1 to Part D of this Appendix.

C 2 CAISO Standard Meter Memory Channel Assignments

Metering Facilities shall be installed and configured in such a manner so as to comply with the following CAISO requirements:

Channel 1 shall record active power delivered by the CAISO Controlled Grid;

Channel 2 shall record reactive power delivered by the CAISO Controlled Grid;

Channel 3 shall record reactive power received by the CAISO Controlled Grid; and

Channel 4 shall record active power received by the CAISO Controlled Grid.

For metering with bi-directional power flows, the CAISO reserves the right to require metering which will measure 4 quadrant Vars. Situations like a generating plant that nets gross generator output and auxiliary loads on one meter which could swap from a supplying to a buying mode and vice versa may require this type of metering. To properly account for such cases, six channels of data will be required. This configuration is considered optional unless specified by CAISO as required. Such Metering Facilities shall be installed and configured in such a manner so as to comply with the following CAISO requirements:

Channel 1 shall record active power delivered by the CAISO Controlled Grid;

Channel 2 shall record quadrant 1 reactive power delivered by the CAISO Controlled Grid;

Channel 3 shall record quadrant 3 reactive power received by the CAISO Controlled Grid;

Channel 4 shall record active power received by the CAISO Controlled Grid;

Channel 5 shall record quadrant 2 reactive power delivered by the CAISO Controlled Grid; and

Channel 6 shall record quadrant 4 reactive power received by the CAISO Controlled Grid.

C 3 CAISO Standard Meter Display Modes

The following display readings shall be displayed in the normal display mode to comply with CAISO requirements.

~~Normal Display Mode (Standard Configuration, Uni-directional/Bi-directional kWh and kVarh)~~

~~For standard metering applications the display items should be utilized in the sequence listed below. When metering uni-directional power flows, the quantities listed below that do not apply (i.e. for generation only applications, the delivered quantities should have zero accumulation) may be omitted. The only exception to this would be where the display items correlate to the load profile channel assignments. The 4 display readings that correlate to the 4 load profile channels must also be displayed.~~

~~Date MM:DD:YY.~~

~~Time HH:MM:SS (Pacific Standard Time, military format).~~

~~Total kWh delivered by the CAISO Controlled Grid.~~

~~Maximum kWd (5 minute or hourly demand interval) delivered by the CAISO Controlled Grid.~~

~~Date and time of maximum kWd delivered by the CAISO Controlled Grid.~~

~~Total kVarh delivered by the CAISO Controlled Grid.~~

~~Total kVarh received by the CAISO Controlled Grid.~~

~~Total kWh received by the CAISO Controlled Grid.~~

~~Maximum kWd (5 minute or hourly demand interval) received by the CAISO Controlled Grid.~~

~~Date and time of maximum kWd received by the CAISO Controlled Grid.~~

~~Normal Display Mode (Optional Configuration, Bi-directional Kwh and Four Quadrant kVarh)~~

~~For metering bi-directional power flows in which CAISO requires optional 4 quadrant Var measurement, the following display items should be displayed in the sequence listed below:~~

~~Date MM:DD:YY.~~

~~Time HH:MM:SS (Pacific Standard time, military format).~~

~~Total kWh delivered by the CAISO Controlled Grid.~~

~~Maximum kWd (5 minute or hourly demand interval) delivered by the CAISO Controlled Grid.~~

~~Date and time of maximum kWd delivered by the CAISO Controlled Grid.~~

Total kVarh for Quadrant 1.

Total kVarh for Quadrant 2.

Total kVarh for Quadrant 3.

Total kVarh for Quadrant 4.

Total kWh received by the CAISO Controlled Grid.

Maximum kWd (5 minute or hourly demand interval) received by the CAISO Controlled Grid.

Date and time of maximum kWd received by the CAISO Controlled Grid.

Consumption Values

The consumption values shall be in XXXXX.X format and demand in XXXX.XX format. The register scaling factor should be set such that the display does not roll over in less than 60 days.

Alternative Display Mode

The values listed below should be displayed in the alternate display mode to comply with CAISO requirements:

Phase A voltage magnitude and phase angle.

Phase B voltage magnitude and phase angle.

Phase C voltage magnitude and phase angle.

Phase A current magnitude and phase angle.

Phase B current magnitude and phase angle.

Phase C current magnitude and phase angle.

Neutral current magnitude and phase angle (if available).

Instantaneous kW delivered by the CAISO Controlled Grid (for bi-directional power flows and/or applications where the power flow is out of CAISO Controlled Grid).

Instantaneous kW received by the CAISO Controlled Grid (for bi-directional power flows and/or applications where the power flow is received by the CAISO Controlled Grid).

When available, the alternative display mode may also be used by CAISO Metered Entities to display other definable quantities in sequence after the values defined above.

C 4 Instantaneous Power Factor - Test Mode

The following values should be displayed in the test mode to comply with CAISO requirements:

total pulse count for test; and

total consumption during test.

During the test mode the above values should be provided for each function being tested (Watts, Vars). The data displayed by the meter while in test mode shall not change the normal mode display registers nor shall it be recorded in the load profile channels. This requirement is imposed to prevent the test data from being recorded as actual load/generation data.

CAISO Metered Entities may add additional display quantities in sequence in the test mode after the values defined above.

C 5 Transformer and Line Loss Correction

The CAISO Metered Entity will be responsible for properly calculating and applying the transformer and line loss corrections to its meters in accordance with this Appendix to reflect the actual meter usage (on the low side) as opposed to the theoretical meter usage at the transmission point.

C 6 CT/VT and Cable Loss Correction Factors

Where the connected burden of a metering circuit exceeds the burden rating of a CT or VT or if an existing instrument transformer does not meet the minimum CAISO accuracy requirements, then one of the actions listed below must to be taken:

(a) replace the instrument transformer(s) with higher burden rated revenue class units; or

(b) reduce the burden on the circuit to comply with the name plate of existing instrument transformer(s); or

(c) apply correction factors to the meter to adjust the meter's registration to compensate for inaccuracies.

The CAISO preferred action is that referred to in paragraph (a) above.

The CAISO Metered Entity will be responsible for properly calculating and applying the CT/VT and cable loss correction factors to its meters in accordance with this Appendix to adjust for inaccuracies in the metering circuit.

C 7 Special Applications, Configurations and Unique Situations

CAISO Metered Entities are responsible for providing the CAISO with the necessary Meter Data and other information to enable the CAISO to prepare Settlement Quality Meter Data. For instance, where there is a generating plant with multiple generators and

auxiliary loads, the CAISO Metered Entity must provide appropriate information (i.e. documentation, descriptions, one line diagrams, etc.) to the CAISO to ensure that the CAISO can properly account for the net generator output of each unit under all combinations of generation and load (e.g. where only one generator is operating but all auxiliary loads are being supplied).

PART D

STANDARDS FOR METERING FACILITIES

The standards for Metering Facilities referred to in this Part provide additional details to the standards referred to in Appendix J to the CAISO Tariff.

The standards referred to in Appendix J to the CAISO Tariff and this Part apply to CAISO Metered Entities and, where the relevant Local Regulatory Authority has not set any standards, to Scheduling Coordinator Metered Entities.

D 1 Standards for Existing Metering Facilities

Existing Metering Facilities are those facilities that are fully installed as of the CAISO Operations Date. Existing Metering Facilities used by CAISO Metered Entities shall meet the following general standards:

revenue quality instrument transformers at the generator output level (specifically at all main generators, banks and local distribution load supplied from the generator) must have an accuracy of 0.3% or better

generator auxiliary load metering must have an overall accuracy of 3%

revenue quality instrument transformers at transmission metering points must have an accuracy of 0.3% or better

D 2 General Standards for New Meters

New Meters are those meters that are installed after the CAISO Operations Date. New Meters used by CAISO Metered Entities shall meet the following general standards:

they must be revenue quality in an accuracy class of 0.25%

they must be remotely accessible, reliable, 60 Hz, three phase, bi-directional, programmable and multifunction electronic meters

they must be capable of measuring kWh and kVarh and providing calculated three phase values for kVah, kVa

they must have a demand function including cumulative, rolling, block interval demand calculation and maximum demand peaks

there must be battery back-up for maintaining RAM and a real-time clock during outages of up to thirty days

there must be AC potential indicators on each of the three phases

they must be capable of being powered either internally from the bus or externally from a standard 120 volt AC source.

they must be capable of providing RMDAPS (MV-90) addressable metering protocol

they must be capable of 60 days storage of kWh and KVarh interval data

If there is any inconsistency between these general standards and the detailed standards referred to in paragraphs D3 and D4 of this Part, the detailed standards shall prevail.

D 3 Detailed Standards for New Meters

Exhibit 1 to this Part provides the detailed specifications with which new meters must comply.

D 4 Detailed Standards for New Oil Filled, Wound Instrument Transformers

Exhibit 2 to this Part provides the detailed specifications with which new oil filled, wound instrument transformers must comply.

D 5 Standards for Compatible Meter Data Servers

In order for a meter data acquisition and processing system of a metered entity to be certified by the CAISO as a Compatible Meter Data Server, that metered entity must satisfy the CAISO that the server is capable of providing:

- Meter Data and/or Settlement Quality Meter Data to RMDAPS in the Meter Data Exchange Format via the CAISO secure communication system and/or REMnet via File Transfer Protocol (FTP);

- Meter Data to the CAISO which is real data at least comparable to data obtained directly by RMDAPS from meters;

- Meter Data and/or Settlement Quality Meter Data to the CAISO on demand within 10 minutes of receiving such a demand from the CAISO;

- System Back Up procedures that permit submission of data within 41 days of a Trading Day to RMDAPS even in the event of a major facility or system problem. Back Up procedures must be documented and available for review by CAISO.

- System Security procedures that limit the accessibility to meter data and the system parameters . The System Security procedures must be documented and available for review by CAISO.

- If applicable, procedures that define methods of profiling consumption meter data into intervals. These procedures must be documented, they must follow any appropriate regulatory guidelines and they must be available for review by the v.

- System day-to-day operational procedures, these procedures should be available for CAISO review and audit.

EXHIBIT 1 TO PART D

SPECIFICATION MTR1-96

ENGINEERING SPECIFICATION
FOR POLYPHASE SOLID-STATE
ELECTRICITY REVENUE QUALITY METERS
FOR USE ON THE CAISO CONTROLLED GRID

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~~1 General Information~~

~~This Exhibit applies to all solid-state polyphase electricity meters used in revenue metering applications on the CAISO Controlled Grid (Meters).~~

~~2 Scope~~

~~2.1 General~~

~~This Exhibit provides the minimum functional and performance requirements for Meters. All requirements in this Exhibit are intended to ensure the expected life cycles, security, accuracy,~~

reliability and minimum maintenance requirement of Meters. Some requirements, however, are specified to maintain the compatibility and interchangeability of the Meter.

2.2 Applicability

Meters approved under this Exhibit may not be required to have all of the specified features. Meters shall meet the specified minimum requirements and the requirements of Section 13 (Meter Approval Testing) of this Exhibit.

3 Metering Functions

3.1 Measured Quantities

As used in this Exhibit, the term "delivered" applies to Energy flowing out of the CAISO Controlled Grid and the term "received" applies to Energy flowing into the CAISO Controlled Grid.

3.1.1 Consumption

The following consumption quantities are required for all Meters approved for use on the CAISO Controlled Grid:

(a) Kilowatt-hours—delivered;

(b) Kilowatt-hours—received;

(c) Kilovar-hours—delivered, received, for each quadrant;

(d) Kilovoltamp-hours—delivered, received, for each quadrant;

(e) Ampere-squared-hours; and

(f) Volts-squared-hours.

3.1.2 Demand

The following demand quantities are required for all meters approved for use on the CAISO Controlled Grid:

(a) Kilowatts—delivered;

(b) Kilowatts—received;

(c) Kilovars—delivered, received, for any quadrant; and

(d) Kilovoltamps—delivered, received, for any quadrant.

3.1.3 Power Factors

The CAISO may specify average power factors for the previous demand sub-interval in any quadrant or any combination of two quadrants.

3.1.4 Reverse Consumption/Demand

The Meter shall be programmable to take one of the following actions for reverse consumption and demand quantities:

(a) ignore the reverse quantities; and

(b) add the reverse quantities to the appropriate consumption and demand quantities.

3.2 Basic Default Metering Function

When power is applied to the Meter, it shall immediately begin recording bi-directional total kilowatt-hours. Reverse power flow shall carry a negative sign. This function shall be performed regardless of whether the Meter is programmed or not and shall not require a battery. An unprogrammed Meter shall indicate that it is unprogrammed. The CAISO may request a Meter to be programmed with a specific program.

3.3 Demand Metering Function

Meters shall have the following demand metering functions:

(a) as a minimum, the Meter shall be programmable for fixed and/or rolling interval demand calculations on bi-directional kilowatts and kilovars;

(b) a battery shall not be required to perform demand calculations, to save the results or to communicate the results to a handheld meter reader connected to the optical port;

(c) the Meter shall be programmable for one minute delivered kilowatt demand (as an approximation of "instantaneous" kilowatts delivered) in addition to the rolling interval demand calculation. The one minute demand is not required to be synchronous with the other demand quantities;

(d) the Meter shall be programmable for rolling interval demand calculations for any optional demand quantity (see Section 3.1.2) that CAISO specifies.

(e) demand intervals shall be programmable for a duration of 5, 10, 15, 30 or 60 minutes;

(f) the demand interval shall be composed of an integral number of sub-intervals. Sub-interval duration shall be a programmable duration of 1, 5, 10, 15 or 30 minutes;

(g) demand functions shall be capable of temporary suspension for a programmable time interval after power is restored following a power outage. The length of time shall be programmable from zero to 60 minutes in one minute intervals;

(h) after a demand reset, further manual demand resets shall be prevented with a programmable lockout time. A demand reset from a Meter Programmer connected to the optical port is not subject to this delay and can be initiated as frequently as required; and

(i) if the Meter has been programmed for Time-of-Use (TOU) functions, the time at which maximum demand occurred shall be recorded at the end of that demand interval.

3.4 Time-of-Use (TOU) Metering Function

Meters shall have the following TOU metering functions:

(a) as a minimum, the Meter shall be programmable for TOU calculations for bi-directional kilowatt-hours and kilovarhours and bi-directional kilowatt and kilovar demand.;

(b) the Meter shall be programmable for TOU calculations for any optional consumption or demand quantity (see Section 3.1.1 or 3.1.2) that the CAISO specifies;

(c) the calendar shall be programmable into one to four mutually exclusive seasons;

(d) each season shall be further programmable into one to four mutually exclusive daily TOU schedules;

(e) the Meter shall be capable of distinguishing weekdays, weekends, days of the week, and holidays.

(f) each consumption and demand quantity shall be metered independently for each TOU schedule;

(g) only one season and one TOU schedule shall be active at a given time. There shall always be one active season and one active TOU schedule;

(h) each daily TOU schedule shall be capable of a minimum of eight switch points with a minimum resolution of a quarter hour;

(i) the calendar shall be capable of accommodating leap years, daylight saving time changes and recurring holidays; and

(j) the Meter shall have capacity for a minimum calendar of 20 years, taking into account 12 holidays/year, 4 seasons/year, and 2 daylight savings time adjustments/year.

3.5 Self-Read TOU Metering Function

Meters shall have the following self-read TOU metering functions:

(a) as a minimum the Meter shall perform a self-read of all consumption and demand quantities on season changes. A self-read shall consist of reading the quantities, resetting the demand and storing the data;

(b) the change of season self-reads shall occur at midnight of the day before the season change;

(c) the CAISO may specify that the Meter be programmable for up to three consecutive self-reads. The self-reads shall be programmable for:

i. a specific day of each month at midnight;

ii. a specific number of days from the last demand reset (read) at midnight; and

iii. self-read time of use metering; and

(d) self-read data, other than previous season data, need not be displayed but shall be retrievable with a Meter Programmer connected to the optical port.

3.6 Load Profile Function

Meters shall have the following load profile functions:

(a) the CAISO may specify that the Meter provide load profile recording of interval data for 1 to 4 channels of consumption quantities;

(b) load recording of interval data shall operate independently of the TOU functions;

(c) date and time shall be stored with the load recording of interval data;

(d) load recording of interval data shall use a "wraparound" memory that stores new interval data by writing over the oldest interval data;

(e) the load recording of interval data function shall be capable of storing and communicating a minimum of 60 days of 4 channel, 5 minute interval data, in addition to allowances for event recording (power outages, resets, time sets, etc.);

(f) the load recording of interval data function shall have the capacity to count and store at least 16,000 counts in a 15 minute period of time; and

(g) load recording of interval data shall continue while the Meter is communicating with a Meter Programmer connected to the optical port.

3.7 Function during Power Disturbances

Meters shall have the following functions during power disturbances:

(a) during powerline disturbances such as brownout or outage conditions the Meter shall maintain all meter data as well as time keeping functions. Display and communication functions are not required during these conditions;

(b) the Meter shall withstand the following outages during a continuous ten year or longer service without the need to maintain its auxiliary power system, including replacing the battery:

i. 20 short outages per year of less than 30 seconds per outage; and

ii. 40 days of continuous/cumulative outage;

(c) during a power outage, critical program and billing data shall be written to non-volatile memory. When power is restored, data shall be returned to active memory and data collection resumed;

(d) following a power outage, register "catch-up" time shall be a maximum of 30 seconds. During the "catch-up" time the Meter shall still calculate consumption and demand quantities. Optional outputs shall also function during this time;

(e) during power outages, time shall be maintained with a cumulative error of no more than 2 minutes per week (0.02%);

(f) the Meter shall record the date and time of any power outage; and

(g) Meters may also record the duration of any power outage.

3.8 Meter Test Mode Function

Meters shall have the following meter test mode functions:

(a) the Meter shall have the capability of a Test Mode function that suspends normal metering operation during testing so that additional consumption and demand from the tests are not added to the Meter's totals;

(b) the Test Mode function shall be activated by a permanently mounted physical device that requires removal of the Meter cover to access or by a Meter Programmer connected to the optical port;

(c) activation of the Test Mode shall cause all present critical billing data to be stored in non-volatile memory and restored at the time of exit from the Test Mode;

(d) upon activation of the Test Mode, register displays shall accumulate beginning from zero;

(e) actuation of the billing period reset device during Test Mode shall reset the test mode registers;

(f) after a programmable time-out period, the Meter will automatically exit from Test Mode and return to normal metering; and

(g) the default Test Mode registers for an unprogrammed meter shall include as a minimum:

i. time remaining in the test interval;

ii. maximum kilowatt block demand; and

iii. total kilowatt-hours.

4 Display Requirements

4.1 LCD Display

The Meter shall have an electronic display for displaying the consumption and demand quantities. A liquid crystal display (LCD) is preferred.

4.2 Viewing Characteristics

Digits for displaying the consumption and demand quantities shall be a minimum of 7/16" in height and be legible in normal daylight conditions from a distance of six feet by an observer. The viewing angle shall be a minimum of fifteen degrees from the front Meter face line of sight.

4.3 Display Components

The display shall provide the following:

(a) six digits for display of the consumption and demand quantities and constants with decimal points for the three least significant digits;

(b) three digits for numeric display identifiers (ID numbers);

(c) alternate and Test Mode indication;

(d) potential indication for each phase;

(e) current TOU rate indicator;

(f) end of interval indicator;

(g) visual representation of the magnitude and direction of kilowatt loading;

(h) visual representation of the magnitude and direction of kilovar loading if the Meter is capable of measuring kilovars; and

(i) Annunciators for most consumption and demand quantities.

4.4 Digits

Consumption and demand quantities shall be programmable for display with leading zeroes in four, five or six digits with a decimal point at any of the least significant three digits.

4.5 Time Format

Time shall be displayed in the 24 hour military format.

4.6 Date Format

Date shall be displayed programmable in either Day/Month/Year or Month/Day/Year format.

4.7 Operating Modes

The display shall have at least three of the following operating modes:

(a) Normal Mode – in this mode, the display shall scroll automatically through the programmed displays for normal meter reading;

(b) Alternate Mode – in this mode, the display shall scroll automatically, scroll manually or freeze for up to one minute for alternate programmed displays;

(c) Test Mode – in this mode, the display shall scroll automatically, scroll manually or freeze for up to one minute for test quantity displays; and

(d) Segment Check – in this mode, all segments or displays are activated to verify display integrity.

Display ID numbers and display sequence shall be independently programmable for each of the modes referred to above. Display times shall be programmable.

4.8 Normal Mode

Upon power-up, the Meter display shall operate in the Normal Mode. The Meter display shall operate in Normal Mode until power is disconnected or until either the Alternate Mode or the Test Mode is activated.

4.9 Alternate Mode

The Alternate Mode shall be initiated with a display control device that does not require Meter cover removal or with a Meter Programmer connected to the optical port.

Display Items

As a minimum, the Meter shall provide the display quantities and items for each of the modes referred to in Section 4.7 as detailed in Attachment 2.

4.10 Constants and Correction Factors.

The Meter shall have programmable multi-variable polynomial function multipliers and/or summers to account for instrument transformer ratios, instrument transformer correction factors, the Meter constant, radial line losses and power transformer loss correction.

4.11 Identifiers

The Meter shall have programmable identifiers for the Meter ID, the person who programmed the Meter (programmer ID) and the current program ID. The Meter ID shall be capable of eight alphanumeric characters.

5 Meter Diagnostics

5.1 Self-test

The Meter register shall be capable of performing a self-test of the register software. As a minimum, the self-test shall be performed at the following times:

(a) whenever communications are established to the register;

(b) after a power-up; and

(c) once per day.

5.2 Diagnostic Checks

As a minimum, the following diagnostic checks shall be performed during a self-test:

(a) check the backup battery capacity;

(b) verify the program integrity; and

(c) verify the memory integrity.

5.3 Pulse Overrun

The register shall be capable of detecting that the maximum number of pulses have been exceeded during a demand interval.

5.4 Error and Warning Displays

Meters shall be capable of the following displays:

(a) any detected error or warning shall be stored in memory and an error or warning code displayed on the display;

(b) error code displays shall freeze the display; and

(c) warning code displays shall be programmable to one of the following choices:

i. freeze the warning code on the display;

ii. ignore the warning code (not displayed); or

iii. warning code display at the end of the Normal, Alternate or Test Modes display sequences.

5.5 Error Reset

Error or warning conditions shall only be reset upon an explicit command invoked via the Meter Programmer or upon some other explicit action by the Meter technician.

6 Programming and Software

6.1 Optical Communications Interface.

The Meter shall be capable of communicating with a handheld reader (Itron DataCap or similar) through the optical port.

6.2 Meter Programmers

The CAISO and CAISO Authorized Inspectors will use PC DOS based laptop and handheld computers with LCD displays as meter reader/programming devices (Meter Programmers). Communications with the Meter shall be through the optical port.

6.3 Software

The CAISO Metered Entity shall ensure that its supplier provides all software for maintenance, programming and operation of the Meter. The software shall include the following:

(a) Rate Development Program;

(b) Field Program;

(c) Field Disk Serialization Program; and

(d) Password protection to preclude 3rd party access for all levels of access except read-only.

6.4 Rate Development Program

The CAISO Metered Entity shall ensure that its supplier provides a Rate Development Program software package which allows the CAISO to customize the Meter's rate schedules and the Meter's operating parameters. The Rate Development Program shall be capable of utilizing all programmable functions of the Meter.

6.5 Rate Development Program Functions

The Rate Development Program as a minimum shall provide the following functions in a "user-friendly" manner:

(a) originate or modify Meter configuration records;

(b) validate user entries for format and range;

(c) translate user entry into code for configuring the Meter;

(d) send and receive configurations to and from the Meter;

(e) compare configuration files from the Meter with desired files and report discrepancies;

(f) read Meter billing data and load profile data;

(g) generate Meter data and diagnostic reports for printing; and

(h) generate configuration files for loading into the Meter via the Field Program.

6.6 Field Program

The CAISO Metered Entity shall ensure its supplier provides a Field Program software package for use with CAISO's Meter Programmer. The Field Program in conjunction with any such Meter Programmer shall be capable of loading the rate schedule and meter operating parameters as generated by the Rate Development Program into the Meter.

6.7 Field Program Functions

The Field Program as a minimum shall provide the following functions:

(a) set date and time on the Meter;

(b) preset the Meter consumption registers;

(c) send and receive configurations to and from the Meter;

(d) compare configuration files from the Meter with desired files and report discrepancies;

(e) read Meter billing data and load profile data;

(f) generate Meter data and diagnostic reports for printing;

(g) read, display and modify the present settings of field configurable items;

(h) execute a billing period reset;

(i) reset all consumption and demand quantities; and

(j) not have the capability to alter the configuration files as generated by the Rate Development Program.

6.8 Field Disk Serialization Program

The CAISO Metered Entity shall ensure that its supplier provides a Field Disk Serialization Program software package that associates an unique password with each copy of the Field Program. The Field Disk Serialization Program shall use an ASCII text file in a specified format as input and place a different password on one or more copies of a field disk generated by the Rate Development Program.

6.9 DOS or Windows

All software programs shall be PC DOS or Windows based. The Rate Development Program shall be either a Microsoft Windows 9x application or a DOS application capable of running under Microsoft Windows 9x without any loss of function. The Field Program and the Field Disk

Serialization Program shall be DOS applications capable of running under PC-DOS Version 7 or later.

6.10 Communication Protocol

The protocol used for communication with the Meter through either the optical port or the optional modem shall be an asynchronous, byte oriented protocol.

6.11 Optical Probe

The Rate Development Program and the Field Program shall support use of a compatible optical probe (ABB Unicomm or similar) connected to the standard PC serial port of the Meter Programmer.

7 Communication

7.1 Optical Port

The primary communication port to the Meter for reading and programming of the internal data shall be an optically isolated communication port per ANSI C12.13, Type 2 or other serial port.

7.2 Baud Rate

The optical port shall communicate at a minimum of 9600 baud.

7.3 Optical Port Location

The optical port shall be located in the front of the Meter and be accessible without removing the Meter's cover. The optical port shall also be functional with the Meter cover removed.

7.4 Optical Port Cable

There shall be no cable connection between the optical port on the Meter cover and the register.

7.5 RS232 or RS 485 or RSXXX.

One RSXXX port shall be provided at the Meter for bi-directional communications (with security provisions included) to computers and/or data acquisition devices. The Meter must have the capability for being polled every 15 minutes for data by RMDAPS or a Compatible Meter Data Server. An optional RSXXX port or ports with read-only access can be provided for others desiring the data. All RSXXX ports shall be optically isolated.

The Meter shall be capable of being polled simultaneously by more than one entity on one or more of it's ports without loss of data, interference, lockup or other such problems. In all cases, priority servicing shall be given to the CAISO required RSXXX port (used by RMDAPS).

The Meter shall support and be implementable with the CAISO secure communication system chains, including:

(a) Meter RSXXX port to ISDN line (or lease line) to ATM Cloud POP to RMDAPS; and

(b) Meter RSXXX port to Compatible Meter Data Server to Frame Relay or ISDN line to ATM Cloud POP to RMDAPS.

8 Optional Meter Functions

8.1 Pulse Outputs

The CAISO may specify one to four channels of pulse outputs that are proportional to the consumption quantities. The pulse output values shall be programmable with pulse durations of at least 100 milliseconds. The outputs may be either 2-wire, Form A or 3-wire, Form C configuration.

8.2 Current Loop

The CAISO may specify an additional serial communication port consisting of a 2-wire, 20 milliamp current loop that is optically isolated from the rest of the Meter. At a minimum, the baud rate shall be selectable as 300/ 1200/ 2400/ 9600 baud.

8.3 Internal Modem

The CAISO may specify an internal modem having telephone communications at autobaud rates of up to 28800 baud. The modem shall include automatic baud select, configurable answer time window and configurable answer ringcounter. The ring detect circuitry shall not be affected by spurious voltage rises in the telephone line.

8.4 Demand Threshold Alarm

The CAISO may specify a kilowatt threshold relay that closes at a programmable demand value and stays closed for the remainder of the interval and until at least one complete interval does not exceed the threshold value. The value shall be independently programmable for each TOU rate season and schedule.

9 Accuracy

9.1 ANSI C12.10

The Meter shall meet or exceed the accuracy specifications contained in ANSI C12.10 over its entire service life without the need for adjustment.

9.2 Factory Calibration

The Meter shall be calibrated to provide the following level of accuracy:

(a) ± 0.2% at full load at power factor of 100%;

(b) ± 0.25% at full load at power factor of 50% lag;

(c) ± 0.25% at full load power factor at 50% lead; and

(d) ± 0.25% at light load at power factor of 100%.

9.3 Test Equipment

Meter accuracy and calibration tests, both shop and field, shall require only standard test equipment. No special laboratory-type test equipment or test procedures shall be required to assure accuracy of the Meter.

9.4 Creep

The Meter shall not creep. No pulse generation or registration shall occur for any consumption or demand quantity which depends on current while the current circuit is open.

9.5 Starting Current

The Meter shall start to calculate consumption and demand quantities when the per phase current reaches Class 20 - 5 milliamps.

9.6 Start-up Delay

The Meter shall start to calculate consumption and demand quantities less than 3 seconds after power application.

9.7 Pulse Outputs

Pulse outputs shall have the same accuracy as the Meter displays.

10 Electrical Requirements

10.1 Meter Forms, Voltage Ratings and Classes

The following forms, voltage ratings and classes of Meters are approved for installation on the CAISO Controlled Grid:

(a) A – Base Type, FORMS 5A and 9A, 120 Volts, Class 10 and Class 20;

(b) Socket – Type, FORMS 5S and 9S, 120 Volts, Class 10 and Class 20;

(c) Switchboard – Type, 2 Element and 3 Element, 120 Volts, Class 10 & Class 20; and

(d) Rack mounted meter assemblies – 2 element and 3 element, Class 10 & Class 20.

10.2 Circuit Boards

All circuit boards in the Meter shall be designed to meet CAISO's environmental and electrical testing requirements and the service life and performance expectations detailed in this Exhibit.

10.3 LCD Display Connectors

Gold pins encased in an elastomer or carbonized contacts, or some other better construction, shall be used to connect the LCD display to the register circuit board.

10.4 Metering Application

The Meter shall be used to meter electrical service on a continuous duty.

10.5 Connections

The Meter's internal electrical connections shall be in accordance with ANSI C12.10.

10.6 Meter Register Power Supply

The Meter register shall be powered from the line side of the Meter and shall have provision for external backup power. Neither the normal power supply nor the backup power supply (when so equipped) shall be fused.

10.7 Clock

Clocks shall meet the following requirements:

(a) the clock internal to the Meter shall be accurate within 2 minutes per week (0.02%) when not synchronized to the CAISO Controlled Grid operation line frequency and shall be resettable through the CAISO communications interface. The CAISO will transmit a periodic master synchronizing signal to the meter;

(b) the internal clock shall have two modes of operation as follows:

i. the clock shall synchronize with the CAISO Controlled Grid operation line frequency until an outage occurs. During the outage, the clock will then synchronize with its own internal crystal. When power returns, the clock shall resynchronize with the CAISO's master synchronizing signal and follow line frequency; and

ii. the clock shall always synchronize with its own internal crystal, as a default; and

(c) the choice of clock mode shall be programmable.

10.8 Batteries

Batteries shall meet the following requirements:

(a) when the Meter design requires a battery as auxiliary power supply, the requirements of Section 3.7 shall apply;

(b) the battery shall be secured with a holder securely attached to the Meter. The battery holder and electrical connections shall be designed to prevent the battery from being installed with reversed polarity;

(c) replaceable batteries shall be easily accessible by removing the Meter cover. Battery replacement while the Meter is in service shall not interfere with any of the specified functions;

(d) no fuse external to the battery shall be installed in the battery circuit;

(e) the Meter battery shall provide a minimum carryover capability at 23° C for the functions listed in Section 3.7 and have a 15 year shelf life; and

(f) the following information shall be clearly identified on the battery:

i. manufacturer;

ii. date of manufacture, including year and month (i.e. 9601) or year and week (i.e. 9644);

iii. polarity;

iv. voltage rating; and

v. type.

10.9 Electromagnetic Compatibility

The Meter shall be designed in such a way that conducted or radiated electromagnetic disturbances as well as electrostatic discharges do not damage nor substantially influence the Meter.

10.10 Radio Interference Suppression

The Meter shall:

(a) not generate conducted or radiated radio frequency noise which could interfere with other equipment; and

(b) meet FCC Part 15 Class B computing device radio frequency interference standards.

11 Mechanical Requirements

11.1 General

The Meter shall not pose any danger when operating under rated conditions in its normal working position. Particular attention should be paid to the following:

(a) personnel protection against electric shock;

(b) personnel protection against effects of excessive temperature;

(c) protection against the spread of fire; and

(d) protection against penetration of solid objects, dust or water.

11.2 Corrosion Protection

All parts of the Meter shall be effectively protected against corrosion under normal operating conditions. Protective coatings shall not be damaged by ordinary handling nor damaged due to exposure to air. The Meter shall be capable of operating in atmospheres of up to (and including) 95% relative humidity condensing.

11.3 Solar Radiation

The functions of the Meter shall not be impaired, the appearance of the Meter shall not be altered and the legibility of the Meter nameplate and other labels shall not be reduced due to exposure to solar radiation throughout the service life of the Meter.

11.4 Corrosive Atmospheres

CAISO may specify additional requirements for Meters used in corrosive atmospheres.

11.5 Meter Package

The Meter Package shall meet the following requirements:

(a) the socket Meter's dimensions shall be in accordance with ANSI C12.10;

(b) the socket Meter shall be designed for mounting outdoors in a standard meter socket;

(c) Meters shall have a twist-on self locking cover in accordance with ANSI C12.10 requirements. The Meter cover shall:

i. not contain a metal or conducting locking ring;

ii. shall be resistant to ultraviolet radiation;

iii. be sealed in such a way that the internal parts of the Meter are accessible only after breaking the seal(s);

iv. for any non-permanent cover deformation, not prevent the satisfactory operation of the meter;

v. for the "sprue" hole (mold fill hole), not affect the ability to read the Meter; and

vi. have an optical port per ANSI C12.13, Type 2.

(d) the method of securing the socket Meter to the meter socket shall be with either a sealing ring or a high security sealing device;

(e) the billing period demand reset device shall accommodate a standard electric meter seal and shall remain in place with friction if not sealed; and

(f) filtered ventilation shall be provided in the base of the Meter to prevent condensation inside the Meter.

~~11.6 Nameplate~~

~~The Meter nameplate shall:~~

~~(a) comply with the minimum information requirements of ANSI C12.10;~~

~~(b) include the Meter's serial number and the date of manufacture. The manufacturing date shall include the year and month (i.e. 9601) or the year and week (i.e. 9644);~~

~~(c) have the following attributes:~~

~~i. it shall be mounted on the front of the Meter;~~

~~ii. it shall not be attached to the removable Meter cover;~~

~~iii. it shall be readable when the Meter is installed in the Meter socket or panel; and~~

~~iv. it shall not impair access for accuracy adjustment or field replacement of components (such as the battery).~~

~~(d) include ANSI standard bar coding; and~~

~~(e) include an easily erasable strip with minimum dimensions of 3/8 inch by 1½ inches for penciling in items such as meter multiplier or the Meter tester's initials.~~

~~12 Security~~

~~12.1 Billing Period Reset~~

~~Operation of the billing period demand reset mechanism shall require breaking of a mechanical sealing device. Use of common utility-type sealing devices shall be accommodated.~~

~~12.2 Meter Password~~

~~The Meter shall be programmable by the Meter Programmer with up to four unique passwords to prevent unauthorized tampering by use of the optical port or the optional modem. For meters procured after 1/1/98, passwords must be a minimum of four (4) alpha/numeric characters. Access rights and capabilities shall be individually programmable for each password. The Meter shall accept multiple requests from different sources without error, lockup or loss of data.~~

~~12.3 Test Mode~~

~~Removal of the Meter cover shall be required to activate the Test Mode.~~

~~12.4 Program Security~~

~~At least four levels of security shall be available for the Rate Development Program and the Field Program. These levels include:~~

~~(a) Read Register — the user can only read billing and load profile data;~~

(b) Read Register – the user can only read billing and load profile data, and perform a billing period reset;

(c) Read/Modify Register – the user can perform functions listed in 12.4(a) and 12.4(b), plus download Meter configuration files and operate other features of the Field Program; and

(d) Read/Modify/Program Register – the user can perform functions listed in 12.4(a), 12.4(b) and 12.4(c), plus develop Meter configuration files and operate additional features of the Rate Development Program.

12.5 Revenue Protection

Meters that help prevent Energy diversion are preferred.

13 Meter Approval Testing

13.1 General Requirement

This Section outlines the testing required by the CAISO to assure the quality of Meters, the CAISO will not approve Meters which have not undergone the testing referred to in this Section.

CAISO *Testing using Independent Laboratory*

In addition to the required manufacturer testing specified in this Section, the CAISO reserves the right to require independent laboratory test data resulting from the performance of tests as outlined in this Section.

In addition to the applicable testing requirements of the ANSI C12 standards, the qualification tests specified in this Section shall be conducted to confirm correct operation of the Meter. The qualification testing is required for new Meter designs and for Meter product changes.

The CAISO Metered Entity shall ensure that its supplier provides a certified test report documenting the tests and their results. The test report will be signed by the supplier and shall include all charts, graphs and data recorded during testing.

13.2 Meter Failure Definition

A Meter shall be designated as failed if any of the following events occur:

(a) failure of the Meter to perform all of the specified functions;

(b) failure of the Meter to meet the technical performance specifications included in this Exhibit;

(c) signs of physical damage or performance degradation as a result of a test procedure, including effects which could shorten the service life of the Meter;

(d) the occurrence of an unexpected change of state, loss of data or other unacceptable mode of operation for the Meter as a consequence of a test procedure; and

(e) failures shall be classified as a hardware, firmware or software failure or a combination according to the following definitions:

i. firmware failures are errors made during the fabrication of programmable read only memory (PROM) chips such that the required program or instruction set that the microprocessor is to perform is incorrect;

ii. hardware failures are failures that are physical in nature and directly traceable to the component level. Visual observances such as discoloration, cracking, hardening of cables, poor solder joints, etc. are also included. Failures of DIP switches, jumpers, and links are also included; and

iii. software failures are failures such as the loss or unintended change of data, the inability to program the Meter, the loss of the Meter program or the erroneous output or display of false information.

13.3 Meter Design Rejection Criteria

A Meter design will be rejected if any of the following events occur:

(a) the failure of one Meter during one test procedure and the failure of a second Meter during another test procedure; and

the failure of two or more Meters during the same test procedure.

13.4 Test Setup

(a) the Meter shall be connected to its normal operating supply voltage with a fully charged Power Failure Backup System. The Meter shall be energized throughout the duration of the test procedures, unless otherwise stated;

(b) before testing commences, the Meter shall be energized for a minimum of two hours at room temperature;

(c) all tests shall be conducted at room temperature unless otherwise specified; and

(d) the Meter shall be loaded to the nameplate test amperes at 100% power factor for all tests unless otherwise indicated.

13.5 Functional Test (No Load Test)

This test confirms the operation of the Meter functions in accordance with this Exhibit:

(a) the Meter shall be energized with no load;

(b) the Meter shall be programmed with the CAISO supplied parameters using a Meter Programmer;

(c) operation of the specified functions will be verified over 24 hours by observing the Meter display and by interrogating the contents of Meter registers via a Meter Programmer; and

(d) to pass this test, the Meter shall operate as specified with no observed anomalies.

13.6 Accuracy Test

This test confirms the accuracy of the Meter:

(a) the accuracy of the Meter shall be tested for all combinations of the following conditions:

i. at ambient temperature, 85°C and -20°C;

ii. at power factors of 100%, 50% lag and 50% lead; and

iii. at 0% to 120% of class current;

(b) accuracy curves shall be provided for all combinations of the conditions; and

(c) to pass this test, the Meter shall have the indicated accuracy at ambient temperature for the following load conditions:

i. ± 0.2% at Full load at power factor of 100%;

ii. ± 0.25% at Full load at power factor of 50% lag;

iii. ± 0.25% at Full load at power factor of 50% lead; and

iv. ± 0.25% at Light load at power factor of 100%.

13.7 Line Voltage Variation Test

This test confirms the Meter's correct operation under varying line voltage conditions:

(a) the Meter shall be tested at line voltages ranging from 80% to 120% of rated voltage under the following load conditions:

i. full load at power factor of 100%; and

ii. light load at power factor of 100%; and

(b) to pass this test the Meter shall meet the following criteria:

i. operate as specified;

ii. have an accuracy as specified in Section 13.6(c) throughout the 80% to 120% voltage range; and

iii. the Power Failure Backup System shall not take over when the voltage is above 80% and below 120% of rated.

13.8 Momentary Power Loss

This test confirms the Meter's ability to withstand momentary power outages:

(a) the test will be performed by opening the AC power supply input for the specified duration;

(b) twelve tests shall be conducted using the following sequence:

i. energize the Meter;

ii. simulate a power loss of 0.5 cycles at 60 hertz;

iii. lengthen each succeeding simulated power outage by 0.5 cycles until a duration of 6.0 cycles is attained; and

iv. the start of each successive test shall be delayed by one minute; and

(c) to pass this test, the Meter shall operate as specified with no observed anomalies.

13.9 Power Failure Backup System Test

This test confirms the carryover capability of the Power Failure Backup System:

(a) this test shall be conducted at ambient temperature using a new or fully charged battery;

(b) the test shall be conducted using the following sequence:

i. Energize the Meter at full load for two hours;

ii. De-energize the Meter for 24 hours; and

iii. Verify the integrity of programs and metering data stored in memory; and

(c) to pass this test, the Meter shall operate as specified with no observed anomalies.

13.10 Brownout and Extended Low Voltage Test

This test confirms the Meter's ability to withstand brownouts and extended low voltage conditions:

(a) the test shall be conducted using the following sequence:

i. Energize the Meter and verify correct operation;

ii. Slowly lower the line voltage to 80% of nominal;

iii. Operate the Meter at this voltage level for 6 hours;

iv. Verify correct Meter operation;

v. Lower the line voltage to 50% of nominal;

vi. Operate the Meter at this voltage level for 6 hours; and

vii. Verify correct operation of the Meter and the Power Failure Backup System; and

(b) to pass this test, the Meter shall operate as specified with no observed anomalies.

13.11 Effect of Power Failure Backup System Voltage Variation on Clock Accuracy

This test confirms the effects of the battery voltage on the Meter's clock accuracy:

(a) the Meter shall be tested with the battery disconnected and an auxiliary DC power supply connected to the battery carryover circuit. The DC power shall be varied from 95% to 105% of nominal battery voltage; and

(b) to pass this test, the accuracy of the Meter clock shall be within 0.02% (2 minutes per week) with a voltage variation of 5 % of nominal battery voltage at ambient temperature.

13.12 Effect of Temperature Variation on Clock Accuracy

This test confirms the effects of temperature on the Meter clock accuracy:

(a) this test shall be conducted with the register in the battery carryover mode;

(b) the temperature shall be varied from 85°C to –20°C;

(c) the Meter shall be exposed to each temperature for a least 2 hours prior to testing; and

(d) to pass this test, the accuracy of the Meter clock shall be within 0.02% (2 minutes per week) at ambient temperature, 85°C, and -20°C.

13.13 Temperature Cycle Test

This test confirms the effects of an accelerated temperature cycle on the Meter:

(a) the Meter cover shall be removed during this test;

(b) the test duration shall be 7 days (168 hours);

(c) the temperature shall be cycled once per 24 hour period;

(d) temperature shall be varied linearly during the tests at a constant rate not to exceed 20°C per hour;

(e) humidity shall not be controlled during the test;

(f) the Meter shall be de-energized during the fourth and fifth cycles of the test to verify the performance of the Power Failure Backup System during temperature fluctuations;

(g) each 24 hour cycle shall consist of the following:

i. begin test at +20°C (or room temperature if within 5°C);

ii. ramp up to +85°C in approximately 3.25 hours;

iii. hold at +85°C for approximately 10.75 hours;

iv. ramp down to -20 C in approximately 5.25 hours;

v. hold at -20°C for approximately 2.75 hours;

vi. ramp up to +20°C in approximately 2.00 hours; and

vii. begin next 24 hour cycle or end test after 7 cycles; and

(h) to pass this test, the Meter shall operate as specified with no observed anomalies for the entire test period.

13.14 Humidity Cycle Test

This test confirms the effects of an accelerated humidity cycle on the Meter:

(a) the Meter cover shall be removed during this test, or a meter cover with a large hole at the bottom may be substituted;

(b) the duration of the test shall be 24 hours;

(c) condensation may form on the Meter during the test;

(d) temperature shall be varied linearly during the tests at a constant rate not to exceed 20°C per hour;

(e) humidity shall not be controlled during temperature changes;

(f) the test shall consist of the following sequence:

i. begin at +20°C (or room temperature if within 5°C);

ii. ramp up to +85°C in approximately 3.25 hours;

iii. ramp up to a relative humidity of 95% in approximately 1 hour;

iv. hold at +85°C at a relative humidity of 95% ±1% for approximately 14.5 hours;

v. ramp down to +20°C in approximately 3.25 hours;

vi. concurrently with Section 13.14(f)v. ramp down to a relative humidity of 75% in approximately 15 minutes;

vii. hold relative humidity at 75% for remainder of temperature ramp down; and

viii. hold at 20°C at a relative humidity of 75% ±1% for approximately 2 hours; and

(g) to pass this test, the Meter shall operate as specified with no observed anomalies for the entire test period.

13.15 Insulation Withstand Test

This test confirms the insulation levels of the Meter:

(a) the Meter shall not be energized for this test;

(b) the insulation between power line voltage and current carrying parts and any other metallic or conductive part shall be tested by applying 2500 volts rms, 60 Hz for a period of one minute; and

(c) to pass this test the leakage current shall not exceed one milliamp for the duration of the test and the Meter shall operate after completion of the test.

13.16 Standard Waveform Surge Withstand Test

This test confirms the ability of the Meter to withstand voltage transients:

(a) the Meter shall be energized but not loaded during the test;

(b) the test shall be conducted in accordance with the latest recognized industry standards;

(c) the oscillatory test wave shall be applied at a repetition rate of 100 tests per second for 25 seconds;

(d) the test signal shall be applied in both the common and transverse modes;

(e) the test shall be conducted on all voltage, current, and optional equipment inputs and outputs;

(f) this test will be performed two times with a maximum period of 1 minute between tests; and

(g) to pass this test, the Meter shall operate as specified with no observed anomalies;

13.17 Fast Transient Waveform Surge Withstand Test

This test confirms the ability of the Meter to withstand fast voltage transients:

(a) the Meter shall be energized but not loaded during the test;

(b) this test shall be conducted in accordance with the latest industry recognized standard;

(c) the unipolar test wave shall be applied at a repetition rate of 100 tests per second for 25 seconds;

(d) the test signal shall be applied in both the common and transverse modes;

(e) the test shall be conducted on all voltage, current, and optional equipment inputs and outputs;

(f) this test will be performed two times with a maximum period of 1 minute between tests; and

(g) to pass this test, the Meter shall operate as specified with no observed anomalies.

13.18 Powerline Surge Voltage and Current Test

This test confirms the ability of the Meter to withstand power line voltage and current surges:

(a) the meter shall be energized but not loaded during the test;

(b) the test shall be performed using the unipolar and the ring waveform specified in the latest industry recognized standard;

(c) the test surges shall be applied to the power line in both the normal and common modes;

(d) the following number of surges shall be applied at the indicated voltages:

i. 12 surges at 6 kV;

ii. 12 surges at 5 kV; and

iii. 36 surges at 4 kV.

(e) the first test surges at 5 kV and 6 kV shall be injected at 0 degrees on the positive half-cycle of the waveform. Each successive test surge shall be shifted 15 degrees on the positive half-cycle of the waveform up to 180 degrees;

(f) the first test surge at 4 kV shall be injected at 0 degrees on the positive half-cycle of the waveform. Each successive test surge shall be shifted 15 degrees on both the positive and negative half-cycles of the waveform up to 360 degrees;

(g) sufficient time shall be allowed in between test surges for the electronic components to return to normal operating temperatures. A minimum of 5 minutes shall be allowed between each surge test;

(h) the applied test signals shall be monitored and recorded. The Meter under test shall be monitored to confirm that correct operation is maintained;

(i) after the tests each meter shall be inspected for visible damage, such as signs of arcing, etc.; and

(j) to pass this test, the Meter shall operate as specified with no visible damage observed.

13.19 Electrostatic Susceptibility Test

This test verifies the ability of the Meter to withstand electrostatic discharges:

(a) this test shall be tested in accordance with the latest revision of Military Handbook DOD-HDBK-263;

(b) the test generator shall simulate a human body with a capacitance of 100 picofarads and a series resistance of 1500 ohms;

(c) the test probe shall be a 3/8 inch rod with a rounded tip;

(d) the following procedures shall be followed:

i. test all surfaces, including switches and buttons and other components that will be contacted by personnel under normal handling, installation and use of the Meter. This shall include any safety grounded or neutral terminals on the exterior of the meter enclosure;

ii. with the test probe voltage set at 10 kV, contact each of the above surfaces with the probe;

iii. with the test probe voltage set to 15 kV, locate the probe to within approximately 0.5 inch (avoiding contact) with each of the above surfaces; and

iv. the functions of the Meter shall be periodically verified for correct operation; and

(e) to pass this test, the Meter shall operate as specified with no observed anomalies.

13.20 Visual Inspection

This test shall be performed after all of the other tests except the Shipping Test have been performed:

(a) visual inspection shall be performed for all electronic circuit boards in the Meter; and

(b) to pass this test, the Meter shall not have any defect which would result in rejection under the latest recognized industry standards on any electronic circuit board.

13.21 Shipping Test

This test confirms the ability of the Meter and its packaging to withstand the rigors of shipping and handling:

(a) the Meter shall not be energized during this test, but shall be programmed and operating in the power Backup mode;

(b) the packaged Meter shall be subjected to the following tests:

i. the National/International Safe Transit Association Pre-shipment Test Procedures, Project IA; and

ii. Method B, Single Container Resonance Test, of the latest revision of American Society for Testing and Materials (ASTM) Standard D-999. Test intensities, frequency ranges and test durations shall meet or exceed the recommended values of ASTM D-999; and

(c) to pass this test, the Meter shall be inspected and tested to verify that no damage had occurred and that the time and all stored data is correct.

14 Safety

14.1 Hazardous Voltage

Hazardous voltages shall not be easily accessible with the Meter cover removed.

14.2 Grounding

All accessible conductive parts on the exterior of the Meter and conductive parts that are accessible upon removal of the Meter cover shall be electrically connected to the Meter grounding tabs. All connections in the grounding circuit shall be made with an effective bonding technique.

14.3 Toxic Materials

No materials that are toxic to life or harmful to the environment shall be exposed in the Meter during normal use.

14.4 Fire Hazard

Materials used in the construction of the Meter shall not create a fire hazard.

15 Data Security And Performance

(a) Manual access for changing data or reprogramming shall require the physical removal or breaking of a CAISO seal by the CAISO or a CAISO Authorized Inspector.

(b) No loss of data shall occur as a result of the following events within design specifications:

i. power outages, frequency changes, transients, harmonics, reprogramming, reading; and

ii. environmental factors—dampness, heat, cold, vibration, dust.

(c) 5-minute interval data for the most recent 60 day period shall always be available and accessible via the communications interface or the optical interface.

16 Documentation

16.1 Hardware Documentation To Be Provided For CAISO Review

(a) Drawing(s) showing the external meter connections.

(b) Instruction booklets detailing the necessary procedures and precautions for installation of the Meter provided for use by field personnel during initial installation written in the style of a step by step outline.

(c) One (1) technical/maintenance manual and one (1) repair manual shall be provided for each Meter style. These manuals shall be sufficiently detailed so that circuit operation can be understood and equipment repair facilitated.

(d) The above documents shall be submitted for approval by CAISO before equipment is installed. Approval of documents by the CAISO shall not relieve any responsibility for complying with all the requirements of this Exhibit.

16.2 Software

A complete set of manuals detailing the operation of the Rate Development Program, the Field Program, and the Field Disk Serialization Program shall be provided to CAISO for review. These manuals shall explain to a person with only basic computer knowledge how to generate and download Meter configuration files.

17 Applicable Standards

The standards referred to in Appendix J to the CAISO Tariff shall apply to all Meters.

18 Definitions

The following terms and expressions used in this Exhibit are detailed as set forth below:

"Ambient Temperature" means temperature of 23°±2° Celsius.

"Average Power Factor" means the power factor calculated using the average active and reactive power flows over the latest demand interval.

"Delivered" means Energy (active, reactive, or apparent) that flows from the CAISO Controlled Grid to an End-User.

"Failed Meter" means a Meter in which any part or component, except the removable battery, has failed.

"Failure" means any hardware, firmware or software failure, or any combination.

"Field Disk Serialization Program" means a software package that allows the user to assign a separate password to each disk copy of the Field Program.

"Field Program" means a software package that allows the user to download Meter configuration files into the Meter and perform other testing and maintenance activities.

"Hazardous Voltage" means any voltage exceeding 30 volts rms.

"Meter" means all single phase and three phase electricity meters with electronic registers, including hybrid and solid state meters, but excluding solid state recorders, and including any optional devices included under the Meter cover.

"Meter Programmer" means the PC DOS based laptop computers used for meter reading/programming.

"MSDS" means the Material Safety Data Sheet.

"Power Failure Backup System" means a sub-system in the Meter that provides power to the electronic circuitry when the normal power line voltage is below operating limits. The sub-system usually consists of a battery and may or may not include a super capacitor.

"Quadrant" means the term used to represent the direction of power flows (active and reactive) between the CAISO Controlled Grid and an End-User. The 4 quadrants are defined as follows:

(a) Quadrant 1 – shall measure active power and reactive power delivered by the CAISO Controlled Grid;

(b) Quadrant 2 – shall measure active power received by CAISO Controlled Grid and reactive power delivered by the CAISO Controlled Grid;

(c) Quadrant 3 – shall measure active power and reactive power received by the CAISO Controlled Grid; and

(d) Quadrant 4 – shall measure active power delivered by CAISO Controlled Grid and reactive power received by the CAISO Controlled Grid.

"Rate Development Program" means a software package that allows the user to generate Meter configuration files including operating parameters and TOU schedules.

"Received" means Energy (active, reactive or apparent) that flows from a Generator to the CAISO Controlled Grid.

"RFI" means the Radio Frequency Interference.

"Temperature tolerance" means ±2° Celsius.

Attachment 1

Physical and Electronic Attribute Criterion for Electricity Meters

Test / Inspection Description	Pass	Fail
1. Bayonets A. Missing or loose parts, i.e., cotter pin, arc gap, etc.		

2. Meter Base A. Any cracked and/or missing/damaged gasket B. Any broken leg C. Missing or loose voltage link or screw D. Any missing or loose arc gaps E. Missing or damaged ventilation screen or filter on applicable meter F. Sealing hole unusable for sealing G. Any chips on upper half of meter (gasket ring area) H. Any chips which may jeopardize meter integrity I. Any sign of water damage in meter such as corrosion, oxidation, stain J. Missing or loose rivets holding frame to base		
3. Meter Frame A. Nameplate data incorrect or flawed B. Missing or loose hardware on frame		
4. Module A. Loose or defective power connectors B. Improper routing of voltage leads C. Improper fit (loose or crooked) D. Crimped or pinched voltage leads E. Incorrect module F. Calibration screw access should not be significantly affected (or covered)		
5. Meter Cover A. Wiring to communication port is correct & solid B. Proper meter cover is used for meter type and class C. Mechanical reset mechanism works properly D. Proper alignment, positioning, and operation of all cover mechanisms		

Attachment 1

Physical and Electronic Attribute Criterion for Electricity Meters (cont.)

6. Electronic Register A. Program register to verify acceptance of rate schedule B. Check display that all segments are operational C. Check battery carryover function, if appropriate D. Check register tracking by inputting disk revolutions E. Check for any visual defects in the register assembly		

Only scratches and/or chips that are cosmetically or functionally objectionable will be classified as defective and failing.

Attachment 2
Meter Display Items

Display Item	Normal Mode	Alternate Mode	Test Mode
Minimum Requirements for Delivered kWh			
Complete Display (Segment) Test	x	x	
Demand Reset Count		x	
Demand Reset Date		x	
Instantaneous kW	x	x	
Interval length		x	
Minutes of Battery Use		x	
Present time	x	x	
Previous Billing Rate A kWh		x	
Previous Billing Rate A Maximum kW		x	
Previous Billing Rate B kWh		x	
Previous Billing Rate B Maximum kW		x	
Previous Billing Rate C kWh		x	
Previous Billing Rate C Maximum kW		x	
Previous Billing Rate D kWh		x	
Previous Billing Rate D Maximum kW		x	
Previous Billing Total kWh		x	
Previous Season Rate A kWh	x	x	
Previous Season Rate A Maximum kW	x	x	
Previous Season Rate B kWh	x	x	
Previous Season Rate B Maximum kW	x	x	
Previous Season Rate C kWh	x	x	
Previous Season Rate C Maximum kW	x	x	
Previous Season Rate D kWh	x	x	
Previous Season Rate D Maximum kW	x	x	
Previous Season Total kWh		x	
Program ID		x	
Rate A kWh	x	x	
Rate A Maximum kW	x	x	
Rate B kWh	x	x	
Rate B Maximum kW	x	x	
Rate C kWh	x	x	
Rate C Maximum kW	x	x	
Rate D kWh	x	x	
Rate D Maximum kW	x	x	

Attachment 2
Meter Display Items (cont.)

Display Item	Normal Mode	Alternate Mode	Test Mode
Minimum Requirements for Delivered kWh (cont.)			

~~Total kWh~~	~~x~~	~~x~~	~~x~~
~~Wh per disk revolution (Kh)~~		~~x~~	
~~Wh per pulse (Ke)~~		~~x~~	
~~**Minimum Requirements for Test Mode**~~			
~~Present Interval Demand – kW~~			~~x~~
~~Pulse count~~			~~x~~
~~Time left in subinterval~~			~~x~~
~~Total kWh~~			~~x~~
~~**Additional requirements for Received kWh (if specified)**~~			
~~Previous Billing Total Received kWh~~		~~x~~	
~~Previous Season Total Received kWh~~		~~x~~	
~~Total Received kWh~~	~~x~~	~~x~~	
~~**Additional requirements for kVARh (if specified)**~~			
~~Maximum Delivered kVAR~~		~~x~~	
~~Maximum Received kVAR~~		~~x~~	
~~Previous Billing Maximum Delivered kVAR~~		~~x~~	
~~Previous Billing Maximum Received kVAR~~		~~x~~	
~~Previous Billing Total Delivered kVARh~~		~~x~~	
~~Previous Billing Total Received kVARh~~		~~x~~	
~~Previous Season Maximum Delivered kVAR~~		~~x~~	
~~Previous Season Maximum Received kVAR~~		~~x~~	
~~Previous Season Total Delivered kVARh~~		~~x~~	
~~Previous Season Total Received kVARh~~		~~x~~	
~~Total Delivered kVARh~~		~~x~~	
~~Total Received kVARh~~		~~x~~	
~~Previous Billing Maximum Delivered kVA~~		~~x~~	
~~Previous Billing Maximum Received kVA~~		~~x~~	
~~Previous Billing Total Delivered kVAh~~		~~x~~	
~~Previous Billing Total Received kVAh~~		~~x~~	
~~Previous Season Maximum Delivered kVA~~		~~x~~	
~~Previous Season Maximum Received kVA~~		~~x~~	

~~Attachment 2~~

~~Meter Display Items (cont.)~~

~~**Additional requirements for kVAh (cont.)**~~			
~~Previous Season Total Delivered kVAh~~		~~x~~	
~~Previous Season Total Received kVAh~~		~~x~~	
~~Total Delivered kVAh~~		~~x~~	
~~Total Received kVAh~~		~~x~~	
~~**Additional requirements for Power Factor (if specified)**~~			
~~Quadrant 1 Average Power Factor~~		~~x~~	
~~Quadrant 2 Average Power Factor~~		~~x~~	
~~Quadrant 3 Average Power Factor~~		~~x~~	
~~Quadrant 4 Average Power Factor~~		~~x~~	
~~Total Average Power Factor Delivered~~		~~x~~	
~~Total Average Power Factor Received~~		~~x~~	

EXHIBIT 2 TO PART D

CAISO SPECIFICATION
FOR CERTIFICATION OF OIL-FILLED,
WOUND INSTRUMENT TRANSFORMERS
FOR REVENUE METERING

1 Purpose

This Exhibit specifies the technical requirements for reliable high-accuracy Current Transformers (CT) and Voltage Transformers (VT) to be used for revenue quality metering on the CAISO Controlled Grid.

2 Scope

2.1 This Exhibit applies only to the following:

- Oil-filled Single-Phase CTs - 35kV-230kV.
- Oil-filled Single-Phase VTs - 35kV-230kV.
- Oil-filled Single-Phase Combination Current/Voltage Transformers - 35kV-230kV.

2.2 This Exhibit applies only to the following Oil-filled Wound Devices, which are VTs < 35kv.

VTs > 230kv must be individually specified in accordance with the engineered installations.

3 Standards

All instrument transformers covered by this Exhibit shall be designed, manufactured, tested and supplied in accordance with the applicable standards referred to in Appendix J to the CAISO Tariff.

4 Definitions

"Hermetically Sealed" means completely sealed by fusion, soldering, etc., so as to keep air or gas from getting in or out (i.e. airtight).

"Metering Unit" means one or more Voltage element(s) and one or more Current element(s) contained in one common housing.

"BIL Rating" means basic lightning impulse insulation level.

"Burden Rating" means the total impedance (in ohms) that can be connected to the secondary circuit(s) of an instrument transformer while still maintaining metering accuracy of plus-or-minus 0.3%

5 Specifications

5.1 General

All instrument transformers covered by this Exhibit shall be hermetically sealed, oil-filled type and have a minimum BIL Rating appropriate for the designated nominal System voltage:

- 60 - 69 kV – 350 kV BIL
- 115 kV – 550 kV BIL
- 230 kV – 900 kV BIL

5.2 Current Transformers

5.2.1 Current Transformer windings (typical configurations) shall be either:

(a) a single primary winding and single secondary winding with dual ratio tap;

(b) a dual primary winding and a single ratio tap;

(c) a single primary winding and one or more secondary windings with dual ratio tap(s); or

(d) other combinations as available and approved by the CAISO.

5.2.2 Rated primary current

The rated primary current must be as specified by the CAISO Metered Entity.

5.2.3 Rated secondary current

The rated secondary current must be 5 amperes @ rated primary current.

5.2.4 Accuracy and burden

All current transformers shall have an accuracy and burden of:

(a) standard – plus-or-minus 0.3% @ B0.1 - 1.8 ohms, 10% - 100% rated current; or

(b) optional – plus-or-minus 0.15 % @ B0.1 - 1.8 ohms, 5% - 100 % rated current.

5.2.5 Continuous current rating factor

All current transformers shall have a continuous current rating factor of:

(a) standard – 1.5 @ 30 degrees C Ambient; or

(b) optional – 1.0 @ 30 degrees C Ambient.

5.2.6 Short time thermal current rating

The short time thermal current rating varies with transformer rating as follows:

25/50: 5 ratio, 4 kA RMS to 1500/3000:5 ratio, 120 kA RMS.

5.2.7 Mechanical short time current rating

The mechanical short time current rating varies with transformer rating as follows:

25/50:5 ratio, 3 kA RMS to 1500/3000:5 ratio, 90 kA RMS.

5.3 Voltage Transformers

5.3.1 Transformer windings shall consist of a single primary winding and one or more tapped secondary windings.

5.3.2 Rated primary voltage, as specified by the CAISO Metered Entity, must be 34,500 volts through 138,000 volts, L-N.

5.3.3 Rated secondary voltage must typically be 115/69 volts.

5.3.4 The ratio of primary to secondary windings must be 300/500:1 through 1200/2000:1.

5.3.5 Accuracy and burden

All voltage transformers shall have accuracy and burden of:

(a) standard – plus-or-minus 0.3% through B. ZZ @ 90% through 110% of nominal voltage; or

(b) optional – plus-or-minus 0.15% through B. Y 90% through 110% of nominal voltage.

5.3.6 Thermal burden rating

All voltage transformers shall have a thermal burden rating of:

(a) 34.5 kV – 2500 VA, 60 hertz;

(b) 60 kV & 69 kV – 4000 VA, 60 hertz; or

(c) 115 kV – 6000 VA, 60 hertz.

5.4 Combination Current/Voltage Transformers (Metering Units)

Combination Current/Voltage Transformers shall maintain the same electrical, accuracy and mechanical characteristics as individual CTs and VTs. Physical dimensions may vary according to design.

5.5 Grounding

The neutral terminal of the VT shall exit the tank via a 5kV insulated bushing and be grounded by means of a removable copper strap to a NEMA 2-hole pad.

5.6 Primary Terminals

The primary terminals shall be tin-plated NEMA 4-hole pads (4"x4").

5.7 Paint

Exterior metal non current-carrying surfaces shall be painted with a weather-resistant paint system consisting of one primer and two industry recognized gray finish coats. As an option, for high-corrosion areas, special corrosion-resistant finishes (e.g. zinc-rich paint, stainless steel tank) shall be used.

5.8 Porcelain

Porcelain shall be of one-piece wet-process, glazed inside and outside. The outside color shall be in accordance with industry recognized gray glaze. The minimum creepage and strike-to-ground distances for various voltages shall be as follows:

Voltage (nominal kV)	Creepage (inches)	Strike (inches)
34.5	34	13
60 & 69	52	24
115	101	42
230	169	65
230 (1050 BIL)	214	84

5.9 Insulating Oil

The nameplate shall be of non-corroding material and shall indicate that the dielectric fluid is free of polychlorinated biphenyls by the inscription:

"CONTAINS NO PCB AT TIME OF MANUFACTURE".

5.10 Accessories

All units shall be equipped with the following standard accessories:

- 1/2" brass ball drain valve with plug

- 1" oil filling opening with nitrogen valve
- Magnetic oil level gauge, readable from ground level
- Primary bypass protector
- Sliding CT shorting link
- Four 7/8"x 2-3/8" mounting slots
- Four 1" eyebolts on base for four-point lifting sling
- 1/4" threaded stud secondary terminals
- Two conduit boxes, each with three 1-1/2" knockout

6 Testing

The CAISO Metered Entity shall ensure that, before shipment, each transformer is subjected to testing as prescribed by recognized industry standards and other tests including:

(a) Applied voltage test for primary and secondary winding withstand to ground;

(b) Induced voltage test for proper turn-to-turn insulation;

(c) Accuracy test for ratio correction factor and phase-angle verification to confirm 0.3% metering accuracy per recognized industry standards;

(d) Ratio test;

(e) Insulation Power Factor test;

(f) Polarity test;

(g) Leak test to assure integrity of gaskets and seals; and

(h) Partial Discharge Test may be done in conjunction with applied voltage testing to assure proper line-to-ground withstand.

The tests shall be submitted to the CAISO on a formal certified test report.

7 Required Information

The following drawings and information shall be required:

(a) 3 sets of drawings showing physical dimensions including mounting holes and primary CT terminal details, nameplate. The CAISO Metered Entity shall ensure that it receives a schematic of connections from its supplier; and

(b) a copy of quality controls/quality assurance (QC/QA) manuals applicable to production of the transformer(s).

PART E

TRANSFORMER AND LINE LOSS CORRECTION FACTORS

E 1 Introduction

Transformer loss correction refers to the practice of metering electrical Energy delivered at a high-voltage billing point using metering equipment connected on the low-voltage side of the delivery point. The metering equipment is provided with a means of correction that adds to, or subtracts from, the actual active and reactive metered values in proportion to losses that are occurring in the transformer.

Transformer losses are divided into two parts:

the core or iron loss (referred to as the no-load loss); and

the copper loss (referred to as the load loss).

Both the no-load loss and the load loss are further divided into Watts and Var components.

The no-load (iron) loss is composed mostly of eddy current and hystersis losses in the core. No-load loss varies in proportion to applied voltage and is present with or without load applied. Dielectric losses and copper loss due to exciting current are also present, but are generally small enough to be neglected.

The load (copper) watt loss (I^2 + stray loss) is primarily due to the resistance of conductors and essentially varies as the square of the load current. The Var component of transformer load loss is caused by the leakage reactance between windings and varies as the square of the load current.

Line losses are considered to be resistive and have I^2R losses. The lengths, spacings and configurations of lines are usually such that inductive and capacitive effects can be ignored. If line losses are to be compensated, they are included as part of the transformer load losses (Watts copper).

The coefficients, which are calculated at the calibration point of the meter, are entered into the meter as Percent Loss Watts Copper %LWCU), Percent Loss Watts Iron (%LWFE), Percent Loss Vars Copper (%LVCU), and Percent Loss Vars Iron (%LVFE).

Percent losses are losses expressed as a percent of the full load on a meter.

The formulas used to determine the compensation values at a particular operating point are:

$$\text{WATTS Compensation} = \frac{\text{Measured Voltage}^2}{} * \%LWFE + \frac{\text{Measured Current}^2}{} * \%LWCU$$

$$\text{Vars Compensation Value} = \frac{\text{Measured Voltage}^4}{\text{Calibration Point Voltage}^4} * \%LVFE + \frac{\text{Measured Current}^2}{\text{Calibration Point Current}^2} * \%LVCU$$

E 2 Calculating Transformer Loss Constants

Transformer Loss correction calculations with electronic meters are accomplished internally with firmware. Various setting information and test data is required to calculate the four values which are to be programmed into the meter.

The following information is required about meter installations:

the transformer high voltage (HV) voltage rating

the transformer kVa rating

the transformer high voltage (HV) tap settings

the transformer low voltage (LV) tap settings

the transformer connection (wye or delta)

the transformer phases (1 or 3)

the voltage transformer (VT) ratio

the current transformer (CT) ratio

the number of meter elements

The following data from a transformer test report is required:

no-load (iron) loss

full-load (copper) loss

percent impedance

percent excitation current

The test data required may be obtained from the following sources:

the manufacturer's test report

a test completed by a utility or independent electrical testing company

If the transformer bank is used to deliver power to more than one entity (that is, it is a joint use transformer bank) additional data is required, including the:

maximum available kVa from the transformer bank

contracted amount of load to be compensated in kW

contractual power factor amount to be used in calculations

E 3 Calculating Line Loss Constants

Line Loss correction calculations with electronic meters are accomplished internally with firmware. Various information about the radial line is required to calculate the value which is programmed into the meter. The resistance of the conductors are used to calculate a value which is added to the Watts copper loss value which is programmed into the meter. It is not practical to compensate for line losses in a network connected line, only radial lines.

The following information is required about the transmission line:

the transmission line type

the ohms per mile

the length in miles of each type of line

E 4 Applications

Joint Use Transformers

Where a transformer bank is used to deliver power to more than one entity (that is, a joint use transformer bank), no-load iron losses are adjusted by the transformer percent use. This percent use is determined by dividing a negotiated contract kW load (*Contract kW*) at a negotiated power factor (*% Power Factor*) by the maximum available kVa from the transformer bank (*Max. Available kVa*).

$$Percent\ Use = \frac{Contract\ kW \,/\, \%\ Power\ Factor}{Max.Available\ kVa}$$

Switched Lines

Line Loss correction for radial lines which are switched, must be based on a negotiated average resistance based on the typical operating characteristics.

Transformer Load Tap Changer

Transformers equipped with a load tap changer (i.e., which has the capability to change transformer voltage tap positions or settings under Load) for regulating voltage, must have the corrections calculated at the median tap voltage. Differences in the corrections

must be minimal and must even out over time as the bank operates above and below the median tap voltage.

E 5 Worksheets

A pro forma Transformer and Line Loss Correction Worksheet which can be used to perform the above calculation is attached to this Part. Instructions for completing the worksheet are as follows:

Complete the Name, Delivery, Location and Revision Date fields using the CAISO Metered Entity's name, operating name, city, state, and the date of the calculation.

Enter Transformer High Voltage (HV) winding rated voltage, this is the voltage at which the transformer tests were performed.

Enter the HV and Low Voltage (LV) transformer tap settings.

Enter 'Y' or 'D' to indicate the secondary winding connection of either wye or delta.

Enter '1' to indicate that the transformer bank is comprised of single phase units or '3' to indicate the bank is comprised of three phase units.

Enter '2' or '3' to indicate the number of elements in the meter.

Enter the VT and CT ratios of the instrument transformers used in the metering.

Enter 'Y' or 'N' to indicate if the transformer bank is utilized by more than one entity.

Enter the negotiated contract and power factor for the joint use portion of the transformer (if any).

If compensation coefficients are required at a calibration point other than five amps, enter the new value.

Space is provided to make comments about the calculation or delivery configuration.

Enter the manufacturer and serial number of the transformer(s).

Enter the kVa rating of each bank. For multiple rated banks, the base kVa should be used. Enter the test data collected at base kVa.

Enter the no-load losses in Watts from the test data.

Enter the load losses in Watts from the test data.

Enter the impedance from the test data.

Enter the Exciting current from the test data.

If the maximum available kVa from the transformer bank is more than the rated kVa, this value can be entered manually. An example may be for a triple rated transformer that has fans with a rating which is more than the base kVa. This value only affects the percent use calculation.

Enter the line type for each type of line to be compensated.

Enter the resistance in ohms per mile of each type of line to be compensated.

Enter the total length in miles of each type of line to be compensated.

E 6 Reference Materials

The following additional references may be referred to for assistance when calculating the correction factors referred to in this Part.

Handbook For Electricity Metering, Ninth Edition. Edison Electric Institute. Washington, D.C.

Eastern Specialty Company Bulletin No. 63.

American National Standard Institute. Test Code for Distribution, Power and Regulating Transformers.

System Loss Compensation, Schlumberger Industries, Quantum Multifunction Meter Hardware Instruction Manual 1610, November 1993.

Transformer Loss Calculation Method, Process System Manual, Appendix E.

Transformer and Line Loss Correction Worksheet (Example)

TRANSFORMER AND LINE LOSS CORRECTION

Name: Acme Power Company

Delivery: Delivery Number 5

Location: Surf Beach, CA

Rev. Date: 5/6/97

HV Rated Voltage:	110000 V	VT Ratio:	60:1
HV Tap:	101200 V	CT Ratio:	600:5
LV Tap:	13090 V	Joint Use (Y/N):	N
Trf. Conn. (Y/D):	Y	Metering Trf. Use:	100 %

Trf. Phase (1 or 3)	3	Contract kW:	10,000 kW
# Meter Elem.:	3	Power Factor:	95 %

Compensation Values (@ 5A F.L.)		Compensation Values at:	10 A
Watt Fe Loss:	0.16 %	Watt Fe Loss:	.08 %
Watt Cu Loss:	0.53 %	Watt Cu Loss:	1.06 %
Watt Tot. Loss:	0.69 %	Watt Tot. Loss:	1.14 %
Var Fe Loss:	0.31 %	Var Fe Loss:	0.16 %
Var Cu Loss:	10.96 %	Var Cu Loss:	21.92 %
Var Tot. Loss:	11.27 %	Var Tot. Loss:	22.08 %

Comments:

TRANSFORMER DATA

Serial Number	KVa Rating	No Load (Fe) Loss	Load (Cu) Loss	(Z) Impedance	(IE) Exciting Current
ABB 1000001	12000	22200 w	51360 w	8.84 %	0.45 %

Total kVa rating:	12000		Max Available kVa:	12000

LINE DATA

	Resistance	Length
#1 Line Type:	Ohms/mile	miles
#2 Line Type:	Ohms/mile	miles
#3 Line Type:	Ohms/mile	miles
#4 Line Type:	Ohms/mile	miles
#5 Line Type:	Ohms/mile	miles
#6 Line Type:	Ohms/mile	miles

Transformer and Line Loss Correction Worksheet (Example, continued)

TRANSFORMER AND LINE LOSS CORRECTION

Name: ACME Power Company

Delivery: Delivery Number 5

Location: Surf Beach, CA

Rev. Date: 5/6/97

HV Rated Voltage:	110000 V	VT Ratio:	60:1
HV Tap:	101200 V	CT Ratio:	600:5
LV Tap:	13090 V	Joint Use (Y/N):	N
Trf. Conn. (Y/D):	Y	Metering Trf. Use:	100 %
Trf. Phase (1 or 3)	3	Contract kW:	10,000 kW
# Meter Elem.:	3	Power Factor:	95 %

TRANSFORMERS

Serial Number	kVa
ABB 1000001	12000

TRANSFORMER LOSS COMPENSATION TEST POINTS FOR WATTHOURS

SERIES TEST

Test Load	% Iron	% Copper	% Total
Light	1.60	0.05	1.65
Full	0.16	0.53	0.69
0.5 P.F.	0.32	1.06	1.38

TRANSFORMER LOSS COMPENSATION TEST POINTS FOR VARHOURS

SERIES TEST

Test Load	% Iron	% Copper	% Total
Light	3.10	1.10	4.20

Full	0.31	10.96	11.27
0.5 P.F.	0.62	21.92	22.54

Pro Forma Transformer and Line Loss Correction Worksheet

TRANSFORMER AND LINE LOSS CORRECTION

Name:

Delivery:

Location:

Rev. Date:

HV Rated Voltage:	V	VT Ratio:	:1
HV Tap:	V	CT Ratio:	:5
LV Tap:	V	Joint Use (Y/N):	
Trf. Conn. (Y/D):		Metering Trf. Use:	100 %
Trf. Phase (1 or 3)		Contract kW:	kW
# Meter Elem.:		Power Factor:	%

Compensation Values (@ 5A F.L.)		Compensation Values at:	10 A
Watt Fe Loss:	%	Watt Fe Loss:	%
Watt Cu Loss:	%	Watt Cu Loss:	%
Watt Tot. Loss:	%	Watt Tot. Loss:	%
Var Fe Loss:	%	Var Fe Loss:	%
Var Cu Loss:	%	Var Cu Loss:	%
Var Tot. Loss:	%	Var Tot. Loss:	%

Comments:

TRANSFORMER DATA

Serial Number	KVa Rating	No Load (Fe) Loss	Load (Cu) Loss	(Z) Impedance	(IE) Exciting Current

Total kVa rating:	Max Available kVa:

LINE DATA

	Resistance	Length
#1 Line Type:	Ohms/mile	miles
#2 Line Type:	Ohms/mile	miles
#3 Line Type:	Ohms/mile	miles
#4 Line Type:	Ohms/mile	miles
#5 Line Type:	Ohms/mile	miles
#6 Line Type:	Ohms/mile	miles

Pro Forma Transformer and Line Loss Correction Worksheet (continued)

TRANSFORMER AND LINE LOSS COMPENSATION

Name:

Delivery:

Location:

Rev. Date:

HV Rated Voltage:	V	VT Ratio:	:1
HV Tap:	V	CT Ratio:	:5
LV Tap:	V	Joint Use (Y/N):	
Trf. Conn. (Y/D):		Metering Trf. Use:	100 %
Trf. Phase (1 or 3)		Contract kW:	kW
# Meter Elem.:		Power Factor:	%

TRANSFORMERS

Serial Number	kVa

TRANSFORMER LOSS COMPENSATION TEST POINTS FOR WATTHOURS

SERIES TEST

Test Load	% Iron	% Copper	% Total
Full			
0.5 P.F.			

Light			

TRANSFORMER LOSS COMPENSATION TEST POINTS FOR VARHOURS

SERIES TEST

Test Load	% Iron	% Copper	% Total
Full			
0.5 P.F.			
Light			

PART F

INSTRUMENT TRANSFORMER RATIO AND CABLE LOSS CORRECTION FACTORS

Background

All current transformers (CTs) and voltage transformers (VTs) (collectively, instrument transformers) have inherent errors due to their design and the physical properties of the materials used in their construction. These errors are manifested as a magnitude and phase angle difference between the "ideal" nameplate ratio and the waveform actually present on the secondary of the transformer. The terms used to denote these errors are Ratio Correction Factor (RCF) and Phase Angle Correction Factor (PACF).

The burden (load) connected to instrument transformer secondaries has an effect on the RCF and PACF of the units. All wiring and instrumentation of any kind is part of the burden. On a CT, the burden is designated in ohms and is represented by a number ranging from B-0.1 through B-1.8. On a VT, burden is measured in volt-amps and indicated by an alpha character, such as W, X, M, Y, Z or ZZ. The magnitude of these burdens must be known and kept within specified limits or additional errors will occur in the metering.

Significant impedance in the leads between the VTs and the meter can be another source of error, where a voltage drop in the leads is caused by the load of the meter and any other connected devices between the VTs and the meter. Conductors which are too small or too long can cause metering error.

Correction when the Burden Rating is exceeded

Where the connected burden of a metering circuit exceeds the burden rating of a CT or VT or if an existing instrument transformer does not meet minimum CAISO accuracy requirements, then one of the actions listed below must to be taken:

i. The preferred action is to correct the problem by either replacing the instrument transformer(s) with higher burden rated revenue class units or reducing the burden on the circuit to comply with the name plate of existing instrument transformer(s).

ii. An acceptable action is to apply CAISO approved correction factors to the meter to adjust the meter's registration to compensate for inaccuracies.

The CAISO Metered Entity will be responsible for properly calculating and applying the CT/VT and cable loss correction factors to its meter to adjust for inaccuracies in the metering circuit. CAISO approved algorithms and spreadsheets for calculating correction factors are included in this Part.

CT Ratio Correction Factor

Current transformers are usually tested by the manufacturer for the value of RCF and phase angle at both 5 and 0.5 amp secondary currents. The values for each CT in an installation would be averaged together to determine the CT Ratio Correction Factor (RCFI) and CT Phase Angle (b). If the current transformers used are revenue metering with an accuracy class of 0.3 % and are operated at or below their rated burden, then the correction factors may be disregarded.

VT Ratio Correction Factor

Voltage transformers are usually tested by the manufacturer for the value of RCF and phase angle at rated voltage. The values for each VT in an installation would be averaged together to determine the VT Ratio Correction Factor (RCFE) and VT Phase Angle (g). If the voltage transformers used are revenue metering with an accuracy class of 0.3 % and are operated at or below their rated burden, then the correction factors may be disregarded.

Cable Loss Correction Factor

The secondary voltage cables at an installation can be tested to determine the losses and phase angle of each. These values would then be averaged together to get the Cable Loss Correction Factor (CLCF) and the Phase Angle (a) for the installation. If the calculated connected burden of each phase do not exceed the VT burden rating, then the correction factors may be disregarded.

Final Correction Factor

The PACF for an installation is determined by the following formula:

$$PACF = \frac{\cos(Q + b - a - g)}{\cos Q}$$

Where *cosQ* is the secondary apparent power factor.

The Final Correction Factor (FCF) can then be determined as follows:

FCF = RCFI * RCFE * CLCF * PACF

The Percent Error is the amount of error caused by the instrument transformers and cable loss, it is calculated as follows:

Percent Error = (1-FCF)*(100)

The Percent Meter Adjustment is the adjustment to the meter required to compensate for the Percent Error, it is calculated as follows:

Percent Adjustment Factor = (FCF-1)*(100)

The FCF is applied to the calibration of the meter, usually through adjustment of the calibration potentiometer or through a change in the programmed calibration values. After an adjustment to the meter is made, the meter should be tested at all test points to show that the meter is within calibration limits with the calibration values applied. A FCF which results in a correction of less than 0.6% can be disregarded since this is less than the required combined accuracy of the instrument transformers. However, if any correction factor (full load, light load or power factor) results in a correction of more than 0.6%, they should all be applied.

Applications

Typical Installation

The preferred meter installation would utilize revenue metering class instrument transformers (0.3 %) operated at or below rated burden. If this is not the case, one or more of the following actions may be used to correct the problem:

Replace instrument transformers with higher burden rated units.

Reduce the burden on the circuit to comply with the existing rated burden.

Apply correction factors to the meter to compensate for inaccuracies.

Paralleling CTs

In normal revenue metering, current transformers would not be paralleled, but there are some applications where paralleling is done because the cost of the installation is reduced and the possibility of reduced meter accuracy is acceptable. A typical installation of this type would be to meter the net output of a generating station on a single meter rather than metering gross generator output and auxiliary power separately. In these type of installations additional rules apply:

All of the transformers must have the same nominal ratio regardless of the ratings of the circuits in which they are connected.

All transformers which have their secondaries paralleled must be connected in the same phase of the primary circuits.

The secondaries must be paralleled at the meter and not at the current transformers.

There should only be one ground on the secondaries of all transformers. This should be at their common point at the meter. Each utility may use their established grounding procedures.

Modern current transformers with low exciting currents and, therefore, little shunting effect when one or more current transformers are "floating" at no load should be used. Three or more "floating" current transformers might have an effect that should be investigated.

The secondary circuits must be so designed that the maximum possible burden on any transformer will not exceed its rating. The burden should be kept as low as possible as its effects are increased in direct proportion to the square of the total secondary current.

A common voltage and frequency must be available for the meter.

If adjustments are made at the meter to compensate for ratio and phase angle errors, the ratio and phase angle error corrections used must represent the entire combination of transformers as a unit.

The watthour meter must be able to carry, without overload errors, the combined currents from all the transformers to which it is connected.

While servicing meters and equipment on parallel CT secondaries, all CTs must be by-passed (shorted). When work is completed all by-passes must be removed.

Worksheets

A worksheet which can be used to perform the above calculations is attached to this Part. Instructions for completing the worksheet follow:

Complete the Name, Delivery and Location fields using the CAISO Metered Entity's name, the operating name of the delivery, and the city and state for the location.

Enter the values of RCF and phase angle as tested at full load and light load for each CT in the circuit. Record the manufacturer and serial number of each transformer.

Enter the values of RCF and phase angle as tested at rated voltage for each VT in the circuit. Record the manufacturer and serial number of each transformer.

Enter the values of the Cable Loss Correction Factor and Phase Angle for the secondary voltage cables.

The worksheet will calculate the Final Correction Factors, Percent Errors and Percent Adjustment Factors to be applied to the meter calibration.

Reference Materials

The following additional reference may be referred to for assistance when calculating the correction factors referred to in this Part.

Handbook For Electricity Metering, Ninth Edition. Edison Electric Institute. Washington, D.C.

CT/VT Ratio and Cable Loss Correction Worksheet (Example)

Name:

Delivery:

Location:

	Full Load	Light Load

CT Test Data:

Phase 'A' CT Mfr. & Serial Number:

Ratio Correction Factor (RCF^{I})	1.0003	1.0002
Phase Angle (β) (minutes)	-0.3	2.2

Phase 'B' CT Mfr. & Serial Number:

Ratio Correction Factor (RCF^{I})	1.0004	1.0029
Phase Angle (β) (minutes)	-0.4	2.2

Phase 'C' CT Mfr. & Serial Number:

~~Ratio Correction Factor (RCF^I)~~	~~1.0019~~	~~1.0028~~
~~Phase Angle (β) (minutes)~~	~~-0.3~~	~~3.1~~

~~Average of CT's Mfr. & Serial Number:~~

~~Ratio Correction Factor (RCF^I)~~	~~1.0009~~	~~1.0020~~
~~Phase Angle (β) (minutes)~~	~~-0.3~~	~~2.5~~

~~VT Test Data:~~

~~Phase 'A' VT Mfr. & Serial Number:~~

~~Ratio Correction Factor (RCF^E)~~	~~0.9997~~

~~Phase Angle (γ) (minutes)~~	~~1.5~~

~~Phase 'B' VT Mfr. & Serial Number:~~

~~Ratio Correction Factor (RCF^E)~~	~~0.9996~~
~~Phase Angle (γ) (minutes)~~	~~1.5~~

~~Phase 'C' VT Mfr. & Serial Number:~~

~~Ratio Correction Factor (RCF^E)~~	~~0.9997~~
~~Phase Angle (γ) (minutes)~~	~~1.7~~

~~Average of VT's Mfr. & Serial Number:~~

~~Ratio Correction Factor (RCF^E)~~	~~0.9997~~
~~Phase Angle (γ) (minutes)~~	~~1.6~~

~~Cable Loss Test Data:~~

~~Phase 'A'~~

~~Ratio Correction Factor (CLCF)~~	~~0.9969~~
~~Phase Angle (α) (minutes)~~	~~4.3~~

~~Phase 'B'~~

~~Ratio Correction Factor (CLCF)~~	~~0.9949~~
~~Phase Angle (α) (minutes)~~	~~4.2~~

Phase 'C'

Ratio Correction Factor (CLCF)	0.9959
Phase Angle (α) (minutes)	4.7

Average Cable Loss Data

Ratio Correction Factor (CLCF)	0.9959
Phase Angle (α) (minutes)	4.4

Correction Factors: Full Load Power Factor Light Load

Avg. Combined Corr. Factor	0.9964	0.9964	0.9975
Phase Ang Corr Factor (PACF)	1.0003	1.0032	1.0001
Final Correction Factor (FCF)	0.9967	0.9996	0.9977
Percent Error	+ 0.33	+ 0.04	+ 0.23
Percent Meter Adjustment	- 0.33	- 0.04	- 0.23

CT/VT Ratio and Cable Loss Correction Worksheet

Name:

Delivery:

Location:

Full Load	Light Load

CT Test Data:

Phase 'A' CT Mfr. & Serial Number:

Ratio Correction Factor (RCF^{I})		
Phase Angle (β) (minutes)		

Phase 'B' CT Mfr. & Serial Number:

Ratio Correction Factor (RCF^I)		
Phase Angle (β) (minutes)		

Phase 'C' CT Mfr. & Serial Number:

Ratio Correction Factor (RCF^I)		
Phase Angle (β) (minutes)		

Average of CT's Mfr. & Serial Number:

Ratio Correction Factor (RCF^I)		
Phase Angle (β) (minutes)		

VT Test Data:

Phase 'A' VT Mfr. & Serial Number:

Ratio Correction Factor (RCF^E)	

~~Phase Angle (γ) (minutes)~~	

~~Phase 'B' VT Mfr. & Serial Number:~~

~~Ratio Correction Factor (RCF^E)~~	
~~Phase Angle (γ) (minutes)~~	

~~Phase 'C' VT Mfr. & Serial Number:~~

~~Ratio Correction Factor (RCF^E)~~	
~~Phase Angle (γ) (minutes)~~	

~~Average of VT's Mfr. & Serial Number:~~

~~Ratio Correction Factor (RCF^E)~~	
~~Phase Angle (γ) (minutes)~~	

~~Cable Loss Test Data:~~

~~Phase 'A'~~

~~Ratio Correction Factor (CLCF)~~	
~~Phase Angle (α) (minutes)~~	

~~Phase 'B'~~

~~Ratio Correction Factor (CLCF)~~	
~~Phase Angle (α) (minutes)~~	

Phase 'C'

Ratio Correction Factor (CLCF)	
Phase Angle (α) (minutes)	

Average Cable Loss Data

Ratio Correction Factor (CLCF)	
Phase Angle (α) (minutes)	

Correction Factors: Full Load Power Factor Light Load

Avg. Combined Corr. Factor			
Phase Ang Corr Factor (PACF)			
Final Correction Factor (FCF)			
Percent Error			
Percent Meter Adjustment			

PART G

CAISO DATA VALIDATION, ESTIMATION AND EDITING PROCEDURES

This Part is provided for information purposes only, it gives an overview of the procedures that the CAISO will use to validate, edit and estimate Meter Data received from CAISO Metered Entities and, where an exemption applies, Meter Data received from Scheduling Coordinator Metered Entities.

G 1 Validation

G 1.1 Timing of Data Validation

Meter Data will be remotely retrieved via the CAISO secure communication system from CAISO Metered Entities by RMDAPS on a daily basis. Validation will be performed on the new Meter Data as it is retrieved from the meter or Compatible Meter Data Server in order to detect:

missing data;

data that could be invalid based upon status information returned from the meter; or

meter hardware or communication failure.

Additional validation will be performed on a daily basis to verify data against load patterns, check meters, schedules, RMDAPS load interval data and data obtained by SCADA.

G 1.2 Data Validation Conditions

RMDAPS will detect the following conditions so that erroneous data will not be used for Settlement or billing purposes:

G 1.2.1 Validation of metering/communications hardware:

meter hardware/firmware failures;

metering CT/VT failures (for example, losing one phase voltage input to the meter);

communication errors;

data which is recorded during meter tests;

mismatches between the meter configuration and host system master files;

meter changeouts (including changing CT/VT ratios);

gaps in data;

overflow of data within an interval;

ROM/RAM errors reported by the meter; and

alarms/phase errors reported by the meter.

G 1.2.2 Validation of RMDAPS load Interval Data characteristics:

data which exceeds a defined tolerance between main and check meters;

data which exceeds a defined tolerance between metering and SCADA data;

load factor limits;

power factor limits; and

for End-Users, validation of load patterns against historical load shapes.

G 1.3 Validation Criteria

~~Validation criteria will be defined by the CAISO for each channel of RMDAPS load interval data (kW/kVar/kVa/Volts, etc.) depending on the load characteristics for each meter location and the type of data being recorded.~~

~~For loads that do not change significantly over time or change in a predictable manner, percentage changes between intervals will be used.~~

~~For loads that switch from no-load to load and for reactive power where capacitors may be switched to control power factors, validation will be based upon historical data for that meter location. If no historical data is available, data such as the rating of transformers or the maximum output from a Generator will be used to set maximum limits on interval data.~~

~~Validation will be based upon reasonable criteria that can detect both hardware and operational problems with a high degree of confidence but will be set so as to avoid unnecessary rejection of data.~~

~~G 1.4 Validation for Stated Criteria~~

~~Data validation will be performed only for the validation criteria that has been entered for each meter channel of data. For example, the number of intervals of zero Energy recorded by the meter for the channel indicated will be validated only when a non-zero value is entered for this criteria.~~

~~Additional validation will be performed on a daily basis to verify data which is based upon load patterns, comparisons to check meters, schedules, RMDAPS load profiles or data obtained by SCADA.~~

~~G 1.5 Validation Failure~~

~~Data that fails validation will be flagged with the reason for the failure, where applicable. Data that fails checks such as load factor limits or comparisons of a RMDAPS load profile to the previous day, check meter or other load shape will be identified so that manual intervention can be used to estimate the correct values in order to edit the data or to manually accept the data.~~

~~G 1.6 Validation Criteria~~

~~**G 1.6.1 Time of Application of Criteria**~~

~~**Validation Criteria**~~	~~**Hourly**~~	~~**Daily**~~
~~**Meter Readings vs. RMDAPS load profile (Energy Tolerance)**~~		~~**Yes**~~
~~**Intervals Found vs. Intervals Expected**~~		~~**Yes**~~
~~**Time Tolerance Between RMDAPS and Meter**~~	~~**Yes**~~	~~**Yes**~~
~~**Number of Power Outage Intervals**~~		~~**Yes**~~
~~**Missing Intervals (Gap In Data)**~~		~~**Yes**~~
~~**High/Low Limit Check On Interval Demand**~~	~~**Yes**~~	~~**Yes**~~
~~**High/Low Limit Check on Energy**~~		~~**Yes**~~
~~**CRC/ROM/RAM Checksum Error**~~	~~**Yes**~~	~~**Yes**~~
~~**Meter Clock Error**~~	~~**Yes**~~	~~**Yes**~~
~~**Hardware Reset Occurred**~~	~~**Yes**~~	~~**Yes**~~
~~**Watchdog Timeout**~~	~~**Yes**~~	~~**Yes**~~
~~**Time Reset Occurred**~~	~~**Yes**~~	~~**Yes**~~
~~**Data Overflow In Interval**~~	~~**Yes**~~	~~**Yes**~~
~~**Parity Error (Reported By Meter)**~~	~~**Yes**~~	~~**Yes**~~
~~**Alarms (From Meter)**~~	~~**Yes**~~	~~**Yes**~~
~~**Load Factor Limit**~~		~~**Yes**~~
~~**Power Factor Limit**~~		~~**Yes**~~
~~**Main vs. Check Meter Tolerance**~~		~~**Yes**~~
~~**Actual vs Scheduled Profile**~~		~~**Yes**~~
~~**Actual vs SCADA Data**~~		~~**Yes**~~
~~**Comparison Of Current Day To Previous Day**~~		~~**Yes**~~
~~**Percent Change Between Intervals**~~		~~**Yes**~~

~~**G 1.6.2 Validation Criteria**~~

~~**(a) Meter Reading vs. RMDAPS load Interval Data (Energy Tolerance)**~~

~~Meter readings will be obtained from CAISO approved meters on a daily basis in order to validate interval Energy measurements~~

~~obtained from the RMDAPS approved meters data and Energy from the meter readings. This Energy tolerance check will be used to detect meter changeouts or changes in metering CT/PT ratios that have not been reflected in the RMDAPS master files (meter configuration files). A "tolerance type" parameter will be set in the RMDAPS system parameter to define the type of check to be performed.~~

The types of check that will be used will include the following (the constant used to convert the meter readings to kWh):

ID	Term	Description
M	Multiplier	Allows a percentage of the meter multiplier difference between the meter reading the recorded interval total energy.
P	Percent	Allows a percentage of the metered total energy difference between the metered total energy and the recorded total energy. The percent of allowed difference will be defined by the CAISO on an individual meter channel basis.
Q	Same as Percent	Based on 30 days of data. If the data relates to a period less than 30 days then the total usage will be projected to 30 days as follows: Projected Usage=Total Usage * (30/Total Days)
D	Dual Check	Percent Method (P) is the primary check. If it fails, then the Multiplier Method (M) is used.
E	Dual Method	Percent Method (Q) is the primary check. If it fails, then the Multiplier Method (M) is used.
N	None	No tolerance check

(b) Intervals Found vs Intervals Expected

RMDAPS will calculate the expected number of time intervals between the start and stop time of the RMDAPS load profile data file and compare that number against the actual number of time intervals found in the RMDAPS data file. The calculation used to determine the expected number of time intervals will take into account the size or duration of the actual time intervals for the particular meter/data file (e.g., 5 min, 15 min, 30 min and 60-min interval sizes).

(c) Time Tolerance Between RMDAPS and Meter

When RMDAPS retrieves data from a meter, the RMDAPS workstation clock will be compared against the meter's clock. RMDAPS will be configured to automatically update the meter clocks within certain tolerances, limits and rules including:

i. a time tolerance parameter (in seconds) which indicates the allowable difference between the RMDAPS workstation clock and the meter clock (if the meter clock is within that parameter, RMDAPS will not update the meter clock);

ii. an upper limit for auto timeset which is the maximum number of minutes a meter can be out of time tolerance before RMDAPS will perform an auto timeset;

iii. the RMDAPS will not perform auto timesets across interval boundaries; and

iv. the auto timeset feature will support DST changes and time zone differences. Since all CAISO Metered Entity's meters that are polled by RMDAPS will be set to PST, this rule will not generally apply.

(d) Number of Power Outage Intervals

The CAISO approved meter will record a time stamped event for each occurrence of a loss of AC power and a restoration of AC power. During the Meter Data retrieval process, RMDAPS will flag each RMDAPS interval between occurrences of AC power loss and AC power restoration with a power outage status bit. RMDAPS will sum the total number of power outages for a time frame of RMDAPS data and compare that value against a CAISO defined Power Outage Interval Tolerance value stored in the RMDAPS validation parameters.

(e) Missing Intervals (Gap in Data)

The RMDAPS validation process will compare the stop and start times of two consecutive pulse data files for a meter and will report if a missing interval/gap exists. The RMDAPS automatic estimation process for "plugging" missing intervals/gaps in data is described in more detail in the Data Estimation section of this Part.

(f) High/Low Limit Check on Interval Demand

The RMDAPS validation process will compare the Demand High/Low Limits entered by the RMDAPS operator on a meter channel basis in the RMDAPS meter channel table against the actual Demand value collected from the meter. This comparison will be performed on an interval by interval basis. If the actual Demand value is less than the Low Limit or greater than the High Limit, the RMDAPS validation process fails.

(g) High/Low Limit Check on Energy

The RMDAPS validation process compares the Energy High/Low Limits entered by the RMDAPS operator on a meter channel basis in the RMDAPS meter channel table against the actual total Energy collected from the meter for the time period. If the actual total Energy is less than the Low Limit or greater than the High Limit, the RMDAPS validation process fails.

(h) CRC/ROM/RAM Checksum Error

This general meter hardware error condition can occur during an internal status check or an internal read/write function within the meter. This error code may not be standard on some meters (reference should be made to the meter's user manual). When available, this internal status information will be collected during the RMDAPS Meter Data retrieval process and stored for review/reporting purposes.

(i) Meter Clock Error

This meter hardware error condition can occur whenever an internal meter hardware clock error results in an invalid time, day, month, year, etc. This error code may not be standard on some meters (reference should be made to the meter's user manual). When available this interval status information is collected during the RMDAPS Meter Data retrieval process and stored for review/reporting purposes.

(j) Hardware Reset Occurred

This meter hardware error condition occurs whenever an internal meter hardware reset occurs. This error code may not be standard on some meters (reference should be made to the meter's user manual). When available this interval status information is collected during the RMDAPS Meter Data retrieval process and stored for review/reporting purposes.

(k) Watchdog Timeout

This error code may not be standard on some meters (reference should be made to the meter's user manual). When available, this feature watches for meter inactivity, indicating a possible meter failure.

(l) Time Reset Occurred

This is a meter error code that indicates that the meter time has been reset. See paragraph (c) above.

(m) Data Overflow In Interval

This error code occurs when the amount of data in an interval exceeds the memory capabilities of the meter to store the data. This alerts RMDAPS that there is corrupt data for the interval.

(n) Parity Error (Reported by Meter)

Parity error is another indicator of corrupted data.

(o) Alarms (From Meter)

CAISO RMDAPS operator will evaluate all meter alarms to determine if the alarm condition creates data integrity problems that need to be investigated.

(p) Load Factor Limit

The RMDAPS validation process compares the daily Load Factor to the limit entered by the RMDAPS operator. RMDAPS will prompt the operator to investigate data integrity if the limit is out of tolerance.

(q) Power Factor Limit

The RMDAPS validation process compares the actual Power Factor to the limit entered by the RMDAPS operator. RMDAPS will prompt the operator to investigate if the limit is out of tolerance.

(r) Main vs Check Meter Tolerance

The main and check meters can be configured in RMDAPS to be compared on a channel by channel basis to the check meter ID, channel number, percent tolerance allowance and the type of check. Interval or daily Meter Data will be entered into the corresponding main meter RMDAPS meter channel table record. This information will remain constant unless:

i. a meter changeout occurs at the site;

ii. the percent tolerance allowance needs adjusting; and/or

iii. the type of check is switched.

If the percentage difference between the main channel interval Demand and the check channel interval Demand exceeds the Percent Tolerance allowed, the RMDAPS validation will fail. If, after applying this validation test, the percentage difference between the main channel total Energy and the check channel total Energy for each Trading Day exceeds the allowed percentage, the RMDAPS validation will fail. In both cases, if the percentage difference is less than the Percent Tolerance allowed, the RMDAPS validation will be accepted.

(s) Actual vs. Scheduled Profile

Data is compared on an interval by interval basis like Main vs Check.

(t) Actual vs. SCADA Data

Data is compared on an interval by interval basis like Main vs Check.

(u) Comparison Of Current Day To Previous Day

The RMDAPS validation process compares the last complete day's Demand and Energy in the validation time period to one of the following parameters configured by the RMDAPS operator:

i. previous day;

ii. same day last week; or

iii. same day last month.

Validation Failure

If the percentage difference between the Demand and Energy exceeds the tolerance setup in the RMDAPS validation parameters, the data subjected to the validation process fails.

(v) Percent Change Between Intervals

The RMDAPS validation process uses the Interval Percent Change Tolerance set by the RMDAPS operator on a meter channel basis in the RMDAPS meter channel table to compare the percentage change in the pulses for the channel between two consecutive intervals.

If the percent change exceeds the Interval Percent Change Tolerance set for that channel, the RMDAPS validation process fails.

G 2 Data Estimation Criteria

When interval data is missing due to there not being any response from the meter or the meter reports it as missing, RMDAPS will supply estimated data for the missing intervals based on the guidelines discussed below.

If a certified Check Meter is available and that data is valid, the data from the Check Meter will be used to replace the invalid or missing data from the main meter. When reading meters on a frequency basis, the point-to-point linear interpolation method will be used to estimate the current interval(s) of data. This method will only normally be used when estimating one hour or less of contiguous missing interval data when the previous and next intervals are actual values from the meter. If data is missing for an extended time period, historical data will be used as the reference date so that data can be matched to time of day and day of week.

G 2.1 Data Estimation Methods

The following data estimation methods are configurable by the RMDAPS operator on a meter-by-meter basis. The algorithms for each method are described below in order of precedence as implemented by the RMDAPS automatic estimation application software. The RMDAPS operators can alter this order by simply not activating a certain method. In addition, the RMDAPS operator can manually select each data estimation method at any time during the data analysis process.

G 2.2 Main vs Check Meter

The global primary and Check Meters can be configured in the RMDAPS meter channel table to be compared on a channel-by-channel basis. The Check Meter ID and channel number will be entered into the corresponding primary meter RMDAPS meter channel table record. This information remains constant unless a meter changeout at the site occurs. During the RMDAPS automatic estimation process, if missing data is encountered and actual values from a certified Check Meter are available, the values for the corresponding intervals from that Check Meter will be substituted into the data file for the primary meter. All copied intervals will be tagged as an edited interval. In order for actual values from the check meter to be deemed acceptable for use in the automatic estimation process, the values must reside in an accepted data file that passed the validation criteria referred to earlier in this Part and no error codes or alarms can be set

on the interval values. Meter Data from Check Meters may only be used where Meter Data is not available from the primary meter.

G 2.3 Point-to-Point Linear Interpolation

When reading meters on a frequency basis, the Point-to-Point Linear Interpolation Algorithm described below can be used to estimate the missing intervals of data. This method will only normally be used to estimate a maximum of one hour of contiguous missing interval data when the previous and next intervals are actual values from the meter. Even though this method will not normally be used above that maximum of one hour, the RMDAPS allows this maximum threshold to be set by the RMDAPS operator on a meter-by-meter basis. The same rules for defining acceptable actual values apply as

detailed in Main vs. Check Meter description above. All estimated intervals will be tagged as an edited interval.

Point to Point Linear Interpolation Algorithm

$$\text{Estimated Interval} = \frac{\text{Next Actual} - \text{Previous Actual Interval}}{\text{Number of Missing Intervals} + 1} + \text{Previous Actual Interval}$$

G 2.4 Historical Data Estimation

Historical data estimation is the process of replacing missing or corrupt interval data in the RMDAPS data files. The data is replacing using historical data as a reference. There are two basic requirements when estimating data to be inserted or replaced:

the amount of data to add or replace; and

the shape or contour of the data over the time span requested.

G 2.4.1 Estimation Parameters

The following estimation parameters are required on a per meter basis:

Auto Plug (Y/N)	Controls the option to perform automatic estimation
Auto Plug Option (W/C/P/L)	Indicates where to get the reference data used in the estimation process: W - use the previous week as the reference data (all data for the week must be present). C - use the current month as reference data.

	P - use the previous month as reference data. L - use the current month of last year as reference data.
Reference ID	ID from which the reference data is retrieved. The contour of the data is determined from this ID. The Reference ID can be the same as the meter ID (i.e. use historical data from the same meter) or a different Reference ID.
Auto Plug Missing Days Limit	Verifies that the number of missing days of data is less then the missing day limit in order to invoke automatic estimation.

Auto Plug Reference Data %	Identifies a percent adjustment for situations where there is a need to factor the reference data by a percent increase or decrease. If this value is set to "0", the adjustment is not performed.
Auto Plug Power Outage	Indicates if intervals with a power outage status are to be estimated/replaced automatically.
Reference Time Span	Identifies the reference time span for the historical data.

G 2.4.2 Total Data

The estimation algorithm used depends on the total amount of data to be added or replaced and the shape of that data. The RMDAPS operator can give the total data or that can be calculated to balance the meter usage in the file. The shape of the data is defined with the use of the reference data.

G 2.4.3 Reference Data

The reference data is based on the day of the week. All reference data is averaged and stored into a 7-day table of values for each interval. The table includes a day's worth of intervals for each day of the week (Sunday-Saturday). When the shape of a day's data is needed, this weekly table is referenced. Two data tables are set up to use in the algorithm. One stores the number of times that an interval value is needed from the reference data. While the other table maps the interval value in the reference data to the correct data in the update file. The data from the reference must be scaled up or down to match the magnitude of the data needed for the update file. This is determined by comparing the data total from the reference file with the data needed for the update file. This ratio is used when getting reference data to use for the update file.

G 2.4.4 Iterations

Iterations will be used to get the best reproduction of data in the update file. This process will attempt to get the correct shape for the data and also to get as close to the requested total data as possible by using up to ten iterations. Since RMDAPS data will be integer data and cannot have decimal values, the total data used will not be exactly what is requested. Definition of some of the tables and variables are:

REFTOT	Total data from the reference file for the time requested.
REQTOT	Total requested data.
REFADJ	Adjusted total reference data.
IP( )	A table containing the total times that a value is used from the reference data.

NP ( )	A table containing the data in the update file for that value in the reference data. A table mapping the reference data to the update data according to the needed ratio.

G 2.4.5 Population of Tables

The first step is to populate the tables. All intervals for the requested time are read from the reference data. These values are stored into table NP( ). The number of times a value is used is stored into the table IP( ). For example:

If the value 54 is needed 3 times, then IP(54)=3 and NP(54)=54

The table IP( ) is used to quickly add up the totals. The table NP( ) is modified by the ratio REQROT/REFADJ. For example:

If: REQTOT=22000

REFTOT=44000

Then: REQTOT/REFTOT=0.50

and NP(54) = 0.50* NP(54) = 27

After modifying the complete NP( ) table, the total data is added to determine how close this total is to the requested total (REQTOT). The NP( ) values have to be rounded to whole numbers. This total is calculated by adding up all of the values in the NP ( ) table multiplied by the times the value is needed (IP( )). Each value used (IP(x) not zero) is multiplied by the value (NP(x)). Then each of the results is added up to a total. If the total is close enough to the requested total then the iteration process ends. After ten iterations the total will automatically be considered close enough to the requested total.

G 2.4.6 Update File

As the data is needed to insert into the update file, the reference data is read from the reference file. The mapping table (NP) modifies the value. This modified value is inserted into the update file. All intervals are inserted in this manner to complete the data estimation.

G 3 Editing

All estimated intervals will be tagged as an edited interval in RMDAPS. The CAISO RMDAPS operator will notify the Metered Entity of the edited interval start and stop times, new value and technique used to estimate the data.

If estimation and editing is frequently required for the Meter Data received from a particularly metered entity, the CAISO may require re-certification and or facility maintenance or repair to correct the continued provision of erroneous or missing data.

* * *

CAISO TARIFF APPENDIX T

[NOT USED]

~~**Scheduling Coordinator Application**~~

~~**The information provided for this application will be treated as confidential information**~~

~~**PART A**~~

~~**SCHEDULING COORDINATOR APPLICATION FORM**~~

~~This application is for approval as a Scheduling Coordinator ("SC") by the California Independent System Operator Corporation ("CAISO") in accordance with the CAISO Tariff.~~

~~**I. Administrative Requirements**~~

~~SC Applicant's Legal Name:~~

~~_____~~

~~Address of principal place of business:~~

~~_____~~

~~_____~~

~~_____~~

~~Authorized Representative: _____~~

~~Address: _____~~

~~_____~~

~~Phone: _____~~

~~Fax: _____~~

~~E-mail: _____~~

~~Type of entity: _____~~

~~(Municipal utility, power marketer, investor owned utility, federal or state entity or other)~~

~~State of Incorporation or Partnership: _____~~

~~Proposed commencement date for service: _____~~

~~**II. Scheduling Coordinator Customer Information**~~

~~2.1 The information required under Part C, the CAISO Application File Template, must be provided for represented Scheduling Coordinator Metered Entities, which are Generators. The Scheduling Coordinator Applicant must submit all requested information prior to final certification, which must occur fourteen (14) days before the commencement of service.~~

~~2.2 Information for Scheduling Coordinator Metered Entities, which are End Users or Eligible Customers, must be kept in a standard business format based on generally accepted accounting principals. The CAISO shall have the right to inspect and audit a Scheduling Coordinator's accounts and~~

files relating to its Scheduling Coordinator Metered Entities after giving two Business Days notice in writing.

2.3 The Scheduling Coordinator Applicant must submit a list of all CAISO Metered Entities, which it will represent.

III. Security Requirement

3.1 The Scheduling Coordinator Applicant has an Approved Credit Rating as set forth in the CAISO Tariff: (yes/no).

The Scheduling Coordinator Applicant's credit rating is _____.

Please attach certified documentation of an Approved Credit Rating from Standard & Poor's, Moody's Investors Services or the equivalent. Scheduling Coordinator Applicant must also submit, before final certification, an executed letter of understanding for payment providing contact details in case of default. OR

3.2 The Scheduling Coordinator Applicant will provide an irrevocable and unconditional guarantee from a company which has an Approved Credit Rating: (yes / no).

The Scheduling Coordinator Applicant must submit a signed irrevocable and unconditional guarantee in a CAISO approved form and certified documentation of the other company's Approved Credit Rating before final certification. OR

3.3 The Scheduling Coordinator Applicant will provide an irrevocable and unconditional letter of credit: (yes / no).

Amount: $_____.

The Scheduling Coordinator Applicant must submit a signed irrevocable and unconditional letter of credit in a CAISO approved form before final certification. OR

3.4 The Scheduling Coordinator Applicant will provide a cash deposit: (yes / no).

Amount: $_____. The Scheduling Coordinator Applicant must enter into an escrow agreement in a CAISO approved form before final certification. AND

3.5 The Scheduling Coordinator Applicant must provide its bank account information before final certification. The Scheduling Coordinator Applicant's bank must be capable of performing Fed-Wire System transfers.

IV. Technical Requirements

4.1 Does the Scheduling Coordinator Applicant have the computer hardware, software and communication capabilities for interface compatibility with the CAISO system for data transmission, for electronic data interchange (EDI) and for Fed-Wire System transfer accounts? (yes / no) If no, please submit a proposed completion date to be fully operational so that a CAISO staff site visit can be arranged.

4.2 For Loads and Generating Units located within the CAISO Controlled Grid, does the Scheduling Coordinator Applicant have any scheduling restrictions imposed by the parties they represent? (yes / no) If yes, provide full details on a separate sheet of paper.

4.3 Does the Scheduling Coordinator Applicant have adequate staffing to operate a Scheduling Coordinator's operational facility twenty-four (24) hours a day for 365 days a year? (yes / no). If no,

please submit a proposed completion date to be fully operational so that a CAISO staff site visit can be arranged.

V. Third Party Contractual Requirements

5.1 The Scheduling Coordinator Applicant confirms that all of its Scheduling Coordinator Customers which are located within the CAISO Controlled Grid and which should execute agreements with the CAISO have entered into or will enter into, prior to the certification of the Scheduling Coordinator Applicant, all required agreements with the CAISO to enable them to meet the requirements of the CAISO Tariff: (yes / no).

(a) Represented Generators have signed Participating Generator Agreements: (yes / no).

(b) Represented UDCs have signed UDC Operating Agreements and Meter Service Agreements: (yes / no).

(c) Represented CAISO Metered Entities have signed Meter Service Agreements: (yes / no).

(d) Wholesale Customers it will represent have warranted to the Scheduling Coordinato Applicant that they are eligible for wholesale transmission service pursuant to the provisions of the FPA Section 212(h): (yes / no).

(e) Each End-Use Customer it will represent which requests Direct Access service has warranted to the Scheduling Coordinator Applicant that the End-Use Customer is eligible for such service: (yes / no).

5.2 The SCHEDULING COORDINATORApplicant confirms that all of the parties which it represents as Scheduling Coordinator Customers have granted it all necessary agency authority, whether actual, implied or inherent, to enable the Scheduling Coordinator to perform all of its obligations under the CAISO Tariff: (yes / no).

5.3 Notwithstanding 5.2, the Scheduling Coordinator confirms that it will have the primary responsibility, as the principal, for all Scheduling Coordinator payment obligations under the CAISO Tariff : (yes / no).

VI. Additional Information and Obligations

6.1 The Scheduling Coordinator Applicant agrees to provide such further information to the CAISO as the CAISO may deem necessary to process the application and certify the Scheduling Coordinator Applicant as a Scheduling Coordinator now and on a continuing basis.

6.2 Subject to the CAISO Tariff, the Scheduling Coordinator Applicant agrees to promptly report to the CAISO within seven (7) Business Days or earlier any changes regarding the information provided by it referred to in the CAISO Tariff and in the application with the exception of the security requirement data referred to in Part III of Part A in this Appendix which must be updated within three (3) Business Days. The Scheduling Coordinator shall be responsible if a failure to submit revised technical data more promptly extends the period during which schedules are rejected by the CAISO.

6.3 The Scheduling Coordinator Applicant agrees to enclose herein the non-refundable application fee of $500 to cover the application processing costs, site visit and costs of providing CAISO Tariff.

Please make check payable to:

The California Independent System Operator Corporation

6.4 Scheduling Coordinator Applicant agrees to promptly execute and return the Scheduling Coordinator Agreement, Meter Service Agreements, Interim Black Start Agreements, software licensing agreement, letter of understanding, letter of credit, guarantee, escrow agreement, as applicable, and Fed-Wire System bank account number, after receiving its application approval letter from the CAISO.

6.5 Final certification is contingent upon Scheduling Coordinator Applicant fulfilling all financial and technical requirements as referenced in the CAISO Tariff (including Part C of this Appendix, the CAISO Application File Template).

Scheduling Coordinator Applicant certifies by its signature on this Application Form that:

(1) all information it is submitting is correct and accurate; and that

(2) the Scheduling Coordinator Applicant has read and agrees to be bound by the CAISO Tariff as may be in force or amended from time to time.

Name of Organization:

_____

Scheduling Coordinator Applicant's Name (please print):

_____

Scheduling Coordinator Applicant's Title:

_____

Scheduling Coordinator Applicant's Signature:

_____

State of _____}

_____ss

County of _____}

_____[**SEAL]**

Sworn and subscribed

before me this ____ day of

_____,19___.

Notary's Signature: _____

Please send application and required information to:

California Independent System Operator Corporation

c/o Schedule Coordinator Application Processing Office

151 Blue Ravine Road,

Folsom, CA 95630

Scheduling Coordinator Application PART B

Procedures for Changes or Additions to

Scheduling Coordinator's (SC's) Information

The Scheduling Coordinator must update, amend and / or correct the information originally submitted to the CAISO during the Scheduling Coordinator application process using the format set forth in this Part and/or a revised Part C, the CAISO Application File Template. The Scheduling Coordinator must submit all changes or additional information by first class postage paid mail to:

California Independent System Operator Corporation

c/o SC Application Processing Office

151 Blue Ravine Road

Folsom, CA 95630

The Scheduling Coordinator must notify the CAISO of any change to the information that it has previously submitted to the CAISO, or any additional information, at least three Business Days before the change will take effect.

The CAISO will send a written acknowledgment of receipt of the Scheduling Coordinator's changes within three Business Days of receipt. The receipt shall be sent to the address on file with the CAISO or the address specified in the notice of change received by the CAISO.

Prior Information

_____

_____

_____

New Information

_____

_____

_____

Explanation and Reason for Change

Scheduling Coordinator Application PART C

CAISO APPLICATION FILE TEMPLATE

The CAISO Application File Template is an Excel template used to load resources into the CAISO's database. There is also a customer help file created to work with a Microsoft Access Database which are used together to gather application information.

* * *

Attachment B5 – Appendix N Blacklines

FOR AUGUST 3, 2007 MRTU FILING

* * *

CAISO TARIFF APPENDIX N

Settlements and Billing

~~[To be updated and removed to BPM]~~

PART A

[Not Used]

PART B

~~GRID OPERATIONS CHARGE COMPUTATION~~[NOT USED]

~~B 1 Purpose of charge~~

~~The Grid Operations Charge is a charge which recovers Redispatch costs incurred due to Intra-Zonal Congestion pursuant to Section 27.1.3 of the ISO Tariff. The Grid Operations Charge is paid by or charged to Scheduling Coordinators in order for the ISO to recover and properly redistribute the costs of adjusting the Balanced Schedules submitted by Scheduling Coordinators.~~

~~B 2 Fundamental formulae~~

~~B 2.1 Payments to Scheduling Coordinators with incremented schedules~~

~~When it becomes necessary for the ISO to increase the output of a Scheduling Coordinator's Generating Unit$_i$ or System Resource$_i$ or reduce a Curtailable Demand$_i$ in order to relieve Congestion within a Zone, the ISO will pay the Scheduling Coordinator. The amount that ISO pays the Scheduling Coordinator$_j$ is the price specified in the Scheduling Coordinator's Imbalance Energy bid for the Generating Unit$_i$ or System Resource$_i$ or Curtailable Demand$_i$ multiplied by the quantity of Energy Dispatched. The formula for calculating the payment to Scheduling Coordinator$_j$ for each block$_b$ of Energy of its bid curve in Trading Interval$_t$ is:~~

$$INC_{bijt} = adjinc_{bijt} * \Delta inc_{bijt}$$

~~B 2.1.1 Total Payment for Trading Interval~~

~~The formula for calculating payment to Scheduling Coordinator$_j$ whose Generating Unit$_i$ or System Resource$_i$ has been increased or Curtailable Demand$_i$ reduced for all the relevant blocks$_b$ of Energy in the Imbalance Energy bid curve of that Generating Unit or System Resource or Curtailable Demand in the same Trading Interval$_t$ is:~~

$$PayTI_{ijt} = \sum_{b} INC_{bijt}$$

~~B 2.2 Charges to Scheduling Coordinators with decremented schedules~~

~~When it becomes necessary for the ISO to decrease the output of a Scheduling Coordinator's Generating Unit$_i$ or System Resource$_i$ in order to relieve Congestion within a Zone, the ISO will make a charge to the Scheduling Coordinator. The amount that the ISO will charge Scheduling Coordinator$_j$ for~~

decreasing the output of Generating Unit$_i$ is the decremental reference price specified for the Scheduling Coordinator as determined in accordance with Section 27.1.1.6.1 multiplied by the quantity of Energy Dispatched. The amount that the ISO will charge Scheduling Coordinator$_j$ for decreasing the output of System Resource$_i$ is the price specified in the Scheduling Coordinator's Imbalance Energy bid for System Resource$_i$ multiplied by the quantity of Energy Dispatched. The formula for calculating the charge to Scheduling Coordinator$_j$ for each block$_b$ of Energy in its decremental reference price or Imbalance Energy Bid in Trading Interval$_t$ is:

$$DEC_{bijt} = adjdec_{bijt} * \Delta dec_{bijt}$$

B 2.2.1 Total Charge for Trading Interval

The formula for calculating the charge to Scheduling Coordinator$_j$ whose Generating Unit$_i$ or System Resource$_i$ has been decreased for all the relevant blocks$_b$ of Energy at the decremental reference price for Generating Unit$_i$, or Imbalance Energy bid for System Resource$_i$ in the same Trading Interval$_t$ is:

$$ChargeTI_{ijt} = \sum_{b} DEC_{bijt}$$

B 2.3 Not Used

B 2.4 Net ISO Redispatch costs

The Trading Interval net Redispatch cost encountered by ISO to relieve Intra-Zonal Congestion is the sum of the amounts paid by the ISO to those Scheduling Coordinators whose Generation or System Resource was increased or Curtailable Demand was decreased during the Trading Interval less the sum of the amounts received by the ISO from those Scheduling Coordinators whose Generating Units or System Resource were decreased during the Trading Interval. The fundamental formula for calculating the net Redispatch cost is:

$$REDISP_{CONGt} = \sum_{j} PayTI_{ijt} - \sum_{j} ChargeTI_{ijt}$$

Note that $REDISP_{CONGt}$ can be either positive or negative. This means that it is possible for the ISO to generate either a net cost or a net income, for any given Trading Interval. In the event the ISO does not make use of equal amounts of incremental and decremental dispatched MWHs, then the net Redispatch cost becomes the sum of the amounts paid (or charged) by the ISO to those Scheduling Coordinators whose Generation or System Resource was increased (or decreased) or Curtailable Demand was decreased (or increased) during the Trading Interval less the sum of the amounts received by the ISO from Scheduling Coordinators through the Imbalance Energy Market.

B 2.5 Grid Operations Price

The grid operations price is the Trading Interval rate used by the ISO to apportion net Trading Interval Redispatch costs to Scheduling Coordinators within the Zone with Intra-Zonal Congestion. The grid operations price is calculated using the following formula:

$$GOP_t = \frac{REDISP_{CONG_t}}{\sum_j QCharge_{jt} + \sum_j Export_{jt}}$$

B 2.6 Grid Operations Charge

The Grid Operations Charge is the vehicle by which the ISO recovers the net Redispatch costs. It is allocated to each Scheduling Coordinator in proportion to the Scheduling Coordinator's Demand in the Zone with Intra-Zonal Congestion and exports from the Zone with Intra-Zonal Congestion. The formula for calculating the Grid Operations Charge for Scheduling Coordinator$_j$ in Trading Interval$_t$ is:

$$GOC_{jt} = GOP_t * \left(QCharge_{jt} + EXPORT_{jt}\right)$$

B 3 Meaning of terms of formulae

B 3.1 INC_{bijt} - $

The payment from the ISO due to Scheduling Coordinator$_j$ whose Generating Unit$_i$ or System Resource$_i$ is increased or Curtailable Load$_i$ is reduced within a block$_b$ of Energy in its Imbalance Energy bid in Trading Interval$_t$ in order to relieve Intra-Zonal Congestion.

B 3.2 $adjinc_{bijt}$ - $/MWh

The incremental cost for the rescheduled Generating Unit$_i$ or System Resource$_i$ or Curtailable Load$_i$ taken from the relevant block$_b$ of Energy in the Imbalance Energy bid submitted by the Scheduling Coordinator$_j$ or generated by the ISO for the Trading Interval$_t$.

B 3.3 $\Delta incbijt$ - MW

The amount by which the Generating Unit$_i$ or System Resource$_i$ or Curtailable Load$_i$ of Scheduling Coordinator$_j$ for Trading Interval$_t$ is increased by the ISO within the relevant block$_b$ of Energy in its Imbalance Energy bid.

B 3.4 $PayTI_{jit}$ - $

The Trading Interval payment to Scheduling Coordinator$_j$ whose Generating Unit$_i$ has been increased or System Resource$_i$ or Curtailable Load$_i$ reduced in Trading Interval$_t$ of the Trading Day.

B 3.5 DEC_{bijt} - $

The charge to Scheduling Coordinator$_j$ whose Generating Unit$_i$ or System Resource$_i$ is decreased for Trading Interval$_t$ within a block$_b$ of Energy at the decremental reference price for Generating Unit$_i$ or in the Imbalance Energy bid for System Resource$_i$.

B 3.6 $adjdec_{bijt}$ - $/MWh

The decremental cost for the rescheduled Generating Unit$_i$ or System Resource$_i$ taken from the relevant block$_b$ of Energy at the decremental reference price for Generating Unit$_i$ or Imbalance Energy bid for System Resource$_i$ submitted by Scheduling Coordinator$_j$ or generated by the ISO for the Trading Interval$_t$.

B 3.7 Δdec_{bijt} - MW

The amount by which the Generating Unit$_i$ or System Resource$_i$ of Scheduling Coordinator$_j$ for Trading Interval$_t$ is decreased by ISO within the relevant block$_b$ of Energy at the decremental reference price for Generating Unit$_i$ or Imbalance Energy bid for System Resource$_i$.

B 3.8 $ChargeTI_{ijt}$ - $

The Trading Interval charge to Scheduling Coordinator$_j$ whose Generating Unit$_i$ or System Resource$_i$ has been decreased in Trading Interval$_t$ of the Trading Day.

B 3.9 Not Used

B 3.10 Not Used

B 3.10.1 Not Used

B 3.10.2 Not Used

B 3.11 $REDISP_{CONGt}$ - $

The Trading Interval net cost to ISO to redispatch in order to relieve Intra-Zonal Congestion during Trading Interval$_t$.

B 3.12 GOP_t - $/MWh

The Trading Interval grid operations price for Trading Interval$_t$ used by the ISO to recover the costs of Redispatch for Intra-Zonal Congestion Management.

B 3.13 GOC_{jt} - $

The Trading Interval Grid Operations Charge by the ISO for Trading Interval$_t$ for Scheduling Coordinator$_j$ in the relevant Zone with Intra-Zonal Congestion.

B 3.14 QCHARGE$_{jt}$ – MWh

The Trading Interval metered Demand within a Zone for Trading Interval$_t$ for Scheduling Coordinator$_j$ whose Grid Operations Charge is being calculated.

B 3.15 EXPORT$_{jt}$ – MWh

The total Energy for Trading Interval$_t$ exported from the Zone to a neighboring Control Area by Scheduling Coordinator$_j$.

PART C

ANCILLARY SERVICES CHARGES COMPUTATION[NOT USED]

C 1 Purpose of charges

The Ancillary Services charges reimburse the ISO for the costs of purchasing Ancillary Services in the Day-Ahead and Hour-Ahead Markets. Each Scheduling Coordinator that does not self-provide Ancillary Services must purchase these services from the ISO. The ISO will in turn purchase these Ancillary Services from Scheduling Coordinators in the markets. Ancillary Services purchased and resold by the ISO includes Regulation, Spinning Reserve, Non-Spinning Reserve, and Replacement Reserve. Any references in this Part C to the Ancillary Service "Regulation" shall be read as referring to "Regulation Up" or "Regulation Down".

This Part C also addresses the payments by ISO to Scheduling Coordinators for the Dispatch of energy from Dispatched Ancillary Services Units and for the Dispatch of Supplemental Energy in the Real Time Market. The ISO recovers the costs of real-time Dispatch of such energy through the Imbalance Energy charges described in Part D of this Appendix.

The reference to a Scheduling Coordinator by Zone refers to the Demand of that Scheduling Coordinator which is located in the Zone. A Generation Unit, Load, or System Resource located in another Control Area is considered to be located in the Zone in which its contract path enters the ISO Controlled Grid.

The ISO will purchase Ancillary Services for each Trading Interval in both the Day-Ahead and Hour-Ahead Markets. Separate payments will be calculated for each service for each Trading Interval and in each market for each Generating Unit, Load and System Resource. The ISO will then calculate a total payment for each Scheduling Coordinator for each Trading Interval for each service for each Zone in each market for all the Generating Units, Loads and System Resources that the Scheduling Coordinator represents. The ISO will charge Scheduling Coordinators for Ancillary Services, other than for energy, which they purchase from the ISO by calculating and applying charges to each Scheduling Coordinator for each Trading Interval for each service in each Zone in each market.

~~The ISO will allocate the Ancillary Services capacity charges, for both the Day-Ahead Market and the Hour-Ahead Market, on a Zonal basis if the Day-Ahead Ancillary Services Market is procured on a Zonal basis. The ISO will allocate the Ancillary Services capacity charges, for both the Day-Ahead Market and the Hour-Ahead Market, on an ISO Control Area wide basis if the Day-Ahead Ancillary Services Market is defined on an ISO Control Area wide basis.~~

~~C 2 Fundamental formulas~~

~~C 2.1 ISO payments to Scheduling Coordinators~~

~~C 2.1.1 Day-Ahead Market~~

~~(a) *Regulation*. When the ISO purchases Regulation capacity in the Day-Ahead Market, Scheduling Coordinators for Generating Units that provide this capacity will receive payments for each Trading Interval of the Day-Ahead Market. The payment for a given Generating Unit which provides Regulation capacity over a given Trading Interval will be the total quantity of Regulation capacity provided times the Zonal Market Clearing Price for that Trading Interval in that Zone. The required Regulation capacity is defined in Appendix A. Regulation Up and Regulation Down payments shall be calculated separately. This payment for Scheduling Coordinator j for providing Regulation Up capacity from a resource i in Zone x for Trading Interval t is calculated as follows:~~

~~$AGCUpPayDA_{ijxt} = AGCUpQDA_{ijxt} * PAGCUpDA_{xt}$~~

~~This payment for Scheduling Coordinator j for providing Regulation Down capacity from a resource i in Zone x for Trading Interval t is calculated as follows:~~

~~$AGCDownPayDA_{ijxt} = AGCDownQDA_{ijxt} * PAGCDownDA_{xt}$~~

~~The total Regulation Up payment to each Scheduling Coordinator for a given Trading Interval in the Day-Ahead Market for all the resources that it represents in a given Zone is calculated by summing all the payments for the resources of the Scheduling Coordinator in the Zone for the Trading Interval. This payment for Scheduling Coordinator j in Zone x for Trading Interval t is calculated as follows:~~

$$AGCUpPayTotalDA_{jxt} = \sum_{i} AGCUpPayDA_{ijxt}$$

~~The total Regulation Down payment to each Scheduling Coordinator for a given Trading Interval in the Day-Ahead Market for all the resources that it represents in a given Zone is calculated by summing all the payments for the resources of the Scheduling Coordinator in the Zone for the Trading Interval. This payment for Scheduling Coordinator j in Zone x for Trading Interval t is calculated as follows:~~

$$AGCDownPayTotalDA_{jxt} = \sum_{i} AGCDownPayDA_{ijxt}$$

~~(b) *Spinning Reserve.* When ISO purchases Spinning Reserve capacity in the Day-Ahead Market. Scheduling Coordinators for Generating Units and System Resources that provide this capacity will receive payments for each Trading Interval of the Day-Ahead Market. The payment for a given Generating Unit or~~

~~System Resource which provides Spinning Reserve capacity over a given Trading Interval will be the total quantity of Spinning Reserve capacity provided times the Zonal Market Clearing Price for that Trading Interval in that Zone. The required Spinning Reserve capacity is defined in Appendix A. This payment for Scheduling Coordinator j for providing Spinning Reserve capacity from a resource i in Zone x for Trading Interval t is calculated as follows:~~

~~$SpinPayDA_{ijxt} = SpinQDA_{ijxt} * PSpinDA_{xt}$~~

~~The total Spinning Reserve payment to each Scheduling Coordinator for a given Trading Interval in the Day-Ahead Market for all the resources that it represents in a given Zone is calculated by summing all the payments for the resources of the Scheduling Coordinator in the Zone for the Trading Interval. This payment for Scheduling Coordinator j in Zone x for Trading Interval t is calculated as follows:~~

~~$SpinPayTotalDA_{jxt} = \sum_{i} SpinPayDA_{ixt}$~~

~~(b) *Non-Spinning Reserve*. When the ISO purchases Non-Spinning Reserve capacity in the Day-Ahead Market, Scheduling Coordinators for Generating Units, Loads and System Resources that provide this capacity will receive payments for each Trading Interval of the Day-Ahead Market. The payment for a given Generating Unit, Load or System Resource which provides Non-Spinning Reserve capacity over a given Trading Interval will be the total quantity of Non-Spinning Reserve capacity provided times the Zonal Market Clearing Price for that Trading Interval in that Zone. The required Non-Spinning Reserve capacity is defined in Appendix A. This payment for Scheduling Coordinator j for providing Non-Spinning Reserve capacity from a resource i in Zone x for Trading Interval t is calculated as follows:~~

~~(c) $NonSpinPayDA_{ijxt} = NonSpinQDA_{ijxt} * PNonSpinDA_{xt}$~~

~~The total Non-Spinning Reserve payment to each Scheduling Coordinator for a given Trading Interval in the Day-Ahead Market for all the resources that it represents in a given Zone is calculated by summing all the payments for the resources of the Scheduling Coordinator in the Zone for the Trading Interval. This payment for Scheduling Coordinator j in Zone x for Trading Interval t is calculated as follows:~~

$$NonSpinPayTotalDA_{jxt} = \sum_{i} NonSpinPayDA_{ijxt}$$

(d) *Replacement Reserve*. When the ISO purchases Replacement Reserve capacity in the Day-Ahead Market, Scheduling Coordinators for Generating Units, Loads and System Resources that provide this capacity will receive payments for each Trading Interval of the Day-Ahead Market. The payment for a given Generating Unit, Load or System Resource which provides Replacement Reserve capacity over a given Trading Interval will be the total quantity of Replacement Reserve capacity provided times the Zonal Market Clearing Price for that Trading Interval in that Zone. The required Replacement Reserve capacity is defined in Appendix A. This payment for Scheduling Coordinator j for providing Replacement Reserve capacity from a resource i in Zone x for Trading Interval t is calculated as follows:

$$ReplPayDA_{ijxt} = ReplQDA_{ijxt} * PReplDA_{xt}$$

The total Replacement Reserve payment to each Scheduling Coordinator for a given Trading Interval in the Day-Ahead Market for all the resources that it represents in a given Zone is calculated by summing all the payments for the resources of the Scheduling Coordinator in the Zone for the Trading Interval. This payment for Scheduling Coordinator j in Zone x for Trading Interval t is calculated as follows:

$$ReplPayTotalDA_{jxt} = \sum_{i} ReplPayDA_{ijxt}$$

C 2.1.2 Hour-Ahead Market

(a) *Regulation*. When the ISO purchases Regulation capacity in the Hour-Ahead Market, Scheduling Coordinators for Generating Units that provide this capacity will receive payment for the Trading Interval of the Hour-Ahead Market. The payment for a given Generating Unit which provides Regulation capacity over the Trading Interval will be the total quantity of Regulation capacity provided times the Zonal Market Clearing Price for that Trading Interval in that Zone. The required Regulation capacity is defined in Appendix A. Regulation Up and Regulation Down payments shall be calculated separately. This payment for Scheduling Coordinator j for providing Regulation Up capacity from a resource i in Zone x for Trading Interval t is calculated as follows:

$$AGCUpPayHA_{ijxt} = AGCUpQIHA_{ijxt} * PAGCUpHA_{xt}$$

This payment for Scheduling Coordinator j for providing Regulation Down capacity from a resource i in Zone x for Trading Interval t is calculated as follows:

$$AGCDownPayHA_{ijxt} = AGCDownQIHA_{ijxt} * PAGCDownHA_{xt}$$

When a Scheduling Coordinator buys back, in the Hour-Ahead Market, Regulation capacity which it sold to the ISO in the Day-Ahead Market, the payment which the ISO receives will be the total quantity of Regulation capacity bought back times the Zonal Hour-Ahead Market Clearing Price for that Trading Interval in that Zone.

This payment to the ISO from Scheduling Coordinator j to buy back Regulation Up capacity from a resource i in Zone x for Trading Interval t is calculated as follows:

$$AGCUpReceiveHA_{ijxt} = AGCUpQDHA_{ijxt} * PAGCUpHA_{xt}$$

This payment to the ISO from Scheduling Coordinator j to buy back Regulation Down capacity from a resource i in Zone x for Trading Interval t is calculated as follows:

$$AGCDownReceiveHA_{ijxt} = AGCDownQDHA_{ijxt} * PAGCDownHA_{xt}$$

The total Regulation payment for the Trading Interval of the Hour-Ahead Market to each Scheduling Coordinator for all the resources that it represents in a given Zone is calculated by summing all the payments for the resources of the Scheduling Coordinator in the Zone for the Trading Interval and then deducting therefrom any amount payable by the Scheduling Coordinator to the ISO for Regulation bought back by the Scheduling Coordinator from the ISO in the Hour-Ahead Market for the Trading Interval on behalf of resources located in the Zone. This payment for Scheduling Coordinator j in Zone x for Trading Interval t is calculated as follows:

$$AGCDownPayTotalHA_{jxt} = \sum_{i} AGCDownPayHA_{ijxt} - \sum_{i} AGCDownReceiveHA_{ijxt}$$

$$AGCUpPayTotalHA_{jxt} = \sum_{i} AGCUpPayHA_{ijxt} - \sum_{i} AGCUpReceiveHA_{ijxt}$$

(b) Spinning Reserve. When the ISO purchases Spinning Reserve capacity in the Hour-Ahead Market, Scheduling Coordinators for Generating Units and System Resources that provide this capacity will receive payments for the Trading Interval of the Hour-Ahead Market. The payment for a given Generating Unit or System Resource which provides Spinning Reserve capacity over the Trading Interval will be the total quantity of Spinning Reserve capacity provided times the Zonal Market Clearing Price for that Trading Interval in that Zone. This payment for Scheduling Coordinator j for providing Spinning Reserve capacity from a resource i in Zone x for Trading Interval t is calculated as follows:

$$SpinPayHA_{ijxt} = SpinQIHA_{ijxt} * PSpinHA_{xt}$$

When a Scheduling Coordinator buys back in the Hour-Ahead Market Spinning Reserve capacity which it sold to the ISO in the Day-Ahead Market, the payment which the ISO receives will be the total quantity of

Spinning Reserve capacity bought back times the Zonal Hour-Ahead Market Clearing Price for that Trading Interval in that Zone.

This payment to the ISO from Scheduling Coordinator j to buy back Spinning Reserve capacity from a resource i in Zone x for Trading Interval t is calculated as follows:

$$SpinReceiveHA_{ijxt} = SpinQDHA_{ijxt} * PSpinHA_{xt}$$

The total Spinning Reserve payment to each Scheduling Coordinator for the Trading Interval of the Hour-Ahead Market for all the resources that it represents in a given Zone is calculated by summing all the payments for the resources of the Scheduling Coordinator in the Zone for the Trading Interval and then deducting therefrom any amount payable by the Scheduling Coordinator to the ISO for Spinning Reserve bought back by the Scheduling Coordinator from the ISO in the Hour-Ahead Market for the Trading Interval on behalf of resources located in the Zone. This payment for Scheduling Coordinator j in Zone x for Trading Interval t is calculated as follows:

$$SpinPayTotalHA_{jxt} = \sum_{i} SpinPayHA_{ijxt} - \sum_{i} SpinReceiveHA_{ijxt}$$

(c) *Non-Spinning Reserve*. When the ISO purchases Non-Spinning Reserve capacity in the Hour-Ahead Market, Scheduling Coordinators for Generating Units, Loads and System Resources that provide this capacity will receive payment for the Trading Interval of the Hour-Ahead Market. The payment for a given Generating Unit, Load or System Resource which provides Non-Spinning Reserve capacity over the Trading Interval will be the total quantity of Non-Spinning Reserve capacity provided times the Zonal Market Clearing Price for that Trading Interval in that Zone. This payment for Scheduling Coordinator j for providing Non-Spinning Reserve capacity from a resource i in Zone x for Trading Interval t is calculated as follows:

$$NonSpinPayHA_{ijxt} = NonSpinQIHA_{ijxt} * PNonSpinHA_{xt}$$

When a Scheduling Coordinator buys back in the Hour-Ahead Market Non-Spinning Reserve capacity which it sold to the ISO in the Day-Ahead Market, the payment which the ISO receives will be the total quantity of Non-Spinning Reserve capacity bought back times the Zonal Hour-Ahead Market Clearing Price for that Trading Interval in that Zone.

This payment to the ISO from Scheduling Coordinator j to buy back Non-Spinning Reserve capacity from a resource i in Zone x for Trading Interval t is calculated as follows:

$$NonSpinReceiveHA_{ijxt} = SpinQDHA_{ijxt} * PNonSpinHA_{xt}$$

The total Non-Spinning Reserve payment to each Scheduling Coordinator for the Trading Interval of the Hour-Ahead Market for all the resources that it represents in a given Zone is calculated by summing all

~~the payments for the resources of the Scheduling Coordinator in the Zone for the Trading Interval and then deducting therefrom any amount payable by the Scheduling Coordinator to the ISO for Non-Spinning Reserve bought back by the Scheduling Coordinator from the ISO in the Hour-Ahead Market for the Trading Interval on behalf of resources located in the Zone. This payment for Scheduling Coordinator j in Zone x for Trading Interval t is calculated as follows:~~

$$NonSpinPayTotalHA_{jxt} = \sum_{i} NonSpinPayHA_{ijxt} - \sum_{i} NonSpinReceiveHA_{ijxt}$$

~~(d) *Replacement Reserve*. When the ISO purchases Replacement Reserve capacity in the Hour-Ahead Market, Scheduling Coordinators for Generating Units, Loads and System Resources that provide this capacity will receive payments for the Trading Interval of the Hour-Ahead Market. The payment for a given Generating Unit, Load or System Resource which provides Replacement Reserve capacity over the Trading Interval will be the total quantity of Replacement Reserve capacity provided times the Zonal Market Clearing Price for that Trading Interval in that Zone. This payment for Scheduling Coordinator j for providing Replacement Reserve capacity from a resource i in Zone x for Trading Interval t is calculated as follows:~~

~~$ReplPayHA_{ijxt} = ReplQIHA_{ijxt} * PReplHA_{xt}$~~

~~When a Scheduling Coordinator buys back in the Hour-Ahead Market Replacement Reserve capacity which it sold to the ISO in the Day-Ahead Market, the payment which the ISO receives will be the total quantity of Replacement Reserve capacity bought back times the Zonal Hour-Ahead Market Clearing Price for that Trading Interval in that Zone.~~

~~This payment to the ISO from Scheduling Coordinator j to buy back Replacement Reserve capacity from a resource i in Zone x for Trading Interval t is calculated as follows:~~

~~$ReplReceiveHA_{ijxt} = ReplQDHA_{ijxt} * PReplHA_{xt}$~~

~~The total Replacement Reserve payment to each Scheduling Coordinator for the Trading Interval of the Hour-Ahead Market for all the resources that it represents in a given Zone is calculated by summing all the payments for the resources of the Scheduling Coordinator in the Zone for the Trading Interval and then deducting therefrom any amount payable by the Scheduling Coordinator to the ISO for Replacement Reserve bought back by the Scheduling Coordinator from the ISO in the Hour-Ahead Market for the Trading Interval on behalf of resources located in the Zone. This payment for Scheduling Coordinator j in Zone x for Trading Interval t is calculated as follows:~~

$$ReplPayTotalHA_{jxt} = \sum_{i} ReplPayHA_{ijxt} - \sum_{i} ReplReceiveHA_{ijxt}$$

~~C 2.2 ISO allocation of charges to Scheduling Coordinators~~

~~C 2.2.1 Day-Ahead Market~~

~~*(a) Regulation*. The ISO will charge the Zonal cost of providing Regulation capacity that is not self-provided by Scheduling Coordinators, in the Day-Ahead Market, through the application of a charge to each Scheduling Coordinator for each Trading Interval. This charge will be computed by multiplying the Regulation user rate for the Trading Interval by the Scheduling Coordinator's Regulation obligation, for which it has not self-provided, for the same period.~~

~~The Zonal Regulation user rate for the Day-Ahead Market is calculated by dividing the total cost to ISO of purchasing Regulation Capacity within the Zone, for the Trading Interval, by the total ISO Regulation MW purchases for the Trading Interval within the Zone. Regulation Up and Regulation Down payments shall be calculated separately.~~

~~The Day-Ahead Regulation Up user rate in Zone x for Trading Interval t is calculated as follows:~~

$$AGCUpRateDA_{xt} = \frac{\sum_{j} AGCUpPayTotalDA_{jxt}}{AGCUpPurchDA_{xt}}$$

~~where,~~

~~$AGCUpPayTotalDA_{jxt}$ = Total Regulation Up payments for the Settlement Period t in the Day-Ahead Market for the Zone x.~~

~~The Day-Ahead Regulation Down user rate in Zone x for Trading Interval t is calculated as follows:~~

$$AGCDownRateDAxt = \frac{\sum_{j} AGCDownPayTotalDAjxt}{AGCDownPurchDAxt}$$

~~where,~~

~~$AGCDownPayTotalDA_{jxt}$ = Total Regulation Down payments for the Settlement Period t in the Day-Ahead Market for the Zone x.~~

~~The Regulation capacity charge for Scheduling Coordinator j in the Day-Ahead Market in Zone x for Trading Interval t is calculated as follows:~~

~~$AGCUpChgDA_{jxt} = AGCUpOblig_{jxt} * AGCUpRateDA_{xt}$~~

~~$AGCDownChgDA_{jxt} = AGCDownOblig_{jxt} * AGCDownRateDA_{xt}$~~

~~*(b) Spinning Reserve*~~. ~~The ISO will charge the Zonal cost of providing Spinning Reserve capacity that is not self-provided by Scheduling Coordinators, in the Day-Ahead Market, through the application of a charge to each Scheduling Coordinator for each Trading Interval. This charge will be computed by multiplying the Spinning Reserve capacity user rate for the Trading Interval by the Scheduling Coordinator's Spinning Reserve obligation, for which it has not self-provided, for the same period. The Zonal Spinning Reserve capacity user rate for the Day-Ahead Market is calculated by dividing the total cost to ISO of purchasing Spinning Reserve capacity within the Zone, for the Trading Interval, by the total ISO Spinning Reserve MW purchases for the Trading Interval within the Zone. The Day-Ahead Spinning Reserve capacity user rate in Zone x for Trading Interval t is calculated as follows:~~

~~$$SpinRateDA_{xt} = \frac{\sum_{j} SpinPayTotalDA_{jxt}}{SpinPurchDA_{xt}}$$~~

~~The Spinning Reserve capacity charge for Scheduling Coordinator j in the Day-Ahead Market in Zone x for Trading Interval t is calculated as follows:~~

~~$$SpinChgDA_{jxt} = SpinOblig_{jxt} * SpinRateDA_{xt}$$~~

~~*(c) Non-Spinning Reserve*~~. ~~The ISO will charge the Zonal cost of providing Non-Spinning Reserve capacity that is not self-provided by Scheduling Coordinators, in the Day-Ahead Market, through the application of a charge to each Scheduling Coordinator for each Trading Interval. This charge will be computed by multiplying the Non-Spinning Reserve capacity user rate for the Trading Interval by the Scheduling Coordinator's Non-Spinning Reserve obligation, for which it has not self-provided, for the same period.~~

~~The Zonal Non-Spinning Reserve capacity user rate for the Day-Ahead Market is calculated by dividing the total cost to ISO of purchasing Non-Spinning Reserve capacity within the Zone, for the Trading Interval, by the total ISO Non-Spinning Reserve MW purchases for the Trading Interval within the Zone. The Day-Ahead Non-Spinning Reserve capacity user rate in Zone x for Trading Interval t is calculated as follows:~~

~~$$NonSpinRateDA_{xt} = \frac{\sum_{j} NonSpinPayTotalDA_{jxt}}{NonSpinPurchDA_{xt}}$$~~

~~The Non-Spinning Reserve capacity charge for Scheduling Coordinator j in the Day-Ahead Market in Zone x for Trading Interval t is calculated as follows:~~

~~$$NonSpinChgDA_{jxt} = NonSpinOblig_{jxt} * NonSpinRateDA_{xt}$$~~

C 2.2.2 Hour-Ahead Market

(a) *Regulation*. The ISO will charge the Zonal net cost of providing Regulation capacity that is not self-provided by Scheduling Coordinators, in the Hour-Ahead Market through the application of a charge to each Scheduling Coordinator for the Trading Interval concerned. This charge will be computed by multiplying the Regulation user rate for the Trading Interval by the Scheduling Coordinator's Regulation obligation, for which it has not self-provided, for the same period.

The Zonal Regulation capacity user rate for the Hour-Ahead Market is calculated by dividing the total cost to the ISO of purchasing Regulation capacity within the Zone less any amounts payable to the ISO by Scheduling Coordinators for Regulation bought back from the ISO in the Hour-Ahead Market on behalf of resources located in the Zone, for the Trading Interval, by the total ISO Regulation capacity MW purchases for the Trading Interval within the Zone. Regulation Up and Down payments shall be calculated separately. The Hour-Ahead Regulation Up capacity user rate in Zone x for Trading Interval t is calculated as follows:

$$AGCUpRateHA_{xt} = \frac{\sum_{j} AGCUpPayTotalHA_{jxt}}{AGCUpPurchHA_{xt}}$$

where,

$AGCUpPayTotalHa_{jxt}$ = Totlal Regulation Up payments for the Settlement Period t in the Hour-Ahead Market for Zone x.

The Hour-Ahead Regulation Down capacity user rate in Zone x for Trading Interval t is calculated as follows:

$$AGCDownRateHAxt \frac{\sum_{j} AGCDownPayTotalHAjxt}{AGCDownPurchHAxt}$$

where,

$AGCDownPayTotalHA_{xt}$ = Total Regulation Down payments for the Settlement Period t in the Hour-Ahead Market for Zone x.

The Regulation capacity charge for Scheduling Coordinator j in the Hour-Ahead Market in Zone x for Trading Interval t is calculated as follows:

$AGCUpChgHA_{jxt} = (AGCUpOblig_{jxt} * AGCUpRateHA_{xt})$

$AGCDownChgHA_{jxt} = (AGCDownOblig_{jxt} * AGCDownRateHA_{xt})$

~~*(b)* *Spinning Reserve*. The ISO will charge the Zonal net cost of providing Spinning Reserve capacity that is not self-provided by Scheduling Coordinators, in the Hour-Ahead Market, through the application of a charge to each Scheduling Coordinator for the Trading Interval. This charge will be computed by multiplying the Spinning Reserve capacity user rate for the Trading Interval by the Scheduling Coordinator's Spinning Reserve obligation, for which it has not self-provided, for the same period. The Zonal Spinning Reserve capacity user rate for the Hour-Ahead Market is calculated by dividing the total cost to ISO of purchasing Spinning Reserve capacity within the Zone less any amounts payable to the ISO by Scheduling Coordinators for Spinning Reserve bought back from the ISO in the Hour-Ahead Market on behalf of resources located in the Zone, for the Trading Interval, by the total ISO Spinning Reserve MW purchases for the Trading Interval within the Zone. The Hour-Ahead Spinning Reserve capacity user rate in Zone x for Trading Interval t is calculated as follows:~~

$$SpinRateHA_{xt} = \frac{\sum_{j} SpinPayTotalHA_{jxt}}{SpinPurchHA_{xt}}$$

~~The Spinning Reserve capacity charge for Scheduling Coordinator j in the Hour-Ahead Market in Zone x for Trading Interval t is calculated as follows:~~

~~$SpinChgHA_{jxt} = (SpinOblig_{jxt} * SpinRateHA_{xt})$~~

~~*(c)* *Non-Spinning Reserve*. The ISO will charge the Zonal net cost of providing Non-Spinning Reserve capacity that is not self-provided by Scheduling Coordinators, in the Hour-Ahead Market, through the application of a charge to each Scheduling Coordinator for the Trading Interval. This charge will be computed by multiplying the Non-Spinning Reserve capacity user rate for the concerned Trading Interval by the Scheduling Coordinator's Non-Spinning Reserve obligation, for which it has not self-provided, for the same period. The Zonal Non-Spinning Reserve capacity user rate for the Hour-Ahead Market is calculated by dividing the total cost to ISO of purchasing Non-Spinning Reserve capacity within the Zone less any amounts~~

~~*(d)* payable to the ISO by Scheduling Coordinators for Non-Spinning Reserve bought back from the ISO in the Hour-Ahead Market on behalf of resources in the Zone, for the Trading Interval, by the total ISO Non-Spinning Reserve MW purchases for the Trading Interval within the Zone. The Hour-Ahead Non-Spinning Reserve capacity user rate in Zone x for Trading Interval t is calculated as follows:~~

$$NonSpinRateHA_{xt} = \frac{\sum_{j} NonSpinPayTotalHA_{jxt}}{NonSpinObligTotal_{xt}}$$

The Non-Spinning Reserve capacity charge for Scheduling Coordinator j in the Hour-Ahead Market in Zone x for Trading Interval t is calculated as follows:

$NonSpinChgHA_{jxt} = (NonSpinOblig_{jxt} * NonSpinRateHA_{xt})$

C 2.2.3 Replacement Reserve

The user rate per unit of Replacement Reserve obligation for each Settlement Period t for each Zone x shall be as follows:

$$ReplRate_{xt} = \frac{(PRepResDA_{xt} * OrigReplReqDA_{xt}) + (PRepResHA_{xt} * OrigReplReqHA_{xt})}{OrigReplReqDA_{xt} + OrigReplReqHA_{xt}}$$

where:

$OrigReplReqDA_{xt}$ = Replacement Reserve requirement net of self-provision in the Day-Ahead Market before consideration of any substitutions pursuant to Section 8.2.3.6.

$OrigReplReqHA_{xt}$ = Incremental change in the Replacement Reserve requirement net of self-provision between the Day-Ahead Market and the Hour-Ahead Market before consideration of any substitutions pursuant to Section 8.2.3.

$PRepResDA_{xt}$ is the Market Clearing Price for Replacement Reserve in the Day-Ahead Market for Zone *x* in Settlement Period *t*.

$PRepResHA_{xt}$ is the Market Clearing Price for Replacement Reserve in the Hour-Ahead Market for Zone *x* in Settlement Period *t*.

For each Settlement Period t, each Scheduling Coordinator shall pay to the ISO a sum calculated as follows for each Zone x:

$ReplRate_{xt} * ReplOblig_{jxt}$

where

$ReplOblig_{jxt} = DevReplOblig_{jxt} + RemRepl_{jxt} - SelfProv_{jxt} + NetInterSCTrades_{jxt}$ $DevReplOblig_{jxt}$ is the Scheduling Coordinator's obligation for deviation Replacement Reserve in Zone x in the Settlement Period t and $RemRepl_{jxt}$ is the Scheduling Coordinator's obligation for remaining Replacement Reserve in Zone x for Settlement Period t.

$SelfProv_{jxt}$ is Scheduling Coordinator's Replacement Reserve self-provision in Zone x for Settlement Period t.

$NetInterSCTrades_{jxt}$ is the sale of Replacement Reserve less the purchase of Replacement Reserve through Inter-Scheduling Coordinator Trades by Scheduling Coordinator j in Zone x for Settlement Period t.

Deviation Replacement Reserve for Scheduling Coordinator i in Zone x for Settlement Period t is calculated as follows:

If $ReplObligTotal_{xt} > TotalDeviations_{xt}$ then:

$$DevReplOblig_{xjt} = \left[Max\left(0, \sum_i GenDev_{ijxt}\right) - Min\left(0, \sum_i LoadDev_{ijxt}\right) \right]$$

If $ReplObligTotal_{xt} < TotalDeviations_{xt}$ then:

$$DevReplOblig_{xjt} = \frac{ReplObligTotal_{xt}}{TotalDeviations_{xt}} * \left[Max\left(0, \sum_i GenDev_{ijxt}\right) - Min\left(0, \sum_i LoadDev_{ijxt}\right) \right]$$

where,

$$TotalDeviations_{xt} = \sum_j \left[Max\left(0, \sum_i GenDev_{ijxt}\right) - Min\left(0, \sum_i LoadDev_{ijxt}\right) \right]$$

$GenDev_{ijxt}$ = The deviation between scheduled and actual Energy generation for Generator i represented by Scheduling Coordinator I in Zone x during Settlement Period t as referenced in SABP Part D.

$LoadDev_{ijxt}$ = The deviation between scheduled and actual Load consumption for resource I represented by Scheduling Coordinator in Zone x during Settlement Period t as referenced in SABP Part D.

$DevReplOblig_{xt}$ is total deviation Replacement Reserve in Zone x for Settlement Period t.

$ReplObligTotal_{xt}$ is total Replacement Reserve Obligation in Zone x for Settlement Period t.

Remaining Replacement Reserve for Scheduling Coordinator j in Zone x for Settlement Period t is calculated as follows:

$$RemRepl_{xjt} = \frac{MeteredDemand_{jxt}}{TotalMeteredDemand_{xt}} * TotalRemRepl_{xt}$$

where:

$MeteredDemand_{jxt}$ is the Scheduling Coordinator's total metered Demand excluding exports in Zone x for Settlement Period t.

$TotalMeteredDemand_{xt}$ is total metered Demand excluding exports in Zone x for Settlement Period t.

~~$TotalRemRepl_{st} = Max[0, ReplObligTotal_{st} - DevReplOblig_{st}]$~~

~~C 2.2.4 Rational Buyer Adjustments~~

~~(a) If, in any Settlement Period, no quantity of Regulation, Spinning Reserve, Non-Spinning Reserve or Replacement Reserve is purchased in the Day-Ahead Market or the Hour-Ahead Market due to the operation of Section 8.2.3.6 of the ISO Tariff, then in lieu of the user rate determined in accordance with Section C 2.2.1, C 2.2.2, or C 2.2.3, as applicable, the user rate for the affected Ancillary Service for that Settlement Period shall be determined as follows:~~

~~(i) If the affected market is a Day-Ahead Market, the user rate for the affected Ancillary Service shall be set at the lowest capacity reservation price for an unaccepted qualified capacity bid in a Day-Ahead Market for that Ancillary Service or for another Ancillary Service that meets the requirements for the affected Ancillary Service. If there are no such unaccepted bids, the user rate for the affected Ancillary Service shall be the lowest Market Clearing Price for the same Settlement Period established in the Day-Ahead Market for another Ancillary Service that meets the requirements for the affected Ancillary Service.~~

~~(ii) If the affected market is an Hour-Ahead Market, the user rate for the affected Ancillary Service shall be set at the lowest capacity reservation price for an unaccepted qualified capacity bid in the Hour-Ahead Market for the same Settlement Period for that Ancillary Service or for another Ancillary Service that meets the requirements for the affected Ancillary Service. If there are no such unaccepted bids, the user rate for the affected Ancillary Service shall be the user rate for the same Ancillary Service in the Day-Ahead Market in the same Settlement Period.~~

~~(b) With respect to each Settlement Period, in addition to the user rates determined in accordance with Sections C 2.2.1 through C 2.2.3, or Section C 2.2.4(a), as applicable, each Scheduling Coordinator shall be charged an additional amount equal to its proportionate share, based on total purchases by Scheduling Coordinators of Regulation, Spinning Reserve, Non-Spinning Reserve and Replacement Reserve of the amount, if any, by which (i) the total payments to Scheduling Coordinators pursuant to Section C 2.1 for the Day-Ahead Market and Hour-Ahead Market and all Zones, exceed (ii) the total amounts charged to Scheduling Coordinators pursuant to Sections C 2.2.1 through C 2.2.3, for the Day-Ahead Market and Hour-Ahead Market and all Zones. If total amounts charged to Scheduling Coordinators exceed the total payments to Scheduling Coordinators, each Scheduling Coordinator will be refunded its proportionate share, based on total purchases by Scheduling Coordinators of Regulation, Spinning Reserve, Non-Spinning Reserve and Replacement Reserve.~~

~~C 2.2.5 Real-Time Market~~

~~(a) The ISO will charge the costs of purchasing Instructed Imbalance Energy output from Dispatched Spinning Reserve, Non-Spinning Reserve,~~

Replacement Reserve and Supplemental Energy resources through the Instructed Imbalance Energy settlement process.

(b) The ISO will charge the costs of purchasing Uninstructed Imbalance Energy (including incremental and decremental Energy from Generating Units providing Regulation) through the Uninstructed Imbalance Energy settlement process.

(c) The ISO will charge the costs of Regulation Energy Payment Adjustments as calculated in accordance with Section 8.11.5 of the ISO Tariff, in accordance with Section 11.2.9.

C 3 Meaning of terms of formulae

C 3.1 $AGCUpPayDA_{ijxt}$ - $

The payment for Scheduling Coordinator j for providing Regulation Up capacity in the Day-Ahead Market from a resource i in Zone x for Trading Interval t.

$AGCDownPayDA_{ijxt}$ - $

The payment for Scheduling Coordinator j for providing Regulation Down capacity in the Day-Ahead Market from a resource i in Zone x for Trading Interval t.

C 3.2 $AGCUpQDA_{ijxt}$ – MW

The total quantity of Regulation Up capacity provided in the ISO Day-Ahead Market from resource i by Scheduling Coordinator j in Zone x for Trading Interval t.

$AGCDownQDA_{ijxt}$ – MW

The total quantity of Regulation Down capacity provided in the ISO Day-Ahead Market from resource i by Scheduling Coordinator j in Zone x for Trading Interval t.

C 3.3 $PAGCUpDA_{xt}$ - $/MW

In the case of Capacity made available in accordance with the ISO's Final Day-Ahead Schedules, the Market Clearing Price for units exempt from FERC Ancillary Service rate caps or the bid price for those Units subject to the cap for Regulation Up Capacity in the Day-Ahead Market for Trading Interval t in Zone x. In the case of Capacity not included in the ISO's Final Day-Ahead Schedules but made available in accordance with amended Ancillary Services supplier schedules issued in accordance with Section 8.7, the bid price for the unit for Regulation Up Capacity in Zone x for Trading Interval t.

$PAGCDownDA_{xt}$ - $/MW

In the case of Capacity made available in accordance with the ISO's Final Day-Ahead Schedules, the Market Clearing Price for units exempt from FERC Ancillary Service rate caps or the bid price for those Units subject to the cap for Regulation Down Capacity in the Day-Ahead Market for Trading Interval t in Zone x. In the case of Capacity not included in the ISO's Final Day-Ahead Schedules but made available in accordance with amended Ancillary Services supplier schedules issued in accordance with Section 8.7, the bid price for the unit for Regulation Down Capacity in Zone x for Trading Interval t.

C 3.4 $AGCUpPayTotalDA_{jxt}$ - $

The total payment for Regulation Up capacity to Scheduling Coordinator j in the Day-Ahead Market in Zone x for Trading Interval t.

$AGCDownPayTotalDA_{jxt}$ - $

The total payment for Regulation Down capacity to Scheduling Coordinator j in the Day-Ahead Market in Zone x for Trading Interval t.

C 3.5 $AGCUpPayHA_{ijxt}$ - $

The payment for Scheduling Coordinator j for providing incremental (additional to Day-Ahead) Regulation Up capacity in the Hour-Ahead Market from a resource i in Zone x for Trading Interval t.

$AGCDownPayHA_{ijxt}$ - $

The payment for Scheduling Coordinator j for providing incremental (additional to Day-Ahead) Regulation Down capacity in the Hour-Ahead Market from a resource i in Zone x for Trading Interval t.

C 3.5.1 $AGCUpReceiveHA_{ijxt}$ - $

The payment from Scheduling Coordinator j for buying back from the ISO in the Hour-Ahead Regulation Up capacity which the ISO had purchased from Scheduling Coordinator j in the Day-Ahead Market from a resource i in Zone x for Trading Interval t.

$AGCDownReceiveHA_{ijxt}$ - $

The payment from Scheduling Coordinator j for buying back from the ISO in the Hour-Ahead Regulation Down capacity which the ISO had purchased from Scheduling Coordinator j in the Day-Ahead Market from a resource i in Zone x for Trading Interval t.

C 3.6 $AGCUpQlHA_{ijxt}$ – MW

The total quantity of incremental (additional to Day-Ahead) Regulation Up capacity provided in the ISO Hour-Ahead Market from resource i by Scheduling Coordinator j in Zone x for Trading Interval t.

~~AGCDownQIHA$_{ijxt}$ – MW~~

~~The total quantity of incremental (additional to Day-Ahead) Regulation Down capacity provided in the ISO Hour-Ahead Market from resource i by Scheduling Coordinator j in Zone x for Trading Interval t.~~

~~C 3.7 AGCUpQDHA$_{ijxt}$ – MW~~

~~The total quantity of decremental (less than Day-Ahead) Regulation Up capacity provided in the ISO Hour-Ahead Market from resource i by Scheduling Coordinator j in Zone x for Trading Interval t.~~

~~AGCDownQDHA$_{ijxt}$ – MW~~

~~The total quantity of decremental (less than Day-Ahead) Regulation Down capacity provided in the ISO Hour-Ahead Market from resource i by Scheduling Coordinator j in Zone x for Trading Interval t.~~

~~C 3.7.1 PAGCUpHA$_{xt}$ - $/MW~~

~~The Market Clearing Price for units exempt from FERC Ancillary Service rate caps or the bid price for those units subject to the cap for incremental (additional to Day-Ahead) Regulation Up capacity in the Hour-Ahead Market for Trading Interval t in Zone x. On buyback condition, MCP applies.~~

~~PAGCDownHA$_{xt}$ - $/MW~~

~~The Market Clearing Price for units exempt from FERC Ancillary Service rate caps or the bid price for those units subject to the cap for incremental (additional to Day-Ahead) Regulation Down capacity in the Hour-Ahead Market for Trading Interval t in Zone x. On buyback condition, MCP applies.~~

~~C 3.8 AGCUpPayTotalHA$_{jxt}$ - $~~

~~The total payment for incremental (additional to Day-Ahead) Regulation Up capacity to Scheduling Coordinator j in the Hour-Ahead Market in Zone x for Trading Interval t, after deduction of payments from Scheduling Coordinator j for buying back from the ISO in the Hour-Ahead, Regulation Up capacity which the ISO had purchased from Scheduling Coordinator j in the Day-Ahead Market in Zone x for Trading Interval t.~~

~~AGCDownPayTotalHA$_{jxt}$ - $~~

~~The total payment for incremental (additional to Day-Ahead) Regulation Down capacity to Scheduling Coordinator j in the Hour-Ahead Market in Zone x for Trading Interval t, after deduction of payments from Scheduling Coordinator j for buying back from the ISO in the Hour-Ahead, Regulation Down capacity which the ISO had purchased from Scheduling Coordinator j in the Day-Ahead Market in Zone x for Trading Interval t.~~

C 3.9 AGCUpRateDA$_{xt}$ - $/MW

The Day-Ahead Regulation Up capacity user rate charged to Scheduling Coordinators by the ISO in Zone x for Trading Interval t.

AGCDownRateDA$_{xt}$ - $/MW

The Day-Ahead Regulation Down capacity user rate charged to Scheduling Coordinators by the ISO in Zone x for Trading Interval t.

C 3.10 AGCUpObligTotal$_{xt}$ – MW

The net total Regulation Up obligation in Zone x for Trading Interval t as defined in Appendix A. This net total equals the total obligation minus that self-provided.

AGCDownObligTotal$_{xt}$ – MW

The net total Regulation Down obligation in Zone x for Trading Interval t as defined in Appendix A. This net total equals the total obligation minus that self-provided.

C 3.11 AGCUpChgDA$_{jxt}$ - $

The Regulation Up charge for Scheduling Coordinator j in the Day-Ahead Market in Zone x for Trading Interval t.

AGCDownChgDA$_{jxt}$ - $

The Regulation Down charge for Scheduling Coordinator j in the Day-Ahead Market in Zone x for Trading Interval t.

C 3.12 AGCUpOblig$_{jxt}$ – MW

The net Regulation Up obligation for Scheduling Coordinator j in Zone x for Trading Interval t as defined in Appendix A. This net obligation equals the obligation minus that self-provided.

AGCDownOblig$_{jxt}$ – MW

The net Regulation Down obligation for Scheduling Coordinator j in Zone x for Trading Interval t as defined in Appendix A. This net obligation equals the obligation minus that self-provided.

C 3.13 AGCUpRateHA$_{xt}$ - $/MW

The Hour-Ahead incremental (additional to Day-Ahead) Regulation Up capacity user rate charged to Scheduling Coordinators by the ISO in Zone x for Trading Interval t.

~~AGCDownRateHA$_{xt}$ - $/MW~~

~~The Hour-Ahead incremental (additional to Day-Ahead) Regulation Down capacity user rate charged to Scheduling Coordinators by the ISO in Zone x for Trading Interval t.~~

~~C 3.14 AGCUpChgHA$_{jxt}$ - $~~

~~The incremental (additional to Day-Ahead) Regulation Up charge for Scheduling Coordinator j in the Hour-Ahead Market in Zone x for Trading Interval t.~~

~~AGCDownChgHA$_{jxt}$ - $~~

~~The incremental (additional to Day-Ahead) Regulation Down charge for Scheduling Coordinator j in the Hour-Ahead Market in Zone x for Trading Interval t.~~

~~C 3.15 EnQPay$_{ijxt}$ - $~~

~~The payment for Scheduling Coordinator j for Instructed Imbalance Energy output from a resource i in the Real Time Market in Zone x for Trading Interval t.~~

~~C 3.16 [NOT USED]~~

~~C 3.17 [NOT USED]~~

~~C 3.18 [NOT USED]~~

~~C 3.19 SpinPayDA$_{ijxt}$ - $~~

~~The payment for Scheduling Coordinator j for providing Spinning Reserve capacity in the Day-Ahead Market from a resource i in Zone x for Trading Interval t.~~

~~C 3.20 SpinQDA$_{ijxt}$ – MW~~

~~The total quantity of Spinning Reserve capacity provided in the Day-Ahead Market by resource i represented by Scheduling Coordinator j in Zone x for Trading Interval t.~~

~~C 3.20A REPA$_{ijxt}$ - $~~

~~The Regulation Energy Payment Adjustment payable for real-time incremental or decremental Energy provided from Regulation resource i of Scheduling Coordinator j in Zone x in Trading Interval t.~~

~~C 3.20B RUP$_{ijxt}$ – MW~~

~~The upward Regulation capacity of Regulation resource i in Zone x included in the Final Schedule for Ancillary Services of Scheduling Coordinator j for Trading Interval t, weighted in proportion to the ISO's need for upward Regulation.~~

~~**C3.20C RDN$_{ijxt}$ – MW**~~

~~The downward Regulation capacity of Regulation resource i in Zone x included in the Final Schedule for Ancillary Services of Scheduling Coordinator j for Trading Interval t, weighted in proportion to the ISO's need for downward Regulation.~~

~~**C 3.20D CUP – number**~~

~~The constant established by the ISO and subject to change by resolution of the ISO Governing Board. Initially this shall be set at 1. The ISO may modify the value of CUP within a range of 0-1 either generally in regard to all hours or specifically in regard to particular times of the day, after the ISO Governing Board approves such modifications, by a notice issued by the Chief Executive Officer of the ISO and posted on the ISO Internet "Home Page," at http//www.caiso.com, or such other Internet address as the ISO may publish from time to time, specifying the date and time from which the modification shall take effect, which shall be not less than seven (7) days after the Notice is issued.~~

~~**C 3.20E CDN – number**~~

~~The constant established by the ISO and subject to change by resolution of the ISO Governing Board. Initially this shall be set at 1. The ISO may modify the value of CDN within a range of 0-1 either generally in regard to all hours or specifically in regard to particular times of the day, after the ISO Governing Board approves such modifications, by a notice issued by the Chief Executive Officer of the ISO and posted on the ISO Internet "Home Page," at http//www.caiso.com, or such other Internet address as the ISO may publish from time to time, specifying the date and time from which the modification shall take effect, which shall be not less than seven (7) days after the Notice is issued.~~

~~**C 3.21 PSpinDA$_{xt}$ -$/MW**~~

~~In the case of Capacity made available in accordance with the ISO's Final Day-Ahead Schedules, the Day-Ahead Market Clearing Price for units exempt from FERC Ancillary Service rate caps or the bid price for those units subject to the cap for Spinning Reserve Capacity in Zone x for Trading Interval t. In the case of Capacity not included in the ISO's Final Day-Ahead Schedules but made available in accordance with amended Ancillary Services supplier schedules issued in accordance with Section 8.7, the bid price for the unit for Spinning Reserve Capacity in Zone x for Trading Interval t.~~

~~**C 3.22 SpinPayTotalDA$_{jxt}$ - $**~~

~~The total payment to Scheduling Coordinator j for Spinning Reserve capacity in the Day-Ahead Market in Zone x for Trading Interval t.~~

C 3.23 SpinPayHA$_{ijxt}$ - $

The payment for Scheduling Coordinator j for providing incremental (additional to Day-Ahead) Spinning Reserve capacity in the Hour-Ahead Market from a resource i in Zone x for Trading Interval t.

C 3.23.1 SpinReceiveHA$_{ijxt}$ - $

The payment from Scheduling Coordinator j for buying back from the ISO in the Hour-Ahead, Spinning Reserve capacity which the ISO had purchased from Scheduling Coordinator j in the Day-Ahead Market from a resource i in Zone x for Trading Interval t.

C 3.24 SpinQIHA$_{ijxt}$ – MW

The total quantity of incremental (additional to Day-Ahead) Spinning Reserve capacity provided in the Hour-Ahead Market by resource i represented by Scheduling Coordinator j in Zone x for Trading Interval t.

C 3.25 SpinQDHA$_{ijxt}$ – MW

The total quantity of decremental (less than Day-Ahead) Spinning Reserve capacity provided in the ISO Hour-Ahead Market from resource i by Scheduling Coordinator j in Zone x for Trading Interval t.

C 3.25.1 PSpinHA$_{xt}$ -$/MW

The Hour-Ahead Market Clearing Price for units exempt from FERC Ancillary Service rate caps or the bid price for those units subject to the cap for incremental (additional to Day-Ahead) Spinning Reserve capacity in Zone x for Trading Interval t. On Buyback condition, MCP applies charge for HA.

C 3.26 SpinPayTotalHA$_{jxt}$ - $

The total payment to Scheduling Coordinator j for incremental (additional to Day-Ahead) Spinning Reserve capacity in the Hour-Ahead Market in Zone x for Trading Interval t, after deduction of payments from Scheduling Coordinator j for buying back from the ISO in the Hour-Ahead, Spinning Reserve capacity which the ISO had purchased from Scheduling Coordinator j in the Day-Ahead Market in Zone x for Trading Interval t.

C 3.27 SpinRateDA$_{xt}$ - $/MW

The Day-Ahead Spinning Reserve capacity user rate charged to Scheduling Coordinators by the ISO in Zone x for Trading Interval t.

C 3.28 SpinObligTotal$_{xt}$ – MW

~~The net total Spinning Reserve capacity obligation in Zone x for Trading Interval t as defined in Appendix A. This net total equals the total obligation minus that self-provided.~~

~~**C 3.29 SpinChgDA$_{jxt}$ - $**~~

~~The Spinning Reserve capacity charge for Scheduling Coordinator j in the Day-Ahead Market in Zone x for Trading Interval t.~~

~~**C 3.30 SpinOblig$_{jxt}$ – MW**~~

~~The net Spinning Reserve capacity obligation for Scheduling Coordinator j in Zone x for Trading Interval t as defined in Appendix A. This net obligation equals the obligation minus that self-provided.~~

~~**C 3.31 SpinRateHA$_{xt}$ - $/MW**~~

~~The Hour-Ahead incremental (additional to Day-Ahead) Spinning Reserve capacity user rate charged to Scheduling Coordinators by the ISO in Zone x for Trading Interval t.~~

~~**C 3.32 SpinChgHA$_{jxt}$ - $**~~

~~The incremental (additional to Day-Ahead) Spinning Reserve capacity charge for Scheduling Coordinator j in the Hour-Ahead Market in Zone x for Trading Interval t.~~

~~**C 3.33 NonSpinPayDA$_{ijxt}$ - $**~~

~~The payment for Scheduling Coordinator j for providing Non-Spinning Reserve capacity in the Day-Ahead Market from a resource i in Zone x for Trading Interval t.~~

~~**C 3.34 NonSpinQDA$_{ijxt}$ – MW**~~

~~The total quantity of Non-Spinning Reserve capacity provided from resource i in the Day-Ahead Market by Scheduling Coordinator j in Zone x for Trading Interval t.~~

~~**C 3.35 PNonSpinDA$_{xt}$ - $/MW**~~

~~In the case of Capacity made available in accordance with the ISO's Final Day-Ahead Schedules, the Day-Ahead Market Clearing Price for units exempt from FERC Ancillary Service rate caps or the bid price for those units subject to the cap for Non-Spinning Reserve Capacity for Trading Interval t in Zone x. In the case of Capacity not included in the ISO's Final Day-Ahead Schedules but made available in accordance with amended Ancillary Services supplier schedules issued in accordance with Section 8.7, the bid price for the unit for Non-Spinning Reserve Capacity in Zone x for Trading Interval t.~~

C 3.36 NonSpinPayTotalDA$_{jxt}$ - $

The total payment to Scheduling Coordinator j for providing Non-Spinning Reserve capacity in the Day-Ahead Market in Zone x for Trading Interval t.

C 3.37 NonSpinPayHA$_{ijxt}$ - $

The payment for Scheduling Coordinator j for providing incremental (additional to Day-Ahead) Non-Spinning Reserve capacity in the Hour-Ahead Market from a resource i in Zone x for Trading Interval t.

C 3.37.1 NonSpinReceiveHA$_{ijxt}$ - $

The payment from Scheduling Coordinator j for buying back from the ISO in the Hour-Ahead, Non-Spinning Reserve capacity which the ISO had purchased from Scheduling Coordinator j in the Day-Ahead Market from a resource i in Zone x for Trading Interval t.

C 3.38 NonSpinQIHA$_{ijxt}$ – MW

The total quantity of incremental (additional to Day-Ahead) Non-Spinning Reserve capacity provided from resource i in the Hour-Ahead Market by Scheduling Coordinator j in Zone x for Trading Interval t.

C 3.39 NonSpinQDHA$_{ijxt}$ – MW

The total quantity of decremental (less than Day-Ahead) Non-Spinning Reserve capacity provided in the ISO Hour-Ahead Market from resource i by Scheduling Coordinator j in Zone x for Trading Interval t.

C 3.39.1 PNonSpinHA$_{xt}$ - $/MW

The Hour-Ahead Zonal Market Clearing Price for units exempt from FERC Ancillary Service rate caps or the bid price for those units subject to the cap for incremental (additional to Day-Ahead) Non-Spinning Reserve capacity for Trading Interval t in Zone x. On Buyback condition, MCP applies.

C 3.40 NonSpinPayTotalHA$_{jxt}$ - $

The total payment to Scheduling Coordinator j for providing incremental (additional to Day-Ahead) Non-Spinning Reserve capacity in the Hour-Ahead Market in Zone x for Trading Interval t, after deduction of payments from Scheduling Coordinator j for buying back from the ISO in the Hour-Ahead, Non-Spinning Reserve capacity which the ISO had purchased from Scheduling Coordinator j in the Day-Ahead market in Zone x for Trading Interval t.

C 3.41 NonSpinRateDA$_{xt}$ - $/MW

The Day-Ahead Non-Spinning Reserve capacity user rate charged to Scheduling Coordinators by the ISO in Zone x for Trading Interval t.

~~C 3.42 NonSpinObligTotal$_{xt}$ – MW~~

~~The net total Non-Spinning Reserve capacity obligation in Zone x for Trading Interval t as defined in Appendix A. This net total obligation equals the total minus that self-provided.~~

~~C 3.43 NonSpinChgDA$_{jxt}$ - $~~

~~The Non-Spinning Reserve Capacity charge for Scheduling Coordinator j in the Day-Ahead Market in Zone x for Trading Interval t.~~

~~C 3.44 NonSpinOblig$_{jxt}$ – MW~~

~~The net Non-Spinning Reserve capacity obligation for Scheduling Coordinator j in Zone x for Trading Interval t as defined in Appendix A. This net obligation is the obligation minus that self-provided.~~

~~C 3.45 NonSpinRateHA$_{xt}$ - $/MW~~

~~The Hour-Ahead incremental (additional to Day-Ahead) Non-Spinning Reserve capacity user rate charged to Scheduling Coordinators by the ISO in Zone x for Trading Interval t.~~

~~C 3.46 NonSpinChgHA$_{jxt}$ - $~~

~~The incremental (additional to Day-Ahead) Non-Spinning Reserve Capacity charge for Scheduling Coordinator j in the Hour-Ahead Market in Zone x for Trading Interval t.~~

~~C 3.47 NonSpinObligHA$_{jxt}$ – MW~~

~~The net incremental (additional to Day-Ahead) Non-Spinning Reserve capacity obligation in the Hour-Ahead Market for Scheduling Coordinator j in Zone x for Trading Interval t as defined in Appendix A. This net obligation is the obligation minus that self-provided.~~

~~C 3.48 ReplPayDA$_{ijxt}$ - $~~

~~The payment for Scheduling Coordinator j for providing Replacement Reserve capacity in the Day-Ahead Market from a resource i in Zone x for Trading Interval t.~~

~~C 3.49 ReplQDA$_{ijxt}$ – MW~~

~~The total quantity of Replacement Reserve capacity provided in the Day-Ahead Market from resource i by Scheduling Coordinator j in Zone x for Trading Interval t.~~

C 3.50 PReplDA$_{xt}$ -$/MW

In the case of Capacity made available in accordance with ISO's Final Day-Ahead Schedules, the Day-Ahead Market Clearing Price for units exempt from FERC Ancillary Service rate caps or the bid price for those units not subject to the cap for Replacement Reserve Capacity in Zone x for Trading Interval t. In the case of Capacity not included in the ISO's Final Day-Ahead Schedules but made available in accordance with amended Ancillary Services supplier schedules issued in accordance with Section 8.7, the bid price for the unit for Replacement Reserve Capacity in Zone x for Trading Interval t.

C 3.51 ReplPayTotalDA$_{jxt}$ - $

The total payment to Scheduling Coordinator j for providing Replacement Reserve capacity in the Day-Ahead Market in Zone x for Trading Interval t.

C 3.51.1 ReplReceiveHA$_{ijxt}$ - $

The payment from Scheduling Coordinator j for buying back from the ISO in the Hour-Ahead, Replacement Reserve capacity which the ISO had purchased from Scheduling

Coordinator j in the Day-Ahead Market from a resource i in the Zone x for Trading Interval t.

C 3.52 ReplPayHA$_{ijxt}$ - $

The payment for Scheduling Coordinator j for providing of incremental (additional to Day-Ahead) Replacement Reserve capacity in the Hour-Ahead Market from a resource i in Zone x for Trading Interval t.

C 3.53 ReplQIHA$_{ijxt}$ – MW

The total quantity of incremental (additional to Day-Ahead) Replacement Reserve capacity provided in the Hour-Ahead Market from resource i by Scheduling Coordinator j in Zone x for Trading Interval t.

C 3.54 ReplQDHA$_{ijxt}$ – MW

The total quantity of decremental (less than Day-Ahead) Replacement Reserve capacity provided in the ISO Hour-Ahead Market from resource i by Scheduling Coordinator j in Zone x for Trading Interval t.

C 3.54.1 PReplHA$_{xt}$ -$/MW

The Hour-Ahead Market Clearing Price for Non-FERC jurisdictional units or the bid price for FERC jurisdictional units for incremental (additional to Day-Ahead) Replacement Reserve capacity in Zone x for Trading Interval t. On Buyback condition, MCP applies.

C 3.55 ReplPayTotalHA$_{jxt}$ - $

The total payment to Scheduling Coordinator j for providing of incremental (additional to Day-Ahead) Replacement Reserve capacity in the Hour-Ahead Market in Zone x for Trading Interval t, after deduction of payments from Scheduling Coordinator j for buying back from the ISO in the Hour-Ahead, Replacement Reserve capacity which the ISO had purchased from Scheduling Coordinator j in the Day-Ahead Market in Zone x from Trading Interval t.

C 3.56 ReplRateDA$_{xt}$ - $/MW

The Day-Ahead Replacement Reserve capacity user rate charged to Scheduling Coordinators by the ISO in Zone x for Trading Interval t.

C 3.57 ReplChgDA$_{jxt}$ - $

The Replacement Reserve capacity charge for Scheduling Coordinator j in the Day-Ahead Market in Zone x for Trading Interval t.

C 3.58 ReplRateHA$_{xt}$ – $/MW

The Hour-Ahead incremental (additional to Day-Ahead) Spinning Reserve capacity user rate charged to Scheduling Coordinators by the ISO in Zone x for Trading Interval t.

C 3.59 ReplChgHA$_{jxt}$ - $

The incremental (additional to Day-Ahead) Replacement Reserve capacity charge for Scheduling Coordinator j in the Hour-Ahead Market in Zone x for Trading Interval t.

C 3.60 ReplObligTotal$_{xt}$ – MW

The net total Replacement Reserve capacity obligation in the Day-Ahead and Hour-Ahead Markets in Zone x for Trading Interval t as defined in Appendix A. This net total obligation is the total obligation minus that self-provided.

C 3.61 ReplPayTotal$_{jxt}$ - $

The total payment to Scheduling Coordinator j for providing Replacement Reserve capacity in the Day-Ahead and Hour-Ahead Markets in Zone x for Trading Interval t.

C 3.62 PavgRepl$_{xt}$ - $/MW

The average price paid for Replacement Reserve capacity in the Day-Ahead Market and the Hour-Ahead Market in Zone x in Trading Interval t.

C 3.63 UnDispReplChg$_{jxt}$ - $

~~The undispatched Replacement Reserve Capacity charge for Scheduling Coordinator j in the Day-Ahead and Hour-Ahead Markets in Zone x for Trading Interval t.~~

~~C 3.64 $ReplOblig_{jxt}$ – MW~~

~~The Replacement Reserve capacity obligation in the Day-Ahead and Hour-Ahead Markets for Scheduling Coordinator j in Zone x for Trading Interval t as defined in Appendix A.~~

~~C 3.65 $ReplQDisp_{xt}$ – MWh~~

~~The Dispatched Replacement Reserve capacity in the Day-Ahead Market in Zone x in Trading Interval t.~~

~~C 3.66 $AGCUpPurchDA_{xt}$ – MW~~

~~The total quantity of Regulation Up capacity provided in the Day-Ahead Market in Zone x for Trading Interval t, not including self-provided quantities.~~

~~$AGCDownPurchDA_{xt}$ – MW~~

~~The total quantity of Regulation Down capacity provided in the Day-Ahead Market in Zone x for Trading Interval t, not including self-provided quantities.~~

~~C 3.67 $SpinPurchDA_{xt}$ – MW~~

~~The total quantity of Spinning Reserve capacity provided in the Day-Ahead Market in Zone x for Trading Interval t, not including self-provided quantities.~~

~~C 3.68 $NonSpinPurchDA_{xt}$ – MW~~

~~The total quantity of Non-Spinning Reserve capacity provided in the Day-Ahead Market in Zone x for Trading Interval t, not including self-provided quantities.~~

~~C 3.69 $AGCUpPurchHA_{xt}$ – MW~~

~~The net quantity of Regulation Up capacity provided in the Hour-Ahead Market in Zone x for Trading Interval t, not including self-provided quantities.~~

~~$AGCDownPurchHA_{xt}$ – MW~~

~~The net quantity of Regulation Down capacity provided in the Hour-Ahead Market in Zone x for Trading Interval t, not including self-provided quantities.~~

~~C 3.70 $SpinPurchHA_{xt}$ – MW~~

~~The net quantity of Spinning Reserve capacity provided in the Hour-Ahead Market in Zone x for Trading Interval t, not including self-provided quantities.~~

C 3.71 NonSpinPurchDA$_{xt}$ – MW

The net quantity of Non-Spinning Reserve capacity provided in the Hour-Ahead Market in Zone x for Trading Interval t, not including self-provided quantities.

PART D

IMBALANCE ENERGY CHARGE COMPUTATION[NOTUSED]

D 1 Purpose of charge

The Imbalance Energy charge is the term used for allocating the cost of not only the Imbalance Energy (the differences between scheduled and actual Generation and Demand), but also any Unaccounted for Energy (UFE) and any errors in the forecasted Transmission Losses as represented by the GMMs. Any corresponding cost of Dispatched Replacement Reserve Capacity that is not allocated as an Ancillary Service is also included along with the Imbalance Energy charge.

D 2 Fundamental formulae

D 2.1.1 Uninstructed Imbalance Energy Charges on Scheduling Coordinators

Uninstructed Imbalance Energy attributable to each Load Take-Out Point, Generating Unit, System Unit, or System Resource for which a Scheduling Coordinator has a Final Hour-Ahead Schedule or Metered Quantity, for each Settlement Interval shall be deemed to be sold or purchased, as the case may be, by the ISO and charges or payments for Uninstructed Imbalance Energy shall be settled by debiting or crediting, as the case may be, the Scheduling Coordinator with an amount for each Settlement Interval.

Uninstructed Imbalance Energy within a Settlement Interval shall be settled in two tiers that are defined in relation to the expected Energy associated with the Final Hour-Ahead Schedule, if any, and the Dispatch Instruction as follows:

1) Deviations from the expected Energy associated with a Dispatch Instruction resulting in: 1) under delivery of Instructed Imbalance Energy that is also equal to or greater than the Final Hour-Ahead Schedule, or 2) over delivery of Instructed Imbalance Energy that is also less than or equal to the Final Hour-Ahead Schedule constitutes tier 1 Uninstructed Imbalance Energy that shall be settled at a Resource-Specific Settlement Interval Ex Post Price as described in Part D 2.4.

2)Deviations from the expected Energy associated with a Dispatch Instruction resulting in: 1) over delivery of Instructed Imbalance Energy that is also greater than the Final Hour-Ahead Schedule, or 2) under delivery of Instructed Imbalance Energy that is also less than the Final Hour-Ahead Schedule constitutes tier 2 Uninstructed Imbalance Energy and shall be settled at the Zonal Settlement Interval Ex Post Price as described in Part D 2.5.

Imbalance Energy is calculated as follows:

Generator Calculation for ISO Metered Entities:

~~$$IE_{i,h,o} = ME_{i,h,o} - SE_{i,h,o}$$~~

~~Load Calculation:~~

~~$$IE_{i,h,o} = SE_{i,h,o} - ME_{i,h,o}$$~~

~~System Resource Calculation:~~

~~$$IE_{i,h,o} = \sum_{1}^{k}\sum_{1}^{v} REAL_TIME_FLOW_{i,h,o,k,v} \quad SE_{i,h,o}$$~~

~~where,~~

~~$$SE_{i,h,o} = \frac{HAfin_{i,h}}{6}$$~~

~~$ME_{i,h,o}$ actual Meter Data for each resource *i* of each Settlement Interval *o* for each hour *h*.~~

~~Uninstructed Imbalance Energy is calculated as follows:~~

~~$$UIE_{i,h,o} = E_{i,h,o} \quad IIE_REG_{i,h,o}$$~~

~~where:~~

$$E_{i,h,o} = IE_{i,h,o} - \sum_{1}^{k} IIE_LOSS_{i,h,o,k} - \sum_{1}^{k} IIE_ML_{i,h,o,k} - \sum_{1}^{k}\sum_{1}^{m} IIE_PREDISPATCH_{i,h,o,k,m} - \sum_{1}^{k} RE_STANDARD_{i,h,o,k} - \sum_{1}^{k} RED_{i,h,o,k} - \sum_{1}^{k}\sum_{1}^{m} IIE_ECON_{i,h,o,k,m} - \sum_{1}^{k}\sum_{1}^{L} OOS_P_{i,h,o,k,L} - \sum_{1}^{k}\sum_{1}^{L} OOS_N_{i,h,o,k,L} - \sum_{1}^{k}\sum_{1}^{m} RIE_{i,h,o,k,m} - \sum_{1}^{k} IIE_RERATE_{i,h,o,k}$$

~~$IIE_REG_{i,h,o}$ is the Regulating Energy for resource *i* during Settlement Interval *o* in hour *h*~~

$$UIE_1_{i,h,o} = \begin{cases} \min\left(UIE_{i,h,o}, -\min\left(0, \sum_{1}^{k}\sum_{1}^{m} IIE_ECON_{i,h,o,k,m} + \sum_{1}^{k}\sum_{1}^{m} IIE_PREDISPATCH_{i,h,o,k,m} \right.\right. \\ \quad + \sum_{1}^{k}\sum_{1}^{L} OOS_P_{i,h,o,k,L} + \sum_{1}^{k}\sum_{1}^{L} OOS_N_{i,h,o,k,L} + \sum_{1}^{k} RED_{i,h,o,k} \quad \therefore UIE_{i,h,o} \geq 0 \\ \left.\left. \quad + \sum_{1}^{k} IIE_LOSS_{i,h,o,k} + \sum_{1}^{k}\sum_{1}^{m} RIE_{i,h,o,k,m} + \sum_{1}^{k} IIE_ML_{i,h,o,k} + \sum_{1}^{k} RERATE_{i,h,o,k} \right)\right) \\ \max\left(UIE_{i,h,o}, -\max\left(0, \sum_{1}^{k}\sum_{1}^{m} IIE_ECON_{i,h,o,k,m} + \sum_{1}^{k}\sum_{1}^{m} IIE_PREDISPATCH_{i,h,o,k,m} \right.\right. \\ \quad + \sum_{1}^{k}\sum_{1}^{L} OOS_P_{i,h,o,k,L} + \sum_{1}^{k}\sum_{1}^{L} OOS_N_{i,h,o,k,L+} + \sum_{1}^{k} RED_{i,h,o,k} \quad \therefore UIE_{i,h,o} < 0 \\ \left.\left. \quad + \sum_{1}^{k} IIE_LOSS_{i,h,o,k} + \sum_{1}^{k}\sum_{1}^{m} RIE_{i,h,o,k,m} + \sum_{1}^{k} IIE_ML_{i,h,o,k} + \sum_{1}^{k} RERATE_{i,h,o,k} \right)\right) \end{cases}$$

$$UIE_2_{i,h,o} = UIE_{i,h,o} - UIE_1_{i,h,o}$$

$$UIEC_{i,h,o} = \frac{\left(-1 * UIE_1_{i,h,o} * STLMT_PRICE_{i,h,o}\right) + \left(-1 * UIE_2_{i,h,o} * ZONAL_EX_POST_PRICE_{j,h,o}\right)}{}$$

D 2.1.2 Instructed Imbalance Energy Charges on Scheduling Coordinators

Standard Ramping Energy is Energy associated with a Standard Ramp and shall be deemed delivered and settled at a price of zero dollars per MWh.

Ramping Energy Deviation is Energy produced or consumed due to hourly schedule changes in excess of Standard Ramping Energy and shall be paid or charged, as the case may be, at a Resource-Specific Settlement Interval Ex Post Price calculated using the applicable Dispatch Interval Ex Post Prices as described in this Part D 2.4. For Scheduling Coordinators scheduling a MSS that has elected to follow its Load, this Ramping Energy Deviation will account for the units following Load.

Ramping Energy Deviation shall be settled as an explicit component of Instructed Imbalance Energy for each resource *i* in Dispatch Interval *k* of Settlement Interval *o* for hour *h*, and calculated as follows:

$$REDC_{i,h,o} = \left(\sum_{1}^{k} RED_{i,h,o,k}\right) * STLMT_PRICE_{i,h,o}$$

Hourly Predispatched energy from System Resources is an explicit component of Instructed Imbalance Energy for each interchange resource *i* in Dispatch Interval *k* of Settlement Interval *o* for hour *h*, and settled pursuant to Sections 11.2.4.1.1 and 11.2.4.1.1.2 of the ISO Tariff. The settlement calculation is as follows:

If (

(COST_AT_STLMT_PRICE$_{i,h,o}$ >= 0

And

BID_COST$_{i,h,o}$ >=0)

Then

$$IIEC_PREDISPATCH_{i,h,o} = (-1) *$$

$$[min(COST_AT_STLMT_PRICE_{i,h,o}, BID_COST_{i,h,o})$$

$$+ (STLMT_PRICE_{i,h,o} * PRE_DISP_ABC_BQ_{i,h,o})]$$

Else

*IIEC_PREDISPATCH$_{i,h,o}$ = (-1) *

*[BID_COST$_{i,h,o}$ + (STLMT_PRICE$_{i,h,o}$ * PRE_DISP_ABC_BQ$_{i,h,o}$)]*

Where

COST_AT_STLMT_PRICE$_{i,h,o}$ =

$$\left(\sum_{1}^{k} IIE_PREDISPATCH_{i,h,o,k}\right) * STLMT_PRICE_{i,h,o}$$

BID_COST$_{i,h,o}$ =

$$\sum_{1}^{k}\sum_{1}^{m} IIE_PREDISPATCH_FOR_SEGMENT_{i,h,o,k,m} * IIE_PRICE_{i,h,o,k,m}$$

for the portion of incremental energy bid segments with IIE_PRICE$_{i,h,o,k,m}$ less than or equal to the Maximum Bid Level and all decremental energy bid segments with IIE_PRICE$_{i,h,o,k,m}$ limited to the Bid Floor when IIE_PRICE$_{i,h,o,k,m}$ is less than the Bid Floor.

))

where

PRE_DISP_ABC_BQ$_{i,h,o}$ = $\sum_{1}^{k}\sum_{1}^{m} IIE_PREDISPATCH_FOR_SEGMENT_{i,h,o,k,m}$

for the portion of incremental energy bid segments with *IIE_PRICEi*$_{,h,o,k,m}$ greater than the Maximum Bid Level.

~~The amount of Instructed Imbalance Energy that will be deemed delivered in each Dispatch Interval will be based on Dispatch Instructions, as provided for in Section 34.3, and Final Hour-Ahead Schedules. The amount of Instructed Imbalance Energy to be settled in a Settlement Interval will be equal to the sum of all Instructed Imbalance Energy for all Dispatch Intervals within the relevant Settlement Interval. Instructed Imbalance Energy for each Settlement Interval shall be settled at the relevant Resource Specific Settlement Interval Ex Post Price. Generating Units, Participating Loads, and System Units may be eligible to recover their Energy Bid costs in accordance with Section 11.2.4.1.1.1. Instructed Imbalance Energy from System Resources shall be settled in accordance with Section 11.2.4.1.1.2.~~

~~The Instructed Imbalance Energy amount for each resource *i* in Settlement Interval *o* for hour *h* shall be determined as follows:~~

$$IIEC_{i,h,o} = (-1) * \left(\sum_{1}^{k} \sum_{1}^{m} IIE_ECON_{i,h,o,k,m} + \sum_{1}^{k} \sum_{1}^{m} RIE_{i,h,o,k,m} + \sum_{1}^{k} IIE_RERATE_{i,h,o,k} + \sum_{1}^{k} IIE_ML_{i,h,o,k} \right) * STLMT_PRICE_{i,h,o}$$

$$+ IIEC_OOS_{i,h,o} + REDC_{i,h,o} + IIEC_REG_{i,h,o} + IIEC_PREDISPATCH_{i,h,o}$$

~~Uninstructed Imbalance Energy is Imbalance Energy due to non-compliance with a Dispatch Instruction and shall be settled as provided for in SABP Part D Section 2.1.1.~~

~~D 2.2 Unaccounted for Energy Charge~~

~~The Unaccounted for Energy Charge on Scheduling Coordinator *g* in Settlement Interval *o* of Settlement Period *h* for each relevant Zone *j* is calculated in the following manner:~~

~~The UFE for each utility Service Area *s*, for which separate UFE calculation is performed, is calculated as follows,~~

$$UFE_{UDC,s,h,o} = \sum_{q \in UDC_s} I_{a,q,j,h,o} - \sum_{q \in UDC_s} E_{a,q,j,h,o} + \sum_{i \in UDC_s} G_{a,i,j,h,o} - \sum_{i \in UDC_s} L_{a,i,j,h,o} - TL_{s,h,o}$$

~~The Transmission Loss $TL_{s,h,o}$ in Settlement Interval *o* of Settlement Period *h* for utility Service Area *s* is calculated as follows:~~

$$TL_{s,h,o} = \left(\sum_{i} \left[G_{a,i,j,h,o} * (1 - GMM_{a,i,h}) \right] + \sum_{q} \left[I_{a,q,j,h,o} * (1 - GMM_{a,q,h}) \right] \right) * \frac{PFL_{s,h}}{\sum_{s} PFL_{s,h}}$$

~~Where $PFL_{s,h}$ are the Transmission Losses for utility Service Area *s* as calculated by a power flow solution for Settlement Period *h*, consistent with the calculation of final forecasted Generation Meter Multipliers.~~

Each metered demand point *z* in utility Service Area *s*, either ISO grid connected or connected through UDC *s*, is allocated a portion of the UFE as follows:

$$UFE_{i,j,h,o} = UFE_{UDC,s,h,o} * \frac{L_{i,j,h,o}}{\sum_{i \in UDC_s} L_{i,j,h,o}}$$

The UFE charge for Scheduling Coordinator *g* for Settlement Interval *o* of Settlement Period *h* in Zone *j* is calculated as a charge or payment using the applicable Zonal Settlement Interval Ex Post Price as follows:

$$UFEC_{g,j,h,o} = \left(\sum_{i \in SCg} UFE_{i,j,h,o,} \right) * ZONAL_EX_POST_PRICE_{j,h,o}$$

D 2.3 Hourly Ex Post Price

The Hourly Ex Post Price is the Energy-weighted average of the Dispatch Interval Ex Post Prices in each Zone *j* during each Settlement Period using the absolute value of Instructed Imbalance Energy procured from all Participating Generators, Participating Load, System Units, and System Resources in each applicable Dispatch Interval. The Hourly Ex Post Price may vary between Zones if Congestion is present.

$$HP_{j,h} = \frac{\sum_{1}^{p} \sum_{1}^{i} \left| IIE_TOTAL_{j,i,h,p} \right| * EX_POST_PRICE_{j,h,o,p}}{\sum_{1}^{p} \sum_{1}^{i} \left| IIE_TOTAL_{j,i,h,p} \right|}$$

where,

p is the Dispatch Interval index for hour *h*.

D 2.4 Resource-Specific Settlement Interval Ex Post Price

The Resource-Specific Settlement Interval Ex Post Price is the weighted-average of the Dispatch Interval Ex Post Prices in each Settlement Interval using the Instructed Imbalance Energy from the respective Participating Generator, Participating Load, or System Resource, in each applicable Dispatch Interval. If there is no Instructed Imbalance Energy from a Participating Generator, Participating Load, or System Resource, in any of the applicable Dispatch Intervals, the Resource-Specific Settlement Interval Ex Post Price for that resource would be the simple average of the applicable Dispatch Interval Ex Post Prices in the Settlement Interval.

The Resource-Specific Settlement Interval Ex Post Price is calculated as follows:

$$STLMT_PRICE_{i,h,o} = \frac{\sum_{1}^{k} IIE_TOTAL_{i,h,o,k} * EX_POST_PRICE_{j,h,o,k}}{\sum_{1}^{k} IIE_TOTAL_{i,h,o,k}}$$

~~Where:~~

$$IIE_TOTAL_{i,h,o,k} = \sum_{1}^{m} IIE_ECON_{i,h,o,k,m} + \sum_{1}^{m} IIE_PREDISPATCH_{i,h,o,k,m} + IIE_ML_{i,h,o,k} + \sum_{1}^{m} RIE_{i,h,o,k,m} + \sum_{1}^{L} OOS_P_{i,h,o,k,L} + \sum_{1}^{L} OOS_N_{i,h,o,k,L} + IIE_LOSS_{i,h,o,k} + RED_{i,h,o,k} + \sum_{1}^{k} IIE_RERATE_{i,h,o,k}$$

~~D 2.5 Zonal Settlement Interval Ex Post Price~~

~~The Zonal Settlement Interval Ex Post Price is the weighted-average of the Dispatch Interval Ex Post Prices in each Settlement Interval using the absolute value of Instructed Imbalance Energy procured from all Participating Generators, Participating Load, System Units, and System Resources in each applicable Dispatch Interval. If there is no Instructed Imbalance Energy from a Participating Generator, Participating Load, or System Resource, in any of the applicable Dispatch Intervals, the Zonal Settlement Interval Ex Post Price for that Zone would be the simple average of the applicable Dispatch Interval Ex Post Prices in the Settlement Interval.~~

~~The Zonal Settlement Interval Ex Post Price is calculated as follows:~~

~~$ZONAL_EX_POST_PRICE_{j,h,o} =$~~

$$\frac{\sum_{p=1}^{2}\sum_{1}^{i}\left|IIE_TOTAL_{i,h,p}\right| * EX_POST_PRICE_{j,h,o,p}}{\sum_{p=1}^{2}\sum_{1}^{i}\left|IIE_TOTAL_{i,h,p}\right|}$$

~~where p is the Dispatch Interval index for hour h.~~

~~D 2.6 Calculation of Unrecovered Cost Payment for Generating Units, System Units, Dynamically Scheduled System Resources, and Curtailable Demand.~~

~~As set forth in 11.2.4.1.1.1, Generating Units, System Units, dynamically scheduled System Resources, and Curtailable Demand resources will be eligible to recover their bid costs (less than or equal to the Maximum Bid Level) for extra-marginal Energy dispatched above Pmin, if such costs are not recovered from the net of expected revenues earned through participation in the ISO's Real Time Market during the Trade Day (24-hour period).~~

~~The Unrecovered Cost Payment for each resource i shall be determined for the Trade Day *d* then evenly divided over n-Settlement Intervals as follows:~~

$$COST_RECOVERY_{i,d} = min\left(0, \sum_{1}^{h}\sum_{1}^{o}\left(MR_DEFICIT_{i,h,o} + MR_SURPLUS_{i,h,o}\right)\right)$$

where,

MR_DEFICIT$_{i,h,o}$ = Market Revenue deficit for resource i in hour h for Settlement interval o based on the difference between the expected revenues earned in the Settlement Interval and and/or its bid cost;*MR_SURPLUS$_{i,h,o}$*= Market Revenue surplus for resource i in hour h for Settlement interval o based on the difference between the expected revenues earned in the Settlement Interval and/or its bid cost.

Resource i shall receive a share of its total cost recovery in each Settlement Interval o that is included in the *COST_RECOVERY$_{i,d}$* calculation.

COST_RECOVERY$_{i,h,o}$ = COST_RECOVERY$_{i,d}$ / n

where,

n is the number of Settlement Intervals o that are included in the *COST_RECOVERY$_{i,d}$* calculation for resource i in Trade Day d.

Calculation of Market Revenue Surplus or Deficit

The market revenue surplus or deficit for each resource i will be computed for each Settlement Interval o based on the difference between the revenues earned in the Settlement Interval at the relevant 10-minute Ex Post price and the resource's bid cost (less than or equal to the Maximum Bid Level) as follows:

$$MR_DIFF_{i,h,o} = \frac{\left(\sum_{1}^{k}\sum_{1}^{m} IIE_ECON_{i,h,o,k,m} + \sum_{1}^{k}\sum_{1}^{m} RIE_{i,h,o,k,m}\right) * STLMT_PRICE_{i,h,o}}{} - BID_COST_{i,h,o} - BID_COST_RIE_{i,h,o}$$

for all incremental energy bid segments *m* with *IIE_PRICE$_{i,h,o,k,m}$* and *RIE_PRICE$_{i,h,o,k,m}$* less than or equal to the Maximum Bid Level and all decremental energy bid segments *m* with *IIE_PRICE$_{i,h,o,k,m}$* and *RIE_PRICE$_{i,h,o,k,m}$* greater than or equal to the Bid Floor.

MR_DEFICIT$_{i,h,o}$ = min$\left(0, MR_DIFF_{i,h,o}\right)$

MR_SURPLUS$_{i,h,o}$ = max$\left(0, MR_DIFF_{i,h,o}\right)$

where,

$$BID_COST_{i,h,o} = \left(\sum_{1}^{k}\sum_{1}^{m} IIE_ECON_{i,h,o,k,m} * IIE_PRICE_{i,h,o,k,m}\right)$$

BID_COST_RIE$_{i,h,o}$ = $\sum_{1}^{k}\sum_{1}^{m} RIE_{i,h,o,k,m} * RIE_PRICE_{i,h,o,k,m}$

D 2.6.1 Tolerance Band and Performance Check

The ISO shall determine the Tolerance Band for each Settlement Interval *o* for PGA resources and dynamically scheduled System Resources based on the data from the Master File as follows:

$$TOLERANCE_BAND_{i,h,o} = \pm \max\left(FIX_LIM, TOL_PERCENT * P\max_i\right) / 6$$

where,

FIX_LIM is a fixed MW limit and is initially equal to 5 MW.

TOL_PERCENT is a fixed percentage and is initially equal to 3%.$Pmax_i$ is the maximum operating capacity in MW of resource *i* specified in the Master File.

The ISO shall determine the Tolerance Band for each Settlement Interval o for PLA resources as follows:

$$TOLERANCE_BAND_{i,h,o} = \pm \max\left(FIX_LIM, TOL_PERCENT * HAfin_{i,h}\right) / 6$$

where $HAfin_{i,h}$ *is the* Final Hour Ahead Energy Schedule.

Resources must operate within their relevant Tolerance Band in order to receive any above-Ex Post Price payments. The ISO shall determine the performance status of the resource for each Settlement Interval o. A resource shall have met its performance requirement if its $UIE_{i,h,o}$ is within its relevant Tolerance Band. A resource meeting its performance requirement in Settlement Interval o will have a $PERF_STAT_{i,h,o} = 1$. A resource that has not met its performance requirement in Settlement Interval *o* will have a $PERF_STAT_{i,h,o} = 0$.

Must-offer resources that produce a quantity of Energy above Minimum Load due to an ISO Dispatch Instruction during a Waiver Denial Period are not subject to the Tolerance Band requirement for purposes of receiving Minimum Load Cost Compensation, as defined in Section 40.1.6.1. Accordingly, the $PERF_STAT_{i,h,o}$ for eligible must-offer resources, as defined in *Section 40.1.6.1*, shall be set to 1, irrespective of deviations outside of the Tolerance Band, for the purpose of determining eligibility for Minimum Load Cost Compensation during a Waiver Denial Period. The Tolerance Band shall be used to apply UDP during a Waiver Denial Period.

Non-dynamically scheduled System Resources do not have a Tolerance Band. Non-Participating Load Agreement (PLA) load resources are not subject to the performance requirement.

D 2.6.2 Unrecovered Costs Neutrality Allocation

For each Settlement Interval *o*, the total Unrecovered Costs for Trade Day *d* shall be allocated pro-rata to each Scheduling Coordinator *g* based on its Metered Demand, calculated as follows:

~~$URC_ALLOC_{g,h,o} = M_{g,h,o} * Per\ Unit\ Price$~~

~~where,~~

~~$M_{g,h,o}$ = the Metered Demand in the ISO control area for Scheduling Coordinator *g* in Settlement Interval *o* for hour *h*;~~

~~$$Per\ Unit\ Price = \frac{-1 * \sum_{1}^{i} COST_RECOVERY_{i,h,o}}{\sum_{1}^{g} M_{g,h,o}}$$~~

~~D 2.6.3 Calculation of Unrecovered Bid Cost Payment for System Resources~~

~~As set forward in Section 11.2.4.1.1.2, System Resources that are pre-dispatched hourly incremental or decremental Instructed Imbalance Energy will be settled based on their Energy bid costs for each Settlement Interval for the quantity of Energy delivered in each Settlement Interval. The hourly pre-dispatched Instructed Imbalance Energy is first settled as set forth in Section D 2.1.2. An additional uplift payment for any applicable Settlement Interval shall be determined when settlement as set forth in Section D 2.1.2 is insufficient recovery of its bid costs for the Settlement Interval. For pre-dispatched hourly Instructed Imbalance Energy, where the resource-specific settlement amount is positive and the bid-cost is positive, an uplift payment is determined for each Settlement Interval based on the minimum of zero or the difference between the resource-specific settlement amount and the bid cost settlement amount as follows:~~

~~The predispatched uplift payment for each applicable Settlement Interval is calculated as follows:~~

~~$PREDISPATCH_PMT_{i,h,o} = PREDISPATCH_UPLIFT_{i,h} / n$~~

~~If (~~

~~($COST_AT_STLMT_PRICE_{i,h,o} >= 0$~~

~~And~~

~~$BID_COST_{i,h,o} >= 0$)~~

~~Then~~

$$PREDISPATCH_UPLIFT_{i,h,o} = \frac{}{\min\left(0,\ COST_AT_STLMT_PRICE_{i,h,o} - BID_COST_{i,h,o}\right)}$$

Where

$COST_AT_STLMT_PRICE_{i,h,o} =$

$$\left(\sum_{1}^{k} IIE_PREDISPATCH_{i,h,o,k}\right) * STLMT_PRICE_{i,h,o}$$

$BID_COST_{i,h,o} =$

$$\sum_{1}^{k}\sum_{1}^{m} IIE_PREDISPATCH_FOR_SEGMENT_{i,h,o,k,m} * IIE_PRICE_{i,h,o,k,m}$$

Else

$PREDISPATCH_UPLIFT_{i,h,o} = 0$)

for the portion of incremental energy bid segments with $IIE_PRICE_{i,h,o,k,m}$ less than or equal to the Maximum Bid Level and all decremental energy bid segments with $IIE_PRICE_{i,h,o,k,m}$ limited to the Bid Floor when $IIE_PRICE_{i,h,o,k,m}$ is less than the Bid Floor.

D 2.6.4 Allocation of Unrecovered Cost Payments for Hourly Pre-dispatched System Resources

For each Settlement Interval *o*, the total uplift payments ($PREDISPATCH_PMT_{i,h,o}$) for all hourly pre-dispatched System Resources will be included in the Excess Cost Payments to be allocated to a Scheduling Coordinator's Net Negative Deviation through allocation of excess costs and/or ISO metered Demand through excess cost neutrality allocation.

D 2.6.5 Excess Cost Payments for Instructed Incremental Energy Bids above the Maximum Bid Level

Incremental Instructed Imbalance Energy above the Maximum Bid Level will receive an additional Excess Cost Payment subject to operating within a resource's Tolerance Band.

Excess cost payments are calculated as follows:

$$EXCESS_COST_{i,h,o} = \left[\left(\left(\sum_{1}^{k}\sum_{1}^{m} IIE_ECON_{i,h,o,k,m} + \sum_{1}^{k}\sum_{1}^{m} IIE_PREDISPATCH_{i,h,o,k,m} + \sum_{1}^{k}\sum_{1}^{m} RIE_{i,h,o,k,m}\right) * STLMT_PRICE_{i,h,o} - BID_COST_{i,h,o} - BID_COST_RIE_{i,h,o}\right] * PERF_STAT_{i,h,o}$$

for the portion of energy bid segments with $IIE_PRICE_{i,h,o,k,m}$ and $RIE_PRICE_{i,h,o,k,m}$ greater than the Maximum Bid Level.

D 2.7 Transmission Loss Obligation

The transmission loss obligation charge shall be determined as follows:

For Generators:

$TL_{i,h,o} = ME_{i,h,o} * (1 - GMMa_h)$

For System Resources, the transmission loss obligation shall be determined as follows:

$TL_{i,h,o} =$

$$-\sum_{1}^{k}\sum_{1}^{v} REAL_TIME_FLOW_{i,h,o,k,v} * (1 - GMMa_h)$$

The transmission loss charge will be calculated based on the following formulation:

$TLC_{i,h,o} =$

$$-\sum_{1}^{k} IIE_LOSS_{i,h,o,k} * STLMT_PRICE_{i,h,o} + TL_{i,h,o} * STLMT_PRICE_{i,h,o}$$

D 2.8 Uninstructed Deviation Penalty Charges

The ISO will calculate but not assess charges for UDP according to this Section 2.8 until the first day of the month two months after the software that calculates UDP is put into service.

For negative Uninstructed Deviation Penalty billable quantities where $UDP_BQ_{h,o} < 0$ and $ZONAL_EX_POST_PRICE_{j,h,o} > 0$,

$UDP_NEG_Amt_i\ AMT_{i,h,o} =$

$-1 * UDP_BQ_{i,h,o} * ZONAL_EX_POST_PRICE_{j,h,o} * .5$

For positive UDP billable quantities where $UDP_BQ_{i,h,o} > 0$ and $ZONAL_EX_POST_PRICE_{j,h,o} > 0$, then

$UDP_POS_AMT_{i,h,o} = UDP_BQ_{i,o,h} * ZONAL_EX_POST_PRICE_{j,h,o}$

where,

$UDP_BQ_{i,o,h}$ is the Uninstructed Deviation Penalty (UDP) billable quantity in MWh for a resource, or aggregated resource, denoted by i for Settlement Interval *o* of hour *h*.

UDP_POS_AMT$_{i,o,h}$ or *UDP_NEG_AMT$_{i,o,h}$* are the penalty amounts in Dollars for either an aggregated or individual resource *i* for Settlement Interval *o* of hour *h.*

The ISO will not calculate UDP settlement amounts for Settlement Intervals when the corresponding Zonal Settlement Interval Ex Post Price is negative or zero.

For an MSS that has elected to follow its own Load, the Scheduling Coordinator for the MSS Operator will be assessed the Uninstructed Deviation Penalty charges based on the Deviation Band and Deviation Price in Section 4.9.9.2 of the ISO Tariff.

D 2.9 Minimum Load Cost Compensation

The ISO shall calculate a Must-Offer Generator's Minimum Load Cost Compensation (MLCC), pursuant to section 40.1.6.1.1 of the ISO Tariff, as the Minimum Load Cost for each resource *i* during Settlement Interval *o* of hour *h,* as defined in section 40.1.6.1.2 of the ISO Tariff.

D 3 Meaning of terms in the formulae

D 3.1 [Not Used]

D 3.2 COST_AT_STLMT_PRICE$_{i,h,o}$ - $/MWh

The sum of all dollar amounts from each dispatched bid segment for Energy quantities settled at the Resource-Specific Ex Post Price, for resource i during Settlement Interval o of hour h, and limited to those bid segments with Energy Bid prices below the Maximum Bid Level.

D 3.3 BID_COST$_{i,h,o}$ - $/MWh

The sum of all dollar amounts from each dispatched bid portion of Energy quantities settled at the maximum of either the corresponding Energy Bid price for those bids with Energy Bid prices below the Maximum Bid Level or the Bid Floor, for resource i during Settlement Interval o during hour h.

D 3.4 PRE_DISP_ABC_BQ$_{i,h,o}$ - MWh

The pre-dispatched Energy from all Energy Bids with any Energy Bid price above the Maximum Bid Level, for resource i during Settlement Interval o during hour h.

D 3.5 IIE_PREDISPATCH_FOR_SEGMENT$_{i,h,o,k,m}$ - MWh

The pre-dispatched Energy for resource i during Dispatch Interval k of Settlement Interval o of hour h for bid segment m.

D 3.6 [Not Used]

D 3.6.1 [Not Used]

~~**D 3.6.2 [Not Used]**~~

~~**D 3.6.3 [Not Used]**~~

~~**D 3.7 $G_{a,i,j,h,o}$ – MWh**~~

~~The total actual metered Generation of Generator i in Zone j during Settlement Interval o during Settlement Period h.~~

~~**D 3.8 [Not Used]**~~

~~**D 3.9 [Not Used]**~~

~~**D 3.9.1 [Not Used]**~~

~~**D 3.10 [Not Used]**~~

~~**D 3.11 [Not Used]**~~

~~**D 3.12 $GMM_{a,i,h}$ – fraction**~~

~~The final forecasted Generation Meter Multiplier (GMM) for a Generator i in Settlement Period h as calculated by the ISO at the hour-ahead stage (but after close of the Hour-Ahead Market).~~

~~**D 3.13 $GMM_{a,j,h}$ – fraction**~~

~~The forecasted Generation Meter Multiplier for an Energy import at Scheduling Point q in Settlement period h as provided to the Scheduling Coordinator by the ISO after close of the Hour-Ahead Market.~~

~~**D 3.14 [Not Used]**~~

~~**D 3.15 $L_{a,i,j,h,o}$ – MWh**~~

~~The actual metered Demand of Demand i in Zone j in Settlement Interval o during Settlement Period h.~~

~~**D 3.15.1 [Not Used]**~~

~~**D 3.15.2 [Not Used]**~~

~~**D 3.16 [Not Used]**~~

~~**D 3.17 [Not Used]**~~

~~**D 3.17.1 [Not Used]**~~

~~**D 3.18 [Not Used]**~~

D 3.19 $I_{a,q,j,h,o}$ – MWh

The total actual Energy import of Scheduling Coordinator g through Scheduling Point q in Settlement Interval o during Settlement Period h. This is deemed to be equal to the scheduled Energy over the same interval.

D 3.20 [Not Used]

D 3.21 [Not Used]

D 3.22 [Not Used]

D 3.23 $E_{a,q,j,h,o}$ – MWh

The total actual Energy export of Scheduling Coordinator g through Scheduling Point q in Settlement Interval o for Settlement Period *h*. This is deemed to be equal to the total scheduled Energy export during the same interval.

D 3.24 [Not Used]

D 3.25 [Not Used]

D 3.25.1 [Not Used]

D 3.26 $UFEC_{jxt}$ – $

The Unaccounted for Energy Charge for Scheduling Coordinator j in Zone x in Settlement Period t. It is the cost for the Energy difference between the net Energy delivered into each utility Service Area, adjusted for utility Service Area Transmission Losses (calculated in accordance with ISO Tariff Section 27.2.1.), and the total metered Demand within that utility Service Area adjusted for distribution losses using Distribution System loss factors approved by the Local Regulatory Authority.

This Energy difference (UFE) is attributed to meter measurement errors, power flow modeling errors, energy theft, statistical Load profile errors, and distribution loss deviations.

D 3.27 $UFE_{UDC,bkt}$ – MWh

The Unaccounted for Energy (UFE) for utility Service Area k.

D 3.28 UFE – MWh

The portion of Unaccounted for Energy (UFE) allocated to metering point z.

D 3.29 [Not Used]

D 3.30 [Not Used]

~~D 3.31 [Not Used]~~

~~D 3.32 [Not Used]~~

~~D 3.33 [Not Used]~~

~~D 3.34 [Not Used]~~

~~D 3.35 [Not Used]~~

~~D 3.36 [Not Used]~~

~~D 3.37 TLs,h,o – MWh~~

~~The Transmission Losses per Settlement Interval *o* in Settlement Period hour h in utility Service Area *s*.~~

~~D 3.38 [Not Used]~~

~~D 3.39 [Not Used]~~

~~D 3.40 [Not Used]~~

~~D 3.41 [Not Used]~~

~~D 3.42 [Not Used]~~

~~D 3.43 [Not Used]~~

~~D 3.44 [Not Used]~~

~~D 3.45 [Not Used]~~

~~D 3.46 [Not Used]~~

~~D 3.47 [Not Used]~~

~~D 3.48 [Not Used]~~

~~D 3.49 $EX_POST_PRICE_{j,h,o,k}$ – $/MWh~~

~~The Ex-Post Price in Dispatch Interval *k* of Settlement Interval *o* in Settlement Period *h* in Zone *j*.~~

~~D 3.50 $HRLY_EX_POST_PRICE_{j,h}$ – $/MWh~~

~~The energy-weighted Ex Post Price for Settlement Period *h* in Zone *j*.~~

~~D 3.51 $STLMT_PRICE_{l,h,o}$ – $/MWh~~

The 10-minute Settlement price (Resource-Specific Settlement Interval Ex Post Price) for resource *i* in the Settlement Interval *o* for the Settlement Period *h.*

D 3.52 $SE_{i,h,o}$ – MWh

The Scheduled Energy from resource *i* during Settlement Interval *o* of Settlement Period *h.*

D 3.53 $TOLERANCE_BAND_{i,h,o}$ – MWh

The Tolerance Band limit for resource *i* during Settlement Interval *o* of Settlement Period *h.*

D 3.54 $IIE_ECON_{i,h,o,k,m}$ – MWh

The dispatched incremental or decremental Instructed Imbalance Energy (IIE) for resource *i* during Dispatch Interval *k* in Settlement Interval *o* of Settlement Period *h* for bid segment *m.*

Decremental Energy shall be represented as a negative quantity.

IIE_ECON$_{i,h,o,k,m}$ shall be comprised of any of the four *IIE_TYPE*'s: SUPP, SPIN, NSPN or RPLC and be associated with its respective IIE_PRICE$_{i,h,o,k,m}$

D 3.55 $IIE_PRICE_{i,h,o,k,m}$ – $/MWh

The bid price for energy bid segment *m* for resource *i* during Dispatch Interval *k* in Settlement Interval *o* of Settlement Period *h* for bid segment *m*

D 3.56 $IIE_PREDISPATCH_{i,h,o,k,m}$ – MWh

The Settlement Period pre-dispatched Energy for resource *i* during Dispatch Interval *k* of Settlement Interval *o* of Settlement Period *h* for bid segment *m* (MWh).

D 3.57 $RIE_{i,h,o,k,m}$ – MWh

The Residual Energy for resource *i* during Dispatch Interval *k* in Settlement Interval *o* of Settlement Period *h* for bid segment *m.*

D 3.58 $RIE_PRICE_{i,h,o,k,m}$ – $/MWh

The reference bid price for the Residual Energy for resource *i* during Dispatch Interval *k* in Settlement Interval *o* of Settlement Period *h* for bid segment *m.*

D 3.59 $OOS_PRICE_{i,h,o,k,L}$ – $/MWh

The Settlement price for the Instructed Out of Stack Energy for resource *i* during Dispatch Interval *k* in Settlement Interval *o* of Settlement Period *h* for index number *L.*

D 3.60 IIE_REG$_{i,h,o}$ – MWh

The Regulating Energy for resource *i* during Settlement Interval *o* in Settlement Period *h.*

D 3.61 IIE_PREDISPATCH$_{i,h,p}$ – MWh

The Settlement Period pre-dispatched Energy for resource *i* during Dispatch Interval *p* of Settlement Period *h.*

D 3.62 E$_{i,h,o}$ – MWh

Calculated as the difference of $IE_{i,h,o}$ and $IIE_TOTAL_{i,h,o,k}$ and is equal to the sum of Uninstructed Imbalance Energy and Regulating Energy of resource *i* during Settlement Interval *o* in Settlement Period *h.*

D 3.63 IIEC$_{i,h,o}$ – $

The Instructed Imbalance Energy payment (charge) for resource *i* during Settlement Interval *o* of Settlement Period *h.*

D 3.64 IIEC_OOS$_{i,h,o}$ – $

The total OOS Energy payment (charge) for resource *i* during Settlement Interval *o* of Settlement Period *h.*

D 3.65 IIEC_OOS_P$_{i,h,o}$ – $

The incremental Instructed OOS Imbalance Energy payment (charge) for resource *i* during Settlement Interval *o* of Settlement Period *h.*

D 3.66 IIEC_OOS_N$_{i,h,o}$ – $

The decremental Instructed OOS Imbalance Energy payment (charge) for resource *i* during Settlement Interval *o* of Settlement Period *h.*

D 3.67 IIE_LOSS$_{i,h,o,k}$ – MWh

The transmission loss self-provided Energy from resource *i* during Dispatch Interval *k* in Settlement Interval *o* of Settlement Period *h.*

D 3.68 IIE_ML$_{i,h,o,k}$ – MWh

The Imbalance Energy due to Minimum Load from resource *i* during Dispatch Interval *k* in Settlement Interval *o* of Settlement Period *h.*

D 3.69 IIE_TOTAL$_{i,h,o,k}$ – MWh

~~The total Instructed Imbalance Energy from all energy sources except Regulation for resource *i* during Dispatch Interval *k* in Settlement Interval *o* of Settlement Period *h.*~~

~~**D 3.70 IIE_RERATE$_{i,h,o,k}$ – MWh**~~

~~The SLIC derated Pmin or Pmax value as a result of a Scheduling Coordinator modifying its operating output level for a given resource *i* during Dispatch Interval *k* in Settlement Interval *o* of Settlement Period *h.*~~

~~**D 3.71 UIE$_{i,h,o}$ – MWh**~~

~~The total Uninstructed Imbalance Energy from resource *i* during Settlement Interval *o* of Settlement Period *h.*~~

~~**D 3.72 UIE_1$_{i,h,o}$ – MWh**~~

~~The Uninstructed Imbalance Energy attributed to non-compliance of *IIE_ECON* from resource *i* during Settlement Interval *o* of Settlement Period *h.*~~

~~**D 3.73 UIE_2$_{i,h,o}$ – MWh**~~

~~The Uninstructed Imbalance Energy exclusive of UIE_1 from resource *i* during Settlement Interval *o* of Settlement Period *h.*~~

~~**D 3.74 UIEC$_{i,h,o}$ – $**~~

~~The Uninstructed Imbalance Energy payment (charge) for resource *i* during Settlement Interval *o* of Settlement Period *h.*~~

~~**D 3.75 ZONAL_EX_POST_PRICE$_{j,h,o}$ – $/MWh**~~

~~The energy weighted average Ex Post Price for Imbalance Energy for Zone *j* in Settlement Interval *o* for Settlement Period *h.*~~

~~**D 3.76 ME$_{i,h,o}$ – MWh**~~

~~The Metered Energy from resource *i* during Settlement Interval *o* of Settlement Period *h.*~~

~~**D 3.77 RED$_{i,h,o,k}$ – MWh**~~

~~The Ramping Energy Deviation from resource *i* during Dispatch Interval *k* in Settlement Interval *o* of Settlement Period *h.*~~

~~**D 3.78 REDC$_{i,h,o}$ – $**~~

~~The Ramping Energy Deviation payment (charge) for resource *i* during Settlement Interval *o* of Settlement Period *h.*~~

D 3.79 $MR_ML_{i,h,o}$ – $

The expected Real Time Market revenue from Minimum Load Energy for resource *i* in Settlement Interval *o* for Settlement Period *h*.

D 3.80 $COST_RECOVERY_{i,d}$ – $

The Unrecovered Cost Payment for resource *i* for Trading Day *d*.

D 3.81 $MR_DIFF_{i,h,o}$

is the market revenue surplus or deficit for resource *i* in Settlement Period *h* for Settlement Interval *o*.

D 3.82 $MR_DEFICIT_{i,h,o}$ – $

The market revenue deficit for resource *i* in Settlement Period *h* for Settlement Interval *o*.

D 3.83 $MR_SURPLUS_{i,h,o}$ – $

The market revenue surplus for resource *i* in Settlement Period *h* for Settlement Interval *o*.

D 3.84 $PERF_STAT_{i,h,o}$ – True/False

The performance status of resource *i* for Settlement Interval *o* of Settlement Period *h*. The performance status is equal to 1 (compliant) or 0 (non-compliant).

D 3.85 $BID_COST_{i,h,o}$ – $

The bid costs for IIE, except OOS Energy and RIE, for resource *i* in Settlement Period *h* for Settlement interval *o*.

D 3.86 $BID_COST_RIE_{i,h,o}$ – $

The bid costs for RIE for resource *i* in Settlement Period *h* for Settlement Interval *o*.

D 3.87 $PREDISPATCH_PMT_{i,h,o}$ – $

The unrecovered bid cost payment for a Settlement Period pre-dispatched System Resource *i* in Settlement Interval *o* for Settlement Period *h*.

D 3.88 $EXCESS_COST_{i,h,o}$ – $

The excess cost payment for resource *i* in Settlement Interval *o* for Settlement Period *h*.

D 3.89 $TL_{i,h,o}$ – MWh

The Transmission Loss Obligation for resource *i* during Settlement Interval *o* of Settlement Period *h.*

D 3.90 EXCESS_COST_ALLOC$_{g,h,o}$ – $

The excess cost allocation for Scheduling Coordinator *g* in Settlement Period *h* for Settlement Interval *o.*

D 3.91 REAL_TIME_FLOW$_{i,h,o,k,v}$ – MW*h*

The real-time actual flow for intertie resource *i* during Dispatch Interval *k* during Settlement Interval *o* of Settlement Period *h* for Real Time Flow Type index v. Real Time Flow Type index *v* must be one of the following Energy types: FIRM NFIRM, SUPP, WHEEL, DYN, ESPN, ENSPN, OOM, ERPLC.

D 3.92 RE_STANDARD$_{i,h,o,k}$ – MWh

The Standard Ramping Energy from resource *i* during Dispatch Interval *k* of Settlement Interval *o* of Settlement Period *h.*

D 3.93 OOS_P$_{i,h,o,k,L}$ – MWh

The incremental Out of Stack Energy for resource *i* during Dispatch Interval *k* in Settlement Interval *o* of Settlement Period *h* for index number *L.*

D 3.94 OOS_N$_{i,h,o,k,L}$ – MWh

The decremental Out of Stack Energy for resource *i* during Dispatch Interval *k* in Settlement Interval *o* of Settlement Period *h* for index number *L.*

D 3.95 URC_ALLOC$_{g,h,o}$ – $

The unrecovered cost neutrality allocation for Scheduling Coordinator *g* in Settlement Interval *o* for Settlement Period *h.*

D 3.96 IIE_TYPE$_{i,h,o,k,m}$

is the energy type for *IIE_ECON$_{i,h,o,k,m.}$* Energy type is one of the following: Supplemental, Spin, Non-Spin or Replacement Reserve Energy.

PART E

USAGE CHARGE COMPUTATION[NOT USED]

E 1 Purpose of Charge

The Usage Charge is payable by Scheduling Coordinators who schedule Energy across Congested Inter-Zonal Interfaces pursuant to Section 27.1.1.5 of the ISO Tariff. Scheduling Coordinators who counter-schedule across Congested Inter-

~~Zonal Interfaces are entitled to Usage Charge Payments. The right to schedule across a Congested Inter-Zonal Interface is determined through the ISO's Congestion Management procedures.~~

~~The following categories of Payments and Charges are covered in this Part E:~~

~~(a) Usage Charges payable by Scheduling Coordinators for Energy transfers scheduled across Congested Inter-Zonal Interfaces and which contribute to Congestion.~~

~~(b) Usage Charge rebates payable to Scheduling Coordinators for Energy transfers scheduled across Congested Inter-Zonal Interfaces and which contribute to relieving Congestion.~~

~~(c) Credits of net Usage Charge revenues to Participating TOs and FTR Holders.~~

~~(d) Debits of net Usage Charge revenues to Participating TOs and FTR Holders.~~

~~(e) Debits and rebates of Usage Charge to Scheduling Coordinators as set out in E 2.3.3.~~

~~E 2 Fundamental Formulae~~

~~E 2.1 ISO Usage Charges on Scheduling Coordinators~~

~~Each Scheduling Coordinator j whose Final Schedule includes the transfer of Energy scheduled across one or more Congested Inter-Zonal Interfaces shall (save to the extent that the transfer involves the use of transmission capacity represented by Existing Rights) pay, or be paid, Usage Charges in Trading Interval t calculated in accordance with the following formulae:~~

~~In the Day-Ahead Market:~~

$$UC_{jtd} = \sum_{x} NetZoneImp_{jtxd} * \lambda_{dxt}$$

~~In the Hour-Ahead Market:~~

$$UC_{jth} = \sum_{x} (NetZoneImp_{jtxh} - NetZoneImp_{jtxd}) * \lambda_{hxt}$$

~~E 2.2 Payments of Usage Charges to Scheduling Coordinators~~

~~Each Scheduling Coordinator j whose Final Schedule includes the transfer of Energy from one Zone to another in a direction opposite that of Congestion shall (save to the extent that the transfer involves the use of transmission capacity represented by Existing Rights) receive a Usage Charge payment from the ISO calculated in accordance with the formulae described in Section E 2.1.~~

E 2.3 ISO Credits and Debits to Transmission Owners and FTR Holders of Usage Charge Revenues

E 2.3.1 Day-Ahead Market

The ISO will pay to the Participating TO n and FTR Holder n its share of the total net Usage Charge revenue for Trading Interval t in the Day-Ahead Market in accordance with the following formula:

$$PayUC_{ntd} = \sum_{y} \mu_{ytd} * K_{yn} * L_{ytd}$$

E 2.3.2 Hour-Ahead Market

The ISO will pay to the Participating TO n and FTR Holder n its share of the total net Usage Charge revenue for Trading Interval t in the Hour-Ahead Market in accordance with the following formula:

$$PayUC_{nth} = \sum_{y} \mu_{yth} * K_{yn} * (L_{yth} - L_{ytd})$$

Under normal operating conditions, ($L_{yth} - L_{ytd}$) is positive and Participating TOs and FTR Holders will receive a refund on the net Usage Charge for the relevant Trading Interval t in the Hour-Ahead Market.

E 2.3.3 Debits to Participating TOs and FTR Holders and Debits/Rebates to Scheduling Coordinators

If, after the close of the Day-Ahead Market, Participating TOs instruct the ISO to reduce interface limits based on operating conditions or an unscheduled transmission Outage occurs and as a result of either of those events, Congestion is increased and Available Transfer Capacity is decreased in the Inter-Zonal Interface in the Hour-Ahead Market, the ($L_{yth} - L_{ytd}$) will be negative. In this case:

(a) Participating TOs and FTR Holders will be charged for the Usage Charge payments they received for the relevant Trading Interval t in the Day-Ahead Market with respect to the reduced interface limits;

(b) Any Scheduling Coordinator whose Schedule was adjusted for the relevant Trading Interval t in the Hour-Ahead Market due to the reduced interface limits will be credited with μ_{yth} for each MW of the adjustment; and

(c) Each Scheduling Coordinator will be charged an amount equal to it proportionate share, based on Schedules in the Day-Ahead Market in the direction of Congestion, of the difference between $\mu_{yth}(L_{yth} - L_{ytd})$ and the total amount charged to Participating TOs and FTR Holders in accordance with item (a) above.

The ISO will issue a notice to Scheduling Coordinators of the operating hour, and extent, for which the derate will apply in the relevant Hour-Ahead Markets. The timing and form of such notices shall be set forth in ISO procedures.

E 3 Meaning of terms of formulae

E 3.1 UC_{jtd} ($)

The Usage Charge payable by or to Scheduling Coordinator j for the relevant Trading Interval t in the Day-Ahead Market.

E 3.2 UC_{jth} - $

The Usage Charge payable by or to Scheduling Coordinator j for Trading Interval t in the Hour-Ahead Market.

E 3.3 $NetZoneImp_{jtxd}$ (MWh)

The net Zonal import scheduled by Scheduling Coordinator j in Zone x for the relevant Trading Interval t in the Day-Ahead Market. For Zones internal to the ISO Control Area, net Zonal import equals scheduled Demand minus scheduled Generation plus transfers. For zones external to the ISO Control Area (i.e., for Scheduling Points), net zonal import equals scheduled imports (i.e., out of the ISO Control Area) minus scheduled exports (i.e., into the ISO Control Area).

E 3.4 $NetZoneImp_{jtxh}$ (MWh)

The net Zonal import scheduled by the Scheduling Coordinator j in Zone x for the relevant Trading Interval t in the Hour-Ahead Market. For Zones internal to the ISO Control Area, net Zonal import equals scheduled Demand minus scheduled Generation plus transfers. For Zones external to the ISO Control Area (i.e., for Scheduling Points), net zonal import equals scheduled imports (i.e., out of the ISO Control Area) minus scheduled exports (i.e., into the ISO Control Area).

E 3.5 λ_{dxt} ($/MWh)

The reference Zonal marginal price for Zone x for the relevant Trading Interval t in the Day-Ahead Market, as calculated by the ISO's Congestion Management computer optimization algorithm.

E 3.6 λ_{hxt} ($/MWh)

The reference Zonal marginal price for Zone x for the relevant Trading Interval t in the Hour-Ahead Market, as calculated by the ISO's Congestion Management computer optimization algorithm.

E 3.7 $PayUC_{ntd}$ ($)

The amount calculated by the ISO to be paid to or by the Participating TO n (in respect of its Transmission Revenue Balancing Account) and FTR Holder n for the relevant Trading Interval t in the Day-Ahead Market.

~~**E 3.7.1 $PayUC_{nth}$ ($)**~~

~~The amount calculated by the ISO to be paid to the Participating TO n (in respect of its Transmission Revenue Balancing Account) and FTR Holder n for the relevant Trading Interval t in the Hour-Ahead Market.~~

~~**E 3.8 μ_{ytd} ($/MW)**~~

~~The Day-Ahead Congestion price (shadow price) at Inter-Zonal Interface y for Trading Interval t. This price is calculated by the ISO's Congestion Management computer optimization algorithm.~~

~~**E 3.8.1 μ_{yth} ($/MW)**~~

~~The Hour-Ahead Congestion price (shadow price) at Inter-Zonal Interface y for Trading Interval t. This price is calculated by the ISO's Congestion Management computer optimization algorithm.~~

~~**E 3.9 K_{ytn} (%)**~~

~~The percentage of the Inter-Zonal Congestion revenue allocation for Participating TO n and FTR Holder n of the Congested Inter-Zonal interface y for the relevant Trading Interval t for both Day-Ahead and Hour-Ahead Markets.~~

~~**E 3.10 L_{ytd} (MW)**~~

~~The total loading of Inter-Zonal Interface y for Trading Interval t in the Day-Ahead as calculated by the ISO's Congestion Management optimization algorithm.~~

~~**E 3.11 L_{yth} (MW)**~~

~~The total loading of Inter-Zonal Interface y for Trading Interval t in the Hour-Ahead as calculated by the ISO's Congestion Management optimization algorithm.~~

PART F

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PART G

~~VOLTAGE SUPPORT and BLACK START CHARGES COMPUTATION~~[NOT USED]

~~**G 1 Purpose of charge**~~

~~**G 1.1**~~ ~~Voltage Support (VS) and Black Start (BS) charges are the charges made by the ISO to recover costs it incurs under contracts entered into between the ISO and those entities offering to provide VS or BS. Each Scheduling Coordinator pays an~~

allocated proportion of the VS&BS charge to the ISO so that the ISO recovers the total costs incurred.

G 1.2 All Generating Units are required by the ISO Tariff to provide reactive power by operating within a power factor range of 0.90 lag and 0.95 lead. Additional short-term Voltage Support required by the ISO is referred to as supplemental reactive power. If the ISO requires the delivery of this supplemental reactive power by instructing a Generating Unit to operate outside its mandatory MVar range, the Scheduling Coordinator representing this Generating Unit will only receive compensation if it is necessary to reduce the MW output to achieve the MVar instructed output. Supplemental reactive power charges to Scheduling Coordinators are made on a Trading Interval basis. As of the ISO Operations Date the ISO will contract for long-term Voltage Support Service with the Owner of Reliability Must-Run Units under Reliability Must-Run Contracts.

G 1.3 The ISO will procure Black Start capability through contracts let on an annual basis. The quantities and locations of the Black Start capability will be determined by the ISO based on system analysis studies. Charges to Scheduling Coordinators for instructed Energy output from Black Start units are made on a Trading Interval basis.

G 2 Fundamental formulae

G 2.1 Payments to Scheduling Coordinators for providing Voltage Support

Payments to Scheduling Coordinators for additional Voltage Support service comprise:

G 2.1.1 Lost Opportunity Cost Payments (supplemental reactive power) to Scheduling Coordinators for Generating Units

When the ISO obtains additional Voltage Support by instructing a Generating Unit to operate outside its mandatory MVar range by reducing its MW output the ISO will select Generating Units based on their Supplemental Energy Bids ($/MWh). Subject to any locational requirements the ISO will select the Generating Unit with the highest decremental Supplemental Energy Bid to reduce MW output by such amount as is necessary to achieve the instructed MVar reactive energy production. Each Trading Interval the ISO will pay Scheduling Coordinator j for that Generating Unit i in Zone x, the lost opportunity cost ($) resulting from the reduction of MW output in Trading Interval t in accordance with the following formula:

$$VSST_{xijt} = Max\{0, P_{xit} - Sup_{xdecit}\} * DEC_{xit}$$

G 2.1.2 Long-term contract payments to Scheduling Coordinators for Reliability Must-Run Units for Generating Units and other Voltage Support Equipment

The ISO will pay Scheduling Coordinator j for the provision of Voltage Support from its Reliability Must-Run Units located in Zone x in month m a sum ($VSLT_{xjm}$) consisting of:

(a) the total of the Ancillary Service Pre-empted Dispatch Payments if the ISO has decreased the output of the Reliability Must-Run Units for the provision of Voltage Support outside the power factor range of the Reliability Must-Run Unit in any Trading Interval in month m and/or

(b) (if applicable) the total payments for the provision of Voltage Support in month m requested by the ISO from the synchronous condensers of the Reliability Must-Run Units,

calculated in each case in accordance with the terms of the relevant Reliability Must-Run Contract. Data on these payments will not be generated by the ISO. Such data will be based on the invoices issued by the Owners of Reliability Must-Run Generating Units pursuant to their Reliability Must-Run Contracts and will be verified by the ISO.

G 2.2 Charges to Scheduling Coordinators for Voltage Support

G 2.2.1 User Rate

The user rate ($/MWh) for the lost opportunity cost for Voltage Support referred to in G 2.1.1 in Zone x for Trading Interval t will be calculated using the following formula:

$$VSSTRate_{xt} = \frac{\sum_{ij} VSST_{xijt}}{\sum_{j} QChargeVS_{xjt}}$$

The user rate ($/MWh) for month m for long-term Voltage Support referred to in G2.1.2 in Zone x will be calculated using the following formula:

$$VSSTRate_{xm} = \frac{\sum_{j} VSLT_{xjm}}{\sum_{jm} QChargeVS_{xjt}}$$

G 2.2.2 Voltage Support Charges

The lost opportunity cost Voltage Support charge ($) payable to recover the sums under G 2.1.1 for Zone x for Trading Interval t for Scheduling Coordinator j will be calculated using the following formula:

$$VSSTCharge_{xjt} = VSSTRate_{xt} * QChargeVS_{xjt}$$

The monthly long-term Voltage Support charge ($) payable to recover sums under G 2.1.2 for Zone x for month m for Scheduling Coordinator j will be calculated using the following formula:

$$VSLTCharge_{xjm} = VSLTRate_{xm} * \sum_{m} QChargeVS_{xjt}$$

G 2.3 Payments to Participating Generators for Black Start

Payments to Participating Generators that provide Black Start Energy or capability shall be made in accordance with the agreements they have entered into with the ISO for the provision of Black Start services and shall be calculated as follows:

G 2.3.1 Black Start Energy Payments

Whenever a Black Start Generating Unit provides a Black Start in accordance with the ISO's instructions, the ISO will pay the Black Start Generator for that Unit for the Generating Unit's energy output and start-up costs. The ISO will pay Black Start Generator for Generating Unit i, the Black Start energy and start-up costs ($) in Trading Interval t in accordance with the following formula:

$$BSEn_{ijt} = (EnQBS_{ijt} * EnBid_{ijt}) + BSSUP_{ijt}$$

G 2.3.2 Black Start Energy Payments to Owners of Reliability Must-Run Units

Whenever a Reliability Must-Run Unit provides a Black Start in accordance with the ISO's instructions, the ISO will pay the Scheduling Coordinator of the Reliability Must-Run Unit the Generating Unit's Energy and start-up costs. The ISO will pay Scheduling Coordinator j for Reliability Must-Run Unit i the Black Start Energy and start-up costs ($) in Trading Interval t in accordance with the following formula:

$$BSEn_{ijt} = (EnQBS_{ijt} * EnBid_{ijt}) + (BSSUP_{ijt})$$

G 2.4 Charges to Scheduling Coordinators for Black Start

G 2.4.1 User Rate

The user rate ($/MWh) for Black Start Energy payments referred to in G 2.3.1 and G 2.3.2 for Trading Interval t will be calculated using the following formula:

$$BSRate_t = \frac{\sum_{ij} BSEn_{ijt}}{\sum_{j} QChargeBlackStart_{jt}}$$

G 2.4.2 Black Start Charges

The user charge ($/MWh) for Black Start Energy to recover the costs of payments under G 2.3.1 and G 2.3.2 for Trading Interval t for Scheduling Coordinator j will be calculated using the following formula:

$$BSCharge_{jt} = BSRate_t * QChargeBlackStart_{jt}$$

G 3 Meaning of Terms in the Formulae

G 3.1 $VSST_{xijt}$ ($)

The lost opportunity cost paid by the ISO to Scheduling Coordinator j for Generating Unit i in Zone x, resulting from the reduction of MW output in Trading Interval t.

G 3.2 P_{xt} ($/MWh)

The Hourly Ex Post Price for Imbalance Energy in Trading Interval t in Zone x.

G 3.3 Sup_{xdecit} ($/MWh)

The Supplemental Energy Bid submitted by Scheduling Coordinator j for Generating Unit i in Zone x in Trading Interval t, whose output is reduced by the ISO to provide additional short-term Voltage Support.

G 3.4 Dec_{xit} (MW)

The reduction in MW by Scheduling Coordinator j for Generating Unit i in Zone x in Trading Interval t, in order to provide short-term additional Voltage Support.

G 3.5 $VSLT_{xjm}$ ($)

The payment from the ISO to Scheduling Coordinator j for its Reliability Must-Run Units in Zone x for Voltage Support in month m calculated in accordance with the relevant Reliability Must-Run Contract.

G 3.6 $VSSTRate_{xt}$ ($/MWh)

The Trading Interval lost opportunity cost Voltage Support user rate charged by the ISO to Scheduling Coordinators for Trading Interval t for Zone x.

G 3.7 $VSLTRate_{xm}$ ($/MWh)

The monthly long-term Voltage Support user rate charged by the ISO to Scheduling Coordinators for month m for Zone x.

G 3.8 $QChargeVS_{xjt}$ (MWh)

The charging quantity for Voltage Support for Scheduling Coordinator j for Trading Interval t in Zone x equal to the total metered Demand (including exports to neighboring Control Areas) for Scheduling Coordinator j in Zone x for Trading Interval t.

~~**G 3.9 $VSSTCharge_{xjt}$ ($)**~~

~~The lost opportunity cost Voltage Support user charge for Zone x for Trading Interval t for Scheduling Coordinator j.~~

~~**G 3.10 $VSLTCharge_{xjm}$ ($)**~~

~~The long-term charge for Voltage Support for month m for Zone x for Scheduling Coordinator j.~~

~~**G 3.11 $BSEn_{ijt}$ ($)**~~

~~The ISO payment to Scheduling Coordinator j (or Black Start Generator j) for that Generating Unit i providing Black Start Energy in Trading Interval t.~~

~~**G 3.12 $EnQBS_{ijt}$ (MWh)**~~

~~The energy output, instructed by the ISO, from the Black Start capability of Generating Unit i from Scheduling Coordinator j (or Participating Generator j) for Trading Interval t.~~

~~**G 3.13 $EnBid_{ijt}$ ($/MWh)**~~

~~The price for Energy output from the Black Start capability of Generating Unit i of Scheduling Coordinator j or (Black Start Generator j) for Trading Interval t calculated in accordance with the applicable Reliability Must-Run Contract or Interim Black Start Agreement.~~

~~**G 3.14 $BSSUP_{ijt}$ ($)**~~

~~The start-up payment for a Black Start successfully made by Generating Unit i of Scheduling Coordinator j (or Black Start Generator j) in Trading Interval t calculated in accordance with the applicable Reliability Must-Run Contract or Interim Black Start Agreement.~~

~~**G 3.15 $BSRate_t$ ($/MWh)**~~

~~The Black Start Energy payment user rate charged by the ISO to Scheduling Coordinators for Trading Interval t.~~

~~**G 3.16 $QChargeBlackstart_{jt}$ (MW)**~~

~~The charging quantity for Black Start for Scheduling Coordinator j for Trading Interval t equal to the total metered Demand (excluding exports to neighboring Control Areas) of Scheduling Coordinator j for Trading Interval t.~~

PART H

[NOT USED]

PART I

~~DRAFT SAMPLE OF INVOICE~~[NOT USED]

Independent System Operator

MARKET INVOICE

CUSTOMER 1
101 N. Harbor Blvd.
Anaheim CA 92808

Invoice: 181
Date: 20-JUN-97
Customer Number: 1000

Please send payment to:

1000 South Fremont Avenue
Building A-11
Alhambra CA 91803

For all inquiries contact:
1-800-ISO-HELP

Comments:

Charges settlement date: 20-JUN-97 to 20-JUN-97

Charge Type	Description	Amount
0001	0001-Day-Ahead Spinning Reserve due SC	-$845.00
0002	0002-Day-Ahead Non-Spinning Reserve due SC	-$1,025.00
0003	0003-Day-Ahead AGC/Regulation due SC	-$1,025.00
0004	0004-Day-Ahead Replacement Reserve due SC	-$1,385.00
0051	0051-Hour-Ahead Spinning Reserve due SC	-$1,565.00
0052	0052-Hour-Ahead Non-Spinning Reserve due SC	-$1,745.00
0053	0053-Hour-Ahead AGC/Regulation due SC	-$1,925.00
0054	0054-Hour-Ahead Replacement Reserve due SC	-$2,105.00
0101	0101-Day-Ahead Spinning Reserve due ISO	$22,075.00
0102	0102-Day-Ahead Non-Spinning Reserve due ISO	$23,935.00
0103	0103-Day-Ahead AGC/Regulation due ISO	$25,795.00
0104	0104-Day-Ahead Replacement Reserve due ISO	$27,655.00
0251	0251-Hour-Ahead Intra-Zonal Congestion Settlement due ISO	$385.00
0252	0252-Hour-Ahead Intra-Zonal Congestion Charge/Refund due ISO	$4,925.00
0253	0253-Hour-Ahead Inter-Zonal Congestion Settlement due ISO	$5,285.00
0301	0301-Ex-Post A/S Energy due SC	-$6,005.00
0302	0302-Ex-Post Supplemental Reactive Power due SC	-$6,365.00
0303	0303-Ex-Post Replacement Reserve due ISO (Dispatched)	$6,725.00
0304	0304-Ex-Post Replacement Reserve due ISO (Undispatched)	$7,085.00
Invoice Total		

Independent System Operator

FERC FEES INVOICE

CUSTOMER 1
101 N. Harbor Blvd.
Anaheim CA 92808

Invoice: 181
Date: 20-JUN-97
Customer Number: 1000

Please send payment to:

1000 South Fremont Avenue
Building A-11
Alhambra CA 91803

For all inquiries contact:
1-800-ISO-HELP

Comments:

Charges settlement date: 20-JUN-97 to 20-JUN-97

Charge Type	Description	Amount
[Charge type to be determined]	FERC Annual Charges due ISO	[Sample charge]
Invoice Total		

PART J

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Attachment C

MRTU TARIFF MODIFICATIONS MADE IN COMPLIANCE WITH THE SEPTEMBER 21, 2006 ORDER (116 FERC ¶ 61,274), APRIL 20, 2007 ORDER (119 FERC ¶ 61,076), AND JUNE 25, 2007 ORDER (119 FERC ¶ 61,313)

Ordering Paragraph	Tariff Section(s) Affected	Description of Change Required	Demonstrative Compliance Changes Made to MRTU Tariff
September 21 PP 64 & 97	Appendix C	Directs the CAISO to augment its tariff with more details concerning the LMP calculation and its components.	Involves adding a new Appendix C to the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing.
Sept 21 Order: P 152	31.5 31.5.3 31.5.3.7 Appendix A	Directs the CAISO to include the definition of RUC zones and the methodology used to define a RUC zone.	Involves multiple changes to the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing
Sept 21 Order: P 646	11.8.2.3.1 11.8.3.3 11.8.4.3 11.8.6.4 11.8.6.5 11.8.6.6	CAISO must finalize and file a proposal concerning how to allocate Day-Ahead Market and BCR costs to MSSs.	Involves multiple changes to Section 11 of the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing.
September 21 Order P 703	30.5.3	Commission stated that the MRTU Tariff could benefit from further refinement in its treatment of Participating Load. The Commission directed the CAISO to work with the California State Water Project ("SWP") to improve the MRTU Tariff's handling of the "unique constraints posed by participating load" and to make a compliance filing no later than 180 days prior to the effective date of MRTU.	30.5.3: . . . Each Scheduling Coordinator representing Demand, including Non-Participating Load and Aggregated Participating Load, shall submit Bids indicating the hourly quantity of Energy in MWh that it intends to purchase in the IFM for each Trading Hour of the Trading Day. Scheduling Coordinators must submit Demand Bids, including Self Schedules, for CAISO Demand at Load Aggregation Points except as provided in Section 30.5.3.2. Curtailable Demand: Demand from a Participating Load or Aggregated Pumping Load that can be curtailed at the direction of the CAISO in the Real-Time Dispatch of the CAISO Controlled Grid. Scheduling Coordinators with Curtailable Demand may offer it to the CAISO to meet Non-Spinning Reserve or Imbalance Energy.

Ordering Paragraph	Tariff Section(s) Affected	Description of Change Required	Demonstrative Compliance Changes Made to MRTU Tariff
Sept 21 Order: P 1167	40.3.1 and subsections thereof 40.3.1.2 40.3.2 40.3.4 and subsections thereof 42.1.8	Directs the CAISO to incorporate into the MRTU Tariff which set of reliability criteria it will use in developing the local capacity area resource requirements.	Involves multiple changes to the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing
Sept 21 Order: PP 530, 1330, & 1345	Appendix A	The MRTU Tariff Appendix A must be harmonized with the rest of the Tariff, including capitalization and acronyms, particularly the terms used in Section 11 and including a definition of IFM Congestion Charge.	Involves changes to multiple definitions in Appendix A of the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing.
Sept 21 Order: P 1331	4.6.3 and subsections thereof 10 and subsections thereof Appendix A Appendix J Appendix O	Accepted the CAISO's commitment to make a "deferred maintenance" filing prior to the implementation of MRTU in order to identify and to correct a number of "clean up" items in the MRTU Tariff.	Involves numerous changes to Sections 4.6.3 and 10 of the MRTU Tariff as well as modification of Appendices A, J and O regarding provisions for Qualifying Facilities and metering; see MRTU Tariff blacklines included as Attachment B to this filing.
Sept 21 Order: P 1371	22.4.3 22.11 22.11.1 22.11.2	Directs the CAISO to file a standard, formalized process for amending Business Practice Manuals.	Involves multiple changes to Section 22 of the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing.

Ordering Paragraph	Tariff Section(s) Affected	Description of Change Required	Demonstrative Compliance Changes Made to MRTU Tariff
April 20 Order: P 66	8.10.8.1 31.5.7.1	Directs the CAISO to make clear that no payment obligation applies to RA resources for undispatchable RUC capacity, and that the CAISO will notify the appropriate Local Regulatory Authority of any non-compliance of RA resources.	8.10.8.1: . . . . ~~For capacity committed in RUC from a Resource Adequacy (RA) resource that becomes Undispatchable Capacity, the payment obligation shall be equivalent to payment obligation which would arise if the resource were eligible to receive a RUC Availability Payment. Such payment obligation is in addition to the consequences for non-compliance under a Local Regulatory Authority's Resource Adequacy Program. The CAISO will report instances of non-compliance under this Section 8.10.8 to the appropriate Local Regulatory Authority.~~ 31.5.7.1: . . . . If the Undispatchable Capacity is capacity committed in RUC and is from a Generating Unit, System Unit or System Resource that is a Resource Adequacy Resource, there is no payment obligation to the CAISO for the Undispatchable RUC Capacity. The CAISO will report the instance of non-compliance by the Resource Adequacy Resource to the appropriate Local Regulatory Authority.
April 20 Order: P 104	8.1	Directed the CAISO to work with WAPA to determine whether the CAISO's proposed work-around for MRTU Release 1 relating to self-provided AS Imports will allow WAPA's Boulder Canyon Project customers to self-provide AS from outside the CAISO Control Area. If not, the CAISO should develop additional provisions for the MRTU Tariff which will allow imports of federal power without violating the restriction on the resale of federal power.	. 8.1: . . . The amount of Ancillary Services procured in the IFM and HASP and in the Real-Time Market is based upon the CAISO Forecast of CAISO Demand plus HASP Intertie Schedule for the Operating Hour net of (i) Self-Provided Ancillary Services from ~~g~~Generation~~g~~ Units internal to the CAISO Control Area and Dynamic System Resources certified to provide Ancillary Services and (ii) Ancillary Services self-provided pursuant to an ETC, TOR or Converted Right. The CAISO will manage both CAISO procured and Self-Provided Ancillary Services as part of the Real-Time Dispatch. The CAISO will calculate payments for Ancillary Services supplied by -Scheduling Coordinators and charge the cost of Ancillary Services to Scheduling Coordinators based on their Ancillary Service ~~o~~Obligations.

Ordering Paragraph	Tariff Section(s) Affected	Description of Change Required	Demonstrative Compliance Changes Made to MRTU Tariff
April 20 Order: PP 303, 305	11.5	Directed the CAISO to remove the term "UFE" from Section 11.5, as indicated by SWP	11.5 . . . . In addition, the CAISO shall settle UFE as part of the Real-Time Market Settlements ~~as described in Section 11.5.3~~. To the extent that the sum of the Settlements Amounts for IIE and UIE does not equal zero, the CAISO will asses charges or make payments for the resulting differences to all Scheduling Coordinators based on a pro rata share of their Measured Demand for the relevant Settlement Interval. ~~The CAISO shall allocate Charges or Payments associated with any non-zero amounts resulting from the sum of IIE, UIE and UFE as described in Section 11.5.4.2.~~ Imbalance Energy due to Exceptional Dispatches, as well as the allocation of related costs, including Excess Costs Payments is settled as described in Section 11.5.6. The CAISO shall reverse RTM Congestion Charges for valid and balanced ETC and TOR Self-Schedules as described in Section 11.5.7. The CAISO will settle Energy for emergency assistance as described in Section 11.5.8.
April 20 Order P 307	11.5.3	Directed the CAISO to remove allocation of UFE costs to wheel-throughs or exports from the CAISO Control Area.	11.5.3: . . . For each Settlement Interval, the CAISO will calculate UFE ~~in the CAISO Control Area, and~~ for each utility Service Area for which the IOU or Local Publicly ~~Utility~~ Owned Electric Utility has requested separate UFE calculation and has met the requirements applicable to a CAISO Metered Entity. The UFE will be settled as Imbalance Energy at the Settlement Interval Locational Marginal Price calculated for each utility Service Area for which UFE is calculated separately. UFE attributable to meter measurement errors, load profile errors, Energy theft, and distribution loss deviations will be allocated to each Scheduling Coordinator based on the ratio of its metered CAISO Demand within the relevant utility Service Area for which UFE is calculated separately ~~plus its Real-Time Interchange export schedules from the relevant Utility Service Area~~ to total metered CAISO Demand within that utility Service Area ~~plus its Real-Time Interchange export schedules from the relevant Utility Service Area~~.

Ordering Paragraph	Tariff Section(s) Affected	Description of Change Required	Demonstrative Compliance Changes Made to MRTU Tariff
April 20 Order: P 339	11.22.2.5.6	Directs the CAISO to modify the MRTU Tariff to ensure that load-following MSSs are not subject to instructed imbalance energy costs if those costs are a result of imbalances caused by following load in Real-Time.	11.22.2.5.6: … For a Scheduling Coordinator for a Load following MSS, Instructed Imbalance Energy associated with Load following instructions will not be assessed the Market Usage Charge for Instructed Imbalance Energy and will be netted with Uninstructed Imbalance Energy for determining the Market Usage Charge for net Uninstructed Imbalance Energy.
April 20 Order: P 347	11.5.2 11.5.2.2	Directs the CAISO to remove from MRTU Tariff language that results in participating load being settled on a LAP basis.	Involves multiple changes to Section 11 of the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing.
April 20 Order P 428	16.6.4 17.3.4	Agrees that that opportunities offered to ETC rights holders to correct identified scheduling errors should also apply to Converted Rights holders and, moreover, to TOR holders as well. Because these parties are similarly situated, directs the CAISO to submit a compliance filing to modify MRTU Tariff sections 16 and section 17 accordingly.	16.6.4: . . .~~To the extent practicable, a~~After performing validation of the ETC Self-Schedule, and prior to taking any action pursuant to Section 16.6.2, the CAISO will make an automated validation notice available to~~notify~~ the Scheduling Coordinator indicating whether the ETC Self-Schedule is valid or invalid. If an ETC Self-Schedule involves more than one Scheduling Coordinator, the complete validation of the chain of ETC Self-Schedules will occur when the last Scheduling Coordinator submits its ETC Self-Schedule. At that time, the CAISO will make an automated validation notice available to each Scheduling Coordinator registered as associated with the chain of ETC Self-Schedules. The CAISO can accommodate corrections submitted by a Scheduling Coordinator to an ETC Self-Schedule up to Market Close of the Day-Ahead Market as further described in the applicable Business Practice Manual. 17.3.4: . . . ~~To the extent practicable, a~~After performing validation of the TOR Self-Schedule, and prior to taking any action pursuant to 17.6.2, the CAISO will make an automated validation notice available to~~notify~~ 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

Ordering Paragraph	Tariff Section(s) Affected	Description of Change Required	Demonstrative Compliance Changes Made to MRTU Tariff
			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.
April 20 Order: P 439	33.3	Directed the CAISO to reconcile Section 11.5.7 and Section 16.9.1 with Section 33.3 so that it is clear that the perfect hedge is still available for any contract-permitted schedule changes for ETCs/TORs submitted by market close.	33.3: . . . 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.
April 20 Order: P 463-464	16.5.1	Directed the CAISO to clarify MRTU Tariff section 16.5.1 by incorporating provisions of MRTU Tariff section 4.2.1 that govern actions by all market participants during a system emergency and making clear that, in the event of a conflict between the MRTU Tariff and a control area operating agreement, the agreement prevails.	16.5.1: . . . As set forth in Section 4.2.1, all Market Participants, including Scheduling Coordinators, Utility Distribution Companies, Participating TOs, Participating Generators, Participating Loads, Control Area Operators (to the extent the agreement between the Control Area Operator and the CAISO so provides), and MSS Operators within the CAISO Control Area and all System Resources must comply fully and promptly with CAISO Dispatch Instructions and operating orders, unless such operation would impair public health or safety. The CAISO will honor the terms of Existing Contracts, provided that in a System Emergency and circumstances in which the CAISO considers that a System Emergency is imminent or threatened, holders of Existing Rights must follow CAISO operating orders even if those operating orders directly conflict with the terms of Existing Contracts, unless such operating orders are inconsistent with the terms of an agreement between the CAISO and a Control Area

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			Operator. In the event of a conflict between the CAISO Tariff and an agreement between the CAISO and a Control Area Operator, the agreement will govern. For this purpose CAISO operating orders to shed Load shall not be considered as an impairment to public health or safety. This section does not prohibit a Scheduling Coordinator from modifying its Bid or re-purchasing Energy in the HASP/~~RT~~ or Real-Time Market.
April 20 Order: P 502	39.7.1.1	Directs the CAISO to submit a compliance filing that incorporates both the names of the specific price indices and the acceptable lag time for gas price indices for use in determining the default energy bids into the MRTU Tariff.	39.7.1.1: . . .The Variable Cost option will calculate the Default Energy Bid as Variable Costs plus ten percent (10%). Variable Cost will be comprised of two components: Fuel Cost and Variable Operation and Maintenance Cost. The Fuel Cost portion will be calculated for each Bid segment using the Heat Rate supplied by the resource owner on file in the Master File and the applicable regional natural gas price indices calculated as follows and as specified in the Business Practice Manual. The CAISO will use different gas price indices for the Day-Ahead Market and the Real-Time Market and each gas price index will be calculated using at least two prices from two or more of the following publications: Natural Gas Intelligence, Btu Daily Gas Wire, Platt's Gas Daily and the Intercontinental Exchange. For the Day-Ahead Market, the CAISO will update the gas price index between 00:00 and 03:00 Pacific Time in the Day-Ahead using gas prices published on the prior day, unless gas prices are not published on that day, in which case the CAISO will use the most recently published prices that are available. For the Real-Time Market, the CAISO will update gas price indices between the hours of 19:00 and 22:00 Pacific Time using gas prices published in the Day-Ahead, unless gas prices are not published on that day, in which case the CAISO will use the most recently published prices that are available. The default value for the Variable Operation and Maintenance Cost portion will be $2/MWh. Generating Units that are of the Combustion Turbine or Reciprocating Engine technology will be eligible for a default Variable Operation and Maintenance Cost of

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			$4/MWh. Resource specific values may be negotiated with the Independent Entity charged with calculating the Default Energy Bid.
April 20 Order: P 570	Appendix A; Definition of "Local Regulatory Authority"	Directs the CAISO to work with Arizona/Southwest Coops and Anza to determine who should serve as Anza's Local Regulatory Authority. Also directs the CAISO to consider an amended definition, if necessary, of Local Regulatory Authority to allow an entity such as Anza to act as its own Local Regulatory Authority.	The state or local governmental authority, or the board of directors of an electric cooperative, responsible for the regulation or oversight of a utility.
April 20 Order: P 617	40.6.11	Directs the CAISO to strike the word, "resource," from section 40.6.11 so that the section instead provides that the CAISO may curtail exports from RA capacity to prevent or alleviate a system emergency.	40.6.11: At its sole discretion, the CAISO may curtail exports from Resource Adequacy Capacity~~Resource~~ to prevent or alleviate a System Emergency.
April 20 Order: P 618	40.4.7	Directed the CAISO to state that Scheduling Coordinators representing RA capacity must show that their generation capacity is not already under bilateral contract or committed for minimum operating reserves.	40.4.7: Scheduling Coordinators representing Resource Adequacy Resources supplying Resource Adequacy Capacity shall provide the CAISO with an annual ~~and~~/or monthly Supply ~~p~~Plan, as applicable, on the schedule set forth in the Business Practices Manual verifying their agreement to provide ~~the~~ Resource Adequacy Capacity during the next Resource Adequacy Compliance Year or month~~listed on the annual and/or monthly Resource Adequacy Plan, as applicable, submitted by a Scheduling Coordinator for a Load Serving Entity~~. The Supply Plan must be in the form of the template provided on the CAISO Website, which shall include an affirmative representation by the Scheduling Coordinator submitting the Supply Plan that the CAISO is entitled

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			to rely on the accuracy of the information provided in the Supply Plan to perform those functions set forth in this Section 40. The CAISO shall be entitled to take reasonable measures to validate the accuracy of the information submitted in Supply Plans under this Section.
April 20 Order: P 621	40.6.1 40.6.2 40.6.3 40.6.5	Directs the CAISO to work with Imperial to incorporate changes to the MRTU Tariff to implement how generation capacity will be designated if there is a de-rate with respect to a generator that has only part of its capacity contracted as RA capacity.	Involves multiple changes to the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing
April 20 Order: 633	40.6.1 40.6.2 40.6.3 40.6.5	Directs the CAISO to modify Section 40.6 to specify the real-time availability requirements for System Resources.	Involves multiple changes to the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing
April 20 Order: P 638	40.2.2.3 40.2.3.3 40.2.4 40.5.2	Directs the CAISO to clarify that it would be the provider of demand forecast information for non-CPUC LSEs if the California Energy Commission were somehow not be able to provide coincident peak data.	Involves multiple changes to the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing
May 8 Order: P 52	Involves numerous changes to multiple MRTU Tariff Sections, including: 4.3.1.2.1 4.9.13.1 6.5 and subsections thereof 12.6 and subsections thereof	Directed the CAISO to incorporate into the MRTU Tariff, no later than 180 days prior to implementation of MRTU, provisions addressed in this order.	Involves multiple changes to the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing

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	16.4 and subsections thereof 17.1 and subsections thereof 27.2 36.5 and subsections thereof 36.8.2 and subsections thereof 36.8.6 36.9 36.10 Appendix A		
June 25 Order: P. 39	6.5.1.4	Directs the CAISO to revise MRTU Tariff Section 6.5 to include firms with legitimate business interests in the CAISO markets.	6.5.1.4(b): A non-Market Participant that is a member of the WECC and that requests the CRR Full Network Model: (i) shall reasonably demonstrate a legitimate business interest in the CAISO Markets, (ii) shall execute the Non-Disclosure Agreement for CRR Full Network Model Distribution that is posted on the CAISO Website, and (iii) shall provide to the CAISO a non-disclosure statement, the form of which is attached as an exhibit to the Non-Disclosure Agreement executed by the non-Market Participant, executed by each employee and consultant of the non-Market Participant who will have access to the CRR Full Network Model.
June 25 Order: P 40	6.5.1.5	Directs the CAISO to revise the non-disclosure agreement to reflect that: (1) the CAISO receives litigation costs only if it prevails in litigation, and (2) market participants may use the Full Network Model and related studies in pleadings before FERC and treated as privileged information if necessary.	6.5.1.5 Non-Disclosure Agreement. The CAISO's Non-Disclosure Agreement for CRR Full Network Model Distribution shall be posted on the CAISO Website. This Non-Disclosure Agreement shall provide for the CAISO to receive the costs of litigation, including attorneys' fees, related to the Non-Disclosure Agreement if the CAISO prevails in litigation. Recipients of the CRR Full Network Model may use the CRR Full Network Model and related studies in pleadings to the FERC provided they request confidential treatment of all information subject to the Non-Disclosure Agreement.
June 25 Order: P 41	27.5.4	Directs the CAISO to modify MRTU Tariff Section 27.5.4 to	27.5.4: … The Business Practice Manual for Managing Full Network Model will describe the information to be provided by

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		reflect that to the extent the CAISO will make a timely correction to the Full Network Model to the extent it becomes aware of any errors or omissions.	Market Participants, ~~and~~ the process by which the CAISO incorporates this information in the FNM, and operational details of the FNM. If the CAISO becomes aware of a material error or omission in the FNM, it will make a timely correction of the FNM.
June 25 Order: P 41	27.5.4	Rejects PG&E's proposal to add certain language to the MRTU Tariff regarding the operational details of the Full Network Model, because these details will be identified in the BPMs. Directs that the tariff language should contain a cross-reference to the specific details reflected in the BPMs regarding the Full Network Model.	27.5.4: … The Business Practice Manual for Managing Full Network Model will describe the information to be provided by Market Participants, ~~and~~ the process by which the CAISO incorporates this information in the FNM, and operational details of the FNM. If the CAISO becomes aware of a material error or omission in the FNM, it will make a timely correction of the FNM.
June 25 Order: P 43	6.5.1.4	Directs the CAISO to file revised MRTU Tariff sheets that include the terms under which a market participant and consultants may obtain the Full Network Model, a summary of the security check process, and the timeframe for completion of the security check process.	Added Section 6.5.1.4, Requirements to Obtain the CRR Full Network Model; see MRTU Tariff blacklines included as Attachment B to this filing.
June 25 Order: P 49	34.10.1	Agrees with Powerex's understanding of the scheduling priorities for exports laid out in MRTU Tariff Section 34.10.1, and	34.10.1: … (a) Non-Participating Load reduction, exports explicitly identified in a Resource Adequacy Plan to be served by Resource Adequacy Capacity explicitly identified and linked in a Supply Plan to the exports, or Self-Schedules for exports at

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		therefore directs the CAISO to provide an explanation of the process proposed under Section 34.10.1.	Scheduling Points in HASP served by Generation from non-Resource Adequacy Capacity or from non-RUC Capacity; (b) Self-Schedules for exports at Scheduling Points in HASP not ~~served~~offered by Generation from non-Resource Adequacy Capacity or not ~~served~~offered by Generation from non-RUC Capacity, except those exports explicitly identified in a Resource Adequacy Plan to be served by Resource Adequacy Capacity explicitly identified and linked in a Supply Plan to the exports as set forth in Section 34.10.1(a);
June 25 Order: P 53	34.10.1(b)	Accepts the CAISO's explanation that MRTU Tariff Section 34.10.1(b) is appropriately worded and accepts the CAISO's minor revision to the same section. Directs the CAISO to make its proposed modification to Section 34.10.1(b).	34.10.1(b): Self-Schedules for exports at Scheduling Points in HASP not ~~served~~offered by Generation from non-Resource Adequacy Capacity or not ~~served~~offered by Generation from non-RUC Capacity, except those exports explicitly identified in a Resource Adequacy Plan to be served by Resource Adequacy Capacity explicitly identified and linked in a Supply Plan to the exports as set forth in Section 34.10.1(a);
June 25 Order: P 55	31.5.1.1 34.10	Directs the CAISO to work with SCE to submit appropriate modifications to the MRTU Tariff and/or BPM that an export from RA capacity procured in order to cover the export should have the same priority as internal California load.	Involves multiple changes to the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing
June 25 Order: P 62	30.5.3	Directs the CAISO to incorporate the proposed language in 30.5.3: "The procedure for identifying the non-resource [adequacy] or non-RUC Capacity is specified in the Business Practice Manuals."	30.5.3: … The procedure for identifying the non-Resource Adequacy Capacity or non-RUC Capacity is specified in the Business Practice Manuals.

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June 25 Order: P 68	11.8.6.5.3	Directs the CAISO to continue to work with SWP to resolve the treatment of schedule changes by Participating Load under the RUC process.	11.8.6.5.3: In the first tier, the RUC Compensation Costs are~~Hourly Net RUC Bid Cost Uplift is~~ allocated to Scheduling Coordinators, based on their Net Negative CAISO Demand Deviation ~~CAISO Demand~~ in that Trading Hour. The Scheduling Coordinator shall be charged at a rate which is the lower of (1) the RUC Compensation Costs~~Hourly Net RUC Bid Cost Uplift~~ divided by the Net Negative CAISO Demand Deviation ~~CAISO Demand~~ for all Scheduling Coordinators in that Trading Hour; or (2) the ~~Hourly Net RUC Bid Cost Uplift~~RUC Compensation Costs divided by the RUC Capacity, for all Scheduling Coordinators in that Trading Hour. Participating Load shall not be subject to the first tier allocation of RUC Compensation Costs.
June 25 Order P 89	11.5.8.1	Directs the CAISO to revise Section 11.5.8 to provide more detail on the process and timeline for addressing submittals of cost justification information, including details as to how any dispute regarding the cost justification will be resolved.	11.5.8.1: … The cost support information must be provided in writing to the CAISO within thirty (30) days following the date of the provision of emergency assistance. The CAISO shall have the discretion to pay that higher price based on the seller's justification of this higher price. The CAISO will provide notice of its determination whether to pay such a higher price within thirty (30) days after receipt of the cost support information. Any dispute regarding the CAISO's determination whether to pay a higher price for emergency assistance based on cost support information shall be subject to the CAISO ADR Procedures. Payment by the CAISO for such emergency assistance will be made in accordance with the Settlement process, billing cycle, and payment timeline set forth in the CAISO Tariff. The costs for such emergency assistance, including the payment of a price based on cost support information, will be settled in two payments: (1) the costs will first be settled at the simple average of the relevant Dispatch Interval LMPs and included in the total IIE Settlement Amount as described in Section 11.5.1.1; and (2) costs in excess of the simple average of the relevant Dispatch Interval LMPs plus other applicable charges will be settled in accordance with Section 11.5.8.1.1. The allocation of the amounts settled in accordance

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			with Section 11.5.1.1 will be settled according to Section 11.5.4.2.
June 25 Order: P 96	11.5.6.1.1 11.5.6.2.3	Directs the CAISO to eliminate the tolerance band language from MRTU Tariff Sections 11.5.6.1.1 and 11.5.6.2.3.	11.5.6.1.1: The Excess Cost Payment for incremental Exceptional Dispatches used for emergency conditions, to avoid Market Interruption ~~intervention~~, or to avoid an imminent System Emergency~~ies~~ is calculated for each resource for each Settlement Interval as the cost difference between the Settlement amount calculated pursuant to Section 11.5.6.1 for the applicable Exceptional Dispatch at the Resource-Specific Settlement Interval LMP and delivered Exceptional Dispatch quantity at one of the following three costs: (1) the ~~R~~resource's Energy Bid Cost, (2) the Default Energy Bid cost, or (3) the Energy cost at the negotiated price, if applicable, for the relevant Exceptional Dispatch. ~~A Resource must be operating within its Tolerance Band for the relevant Settlement Interval in order to be eligible for Excess Cost Payment.~~ 11.5.6.2.3: The Excess Cost Payment for Exceptional Dispatches used for transmission-related modeling limitations as described in Section 34.9.3 is calculated for each ~~R~~resource for each Settlement Interval as the cost difference between the Settlement amount calculated pursuant to Section 11.5.6.2.1 or 11.5.6.2.2 for the applicable Exceptional Dispatch at the Resource-Specific Settlement Interval LMP and one of the following three costs: (1) the ~~R~~resource's Energy Bid Cost, 2) the Default Energy Bid cost, or 3) the Energy cost at the negotiated price, if applicable, for the relevant Exceptional Dispatch. ~~A Resource must be operating within its Tolerance Band for the relevant Settlement Interval in order to be eligible for Excess Cost Payment.~~
June 25 Order: P 104	Appendix A: definition of Real-Time Interchange Export	Agrees with Powerex that the CAISO should revise the	Real-Time Interchange Export Schedule: ~~An agreement~~ A final agreed-upon schedule of Energy to be ~~to~~ transferred ~~energy~~ from

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	Schedule	definition of Real-Time Interchange Export Schedule to clarify that such schedules can include any external control area, not just an interconnected control area. Also agrees with SCE's requested change to that definition, which the CAISO has agreed to. Directs the CAISO to make the changes suggested by Powerex and SCE to the definition.	the CAISO Control Area to another ~~interconnected c~~Control ~~a~~Area ~~at a Scheduling Point~~ based on agreed-upon size (megawatts), start and end time, beginning and ending ramp times and rate, and type required for delivery and receipt of ~~p~~Power and Energy between the source and sink ~~c~~Control ~~a~~Areas involved in the transaction.
June 25 Order: P 110	33.3	Directs the CAISO to revise MRTU Tariff Section 33.3 as it proposes to include the statement "Scheduling Coordinators may submit Self-Schedules for exports at Scheduling Points including but not limited to exports that utilize TORs and ETC rights that have post-Day-Ahead scheduling rights, and including Self-Schedules for wheel throughs."	33.3: Scheduling Coordinators may submit Self-Schedules for Supply of Energy to the HASP. This includes Self-Schedules by Participating Load that is submitting Bids as a negative generator. Scheduling Coordinators may not submit Self-Schedules for CAISO Demand in HASP. Scheduling Coordinators may submit Self-Schedules for exports at Scheduling Points ~~including but not limited to exports that utilize TORs and ETC rights that have post-Day-Ahead scheduling rights, and including Self-Schedules for wheel throughs~~.
June 25 Order: P 114	34.10.2	Direct the CAISO to add the phrase "as necessary to ensure reliable operations" to MRTU Tariff Section 34.10.2 of the MRTU Tariff as the CAISO has proposed.	34.10.2: … These dispatch priorities as defined in the RTM optimization may be superseded by operator actions and procedures as necessary to ensure reliable operations.

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June 25 Order: P 124	11.10.3.2	Directs the CAISO to modify the MRTU Tariff and software, if necessary, to ensure that interruptible imports "can only be" submitted as self-schedules.	11.10.3.2: The Scheduling Coordinator's total Operating Reserve Obligation for the hour is the sum of five percent (5%) of its Real-Time Demand (except the Demand covered by firm purchases from outside the CAISO Control Area) met by Generation from hydroelectric resources plus seven percent (7%) of its Demand (except the Demand covered by firm purchases from outside the CAISO Control Area) met by Generation from non-hydroelectric resources, plus one hundred percent (100%) of any Interruptible Imports, which can only ~~must~~ be submitted as a Self-Schedule in the Day-Ahead Market, and on-demand obligations which it schedules.
June 25 Order: P 127	11.10.4.2	Directs that the additional language added to MRTU Tariff Section 11.10.3.2, regarding interruptible imports, should also be included in MRTU Tariff Section 11.10.4.2.	11.10.4.2: The Scheduling Coordinator's total Operating Reserve Obligation for the hour is the sum of five percent (5%) of its Real-Time Demand (except the Demand covered by firm purchases from outside the CAISO Control Area) met by Generation from hydroelectric resources plus seven percent (7%) of its Demand (except the Demand covered by firm purchases from outside the CAISO Control Area) met by Generation from non-hydroelectric resources, plus one hundred percent (100%) of any Interruptible Imports, which can only be submitted as a Self-Schedule in the Day-Ahead Market, plus five percent (5%) (if hydro) or seven percent (7%) (if thermal) of any unit-contingent or dynamic imports which it schedules.
June 25 Order: P 130	34.16.2	Accepts the CAISO's proposal to clarify the MRTU Tariff to state that the Scheduling Coordinator scheduling an Interruptible Import will be responsible for operating reserves associated with the Interruptible Import, regardless of	34.16.2: Dispatch of Self-Provided Ancillary Services. Where a Scheduling Coordinator has chosen to self-provide the whole of the additional Operating Reserve required to cover any Interruptible Imports which it has submitted through Self-Schedules in the Day-Ahead Market and has identified specific Generating Units, Participating Loads, System Units or System Resources as the providers of the additional Operating Reserve

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		whether the Scheduling Coordinator is an LSE or a non-LSE.	concerned, the CAISO shall Dispatch only the designated Generating Units, Participating Loads, System Units or System Resources in the event of the CAISO being notified that the On Demand Obligation is being curtailed. The Scheduling Coordinator scheduling an Interruptible Import will be responsible for Operating Reserves associated with the Interruptible Import, regardless of whether the Scheduling Coordinator is an LSE or not. For all other Ancillary Services which are being self-provided the Energy Bid shall be used to determine the Dispatch, subject to the limitation on the Dispatch of Spinning Reserve and Non-Spinning Reserve set forth in Section 34.10
June 25 Order: P 168	31.3.3	Directs the CAISO to modify MRTU Tariff Section 31.3.3 to reinstate the sentence which reads: "Costs associated with Congestion and Transmission Losses in the MSS will be the responsibility of the MSS operator."	31.3.3: … Costs associated with internal Congestion and Transmission Losses in the MSS will be the responsibility of the MSS Operator.
June 25 Order: P 172	11.2.3.1.1 11.2.3.2 11.5.1 11.5.2 27.2.1	Accepts the CAISO's proposal to modify MRTU Tariff Section 27.2.1 to clarify that gross-settling MSS load will be settled at the default LAP.	11.5.1: … For MSS Operators that have elected net Settlement, the IIE Settlement Amounts for Energy dispatched through the Real-Time Market optimization, Minimum Load Energy from System Units dispatched in Real-Time, Energy from Regulation, Ramping Energy Deviation, Rerate Energy, MSS Load following Energy and Real-Time Self-Schedule Energy shall be calculated as the product of the sum of all of these types of Energy and the Real-Time Settlement Interval MSS Price. For MSS Operators that have elected gross Settlement, regardless of whether that entity has elected to follow its Load or to participate in RUC, the IIE for such entities is settled similarly to non-MSS entities as provided in this Section 11.5.1. The remaining IIE Settlement Amounts are determined as follows: (1) IIE Settlement Amounts for the Energy from the HASP Intertie Schedules is settled per Section 11.4; (2) IIE Settlement Amounts for Residual Imbalance Energy are

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			determined pursuant to Section 11.5.5~~.~~; and (3) IIE Settlement ~~a~~Amounts for Exceptional Dispatches are settled pursuant to Section 11.5.6. 11.5.2: … Scheduling Coordinators shall be paid or charged a UIE Settlement Amount for each LAP, PNode or Scheduling Point for which the CAISO calculates a UIE quantity. UIE quantities are calculated for each resource that has a Day-Ahead Schedule, ~~HASP Intertie Schedule,~~ Dispatch Instruction, Real-Time Interchange Export ~~s~~Schedule or Metered Quantity. For MSS Operators electing gross Settlement, regardless of whether that entity has elected to follow its Load or to participate in RUC, the UIE for such entities is settled similarly to how UIE for non-MSS entities is settled as provided in this Section 11.5.2. The CAISO shall account for UIE in two categories: (1) Tier 1 UIE is accounted as the quantity deviation from the resource's IIE; and (2) Tier 2 UIE is accounted as the quantity deviation from the resource's Day-Ahead Schedule. For Generating Units, System Units of MSS Operators that have elected gross Settlement, Physical Scheduling Plants, System Resources and ~~the Demand Response portion of~~ all Participating Load, the Tier 1 UIE Settlement Amount is calculated for each Settlement Interval as the product of its Tier 1 UIE quantity and its Resource-Specific Tier 1 UIE Settlement Interval Price as calculated per Section 11.5.2.1, and the Tier 2 UIE Settlement Amount is calculated for each Settlement Interval as the product of its Tier 2 UIE quantity and the simple average of the relevant Dispatch Interval LMPs. For resources within a System Unit of MSS Operators that have elected net Settlement, the Tier 1 UIE Settlement Amount is calculated for each Settlement Interval as the product of its Tier 1 UIE quantity and its Real-Time Settlement Interval MSS Price and the Tier 2 UIE Settlement Amount is calculated for each Settlement Interval as the product of its Tier 2 UIE quantity and the Real-Time Settlement Interval MSS Price. The Tier 2 UIE

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			Settlement Amount for non-Participating Load~~Demand~~ and MSS Demand under gross Settlement is settled~~, the Base Load of a Participating Load and net MSS Demand is calculated for the Trade Hour as the sum of (1) the product of the hourly Tier 2 UIE quantity and the Hourly Real-Time LAP Price and (2) the Hourly UIE Adjustment Amount~~ as described in Section 11.5.2.2. For MSS Operators that have elected net Settlement, the Tier 2 UIE Settlement Amount for Demand of a net MSS Demand is calculated for the Trading Hour as the sum of the product of the hourly Tier 2 UIE quantity and the Real-Time Settlement Interval MSS Price. 27.2.1: … As further provided in Sections 11.2.3 and 11.5, Metered Subsystems Demand is settled either at the price at the Default LAP for MSS Operators that have selected gross Settlement and at the price at the applicable MSS LAP for MSS Operators that have selected net Settlement.
June 25 Order: P 187	11.5.2 11.5.2.2	Reiterates its directive, on rehearing of the September 2006 Order, requiring the CAISO to remove from the MRTU Tariff language, including in MRTU Tariff Sections 11.5.2 and 11.5.2.2, that results in participating load being settled on a LAP basis.	11.5.2: … For resources within a System Unit of MSS Operators that have elected net Settlement, the Tier 1 UIE Settlement Amount is calculated for each Settlement Interval as the product of its Tier 1 UIE quantity and its Real-Time Settlement Interval MSS Price and the Tier 2 UIE Settlement Amount is calculated for each Settlement Interval as the product of its Tier 2 UIE quantity and the Real-Time Settlement Interval MSS Price. The Tier 2 UIE Settlement Amount for non-Participating Load~~Demand~~ and MSS Demand under gross Settlement is settled~~, the Base Load of a Participating Load and net MSS Demand is calculated for the Trade Hour as the sum of (1) the product of the hourly Tier 2 UIE quantity and the Hourly Real-Time LAP Price and (2) the Hourly UIE Adjustment Amount~~ as described in Section 11.5.2.2. For MSS Operators that have elected net Settlement, the Tier 2 UIE Settlement Amount for Demand of a net MSS Demand is calculated for the Trading Hour as the sum of the product of the

Ordering Paragraph	Tariff Section(s) Affected	Description of Change Required	Demonstrative Compliance Changes Made to MRTU Tariff
			hourly Tier 2 UIE quantity and the Real-Time Settlement Interval MSS Price. 11.5.2.2: Hourly Real-Time LAP Price~~UIE Adjustment Amount~~. The Hourly Real-Time LAP Price will apply to Demand~~, the Base Load portion of a Participating Load,~~ and ~~net~~ MSS Demand under net~~for~~ Settlement of Imbalance Energy, except for Demand not settled at the Default LAP as provided in Section 30.5.3.2. The Hourly Real-Time LAP Price is calculated as the ~~load deviation~~ weighted average of the hourly average of the Dispatch Interval LMPs for the LAP, using as weights the Real-Time LAP nodal Loads in the relevant Trading Hour.
June 25 Order: PP 255-56 April 20 Order: P 428	16.6.4 17.3.4	Accepts the CAISO's commitment to revise MRTU Tariff Sections 16.6.4 and 17.3.4.	16.6.4: ~~To the extent practicable, a~~After performing validation of the ETC Self-Schedule, and prior to taking any action pursuant to Section 16.6.2, the CAISO will make an automated validation notice available to~~notify~~ the Scheduling Coordinator indicating whether the ETC Self-Schedule is valid or invalid. If an ETC Self-Schedule involves more than one Scheduling Coordinator, the complete validation of the chain of ETC Self-Schedules will occur when the last Scheduling Coordinator submits its ETC Self-Schedule. At that time, the CAISO will make an automated validation notice available to each Scheduling Coordinator registered as associated with the chain of ETC Self-Schedules. The CAISO can accommodate corrections submitted by a Scheduling Coordinator to an ETC Self-Schedule up to Market Close of the Day-Ahead Market as further described in the applicable Business Practice Manual. 17.3.4: ~~To the extent practicable, a~~After performing validation of the TOR Self-Schedule, and prior to taking any action pursuant to 17.6.2, the CAISO will make an automated validation notice

Ordering Paragraph	Tariff Section(s) Affected	Description of Change Required	Demonstrative Compliance Changes Made to MRTU Tariff
			available to~~notify~~ 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.
June 25 Order: P 272	17	Directs the CAISO to further modify Section 17 to add that, in the event of a conflict between the MRTU Tariff and a bilateral agreement governing TORs, the agreement prevails.	17: … In any case in which (i) the CAISO has entered into a bilateral agreement with a Non-Participating TO regarding its TORs~~,~~ or (ii) a Participating TO has entered into a bilateral agreement with a Non-Participating TO regarding its TORs, which agreement has been accepted by FERC, the provisions of the agreement shall prevail over any conflicting provisions of this Section 17.
June 25 Order: P 287 April 20 Order: PP 438-439	11.5.7 16.9.1 17.2 33.3	Orders the CAISO to reconcile MRTU Tariff Sections 11.5.7 and 33.3 with Section 17.2(3) so that it is clear that the perfect hedge is still available with respect to any TOR scheduling flexibilities submitted by the close of the HASP and through the CAISO's real-time process.	Involves multiple changes to the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing
June 25 Order: P 288	16.5.1 17.2.1	Orders the CAISO to modify Section 17.2.1 to incorporate the modification to Section 16.5.1 required by the April 20 Order on	16.5.1: As set forth in Section 4.2.1, all Market Participants, including Scheduling Coordinators, Utility Distribution Companies, Participating TOs, Participating Generators, Participating Loads, Control Area Operators (to the extent the

Ordering Paragraph	Tariff Section(s) Affected	Description of Change Required	Demonstrative Compliance Changes Made to MRTU Tariff
		Rehearing.	agreement between the Control Area Operator and the CAISO so provides), and MSS Operators within the CAISO Control Area and all System Resources must comply fully and promptly with CAISO Dispatch Instructions and operating orders, unless such operation would impair public health or safety. The CAISO will honor the terms of Existing Contracts, provided that in a System Emergency and circumstances in which the CAISO considers that a System Emergency is imminent or threatened, holders of Existing Rights must follow CAISO operating orders even if those operating orders directly conflict with the terms of Existing Contracts, unless such operating orders are inconsistent with the terms of an agreement between the CAISO and a Control Area Operator. In the event of a conflict between the CAISO Tariff and an agreement between the CAISO and a Control Area Operator, the agreement will govern. For this purpose CAISO operating orders to shed Load shall not be considered as an impairment to public health or safety. This section does not prohibit a Scheduling Coordinator from modifying its Bid or re-purchasing Energy in the HASP/~~RT~~ or Real-Time Market. 17.2.1: As set forth in Section 4.2.1, all Market Participants, including Scheduling Coordinators, Utility Distribution Companies, Participating TOs, Participating Generators, Participating Loads, Control Area Operators (to the extent the agreement between the Control Area Operator and the CAISO so provides), and MSS Operators within the CAISO Control Area and all System Resources must comply fully and promptly with the CAISO's Dispatch Instructions and operating orders, unless such operation would impair public health or safety. The CAISO will honor the terms of TORs, provided that in a System Emergency and circumstances in which the CAISO considers that a System Emergency is imminent or threatened, to enable the CAISO to exercise its responsibilities as Control Area Operator in accordance with Applicable Reliability Criteria, holders of TORs must follow

Ordering Paragraph	Tariff Section(s) Affected	Description of Change Required	Demonstrative Compliance Changes Made to MRTU Tariff
			CAISO operating orders even if those operating orders directly conflict with the terms of applicable Existing Contracts or any other contracts pertaining to the TORs, unless such operating orders are inconsistent with the terms of an agreement between the CAISO and a Control Area Operator. In the event of a conflict between the CAISO Tariff and an agreement between the CAISO and a Control Area Operator, the agreement will govern. For this purpose CAISO operating orders to shed Load shall not be considered as an impairment to public health or safety. This section does not prohibit a Scheduling Coordinator from modifying its Bid or re-purchasing Energy in the HASP or RTM.
June 25 Order: P 290	17.2	Directs the CAISO to clarify that a TOR holder may import AS at scheduling points with the CAISO.	17.2 Treatment of TORs: . . . (4) The CAISO will allow the holder of a TOR to self-provide Ancillary Services, which will include the ability of the holder of a TOR to import Ancillary Services at Scheduling Points with the CAISO.
June 25 Order: P 291	Appendix A: definition of "Applicable Reliability Criteria"	Directs the CAISO to submit a definition of the term "Applicable Reliability Criteria."	Applicable Reliability Criteria: The ~~r~~Reliability ~~s~~Standards and reliability criteria established by NERC~~,~~ and WECC~~,~~ and Local Reliability Criteria~~,~~ as amended from time to time, including any requirements of the NRC.
June 25 Order: P 307	17.1.1 17.4.1	Accepts the CAISO's commitment to correct typographical errors identified by SCE in MRTU Tariff Section 17.1.1.	No new changes are necessary, as the required changes were incorporated into the CAISO's March 9 filing of amendments to the current version of the ISO Tariff.
June 25 Order: P 314	17.3.3 11.2.1.6 11.2.1.7 11.5.4.2	Directs the CAISO to further modify MRTU Tariff Section 17.3.3 to reflect its commitment to honor loss provisions in bilateral	Involves multiple changes to the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing

Ordering Paragraph	Tariff Section(s) Affected	Description of Change Required	Demonstrative Compliance Changes Made to MRTU Tariff
	11.5.7	agreements concerning TORs.	
June 25 Order: P 315	17.3.3(4)	Accepts the CAISO's proposal to revise Section 17.3.3(4) to reflect allocation of the marginal loss surplus credit to the SC for the TOR holder.	17.3.3(4): The holders of TORs will not be entitled to an allocation of revenues from the CAISO, including Access Charge revenues; provided that the Scheduling Coordinator for the TOR holder shall be allocated the applicable amount of IFM Marginal Losses Surplus Credit in accordance with the provisions of Section 11.2.1.6, except for any TOR Self-Schedule that received the IFM Marginal Cost of Losses Credit..
June 25 Order: P 323	17.3.3(3)	Directs the CAISO to modify section 17.3.3(3) to reflect FERC's determination that the CAISO may only assess charges applicable to AS and Imbalance Energy if such services are not self-provided by the TOR holder.	17.3.3(3): … The CAISO will assess charges applicable to Ancillary Services for the use of a TOR only to the extent that the CAISO must procure Ancillary Services for the TOR holder because Ancillary Services are not self-provided by the TOR holder. The CAISO will assess charges applicable to Imbalance Energy for the use of a TOR only if the CAISO must procure Imbalance Energy for the TOR holder.
June 25 Order: P 325	17.3.3(3)	Directs the CAISO to remove GMC from section 17.3.3(3).	17.3.3(3): The CAISO will assess only charges applicable to Ancillary Services, Imbalance Energy, and Transmission Losses~~, and Grid Management Charges~~ for the use of a TOR and will not assess charges for neutrality, UFE, transmission Access Charges, Minimum Load Costs, or other charges that might otherwise be applicable to the Demand or exports served solely over the TOR.
June 25 Order: PP 345 and 346	39.7.1.5	Finds that the CAISO must ensure, prior to calculating any temporary default energy bid that all resources have been exhausted under MRTU Tariff Section 39.7.1 and states that if a Scheduling Coordinator establishes a default energy bid rank order the CAISO must attempt in good faith to	39.7.1.5 Temporary Default Energy Bid. If the Scheduling Coordinator does not elect to use any of the other options available pursuant to Section 39.7.1, or if sufficient data do not exist to calculate a Default Energy Bid using any of the available options, the CAISO will first seek to obtain from the Scheduling Coordinator any additional data required for calculating the Default Energy Bid options available pursuant to 39.7.1. If the provision of additional data by a Scheduling Coordinator results in additional or modified Default Energy Bid options pursuant to

Ordering Paragraph	Tariff Section(s) Affected	Description of Change Required	Demonstrative Compliance Changes Made to MRTU Tariff
		obtain the necessary data from the generator prior to calculating a temporary default energy bid.	39.7.1, the Scheduling Coordinator will have another opportunity to elect one of these options as its Temporary Default Energy Bid. If the Scheduling Coordinator does not elect to use any of the other new options available pursuant to Section 39.7.1, or if sufficient data still do not exist to calculate a Default Energy Bid using any of the available options, the CAISO may~~, after all options otherwise available under Section 39.71 have been exhausted,~~ establish a temporary Default Energy Bid based on one or more of the following . . . .
June 25 Order: 379	40.3.4(ii) 40.3.4.2(a) 40.7	Directs the CAISO to file amendments to the Resource Adequacy provisions that provide LSEs an opportunity to cure a deficiency in their local capacity area resource requirements prior to the CAISO's engaging in backstop procurement.	Involves multiple changes to the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing
June 25 Order: 399	40.3.4	Requires the CAISO to coordinate with Local Regulatory Authorities and to modify the tariff to provide notice and information regarding the scope of backstop procurement attributable to a LSE's failure to procure RA capacity.	40.3.4: Procurement of Local Capacity Area Resources by the CAISO: . . . For each Scheduling Coordinator that is allocated the cost of CAISO procurement under this Section on behalf of an LSE, the CAISO will provide information, including the quantity of capacity procured in MW, necessary to allow the CPUC, Local Regulatory Authority, or federal agency with jurisdiction over the LSE on whose behalf costs were allocated to determine whether the LSE should receive credit toward its Reserve Margin for the CAISO's procurement under this Section.
June 25 Order: P 401	42.1.8	Directs the CAISO to modify Section 42.1.8(d) such that it only applies to capacity procured to resolve system deficiencies, not local capacity deficiencies.	42.1.8: ~~(d)~~ Except where and to the extent ~~that such~~ costs incurred by the CAISO for any contract entered into under Section 42.1.5 are recovered from Scheduling Coordinators pursuant to Sections 11.5.8, 11.10 or 42.1.9, all costs incurred by the CAISO in any Trading Hour shall be charged to each Scheduling Coordinator pro rata based upon the same proportion as the Scheduling

Ordering Paragraph	Tariff Section(s) Affected	Description of Change Required	Demonstrative Compliance Changes Made to MRTU Tariff
			Coordinator's Measured Demand bears to the total Measured Demand served in that hour. ~~pursuant to any contract entered into pursuant to Section 42.1 for Resource Adequacy Capacity, other than Local Capacity Area Resources, shall be charged on a pro rata basis to each Scheduling Coordinator based on each Scheduling Coordinator's relative amount of deficiency to satisfy the Scheduling Coordinator's applicable Demand Forecast and Reserve Margin pursuant to Section 40 up to the quantity of the Scheduling Coordinator's deficiency as determined as the difference between the Scheduling Coordinator's applicable Demand Forecast and Reserve Margin and Resource Adequacy Resources included in the annual or monthly Resource Adequacy Plan. Second, to the extent Local Capacity Area Resource capacity procured by the CAISO exceeds the amount of total Resource Adequacy Resource deficiency, the costs of such capacity will be allocated on a pro rata basis to each Scheduling Coordinator upon the same proportion as the Scheduling Coordinator's metered hourly Demand (including exports) bears to the total metered hourly Demand (including exports) served in that hour in the CAISO Control Area.~~ ~~Whether or not the share of the Resource Adequacy Capacity procured by the CAISO under this Section may count towards satisfaction of a Load Serving Entity's Reserve Margin shall be determined by the CPUC, Local Regulatory Authority, or federal agency with jurisdiction of the Load Serving Entity, unless the CPUC, Local Regulatory Authority, or federal agency has failed to establish a Reserve Margin, in which case the CAISO will assign the Load Serving Entity's share of the Resource Adequacy Capacity towards satisfaction of its Reserve Margin.~~ ~~All costs incurred under this Section 42 shall be charged to Scheduling Coordinators in accordance with Section 11.21.~~
June 25 Order: P 406	40.5.4(2)	Directs the CAISO to modify Section 40.5.4(2) to correctly	40.5.4(2): Energy scheduled in the HASP will not net against, or be used as a credit to correct, any failure to fulfill the Day-Ahead

Ordering Paragraph	Tariff Section(s) Affected	Description of Change Required	Demonstrative Compliance Changes Made to MRTU Tariff
		reference Section 40.5.1(1).	IFM hourly scheduling and RUC obligation in Section 40.5.1(12).
June 25 Order: P 418	39.3.1(4)	Finds it reasonable for the CAISO to impose certain measures of conduct that warrant mitigation, but states that the CAISO must modify MRTU Tariff Section 39.3.1(4) to provide further detail regarding the types of bidding practices that may distort prices or uplift charges away from those expected in a competitive market, in conjunction with the August 3 filing.	39.3.1(4): Bidding practices that distort prices or uplift charges away from those expected in a competitive market~~.~~, such as (i) submitting Demand Bids at prices that are unjustifiably low relative to the expected marginal cost of meeting total expected demand resulting in DAM prices that are significantly below competitive levels and DAM clearing demand that is significantly below total expected demand or (ii) registering Start-Up Cost and Minimum Load Cost data or submitting Bid Costs on behalf of an Electric Facility that are unjustifiably high (relative to known operational characteristics and/or the known operating cost of the resource) or misrepresenting the physical operating capabilities of an Electric Facility in uplift payments or prices significantly in excess of actual costs.
June 25 Order: P 427	11.5.4.2 11.5.6.1 Appendix A: new definitions of Market Intervention and Market Interruption	Agrees that CAISO did not justify the change from "Intervention" to "Interruption" in the title of MRTU Tariff Section 11.5.6.1. Directs the CAISO to provide the definitions for Market Intervention and Market Interruption, and explain the purpose of the change in conjunction with the August 3 filing.	Involves multiple changes to the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing
June 25 Order: P 431	11.5.6.2.5.1	Directs the CAISO to file the modification to MRTU Tariff Section 11.5.6.2.5.1 proposed by SCE and agreed to by the CAISO.	11.5.6.2.5.1: … The total Excess Cost Payments calculated pursuant to Section 11.5.6.2.3 for the IIE from Exceptional Dispatches instructed as a result of a transmission-related modeling limitation in the FNM as described in Section 34.9.3 in that Settlement Interval shall be charged to the Participating Transmission Owner in whose P~~articipating~~ TO Service Territory

Ordering Paragraph	Tariff Section(s) Affected	Description of Change Required	Demonstrative Compliance Changes Made to MRTU Tariff
			the transmission-related modeling limitation as described in Section 34.9.3 is located. If the modeling limitation affects more than one Participating TO, the Excess Cost Payments shall be allocated pro-rata ~~allocated~~ in proportion to the Participating TOs's Transmission Revenue Requirements. Costs allocated~~These allocations~~ to Participating TOs~~'s~~ under this section ~~Transmission Revenue Requirement~~ shall constitute Reliability Services Costs.
June 25 Order: P 441	9.3.10.1A	Directs the CAISO to include the following language in Section 9.3.10.1A: "To the extent possible, the CAISO shall reflect all transmission outages in its integrated forward market, HASP and real-time market."	9.3.10.1A: … To the extent possible, the CAISO shall reflect all transmission Outages in the Integrated Forward Market, HASP, and Real-Time Market.
June 25 Order: P 442-443	34.9.3	Directs the CAISO to modify Section MRTU Tariff [34.9.3] to acknowledge that Exceptional Dispatches will only be used in response to threatening/imminent reliability conditions for which the real-time market optimization and system modeling are either too slow or incapable of brining the grid back to reliable operations in an appropriate time frame (*i.e.*, less than 30 minutes).	34.9.3 . . . The CAISO shall also manually Dispatch resources under this Section 34.9.3 in response to system conditions including threatened or imminent reliability conditions for which the timing of the Real-Time Market optimization and system modeling are either too slow or incapable of bringing the CAISO Controlled Grid back to reliable operations in an appropriate time-frame based on the timing and physical characteristics of available resources to the CAISO.

MRTU TARIFF MODIFICATIONS MADE AS A RESULT OF THE BPM STAKEHOLDER PROCESS

Tariff Section(s) Affected	Relevant BPM	Reason for Change	Changes to MRTU Tariff
Appendix A	Definitions and Acronyms	Questions arose whether "Distribution Curve" and "Generation Distribution Bid" are the same thing. The CAISO agreed to substitute the term "Generation Distribution Factor" in the MRTU Tariff for "Distribution Curve."	~~Distribution Curve: The Bid Template component that indicates an integration distribution factor to demonstrate how the Bid is distributed for the resources participating in the Physical Scheduling Plants or System Units, or for Aggregated Load Resources in the case of Participating Loads.~~ Generation Distribution Factor (GDF): The Bid template component that indicates the proportions of how the Bid is distributed for the resources participating in Physical Scheduling Plants or System Units,
11.5.2.2	Settlements and Billing	Identifies inconsistencies among the MRTU Tariff language, supplemental MRTU testimony, Settlement BPM equations, and MRTU training material used in the calculation of the Hourly Real-Time LAP Price and LAP UIE Adjustment Price.	Involves changes to multiple MRTU Tariff sections; see MRTU Tariff blacklines included as Attachment B to this filing.

Tariff Section(s) Affected	Relevant BPM	Reason for Change	Changes to MRTU Tariff
11.5	Settlements and Billing	Comments that the concept and settlement treatment of Real Time Operational Adjustments is not defined in Tariff Section 11.5.	11.5: … To the extent that the sum of the Settlements Amounts for IIE and UIE does not equal zero, the CAISO will asses charges or make payments for the resulting differences to all Scheduling Coordinators based on a pro rata share of their Measured Demand for the relevant Settlement Interval.~~The CAISO shall allocate Charges or Payments associated with any non-zero amounts resulting from the sum of IIE, UIE and UFE as described in Section 11.5.4.2.~~ Imbalance Energy due to Exceptional Dispatches, as well as the allocation of related costs, including Excess Costs Payments is settled as described in Section 11.5.6. The CAISO shall reverse RTM Congestion Charges for valid and balanced ETC and TOR Self-Schedules as described in Section 11.5.7. The CAISO will settle Energy for emergency assistance as described in Section 11.5.8.
8.10	Settlements and Billing	Comments that the section referenced by S&B Attachment E, 8.10.8, refers to payment "rescission" and does not reflect the fact that the no pay amount will be based upon the weighted average price across all three Ancillary Service markets (Day-Ahead, HASP, Real-Time).	8.10.8: If ~~Awarded~~ Ancillary Services ~~C~~capacity that receives an AS Award or~~,~~ Self~~-~~Provided Ancillary Services ~~C~~capacity ~~and capacity committed in RUC~~ provided from a Generating Unit, Participating Load, System Unit or System Resource is Undispatchable Capacity, ~~u~~Unavailable Capacity, or Undelivered Capacity during the relevant Settlement Interval, then payments will be rescinded as described in this Section 8.10.8 and settled in accordance with Section 11.10.9. If the CAISO determines that non-compliance of a Participating Load, Generating Unit, System Unit or System Resource, with an operating order or Dispatch Instruction from the CAISO, or with any other applicable technical standard under the CAISO Tariff, causes or exacerbates system conditions for which the WECC imposes a penalty on the CAISO, then the Scheduling Coordinator of such Participating

Tariff Section(s) Affected	Relevant BPM	Reason for Change	Changes to MRTU Tariff
			Load, Generating Unit, System Unit or System Resource shall be assigned that portion of the WECC penalty which the CAISO reasonably determines is attributable to such non-compliance, in addition to any other penalties or sanctions applicable under the CAISO Tariff.~~The rescission of payments for Ancillary Services applies to Ancillary Services provided in the Day-Ahead, HASP or Real-Time Markets and the rescission will be in proportion to the amount of capacity sold to the CAISO in each market. For Self-Provided Ancillary Service capacity that becomes Undispatchable Capacity, Unavailable Capacity, or Undelivered Capacity, the payment obligation in this Section 8.10.8 shall be equivalent to that which would arise if the Self Provided Ancillary Service had been submitted as a Bid into each market in which it was scheduled. The rescission of payments in this Section 8.10.8 shall not apply to a capacity payment for any particular Ancillary Service or RUC capacity if the Ancillary Service Marginal Price (ASMP) or RUC Availability payment, respectively, is less than or equal to zero. Examples of the rescission of payments for Undispatchable, Unavailable, or Undelivered Ancillary Service Capacity or RUC Capacity are set forth in the BPM on compliance matters.~~
8.10.8 11.10.9	Compliance Monitoring	Comment that Section 6.1 of the Compliance Monitoring BPM should be included in the MRTU Tariff.	8.10.8: *see above* 11.10.9 Settlements of Rescission of Payments for Ancillary Services Capacity this is Undispatchable, Unavailable, and Undelivered Capacity: The rescission of payments for Ancillary Services for Undispatchable, Unavailable, and Undelivered Capacity applies to Ancillary Services that are awarded in the Day-Ahead, HASP or Real-Time Markets and the rescission will be the weighted average of the Ancillary Service Marginal Prices (ASMPs) and Ancillary Services Award amounts for a resource across the Day-Ahead, HASP and Real-Time Markets. For Self-Provided Ancillary Service capacity that becomes Undispatchable Capacity, Unavailable Capacity, or Undelivered Capacity, the rescission of Ancillary Services self-provision in the Day-Ahead,

Tariff Section(s) Affected	Relevant BPM	Reason for Change	Changes to MRTU Tariff
			HASP and Real-Time Markets reduces the relevant Scheduling Coordinator's effective Ancillary Services self-provision in the Ancillary Services cost allocation, effectively resulting in a charge back at the relevant Ancillary Services rate. The rescission of payments in this Section 11.10.9 shall not apply to a capacity payment for any particular Ancillary Service if the Ancillary Service Marginal Price (ASMP) is less than or equal to zero.
8.10.8.1	Compliance Monitoring	Comment on a conflict between Section 7.4 of the Compliance Monitoring BPM and Section 8.10.8.1 of the MRTU Tariff.	8.10.8.1: … If the amounts of Ancillary Services ~~C~~capacity or RUC Capacity in an electronic tag differ from the amounts of Ancillary Services ~~C~~capacity or RUC Capacity for the System Resource, the Undispatchable Capacity will equal the amount of the difference, and will be settled in accordance with the provisions of Section 11.10.9.1.
36.5.1	Congestion Revenue Rights, Section 3.2.1	Request to define Aggregate Credit Limit.	36.5.1 Creditworthiness Requirements: All CRR Holders and Candidate CRR Holders must comply fully with all ~~C~~creditworthiness requirements as provided in Section 12 ~~of the Tariff~~ and Section 12.6 and as further developed in the applicable Business Practice Manuals. The amount of available credit for participating in a CRR Auction cannot exceed the entity's Aggregate Credit Limit as provided in Section 12.
36.8	Congestion Revenue Rights	Comment that provision 3.3 of the CRR BPM warrants inclusion in the MRTU Tariff.	36.8.2: Load Eligible for CRRs and Eligible CRR Sinks Any entity that wishes to participate in the CRR Allocation process must provide information that demonstrates that it has an obligation to serve load. An LSE's eligibility for allocation of CRRs is measured by the quantity of Load that it serves that is exposed to Congestion Charges for the use of the CAISO Controlled Grid as determined in Sections 36.8.2.1 and 36.8.2.2. An OCALSE's eligibility for allocation of CRRs is also measured by the quantity of load that it serves that is exposed to Congestion Charges for the use of the CAISO Controlled Grid as determined in Section 36.9.3. For LSEs, the information necessary may include, but is not limited to, Settlement Quality Meter Data or relevant documents filed with the California Energy Commission. For OCALSEs, the necessary information may include, but is not limited to, historical tagged Real-Time Interchange Export

Tariff Section(s) Affected	Relevant BPM	Reason for Change	Changes to MRTU Tariff
			Schedules and historical load data reflecting the load they serve that is exposed to Congestion Charges for the use of the CAISO Controlled Grid. In addition, each such OCALSE shall support its data submission with a written sworn affidavit by an executive authorized to represent the OCALSE attesting to the accuracy of the data, and the CAISO will have the right to audit the raw data and calculations used to develop the submitted data set. . . . .
36.5.2	Congestion Revenue Rights, Section 3.4	Comments that details on digital certificate, notification and revocation should be summarized in the MRTU Tariff.	36.5.2: Required Training CRR Holders and Candidate CRR Holders must attend a training class at least once prior to participating in the CRR Allocations or CRR Auctions. The CAISO may update training requirements annually or on an as-needed basis. Unless granted a waiver by the CAISO, Candidate CRR Holders and CRR Holders shall at all times have in their employment a person that has attended the CAISO's CRR training class and shall notify the CAISO as soon as practicable of a change in such status.
36.8 36.9 and subsections thereof	Congestion Revenue Rights	Comments that provision 5.1 of the CRR BPM warrants inclusion in the MRTU Tariff.	Involves changes to multiple MRTU Tariff sections; see MRTU Tariff blacklines included as Attachment B to this filing.
36.8.3.4 and subsections thereof	Congestion Revenue Rights	Comments that Section 6.3.3 of the CRR BPM is contradictory and requires exposition.	Involves changes to multiple MRTU Tariff sections; see MRTU Tariff blacklines included as Attachment B to this filing.
36.8.3.4.4	Congestion Revenue Rights	Request that pro rata adjustment language of Sections 6.3.4 and 6.4.4 of the CRR BMP be included in the MRTU Tariff.	36.8.3.4.4: Calculation of Adjusted Verified CRR Source Quantity: For nominations by an LSE and a Qualified OCALSE, except for a Qualified OCALSE's nomination of Long Term CRRs, the CAISO will consider a contract that covers a portion of a season (but not less than one month) to be acceptable verification, with the adjustment described below, for the entire season for which a CRR is nominated. The CAISO will also consider a contract not less than one month in duration that covers portions of two consecutive months to be acceptable verification, with the adjustment described below, for both of the months that are partially covered. In such cases, for a contract that covers only a portion of the season or month for which the LSE or Qualified

Tariff Section(s) Affected	Relevant BPM	Reason for Change	Changes to MRTU Tariff
			OCALSE wishes to nominate source-verified CRRs, the CAISO will calculate an Adjusted Verified CRR Source Quantity, which equals the Verified CRR Source Quantity times the ratio of the number of days covered by the contract for a particular month or season to the total number of days in that month or season, consistent with the time of use period of the CRRs being nominated. Contracts submitted by a Qualified OCALSE to support nomination of Long Term CRRs must be at least ten (10) years in duration and cover the entire season of the Long Term CRR being nominated, and therefore the Adjusted Verified CRR Source Quantity calculation does not apply to such nominations.
36.8.2 36.8.3.4.1	Congestion Revenue Rights	Requests this language in the Tariff: "The CAISO will make available, prior to the beginning of the allocation process, a list of allowable sources and sinks to be used in the allocation."	36.8.2: . . . In tier 3 of the annual process and tier 2 of the monthly process, such LSEs may also submit CRR Sink nominations at a ~~s~~Sub-LAP of their assigned Default LAP. The CAISO will make available, prior to the beginning of the CRR Allocation process, a list of allowable CRR Sinks to be used in the allocation. 36.8.3.4.1 CRR Year One Source Verification for LSEs: In CRR Year One, nominations for tier 1 and tier 2 of the annual CRR Allocation and tier 1 of the monthly CRR Allocations must be source verified for all LSEs. The CAISO will make available, prior to the beginning of the allocation process, a list of allowable CRR Sources to be used in the allocation.
36.8.3.6.2	Congestion Revenue Rights	Comments that that the MRTU tariff is not clear that sub-LAPs must be within the eligible LAP and that the tariff is silent about there being any verification of sinks in tier 3.	36.8.3.6.2: In ~~T~~tier 2 of the ~~M~~monthly CRR Allocation, Sub-LAPs will be eligible CRR Sinks, provided that the Sub-LAP is within the nominating LSE's Default LAP.
36.9.3	Congestion Revenue Rights	Comments that the MRTU Tariff doesn't specify final schedules as verification data and requests a resolution.	36.9.3: One set of hourly data must reflect the OCALSE's historical hourly exports at the Scheduling Point that is the CRR Sink of the nominated CRRs. The historical hourly exports shall be based on the tagged Real-Time Interchange Export Schedules for the OCALSE.

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30.5.1	Market Instruments	Comments that the following provision should be added to t he tariff: "CAISO does not accept bids for the next Trading Day between the time of Market Close at 1000 hours and the publication of the DAM results at 1300 hours."	30.5.1: All Energy and Ancillary Services Bids of each Scheduling Coordinator submitted to the HASP for the following Trading Day shall be submitted starting from the time of publication, at 1:00 p.m. on the day preceding the Trading Day, of DAM results for the Trading Day, and ending seventy-five (75) minutes prior to each applicable Trading Hour in the RTM. The CAISO will not accept any Energy or Ancillary Services Bids for the following Trading Day between 10:00 a.m. on the day preceding the Trading Day and the publication, at 1:00 p.m. on the day preceding the Trading Day, of DAM results for the Trading Day;
28.3.3	Market Instruments	Requests tariff language to clarify the timing for submitting ISTs.	28.3.3: … Scheduling Coordinators may submit Inter-SC Trades of IFM Load Uplift ~~Load~~ Obligations at any time ~~prior to the time that the CAISO conducts its final validation run as specified in Section 28.3.2~~ during the HASP Inter-SC Trade Period.
30.4(1) 30.4(2)	Market Instruments	Comments that "Bid based" and "Cost based" will be changed to "Registered Cost" and "Proxy Cost" and that other language needs to be changed as a result.	30.4: … (1) Proxy Cost Option ~~based~~. … (2) Registered Cost Option~~Bid based~~.
30.12(c)	Market Instruments	Requests the following language: "SCs need not enter Minimum Load Cost into their DAM Bid. If the SC does submit data for this component, the CAISO overwrites the Bid component with the data from the Master File."	30.12(c): … The Start-Up Cost for each segment must not be negative and must be equal to ~~not exceed~~ the Start-Up Cost of the corresponding segment of the ~~cost-based~~ Start-Up Cost function, as registered in the Master File for the relevant resource. ~~For gas-fired resources, the cost-based startup cost function shall be derived from the startup fuel function, as registered in the Master File for the relevant resource, and the applicable gas price index as approved by FERC.~~ If a value is submitted in a Bid for the Start-Up Cost, it will be overwritten by the Master File value as either the Proxy Cost or Registered Cost based on the option elected pursuant to Section 30.4. If no value for Start-Up Cost is submitted in a Bid, the CAISO will insert the Master File value, as either the Proxy Cost or Registered Cost based on the option

Tariff Section(s) Affected	Relevant BPM	Reason for Change	Changes to MRTU Tariff
			elected pursuant to Section 30.4.
30.4 30.12	Market Instruments	Request changes to conflicting statements regarding the Start-Up Bid.	Several changes were made to Sections 30.4 and 30.12, as seen in the blacklines to be found in Attachment B of this filing.
27.5.5	Market Instruments	Noted that aggregation resource load bids could not be found in the Tariff.	27.5.5: The CAISO will maintain a library of system-wide Load Distribution Factors for use in distributing Demand scheduled at the Default LAPs. The system Load Distribution Factors are derived from the State Estimator and are stored in the Load Distribution Factor library, and are updated periodically. For IFM the Load Distribution Factor library uses a similar-day methodology for smoothing the most recent Load Distribution Factors. The similar-day methodology uses data separately for each type of day. More recent days are weighted more heavily in the smoothing calculations. The market application then uses the set of Load Distribution Factors from the library that best represents the Load distribution conditions expected for the market Time Horizon. For the RTM, the State Estimator solution is used as a source for determining Load Distribution Factors. The Load Distribution Factor are also maintained for use for Demand scheduled at Custom LAPs. These custom Load Distribution Factors are not generated from the State Estimator and are fixed quantities representing the characteristics of the Custom LAP.
31.5.1.1	Market Instruments	Confirming that that RA Capacity must submit Bids in the Day-Ahead market	31.5.1.1: … RUC participation is required for Resource Adequacy Capacity to the extent that Resource Adequacy Capacity is not committed following the IFM.
30.7.3.2	Market Instruments	Requests conformance of Section 30.7.3.2 to the Market Instruments BPM.	30.7.3.2: Except as otherwise prescribed in this tariff, ~~O~~once a day the Master File data is updated with changes to the Master File that were submitted between at least five~~seven~~ (~~7~~5) and up to eleven (11) Business Days in advance, after which all conditional Bids must be re-validated prior to the trading period when the Bid will take effect.

Tariff Section(s) Affected	Relevant BPM	Reason for Change	Changes to MRTU Tariff
39.7.1.2	Market Instruments	Requests provisions in the tariff comparable to the BPM provisions governing the feasibility test.	39.7.1.2: … The LMP Option for Default Energy Bids will not be available until 90 days of LMP pricing has occurred. Each Bid segment created under the LMP Option for Default Energy Bids will be subject to a feasibility test, as set forth in a Business Practice Manual, to determine whether there are a sufficient number of data points to allow for the calculation of an LMP based Default Energy Bid. The feasibility test is designed to avoid excessive volatility of the Default Energy Bid under the LMP Option that could result when calculated based on a relatively small number of prices.
39.7.1.6	Market Instruments	Requests addition of RMR provisions regarding available capacity in excess of the MNDC.	39.7.1.6: The available capacity in excess of the Maximum Net Dependable Capacity (MNDC) specified in the RMR Contract up to the Maximum Generation Capacity (PMax) is subject to Local Market Power Mitigation. The Scheduling Coordinator for the RMR Unit must rank order its preferences between the Variable Cost Option, the LMP Option, and the Negotiated Rate Option, which shall be the default rank order if no rank order is specified by the Scheduling Coordinator. These preferences will be used to determine the Default Energy Bids for the capacity between the MNDC and P-Max. RMR Proxy Bids for RMR Units based on contractually specified costs are used in lieu of Default Energy Bids for the contractual RMR Unit capacity between the Minimum Generating Capacity (PMin) and the MNDC. The CAISO or Independent Entity will concatenate these two calculation methodologies (for calculating RMR Proxy Bids and Default Energy Bids for RMR Units) and will adjust them for monotonicity without lowering any price on either curve to create a single Energy Bid Curve to be used in the MPM-RRD processes as described in Sections 31 and 33 for the DAM and RTM, respectively. RMR Units are not eligible to receive a Bid Adder pursuant to Section 39.8 for contractual RMR Unit capacity between PMin and MNDC.

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4.5.3.2.2	Market Operations	Requests further detail on e-Tags.	4.5.3.2.2: Submitting ~~intertie Interconnection~~Interchange schedules prepared in accordance with all NERC, WECC and CAISO requirements, including providing E-Tags for all applicable transactions pursuant to WECC practices;
27.5.1	Market Operations	Requests further detail on the pricing Location of a Generating Unit.	27.5.1: … The pricing location (PNodes) of a Generating Unit generally coincides with the Node where the relevant revenue quality meter is connected or corrected, to reflect the point at which the Generating Units are connected to the CAISO Controlled Grid. The Dispatch, Schedule and LMP of a Generating Unit refers to a PNode, but the Energy injection is modeled in the FNM for network analysis purposes at the corresponding Generating Unit(s) (at the physical interconnection point), taking into account any losses in the transmission network leading to the point where Energy is delivered to Demand.
27.5.5	Market Operations	Requests detail on similar-day methodology for smoothing the most recent LDFs.	27.5.5: … For IFM the Load Distribution Factor library uses a similar-day methodology for smoothing the most recent Load Distribution Factors. The similar-day methodology uses data separately for each type of day. More recent days are weighted more heavily in the smoothing calculations. The market application then uses the set of Load Distribution Factors from the library that best represents the Load distribution conditions expected for the market Time Horizon.
4.5 and subsections thereof	Scheduling Coordinator Certification and Termination	Comments that all specific roles and responsibilities of the ISO and Market Participants need to be captured in the MRTU Tariff.	Involves numerous changes to Section 4.5 of the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing.
4.5.1.1.10.2	Scheduling Coordinator Certification and Termination	Requests the addition of this language: "The SC applicant has one calendar year in which to complete and pass the requirements for final approval. If an application is not completed	4.5.1.1.10.2: The CAISO will not certify a Scheduling Coordinator Applicant as a Scheduling Coordinator until the Scheduling Coordinator Applicant has completed all of the requirements for certification set forth in this Section 4.5 to the CAISO's satisfaction within twelve (12) months following the CAISO's acceptance of the application for processing. If the

Tariff Section(s) Affected	Relevant BPM	Reason for Change	Changes to MRTU Tariff
		within one calendar year from the initial submittal date, CASIO can close the application. At a later date, if the SC applicant wishes to again pursue certification, a new application and fee is required."	Scheduling Coordinator Applicant has not completed all the above referenced requirements within twelve (12) months after the CAISO's acceptance of the application, the CAISO may close the Scheduling Coordinator Applicant's application. The CAISO shall provide the Scheduling Coordinator Applicant thirty (30) days advance notice of its intent to close the application. If the CAISO closes the application, the Scheduling Coordinator Applicant must submit a new application and non-refundable application fee if it continues to request certification as a Scheduling Coordinator.
4.5.1.1.4	Scheduling Coordinator Certification and Termination	Comments that argued that significantly higher application fees may warrant consideration of inclusion in the tariff of the fee or the fee setting process, and that rates and charges must be set in the tariff.	4.5.1.1.4: At least ~~60~~120 days before the proposed commencement of service, the Scheduling Coordinator Applicant must return a completed application form with the non-refundable application fee ~~set by the CAISO Governing Board~~ of $5,000 to cover the application processing costs~~, site visit and the costs of furnishing the CAISO Tariffs~~.
4.5.1.1.4 4.5.1.3	Scheduling Coordinator Certification and Termination	States that an application fee and charges for submitting a Scheduling Coordinator Application and additional Scheduling Coordinator IDs must be in the tariff.	4.5.1.1.4: Scheduling Coordinator Applicant ~~r~~Returns Application. At least ~~60~~120 days before the proposed commencement of service, the Scheduling Coordinator Applicant must return a completed application form with the non-refundable application fee ~~set by the CAISO Governing Board~~ of $5,000 to cover the application processing costs~~, site visit and the costs of furnishing the CAISO Tariffs~~. 4.5.1.3 Additional Scheduling Coordinator Identification Code Registration. A Scheduling Coordinator Applicant is granted one Scheduling Coordinator Identification Code with its application fee. Requests may be made for additional Scheduling Coordinator Identification Codes. The fee for each additional Scheduling Coordinator Identification Code is $500 per month, or as otherwise specified in

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			Schedule 1 of Appendix F.
4.5.1.1.10.1(g)	Scheduling Coordinator Certification and Termination	Comments that the tariff should include all conditions of SCs without ambiguity.	4.5.1.1.10.1(g): obtained~~bought~~ and installed a computer link ~~account~~and any necessary software in order to communicate with the CAISO, as specified in the applicable Business Practice Manual. Additional instructions for completing the foregoing requirements will be set forth in a Business Practice Manual posted on the CAISO Website.
4.5.1.1.10.1(d)	Scheduling Coordinator Certification and Termination	Comments that the tariff should include all conditions of SCs without ambiguity.	4.5.1.1.10.1(d): undertaken required training and testing regarding the use of the CAISO's market, operating, and technical systems, as specified in the applicable Business Practice Manual~~purchased the requisite Value Area Network (VAN) service in order to support Electronic Data Interchange (EDI) requirements~~;
4.5.1.1.10.1(f)	Scheduling Coordinator Certification and Termination	Comments that the tariff should detail all obligations of SCs without ambiguity.	4.5.1.1.10.1(f): provided an emergency plan specifying the procedures by which Scheduling Coordinator operations and contacts with the CAISO will be maintained during an emergency, containing information specified in the applicable Business Practice Manual~~submitted a timetable for completion of its operational facilities, in order to coordinate site visits by CAISO staff to ensure compliance with the CAISO Tariff Section 4.5.4.1~~;
4.5.1.1.10.1(b)	Scheduling Coordinator Certification and Termination	Comments that the tariff should detail all obligations of SCs without ambiguity.	4.5.1.1.10.1(b): executed ~~software licensing~~ a network connectivity security agreement for access to the CAISO's software used in conducting business with the CAISO and compliance with the CAISO's system security requirements in a form approved by the CAISO, if applicable;

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40.1	Reliability Requirements	Requests clarification as to resource adequacy exemption for LSEs.	40.1 Applicability: A Load Serving Entity, and its Scheduling Coordinator, shall be exempt from this Section 40 during the next Resource Adequacy ~~e~~Compliance ~~y~~Year, ~~as defined in the Business Practice Manual,~~ if the metered peak Demand of the Load Serving Entity did not exceed one (1) MW during the twelve months preceding the last date on which the Load Serving Entity can make the election in Section 40.1.1 for the next Resource Adequacy ~~e~~Compliance ~~y~~Year. This Section 40 shall apply to all other Load Serving Entities and their respective Scheduling Coordinators. For purposes of Section 40, a Load Serving Entity shall not include any entity satisfying the terms of California Public Utilities Code Section 380(j)(3).
40.7	Reliability Requirements	Requests validation or compliance requirements.	40.7 Compliance: The CAISO will evaluate whether each annual and monthly Resource Adequacy Plan submitted by a Scheduling Coordinator on behalf of a Load Serving Entity demonstrates Resource Adequacy Capacity sufficient to satisfy the Load Serving Entity's (i) allocated responsibility for Local Capacity Area Resources under Section 40.3.2 and (ii) applicable Reserve Margin requirements. If the CAISO determines that a Resource Adequacy Plan does not demonstrate Local Capacity Area Resources sufficient to meet its allocated responsibility under Section 40.3.2, compliance with applicable Reserve Margin requirements, or compliance with any other resource adequacy requirement in this Section 40 or adopted by the CPUC, Local Regulatory Authority, or federal agency, as applicable, the CAISO will notify the relevant Scheduling Coordinator, CPUC, Local Regulatory Authority, or federal agency with jurisdiction over the relevant Load Serving Entity, or in the case of a mismatch between Resource Adequacy Plan(s) and Supply Plan(s), the relevant Scheduling Coordinators, in an attempt to resolve any deficiency in accordance with the procedures set forth in the Business Practice Manual. The notification will include the reasons the CAISO believes a deficiency exists. If the deficiency relates to the demonstration of Local Capacity Area Resources in a Load Serving Entity's annual Resource Adequacy Plan, and the

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			CAISO does not provide a written notice of resolution of the deficiency as set forth in the Business Practices Manual, the Scheduling Coordinator for the Load Serving Entity may demonstrate that the identified deficiency is cured by submitting a revised annual Resource Adequacy Plan within thirty (30) days of the beginning of the Resource Adequacy Compliance Year. For all other identified deficiencies, at least ten (10) days prior the effective month of the relevant Resource Adequacy Plan, the Scheduling Coordinator for the Load Serving Entity shall (i) demonstrate that the identified deficiency is cured by submitting a revised Resource Adequacy Plan or (ii) advise the CAISO that the CPUC, Local Regulatory Authority, or federal agency, as appropriate, has determined that no deficiency exists. In the case of a mismatch between Resource Adequacy Plan(s) and Supply Plan(s), if resolved, the relevant Scheduling Coordinator(s) must provide the CAISO with revised Resource Adequacy Plan(s) or Supply Plans, as applicable, at least ten (10) days prior to the effective month. If the CAISO is not advised that the deficiency or mismatch is resolved at least ten (10) days prior to the effective month, the CAISO will use the information contained in the Supply Plan to set the obligations of Resource Adequacy Resources under this Section 40 and/or to assign any costs incurred under this Section 40.~~If the CAISO's review of an annual or monthly Resource Adequacy Plan reveals resource deficiencies, the CAISO will report the deficiencies to the CPUC or Local Regulatory Authority and Scheduling Coordinator submitting Bids for the Load Serving Entity and will coordinate with the CPUC or Local Regulatory Authority to request that the Scheduling Coordinator scheduling Demand revise the plan, as appropriate.~~
40.6.4.2	Reliability Requirements	Notes an inconsistency between the dates required by sections of the Tariff and BPM requiring the Scheduling Coordinator to submit a final annual use plan.	40.6.4.2 Use Plan: ~~With regard to Use-Limited Resources, t~~The Scheduling Coordinator ~~will~~shall provide by September for the following year~~,~~ a proposed annual use plan for each Use-Limited Resource that is a Resource Adequacy Resource.

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Appendix A	Definitions and Acronyms	Comment requesting the addition of "Proxy Cost" to Appendix A	Proxy Cost The cost basis of a generating resource for which the operating cost is calculated as an approximation of the actual operating cost pursuant to Section 30.4(1).
Appendix A	Definitions and Acronyms	Comment requesting the addition of "Maximum Net Dependable Capacity" to Appendix A	Maximum Net Dependable Capacity (MNDC) A term defined in association with an RMR Contract.
Appendix A	Definitions and Acronyms	Comment requesting revisions to the definition of "Frequently Mitigated Unit" in Appendix A.	Frequently Mitigated Unit: A Generating Unit for which a Participating Generator ~~that~~ agrees to be subject to the ~~Frequently Mitigated Unit O~~option for a Bid Adder under Section 39.8.1 and ~~that~~ (i) has a Mitigation Frequency that is greater than eighty (80) percent in the previous 12 months; ~~(ii) has run for more than 200 hours in the previous 12 months; and~~ (iii) must not have a ~~R~~resource ~~A~~adequacy contract for its entire net dependable capacity or be subject to a capacity tariff construct by way of the unit's Participating Generator Agreement.
Appendix A	Definitions and Acronyms	Comment noted that the definition for "Non-Spinning Reserve had not changed from the S&R Tariff and still referred to off-line capacity.	Non-Spinning Reserve: The portion of ~~off-line~~ generating capacity that is capable of being synchronized and Ramping to a specified load in ten minutes (or ~~l~~Load that is capable of being interrupted in ten minutes) and that is capable of running (or being interrupted) ~~for at least two hours~~.
34.11.2	Market Instruments	Comment that Tariff section 34.11.1 lists no response time and should be included in the tariff.	34.11.2: Failure to Conform to Dispatch Instructions In the event that, in carrying out the Dispatch Instruction, an unforeseen problem arises (relating to plant operations or equipment, personnel or the public safety), the recipient of the Dispatch Instruction must notify the CAISO or, in the case of a Generator, the relevant Scheduling Coordinator immediately. The relevant Scheduling Coordinator shall notify the CAISO of the problem immediately. If a resource is unavailable or incapable of responding to a Dispatch Instruction, or fails to respond to a Dispatch Instruction in accordance with its terms, the resource shall be considered to be non-conforming to the Dispatch Instruction unless the resource has notified the CAISO of an event that prevents it from performing its obligations within 30 minutes

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			of the onset of such event through a SLIC log entry. Notification of non-compliance via the Automated Dispatch System (ADS) will not supplant nor serve as the official notification mechanism to the CAISO. If the resource is considered to be non-conforming as described above, the Scheduling Coordinator for the resource concerned shall be subject to Uninstructed Imbalance Energy as specified in Section 11.5.2 and Uninstructed Deviation Penalties as specified in Section 11.23. This applies whether any Ancillary Service concerned are contracted or self-provided. For a ~~n~~Non-Dynamic System Resource Dispatch Instruction prior to the Trade Hour, the Scheduling Coordinator shall inform the CAISO of its ability to conform to a Dispatch Instruction via ~~"~~ADS~~"~~. The Non-Dynamic System Resource has the option to accept, partially accept, or decline the Dispatch Instruction, but in any case must respond within the timeframe specified in a Business Practice Manual. The Non-Dynamic System Resource can change its response within the indicated timeframe. If a Non-Dynamic System Resource does not respond within the indicated timeframe, the Dispatch Instruction will be considered declined. A decline of such a Non-Dynamic System Resource for a Dispatch Instruction received at least 40 minutes prior to the Trading Hour will be subject to Uninstructed Deviation Penalties as specific in Section 11.23. A decline of such a Non-Dynamic System ~~r~~Resource for a Dispatch Instruction received less than 40 minutes prior to the Trading Hour will not be subject to Uninstructed Deviation Penalties. A Non-Dynamic System Resource that only partially accepts a Dispatch Instruction is subject to Uninstructed Deviation Penalties for the portion of the Dispatch Instruction that is declined.

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39.7.1.2	Market Instruments Section D.3.1.2	Comment that Tariff section 39.7.1.2 includes no provisions for this feasibility test not is it found elsewhere in the Tariff.	39.7.1.2 LMP Option: The CAISO will calculate the LMP Option for the Default Energy Bid as a weighted average of the lowest quartile of LMPs at the Generating Unit PNode in periods when the unit was Dispatched during the preceding ninety (90) days. The weighted average will be calculated based on the quantities Dispatched within each segment of the Default Energy Bid curve. The LMP Option for Default Energy Bids will not be available until 90 days of LMP pricing has occurred. Each Bid segment created under the LMP Option for Default Energy Bids will be subject to a feasibility test, as set forth in a Business Practice Manual, to determine whether there are a sufficient number of data points to allow for the calculation of an LMP based Default Energy Bid. The feasibility test is designed to avoid excessive volatility of the Default Energy Bid under the LMP Option that could result when calculated based on a relatively small number of prices.
39.7.1.6	Market Instruments	Comment that the following BPM language should be in the tariff: 'RMR units do not receive the 10% adder for their contract capacity. For available capacity in excess of the MNDC the Scheduling Coordinator representing the RMR unit must rank order their calculation preference between the same three methodologies, namely LMP-based, Cost-based and Negotiated. This preference will then apply to the non-RMR capacity between the MNDC and the PMax of the unit. The independent entity will concatenate these two calculation methodologies (contract based for	39.7.1.6 Default Energy Bids for RMR Units. The available capacity in excess of the Maximum Net Dependable Capacity (MNDC) specified in the RMR Contract up to the Maximum Generation Capacity (PMax) is subject to Local Market Power Mitigation. The Scheduling Coordinator for the RMR Unit must rank order its preferences between the Variable Cost Option, the LMP Option, and the Negotiated Rate Option, which shall be the default rank order if no rank order is specified by the Scheduling Coordinator. These preferences will be used to determine the Default Energy Bids for the capacity between the MNDC and P-Max. RMR Proxy Bids for RMR Units based on contractually specified costs are used in lieu of Default Energy Bids for the contractual RMR Unit capacity between the Minimum Generating Capacity (PMin) and the MNDC. The CAISO or Independent Entity will concatenate these two calculation methodologies (for calculating RMR Proxy Bids and Default Energy Bids for RMR Units) and will adjust them for monotonicity without lowering any price on either curve to create

Tariff Section(s) Affected	Relevant BPM	Reason for Change	Changes to MRTU Tariff
		the RMR capacity and preference based for the non-RMR capacity), adjust them for monotonocity and submit them to CAISO as a single DEB. '	a single Energy Bid Curve to be used in the MPM-RRD processes as described in Sections 31 and 33 for the DAM and RTM, respectively. RMR Units are not eligible to receive a Bid Adder pursuant to Section 39.8 for contractual RMR Unit capacity between PMin and MNDC.
36.13.6	Congestion Revenue Rights Attachment B	Comment that the following language should be included in the tariff as not all markets provide for pro-rata treatment: "Nominations or bids that are tied, i.e. nominations having the same effectiveness on a binding constraint or bids having the same effective price for relieving a constraint, are pro-rata allocated/awarded based on the nominated or bid MW amounts."	36.13.6 Clearing of the CRR Auction The SFT used to clear the CRR Auction will utilize the same DC FNM and optimization algorithm as the corresponding CRR Allocation, except that nominations to the CRR Auction will have associated price-quantity bid curves. The CRR Auction SFT will use the bid prices in determining which CRRs to award when not all nominations are simultaneously feasible, will select the set of simultaneously feasible CRRs with the highest total auction value as determined by the CRR bids, and will calculate nodal prices at each PNode of the DC FNM. In the event that there are two or more identical bids for a specific combination of CRR Source and CRR Sink that affect an overloaded constraint, the CRR Auction optimization cannot distinguish these bids based on either effectiveness or price and therefore the CRR Auction optimization will award each CRR bidder~~, and there is insufficient network capacity to accommodate all of the identical bids, each such CRR bidder will receive~~ a pro rata share of the CRRs that can be awarded based on the bid MW amounts. Based on the nodal prices calculated by the CRR Auction SFT, the CRR Market Clearing Price per MW for a specific CRR will equal the nodal price at the CRR Sink minus the nodal price at the CRR Source. For a Multi-Point CRR the CRR Market Clearing Price will equal the sum over all relevant CRR Sinks of the nodal price at each CRR Sink times that CRR Sink's share of the total MW of the CRR, minus the sum over all relevant CRR Sources of the nodal price at each CRR Source times that CRR Source's share of the total MW of the CRR Market Participants shall pay the associated CRR Market Clearing Prices for all CRRs bought through the CRR Auction.

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4.5.3.11 4.5.3.12	Market Operations	Comment that the following language of the BPM is ambiguous: "It is the responsibility of SCs to respond to CAISO published Schedules and Awards in a timely manner. Upon publication of Schedules and Awards, SCs are advised to review the Schedules and Awards to understand what to expect from ADS. However, they are not required to do anything specific before receiving Dispatch instructions through ADS."	4.5.3.11 Day-Ahead Market Published Schedules and Awards. Starting-up units and timely achieving specified operating levels in response to Dispatch Instructions, in accordance with CAISO published Schedules and awards; 4.5.3.12 Financial Responsibility. Assuming financial responsibility for all Schedules, awards, HASP Intertie Schedules and Dispatch Instructions issued in the CAISO Markets, in accordance with the provisions of this CAISO Tariff; and
34.15.1	Market Operations	BPM detail on the honoring of Energy Limit constraints unless doing so would violate reliability of the grid, could not be found in the tariff. Comment that the tariff needs to indicate that energy limits are not protected against exceptional dispatches and AGC. Further comment that the general impact of the 20 minute threshold should be clarified.	34.15.1 Resource Constraints. The SCED shall enforce the following resource physical constraints: (a) Minimum and maximum operating resource limits. Outages and limitations due to transmission clearances shall be reflected in these limits. The more restrictive operating or regulating limit shall be used for resources providing Regulation so that the SCED shall not Dispatch them outside their regulating range. (b) Forbidden Operating Regions. Resources can only be ramped through these regions. The SCED shall not Dispatch resources within their Forbidden Operating Regions unless at the maximum applicable ramp rate to clear the Forbidden Operating Region in consecutive Dispatch Intervals. Resources ramping through a Forbidden Operating Region shall not set LMP at its location and cannot provide Ancillary Services and will not be called upon to provide Ancillary Services, unless the resource can cross the Forbidden Operating Region in less than 20 minutes. (c) Operational Ramp Rates and Start-Up times. The submitted Operational Ramp Rate for resources that are not providing Regulation, and the submitted Regulation Ramp Rate

Tariff Section(s) Affected	Relevant BPM	Reason for Change	Changes to MRTU Tariff
			for resources that are providing Regulation shall be used for all Dispatch Instructions. –The Ramping Rate for Non-Dynamic System Resources cleared in the HASP will not be observed. Rather the ramp of the Non-Dynamic System Resource respect inter-Control Area ramping conventions established by WECC. Ramp Rates for Dynamic System Resources will be observed like Participating Generators in the RTD. Each Energy Bid shall be Dispatched only up to the amount of Imbalance Energy that can be provided within the Dispatch Interval based on the applicable Operational Ramp Rate or Regulation Ramp Rate. The Dispatch Instruction shall consider the relevant Start-Up time as, if the resource is off-line, the relevant Ramp Rate function, and any prior commitments such as schedule changes across hours and previous Dispatch Instructions. The Start-Up time shall be determined from the Start-Up time function and when the resource was last shut down. The Start-Up time shall not apply if the corresponding resource is on-line or expected to start. (d) Maximum Number of Daily Start-Ups. The SCED shall not cause a resource to exceed its daily maximum number of start-ups. (e) Minimum Up and Down time. The SCED shall not ~~S~~start ~~U~~up off-line resources before their minimum down time expires and shall not ~~S~~shut ~~D~~down on-line resources before their minimum up time expires. (f) Operating (Spinning and Non-Spinning) Reserve. The SCED shall Dispatch Spinning and Non-Spinning Reserve subject to the limitations set forth in Section 34.16.3. (g) Non-Dynamic System Resources. If Dispatched, each Non-Dynamic System Resource flagged for hourly pre-dispatch in the next Trading Hour shall be Dispatched to operate at a constant level over the entire Trading Hour. The HASP shall perform the hourly pre-dispatch for each Trading Hour once prior to the Operating Hour. The hourly pre-dispatch shall not subsequently be revised by the SCED and the resulting HASP Intertie Schedules are financially binding and are settled pursuant to section 11.4.

Tariff Section(s) Affected	Relevant BPM	Reason for Change	Changes to MRTU Tariff
			(h) Daily Energy use limitation to the extent that energy limitation is expressed in a resource's Bid. If the Energy Limits are violated for purposes of Exceptional Dispatches for System Reliability, the Bid will be settled as provided in Section 11.5.6.1.
Appendix C	Market Operations	Comment that additional information concerning LMP calculations should be included in the Tariff and that changes should be made to the description of the calculation of the Marginal Cost of Losses.	Involves multiple changes to Appendix C of the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing
22.11.1.6	Change Management	Comment that appeals of Category B and BPM PRR decisions reviewed by the Board should be included in the tariff.	22.11.1.6 Right to Appeal to CAISO. Any entity eligible to submit a BPM PRR under Section 22.11.1.1 may, within ten (10) Business Days, appeal in writing the outcome of any BPM PRR to a committee comprising at least three CAISO executives. The CAISO committee shall meet in public at the regularly scheduled monthly BPM PRR meeting or specially-noticed meeting to consider public comment by the appellant and any interested stakeholder. The executive sponsor of a BPM PRR may not sit in review of any appeal of a final decision regarding that same BPM PRR but may participate in and be present during the public discussion of any appeal. The CAISO committee will review the appeal and publish its decision to the appealing party and to the CAISO Website. If not satisfied with the decision on appeal, the appellant may raise concerns it may have with the Board of Governors at the next regularly scheduled Board meeting through the public comment period or through prior letter to the Governing Board.

Tariff Section(s) Affected	Relevant BPM	Reason for Change	Changes to MRTU Tariff
22.11.1.1	Change Management	Comment that requirements relating to the BPM PRR form should be in the tariff.	22.11.1.1 BPM Proposed Revision Request Submittal. A request to make any change to a BPM, including any attachments thereto that are incorporated by reference, and any changes to the BPM PRR must be initiated through a submittal of a BPM PRR, except as provided in Section 22.4.3 or 22.11.1.2. The following entities may submit a BPM PRR: (1) Any Market Participant; (2) Local Regulatory Authority; (3) CAISO management; and (4) Any other entity that meets the following qualifications: (a) The entity must represent a Market Participant in dealings with the CAISO or operate in the CAISO Markets, and (b) The entity must demonstrate that the entity (or those it represents) is affected by the subject section(s) of the BPM. BPM PRRs shall be submitted electronically to the CAISO in the form and manner described in the Business Practice Manual for BPM change management. The CAISO shall post each BPM PRR on the CAISO Website and publish a Market Notice of such posting. The BPM PRR shall include a description of the requested revision, the reason for the suggested change, the impacts and benefits of the suggested change, a list of affected BPM sections and subsections, general administrative information, suggested language for the requested revision, and for BPM PRRs submitted by CAISO management, a BPM PRR impact analysis. The CAISO may, as appropriate, prepare an impact analysis for BPM PRRs submitted by other entities eligible to submit BPM PRRs.

Tariff Section(s) Affected	Relevant BPM	Reason for Change	Changes to MRTU Tariff
40.6.11	Reliability Requirements	Comment that the following BPM details need to be included in the tariff: Such exports that are sourced by Resource Adequacy Resource capacity are considered firm exports and as a result will not count as operating reserves for the CAISO. As a result, CAISO shall procure and maintain sufficient operating reserves without consideration of the firm exports regardless if the exports are being sourced by Resource Adequacy or non-Resource Adequacy Resource capacity. In the event such an export is curtailed, the CAISO will compensate the Scheduling Coordinator of the curtailed export at the applicable HASP LMP if the curtailment is performed during the HASP or at the Real-Time LMP associated with the export if the curtailment occurs at/within the Real-Time Operating Hour.	40.6.11 Curtailment of Exports in Emergency Situations. At its sole discretion, the CAISO may curtail exports from ~~a~~ Resource Adequacy Capacity~~Resource~~ to prevent or alleviate a System Emergency. An Export Bid or a Self-Schedule to provide exports included in a binding Schedule accepted in the IFM or HASP will not be distinguished from a Demand Bid or Self-Schedule to serve Load within the CAISO Control Area included in a binding Schedule accepted in the IFM or HASP for purposes of curtailment under this Section, except as consistent with Good Utility Practice.

MRTU TARIFF MODIFICATIONS MADE PURSUANT TO FPA SECTION 205

Tariff Section(s) Affected	Reason for Change	Changes Made to MRTU Tariff
11	Numerous changes made in order to: (1) update the settlements provisions of the MRTU Tariff to be fully consistent with the Settlements and Market Clearing software, (2) clarify the existing intent of specific provisions, and (3) correct grammatical or syntax errors.	Involves numerous changes to Section 11 of the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing See Sections 11.2.2.1, 11.2.4.1.2, 11.2.4.4.1, 11.8.3.1.2, 11.8.6.5, 11.9.1, 11.10.1.3.1, 11.8.2.1.6.
11.2.5 and subsections thereof	Changes made to conform this section to changes filed in July 20 CRR filing in Section 36.9.2.	Involves multiple changes to the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing
14.4 14.5 14.6	Modifying standards of liability.	14.4: … except to the extent that they result from the CAISO's default under this CAISO Tariff or gross negligence or intentional wrongdoing on the part of the CAISO or of its officers, directors or employees. 14.5.1: … except to the extent that they result from gross negligence or intentional wrongdoing on the part of the CAISO. 14.5.2: … except to the extent that it results from gross negligence or intentional wrongdoing on the part of the CAISO.
35.1	Monitoring market clearing results to identify anomalous resource commitment, dispatch levels, prices that may have resulted from erroneous input data or failure of the market application hardware or software, or other inconsistencies.	35.1: The CAISO shall monitor the market clearing software solutions for the Day-Ahead Market, the RUC process, the Hour-Ahead Scheduling Process, and the Real-Time Market for all market intervals to determine whether prices are calculated accurately, consistent with the provisions of the CAISO Tariff. To the extent reasonably practicable, the CAISO shall correct erroneous prices identified through such monitoring and re-run the relevant CAISO Markets prior to publication of prices on its Open Access Same-Time Information System (OASIS) or provision of prices directly to Market Participants, if applicable.
35.2	Allowing invalid prices to be corrected subsequent to their publication on the CAISO's OASIS and no later than the	35.2: Prices for each Trading Day shall become subject to the CAISO's price correction process once the CAISO publishes them on its OASIS or provides them directly to Market Participants, if applicable. The price correction process for each Trading Day shall end no later than 1700 hours of

Tariff Section(s) Affected	Reason for Change	Changes Made to MRTU Tariff
	deadline established in the relevant Business Practice Manual.	the eighth calendar day following that Trading Day. The CAISO may establish an earlier end-time for the price correction process in the applicable Business Practice Manual and may complete the price correction process for any Trading Day earlier than the end-time established in this Section 35 or in the Business Practice Manual. The CAISO shall provide notification on the CAISO Website when it has completed the price correction process for each Trading Day. If the CAISO does not provide such notification, the price correction process will be deemed complete at 1700 hours of the eighth calendar day following that Trading Day, unless an earlier time is established by the applicable Business Practice Manual.
35.3	Stating that all price are provisional until price correction is complete, after which they are final.	35.3: All prices shall be considered provisional until the CAISO has completed the price correction process regarding them. All prices for each Trading Day shall be considered final for purposes of this Section 35 once the price correction process for that Trading Day has ended, except that the CAISO may adjust, re-run, or otherwise correct such prices after the conclusion of the price correction process to the extent authorized by the provisions of the CAISO Tariff other than this Section 35.
35.4	Allowing the CAISO to correct all invalid financially binding prices.	35.4: The CAISO may correct all financially binding prices whenever the CAISO identifies an invalid market solution or invalid prices in an otherwise valid market solution. The circumstances in which the CAISO may determine that an invalid market solution or invalid prices exist include the following: the occurrence of data input failure; the occurrence of hardware or software failure; or a result that is inconsistent with the CAISO Tariff.
35.5	Setting forth the methodology for price correction.	35.5 sets forth an extensive price correction methodology; see MRTU Tariff blacklines included as Attachment B to this filing.
35.6	Requiring the CAISO to issue a weekly report on price corrections that occurred during the previous week.	35.6: The CAISO shall summarize all price corrections that occur within a week in a report that shall be posted on the CAISO Website by the seventh day of the following week. For all price corrections that occur during each week, the price correction report shall specify: (a) which market intervals were affected, (b) which price locations were affected, (c) a brief description of the reason for the price correction, and (d) the method of price corrective action undertaken.

Tariff Section(s) Affected	Reason for Change	Changes Made to MRTU Tariff
40.1	Clarifying that metered Demand data will be evaluated from the date of the election, and that certain "behind-the-meter" entities will be exempted from resource adequacy obligations.	40.1: A Load Serving Entity, and its Scheduling Coordinator, shall be exempt from this Section 40 during the next Resource Adequacy ~~e~~Compliance ~~y~~Year, ~~as defined in the Business Practice Manual,~~ if the metered peak Demand of the Load Serving Entity did not exceed one (1) MW during the twelve months preceding the last date on which the Load Serving Entity can make the election in Section 40.1.1 for the next Resource Adequacy ~~e~~Compliance ~~y~~Year. This Section 40 shall apply to all other Load Serving Entities and their respective Scheduling Coordinators. For purposes of Section 40, a Load Serving Entity shall not include any entity satisfying the terms of California Public Utilities Code Section 380(j)(3).
40.3.4.2	Obligating the CAISO to provide a report on its website that describes the Local Capacity Area Resources procured under Section 40.3.4, the quantity, duration, reasons for procurement, and all payments made for such procurement.	40.3.4.2: Within ninety (90) days of any initial procurement of Local Capacity Area Resources by the CAISO for any Resource Adequacy Compliance Year, ~~T~~the CAISO shall publish a report on the CAISO Website ~~which shall~~ showing the Local Capacity Area Resources procured under Section 40.3.4, the megawatts of capacity procured, the duration of the procurement, the reason(s) for the procurement, and all payments in dollars, itemized for each Local Capacity Area. The CAISO will provide a ~~m~~Market ~~n~~Notice regarding~~of~~ the availability of this~~e~~ report, and shall update the report within ninety (90) days of any Local Capacity Area Resource that is procured after the posting of the report.
40.4.5	Obligated the CAISO to collaborate with the CPUC and other Local Regulatory Authorities concerning a potential reduction in a Resource Adequacy Resource's Net Qualifying Capacity.	40.4.5: No later than 12 months after the effective date of this Section 40, the CAISO will issue a report outlining a proposal with respect to performance criteria for Resource Adequacy Resources. The CAISO will collaborate with the CPUC and other Local Regulatory Authorities to develop the performance criteria to be submitted to FERC. The Scheduling Coordinator ~~of~~for a Resource Adequacy Resource shall provide or make available to the CAISO, subject to the confidentiality provisions of this CAISO Tariff, all documentation requested by the CAISO to determine, develop or implement the performance criteria, including, but not limited to, NERC Generating Availability Data System data. ~~The CAISO will begin reducing Qualifying Capacity based on performance criteria after adoption of performance criteria by the CPUC and/or Local Regulatory Authorities.~~

Tariff Section(s) Affected	Reason for Change	Changes Made to MRTU Tariff
40.4.2 40.4.3 40.4.4 40.4.6.1 40.4.7 40.7.2	Increasing articulation of the respective obligations of LSEs and suppliers so that the risk of non-compliance with CAISO Tariff provisions can be more rationally allocated in the bilateral transaction process.	Involves multiple changes to Sections 40 of the MRTU Tariff; see MRTU Tariff blacklines included as Attachment B to this filing.
40.5.2.2	Renumbered as Section 40.4.6.2.	40.4.6.2: Deliverability of Imports.
40.5.4	Clarified intent of this section.	40.5.4: . . . (3) Any Energy surcharge received by the CAISO pursuant to this Section 40.5.4~~,~~ shall be allocated to Scheduling Coordinators representing other Load Serving Entities in proportion to each such Scheduling Coordinator's Measured~~metered~~ Demand during the relevant Trading Hour(s) to the aggregate CAISO Measured Demand during the relevant Trading Hour(s).
40.6.1.1	Clarifying that accepted export schedules will be considered "firm."	40.6.11 Curtailment of Exports in Emergency Situations: At its sole discretion, the CAISO may curtail exports from ~~a~~ Resource Adequacy Capacity~~Resource~~ to prevent or alleviate a System Emergency. An Export Bid or a Self-Schedule to provide exports included in a binding Schedule accepted in the IFM or HASP will not be distinguished from a Demand Bid or Self-Schedule to serve Load within the CAISO Control Area included in a binding Schedule accepted in the IFM or HASP for purposes of curtailment under this Section, except as consistent with Good Utility Practice.
40.6.4.1	Section 40.6.4.1 has been modified to expand the exemption to Participating Load and Pumping Load.	40.6.4.1: Scheduling Coordinators for Use-Limited Resources, other than for hydroelectric Generating Units and Participating Load, including Pumping Load, must provide the CAISO an application in the form specified on the CAISO Website requesting registration of a specifically identified resource as a Use-Limited Resource. This application shall include specific operating data and supporting documentation including, but not limited to; . . .
40.6.4.2	Section 40.6.4.2 has been modified to explicitly acknowledge that "[h]ydroelectric Generating Units and Pumping Load will be able to update use plans intra-monthly as necessary to reflect evolving hydrological and meteorological conditions" and to be consistent with the CAISO's practice of utilizing the Business Practice Manuals to set forth procedural schedules.	40.6.4.2: . . . Scheduling Coordinators for Use-Limited Resources must submit the proposed and final annual use plans in accordance with the schedule set forth in the Business Practice Manual. The Scheduling Coordinator will be able to update the projections made in the annual use plan in the monthly Resource Adequacy Plans. Hydroelectric Generating Units and Pumping Load will be able to update use plans intra-monthly as necessary to reflect evolving hydrological and meteorological conditions. The annual use plan must reflect the potential operation of the Use-Limited Resource at a level no less than the minimum criteria set forth by the Local Regulatory Authority for qualification of the resource.

Tariff Section(s) Affected	Reason for Change	Changes Made to MRTU Tariff
40.7	Incorporating previously approved provisions from the IRRP into the MRTU Tariff.	40.7: The CAISO will evaluate whether each annual and monthly Resource Adequacy Plan submitted by a Scheduling Coordinator on behalf of a Load Serving Entity demonstrates Resource Adequacy Capacity sufficient to satisfy the Load Serving Entity's (i) allocated responsibility for Local Capacity Area Resources under Section 40.3.2 and (ii) applicable Reserve Margin requirements. If the CAISO determines that a Resource Adequacy Plan does not demonstrate Local Capacity Area Resources sufficient to meet its allocated responsibility under Section 40.3.2, compliance with applicable Reserve Margin requirements, or compliance with any other resource adequacy requirement in this Section 40 or adopted by the CPUC, Local Regulatory Authority, or federal agency, as applicable, the CAISO will notify the relevant Scheduling Coordinator, CPUC, Local Regulatory Authority, or federal agency with jurisdiction over the relevant Load Serving Entity, or in the case of a mismatch between Resource Adequacy Plan(s) and Supply Plan(s), the relevant Scheduling Coordinators, in an attempt to resolve any deficiency in accordance with the procedures set forth in the Business Practice Manual. The notification will include the reasons the CAISO believes a deficiency exists. If the deficiency relates to the demonstration of Local Capacity Area Resources in a Load Serving Entity's annual Resource Adequacy Plan, and the CAISO does not provide a written notice of resolution of the deficiency as set forth in the Business Practices Manual, the Scheduling Coordinator for the Load Serving Entity may demonstrate that the identified deficiency is cured by submitting a revised annual Resource Adequacy Plan within thirty (30) days of the beginning of the Resource Adequacy Compliance Year. For all other identified deficiencies, at least ten (10) days prior the effective month of the relevant Resource Adequacy Plan, the Scheduling Coordinator for the Load Serving Entity shall (i) demonstrate that the identified deficiency is cured by submitting a revised Resource Adequacy Plan or (ii) advise the CAISO that the CPUC, Local Regulatory Authority, or federal agency, as appropriate, has determined that no deficiency exists. In the case of a mismatch between Resource Adequacy Plan(s) and Supply Plan(s), if resolved, the relevant Scheduling Coordinator(s) must provide the CAISO with revised Resource Adequacy Plan(s) or Supply Plans, as applicable, at least ten (10) days prior to the effective month. If the CAISO is not advised that the deficiency or mismatch is resolved at least ten (10) days prior to the effective month, the CAISO will use the information contained in the Supply Plan to set the obligations of Resource Adequacy Resources under this Section 40 and/or to assign any costs incurred under this Section 40.~~If the CAISO's review of an annual or monthly Resource Adequacy Plan reveals resource deficiencies, the CAISO will report the deficiencies to the CPUC or Local Regulatory Authority and Scheduling Coordinator submitting Bids for the Load Serving Entity and will coordinate with the CPUC or Local Regulatory Authority to request that the Scheduling Coordinator scheduling Demand revise the plan, as appropriate.~~

Tariff Section(s) Affected	Reason for Change	Changes Made to MRTU Tariff
40.8.1.5	Modified to more accurately reflect the status of the "phase-out" period at the time the CAISO's MRTU Tariff will become effective.	40.8.1.5 Contracts with Liquidated Damage Provisions: Firm ~~e~~Energy contracts with liquidated damages provisions, as generally reflected in Service Schedule C of the Western Systems Power Pool Agreement or the Firm LD product of the Edison Electric Institute pro forma agreement, or any other similar firm ~~e~~Energy contract that does not require the seller to source the ~~e~~Energy from a particular unit, and specifies a delivery point internal to the CAISO Control Area entered into before October 27, 2005 shall be eligible to count as Qualifying Capacity until the end of 2008. A Scheduling Coordinator, however, cannot have more than ~~7~~25% of its portfolio of Qualifying Capacity met by contracts with liquidated damage provisions for 2008~~6~~. ~~This percentage will be reduced to 50% for 2007 and 25% for 2008.~~
40.8.1.6	Modified to incorporate recent changes adopted by the CPUC.	40.8.1.6 Wind and Solar: As used in this Section, wind units are those wind Generating Units without backup sources of ~~g~~Generation and solar units are those solar Generating Units without backup sources of ~~g~~Generation. Wind and ~~S~~solar units, other than Qualifying Facilities with effective contracts under the Public Utility Regulatory Policies Act, must be ~~participants in the CAISO's~~ Participating Intermittent Resources ~~Program ("PIRP")~~ or subject to availability provisions of Section 40.6.4.3.4. The Qualifying Capacity of all wind or solar units, including Qualifying Facilities, for each month will be based on their monthly historic performance during that same month during the ~~Standard Offer 1 peak~~ hours of noon to 6:00 p.m., using a three-year rolling average. For wind or solar units with less than three years operating history, all months for which there is no historic performance data will utilize the monthly average production factor of all units (wind or solar, as applicable) within the TAC Area in which the Generating Unit is located.

Attachment D

OVERVIEW OF THE CAISO STAKEHOLDER PROCESS RELATED TO THE AUGUST 3, 2007 MRTU FILING

The CAISO has conducted an extensive stakeholder process on the Tariff revisions included in the August 3, 2007 filing.[1] In addition to the dozens of stakeholder meetings and conference calls listed below, the CAISO also posted draft Tariff language and solicited written stakeholder comments on these drafts. Written stakeholder comments, CAISO responses to comments, and revised Tariff drafts based on stakeholder input were posted on the CAISO Website:

http://www.caiso.com/17ba/17ba873e19350.html (General MRTU Tariff comments)

http://www.caiso.com/1872/1872e51451200.html (BPM-related comments).

Date	Event
May 23-25, 2006	BPM Stakeholder Meetings, Market Instruments, Market Operations, and Settlements and Billing
August 29, 2006	BPM Stakeholder Meeting; Managing Network & Market Model
August 30, 2006	BPM Stakeholder Meeting; Outage Management and Reliability Requirements
August 31, 2006	BPM Stakeholder Meeting; SC Application & Responsibilities
September 12, 2006	BPM Stakeholder Meeting; CRRs
September 13, 2006	BPM Stakeholder Meeting; Market Operations
September 14, 2006	BPM Stakeholder Meeting; Market Instruments
September 19-20, 2006	BPM Stakeholder Meeting; Settlements and Billing
September 21, 2006	BPM Stakeholder Meeting; Compliance Monitoring, Rules of Conduct Administration, BPM change Management
October 5, 2006	BPM Stakeholder Meeting; Managing Market Network Model; Definitions and Acronyms

[1] Over the same period, the CAISO also conducted an extensive stakeholder processes to consider MRTU Tariff provisions previously submitted to the Commission related to Congestion Revenue Rights and Scheduling Coordinator certification. These stakeholder meetings and calls are not listed on this attachment.

November 29, 2006	Stakeholder Meeting; MRTU Market Initiatives
February 7, 2007	Conference Call; Compliance Process for BPMs
April 17, 2007	Conference Call; BPM Tariff Language
April 25, 2007	Conference Call; MRTU Tariff Settlements Language
May 21, 2007	Stakeholder Meeting; BPM Change Management
June 15, 2007	Conference Call; BPM Change Management
June 27, 2007	Conference Call; MRTU Metering Tariff Language
June 27, 2007	Conference Call; Resource Adequacy Tariff Language
July 2, 2007	Conference Call; Price Validation and Correction and CAISO Standard of Liability
July 9, 2007	Conference Call, Appendix A Tariff Language and Related Compliance Tariff Language
July 11, 2007	Conference Call; Market Operations and Market Instruments BPM Tariff Language
July 16, 2007	Conference Call; MRTU Settlements Tariff Language
July 17, 2007	Conference Call; MRTU Tariff Language for Qualifying Facilities

Attachment E



California ISO Proposal

Price Validation and Correction and Standard of Liability under MRTU

June 15, 2007

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I. Introduction

In this issue paper, the California Independent System Operator Corporation (CAISO) is publishing two proposals to be included in the CAISO's August 3, 2007 filing with the Federal Energy Regulatory Commission. First, the CAISO presents its proposal for validating and correcting prices produced by the locational marginal pricing (LMP) design reflected in the tariff implementing the Market Redesign and Technology Upgrade (MRTU) Tariff in response to Paragraph 1416 of the September 21, 2006 Order.[1] Paragraph 1416 requires the CAISO to include stakeholders in the development of the CAISO's price validation and correction policies and to file any necessary tariff language. As discussed in detail below the CAISO has worked with consultants and evaluated price correction and validation tariff provisions of Independent System Operators (ISOs) and Regional Transmission Organizations (RTOs) and is proposing the process described in this issue paper.[2]

In addition, the CAISO is proposing to amend the standard of liability applicable to certain actions for damages, as set forth in the MRTU Tariff, primarily in Section 14, to replace the "negligence" standard currently in effect with the "gross negligence" in line with the standard of liability accepted by FERC for other ISOs and RTOs.

The CAISO is requesting written comments on both proposals. Following an expedited stakeholder process, the CAISO intends to seek authority from the CAISO Governing Board at the July Board meeting to file implementing tariff language for price validation and correction and to change the standard of liability by August 3, 2007.

II. Price Validation and Correction

A. Background

The CAISO has always had authority, and has authority under the MRTU Tariff, to correct prices to ensure that priced paid and charges collected are consistent with tariff. This is what the "filed rate" doctrine requires. With the introduction of LMP pricing and a Day Ahead Market, the magnitude of the CAISO's price setting responsibility is substantially increased and substantially more complex. Accordingly, and consistent with other ISOs and RTOs, the CAISO will be

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[1] Order Conditionally Accepting the California Independent System Operator Corporation's Electric Tariff Filing to Reflect Market Redesign and Technology Upgrade, 116 FERC ¶ 61,274 (September 21 MRTU Order).

[2] Attached hereto is a comparison of the tariff provisions of other ISOs/RTOs along with the CAISO's recommended approach for each category.

implementing business processes to ensure that prices are validated and corrected within reasonable time frames.

The CAISO has invested substantial time and effort reviewing the provisions of other ISOs and RTOs and has even visited the eastern ISOs to help ascertain which practices are best suited for the CAISO and are compatible with existing authority and procedures.

B. Market Validation and Price Correction Proposal

For simplicity the CAISO has separated this initiative into two main tasks, both of which will be performed in the Market Services group at the CAISO. These two processes are Market Validation and Price Correction.

1. Market Validation

One of the insights that emerged clearly from the practices of the other ISOs was the importance of a real-time validation process to continuously monitor the price-setting process and to correct any anomalous results as soon as possible. The PJM Interconnection and the New England Independent System Operator (ISO-NE) both have such a system and the New York Independent System Operator (NYISO) has plans to move in this direction. Under MRTU, the CAISO will continuously monitor market clearing results to identify anomalous resource commitment, dispatch levels, and prices that may have resulted from erroneous input data and/or hardware/software failure of the market applications. All markets in Day Ahead (DA) and Real Time (RT) shall be subject to this Market Validation process. Although the CAISO will make every effort to validate market clearing processes and results prior to publication of results, this will not always be the case, particularly for RT markets.

The goal of the Market Validation process is to minimize the occurrence and length (number of market intervals) of circumstances where invalid or problematic market solutions affect the dispatch of energy, and also to minimize the number of corrections to prices published from such invalid market solutions. For all Markets, the CAISO shall closely monitor results, and if time permits, correct problems and re-run Markets as necessary to minimize the number of post-publication Price Corrections. The window of opportunity to identify an invalid market solution, fix the root problem, and re-run the market before results are published outside the CAISO varies by market.

The 3 hour timeline (from 1000 hours to 1300 hours on Trading Day T-1) for the DA market offers the greatest opportunity to validate market outcomes before publishing results. CAISO Market Services business unit will thoroughly evaluated DA market runs prior to publishing results at 13:00, such that after-the-fact Price Corrections to DA prices published to OASIS will be uncommon. For the Hour Ahead Scheduling Process (HASP), and Real Time Unit Commitment

(RTUC) market runs, the Market Validation process has only a few minutes to identify when a solution is invalid, leaving little time to correct the root problem and re-run the market to avoid publishing invalid prices. In most cases, when a problem is found in a HASP or RTUC solution one or more invalid solutions may be dispatched and prices published. CAISO intends to make every effort to minimize the number of affected intervals under these circumstances. For the 5-minute Real Time Economic Dispatch (RTED) market runs, identification and resolution of an erroneous market solution will likely conclude after the dispatch has been issued and prices published to OASIS. When this occurs, CAISO will act to minimize the number of intervals affected by the problem going forward, and thus minimize the Price Corrections.

As mentioned above, the primary purpose of the Market Validation process is to correct prices promptly on a going forward basis so as to avoid after-the-fact corrections to the greatest possible degree. Once prices are published to OASIS for the first time they are then subject to the second process, namely the Price Correction process. All prices from all markets are preliminary, or "reserved," until such time as CAISO completes the subsequent Price Correction process.

2. Price Correction

The Price Correction process is a comprehensive evaluation of all prices for all intervals for a given Trading Day. The CAISO is proposing to set a timetable for this process, such that all prices published to OASIS shall be validated on or before the end of the Price Correction Time Horizon. Note, the CAISO has authority to correct prices if necessary after the Price Correction Time Horizon has expired for a given Trading Day, however, this timetable will indicate to Market Participants when the Price Correction Process, as described in this proposal, is complete. In addition the CAISO will post a monthly Price Correction status report on its website which summarizes Price Corrections for all market runs for all Trading Days in that month. This report will include an account of any erroneous prices, and will describe what actions were taken to correct the market prices, including which intervals were affected and which Pricing Locations were corrected. This report will not contain the "before and after" prices for all corrected Price Locations.

The goal of the Price Correction process is to correct invalid prices to be in conformance with relevant CAISO Tariff provisions where feasible and practical. Consistent with tariff authority approved by FERC for other ISOs and RTOs, in the case that it is not feasible and practical to do so, prices will be corrected as close as reasonably possible to the price that should have resulted under Tariff, and consistent with the prevalent system conditions. Price Corrections shall be made within a time certain following each Trading Day. CAISO will update OASIS with corrected prices at the earliest time within the Price Correction Time Horizon. The CAISO will provide notification for each Trading Day when its comprehensive validation analyses for the Trading Day is completed, indicating

to Market Participants that no further Price Corrections are expected for that Trading Day.

While the CAISO will make every effort to ensure that all corrections are as consistent as possible with the data and system conditions that prevailed for the invalid market interval, there is no guarantee that the final corrected prices will always be consistent with the dispatch of the applicable bid prices. Such inconsistencies are not retroactively resolved; that is, MW dispatches resulting from the invalidated market run are not re-calculated to be consistent with the replicated prices as it is likely that these events have already occurred. Rather, only prices from the replicated market solution are over-laid on the commitment and dispatch levels generated from the invalidated market run.

3. Scope of Price Corrections

General Conditions for Price Corrections

Prices may be corrected when (i) a market solution is determined to be invalid, or (ii) invalid prices are identified in an otherwise valid market solution. The following are some reasons that may be causes of these conditions:

a. In-Scope Aspects of Price Correction

1) Data Input failure. Missing or incorrect versions of one or more data elements input to the market applications may result in an invalid market solution and/or prices. State Estimator data, in particular, may be a cause of RT market validation problems, and will be a focus of the validation effort.
2) Hardware/Software failure. While CAISO has designed a very high degree of reliability into the MRTU systems' architecture, the market run may fail to yield a converged solution in all executions. This may be due to hardware or software failure, planned market systems outages, or simply a failure of the Security Constrained Unit Commitment (SCUC) optimization software to converge. In any case, such events result in an invalid or non-existent market solution, for which corrected prices will be determined after-the-fact, per Section 4 below.
3) Inconsistency with Tariff. A third category of invalid market solution or incorrect price calculations is related to the correct application of market rules, per CAISO Tariff. Market results will be validated to be consistent with CAISO Tariff, and where applicable, prices may be corrected to meet this goal. This includes, but is not limited to ensuring that (i) price setting resources are eligible to do so, and (ii) binding constraints are applied (or relaxed) in the appropriate priority order.

b. Out-of-Scope Aspects of Price Correction

1) Scarcity Driven Prices. Price anomalies, or price spikes, due to scarcity of resource bids will not be a cause for price corrections. The purpose of this initiative is neither to inflate nor suppress prices, merely to validate and correct them. In the course of its analysis the CAISO might compare prices to benchmark price metrics to highlight conditions for further analysis, but Price Corrections will not be performed absent any of the specific conditions described above.
2) Market Power Mitigation / Reliability Requirements Determination (MPM/RRD) Bid Curve Adjustments. Before the Integrated Forward Market (IFM) and HASP are run, the MPM/RRD process is applied to identify portions of market bids that are subject to bid mitigation, and to modify such bids for use in IFM or HASP as applicable. The extent to which bids are mitigated has a direct impact on the market clearing prices in the IFM or HASP/RTUC/RTED. Therefore, these SCUC solutions will be subject to Market Validation principles. However, it should be noted that prices resulting from the MPM/RRD SCUC passes are not themselves validated, as these prices are not used for settlement. Further note that if CAISO determines that an invalid MPM/RRD SCUC solution has yielded invalid bid mitigation and/or invalid RMR dispatch levels that materially affect the subsequent settlement market runs (IFM, HASP, etc), CAISO will attempt to correct these inputs to the settlement market run(s) and produce corrected settlement prices. In such an event, updated (corrected) RMR requirements will be re-posted to OASIS.
3) Advisory HASP and RTUC Prices. Advisory prices are not directly in scope for Price Correction. However, as part of the Price Correction process for binding HASP and RTUC prices, if a Price Correction action is taken that involves re-running the market or otherwise generates a new market solution affecting advisory prices, such revised advisory prices will be updated on the OASIS site.
4) Prices for Exceptional Dispatch. Prices for Exceptional Dispatch instructions will not be subject to the price correction framework, as they will not be the output of the market engine. These prices will be scrutinized by the Market Quality System (MQS) based upon their bid price and applicable tariff specifications.

c. Day-Ahead Market Details

The following is applicable to the Integrated Forward Market (IFM) and Residual Unit Commitment (RUC). The CAISO will validate all commitment decisions and dispatch levels to be consistent with bids, market rules, and system conditions. In this validation process, the CAISO will evaluate the integrity of all market

inputs and results. When a market solution is determined to be invalid, prices will be corrected as necessary, and the affected public market information re-posted to OASIS. In this context, strictly speaking, only final IFM Locational Marginal Prices (LMP), Ancillary Service Marginal Prices (ASMP), and transmission constraint shadow prices are subject to the Price Correction process described in this paper. This process is explicitly a price correction process and it will not alter dispatch levels after the fact. It will only correct the prices at which those dispatches are paid when required.

Other market results, including commitment decisions and dispatch levels, may be affected by a Price Correction action such as re-running a market with corrected input data, but are not subject to re-dispatch through Automated Dispatch System (ADS) or CAISO Market Results Interface (CMRI). Scheduling Coordinators (SCs) that are affected by dispatch level recalculations will be provided updated expected energy data and should rely on this as opposed to old ADS.

Specifically, the following elements are in scope for DA IFM Price Corrections:

1) Final Hourly LMPs for all Pricing Nodes (PNode) and Aggregated Pricing Nodes (APNode)
2) Marginal energy cost component
3) Marginal congestion cost component
4) Marginal loss cost component
5) Final Hourly ASMPs for all Pnodes
6) Final hourly transmission constraint shadow prices at each transmission interface

The price correction process will affect the LMPs at the PNodes, which in turn will change the hourly Resource specific prices that certain units receive. These Hourly Resource Specific prices, which are not published to OASIS but rather sent directly to relevant Market Participants via CMRI system, will be recalculated and resent, as necessary, to reflect any Price Correction actions taken.

d. Real-Time Market Details

Specifically, the following elements are in scope for RT Price Corrections:

1) Binding HASP Prices. All final hourly LMPs, ASMPs, and transmission constraint shadow prices for System Resource Scheduling Points, including each of the three cost components, are subject to the Price Correction process
2) Binding RTUC Prices. All final 15-minute ASMPs for all Pnodes are subject to the Price Correction process.

3) Real Time Economic Dispatch. All 5-minute Final LMPs for all Pnodes and APnodes are subject to the Price Correction process, including
    a) Marginal energy cost component
    b) Marginal congestion cost component
    c. Marginal loss cost component
4) Final 5-minute transmission constraint shadow prices. Additionally, final 5-minute transmission constraint shadow prices at each transmission interface will be validated and subject to Price Correction.

e. Miscellaneous

Hourly weighted average LMP's and 10-minute settlement prices will be corrected, as applicable, when 5-minute RTED prices are corrected. These prices are not directly subject to the Price Correction process, but will remain synchronized with the validated 5-minute prices as they are systematically derived by the corrected 5-minute prices. Prices for Default LAP and Trading Hubs are included in items above under the term Aggregated Pricing Nodes (APnodes). Corrections are a component of the overall CAISO Market Quality System (MQS) scope. Other components of MQS, such as after-the-fact expected energy calculations and Dispatch Operating Point (DOP) corrections, are not subject to the timetable dictated by the Price Correction Time Horizon. For further information on this process refer to the Market Operations BPM, Section 8.

4. Price Correction Methodology

Where feasible and practical, the CAISO shall correct invalid prices to conform with the relevant CAISO Tariff provisions. Where this is neither feasible nor practical the CAISO will correct prices as close as reasonably possible to the price that should have resulted under the Tariff provisions, using the most accurate data available, and in a manner that is consistent with the prevalent system conditions at that time. One of the following three methods shall be used, as appropriate, with respect to the nature of the invalid price conditions.

a. Isolated Price Corrections

When possible, the CAISO will selectively recalculate invalid PNode and APNode prices, such that the market optimization need not be re-run. This method can only be used when invalid prices are isolated and when corrections can be made such that no other market clearing prices are affected by the correction.

b. Market Re-Runs

A market solution may be determined to be wholly invalid because of hardware or software failure, incorrect data or solution parameters, or any other factor that

affects system wide results. When such a market solution is identified, the CAISO will attempt to recreate a valid SCUC solution for the affected market run. When the source of the problem is incorrect data, the market re-run will use as much validated data as possible from the original market run. To replace the problematic data, CAISO will either (i) restore the correct data when possible, or (ii) recreate or replicate data using the best available alternate data sources.

c. Replicate Prices from Validated Market Intervals

1) Day-Ahead Market: IFM and RUC

a) If the entire market solution is deemed to be invalid then all prices will be corrected using the re-run method specified above. In no cases will an invalidated DA market solution be replaced with a valid DA market solution from a previous Trading Day.
b) Interval replication shall only apply in DAM when some but not all hourly intervals within a valid market run are deemed to be invalid and the market is not rerun as explained above
c) Prices for an invalidated interval shall be replicated from prices for a validated interval that best represents the market conditions in the invalid interval. This will be an adjacent interval in most cases.

2) Real Time Market: HASP, RTUC, and RTED

Price replication in RT markets will only be under taken when both isolated price correction and market re-run actions are (i) not feasible because of CAISO's inability to generate a reasonably accurate set of input data or the SCUC cannot be made to find a feasible solution, or (ii) not practical from the perspective of validating all prices within the Price Correction Time Horizon.

For the source of replicated prices, the CAISO may use prices from validated intervals within the same market solution, similar to that which is described above in item 3.c, or may use prices from a previous or subsequent market solution. When prices are replicated from a previous or subsequent market solution, the replicated prices may be either binding or advisory prices. The selection of the source market solution and specific interval for price replication shall be based on the best representation of the market conditions for the invalidated interval.

The following are some details of the RTM price replication methodology:

a) For RTED (including Real Time Contingency Dispatch, or RTCD) and RTUC, source market intervals for price replication shall be taken from a market solution within the same Trading Hour as the invalid market interval for bid

consistency, when possible. If this is not possible the analyst will replicate prices from an interval in an adjacent Trading Hour that best resembles the market conditions of the invalidated market run.

b) For HASP, a previous or subsequent HASP market solution shall be used to replicate prices for an invalid HASP market run.

c) For Short Term Unit Commitment (STUC) process produces advisory prices for 15-minute intervals after the Trading Hour, which are not in-scope for Price Corrections. However, because the STUC is combined with one of the RTUC SCUC market runs, when this combined STUC/RTUC market run is invalidated, the prices for the Trading Hour may be corrected per replication method (a) described above. The advisory prices from STUC for intervals following the Trading Hour will not be corrected.

d) For RTED, prices may be replicated from the most representative market solution, and may be from a similar RTED market run, or from a similar 15-minute RTUC run, including HASP.

The order of the Price Correction methods listed above are shown in order of preference from most preferred to least preferred. When correction of prices can be done on isolated pricing locations or resources without impacting the over-all market solution, this method is preferred. If this is not possible, the preferred Price Correction method is to re-run the affected markets, with the root cause of the invalidation corrected. However, this may not always be feasible due to unrecoverable data loss, or may not always be practical within the Price Correction Time Horizon. In these situations interval or solution replication will be used.

C. Procedures

1. Publication

All prices published to OASIS and reported to Market Participants through CMRI are considered provisional until the validation and Price Correction process is completed. The CAISO shall post notification on its website when all prices are validated for each Trading Day. Such notice will apply to all market runs for the Trading Hour, and will not normally be issued until all market runs are validated.

2. Price Correction Time Horizon

The CAISO will begin validating market prices immediately upon publication of results for all market runs. The price validation process for a given Trading Day will conclude at a time certain, measured in number of days after the Trading Day. The period between the end of the Trading Day and the end of the price validation process is called the Price Correction Time Horizon. All prices for a given Trading Day are subject to validation and possible Price Correction until such time as (i) the Price Correction Time Horizon has ended for that Trading Day, or (ii) CAISO has published notice to its website that the validation process for the Trading Day is concluded.

The CAISO shall seek to conclude its price validation process and publish as soon as possible a notice indicating that no further validation or Price Corrections will occur for a Trading Day. If no such notice is published before the end of the Price Correction Time Horizon for a Trading Day, then such notice is implied by the expiration of that time period, and no further validation or Price Corrections will occur for the Trading Day. The CAISO has authority to correct prices if necessary after the Price Correction Time Horizon has expired for a given Trading Day. However, this timetable will provide to Market Participants an indication as to when the normal Price Correction Process has concluded.
The CAISO is proposing the following phased approach for implementing the Price Correction Time Horizon. This approach is phased as the CAISO would like time to gain familiarity with the process before it constrains itself to the tighter three-day time line.

1) The Price Correction Time Horizon shall be eight calendar days for the first 90 days of MRTU operations, meaning that the Price Correction Time Horizon shall begin at the time of publication of market prices to OASIS for the Trading Day, and shall end at 17:00 on the eighth calendar day following that Trading Day
2) Between the 91st day and the one year anniversary of the MRTU deployment the Price Correction Time Horizon shall be five calendar days.
3) Beginning exactly one year after MRTU deployment Price Correction Time Horizon shall be three calendar days.

3. Reporting

All Price Corrections within a calendar month shall be summarized in a report and published on the CAISO website. This report shall be published on the CAISO website no later than the 10th day of the month following the reported month. For each instance of market invalidation, the monthly report shall contain:

- Brief description of root cause of market invalidation
- Market intervals that were affected
- Price locations that were affected
- Method of Price Corrective action(s) taken

The monthly report will not contain "before and after" data for Price Corrections. Once invalid prices are replaced with corrected prices on OASIS, the old invalid prices are no longer relevant and will not be made available. Note that OASIS does provide data versioning functionality which allows Market Participants to identify which data points have been updated during the Price Correction process, and also can be set to notify Market Participants upon updates to data therein.

III. Standard of Liability

Under Section 14.5 of the MRTU Tariff, the CAISO is liable for direct and consequential damages from the performance or non-performance of its duties to the extent that the damages result from negligence or intentional wrongdoing. Under Section 14.6, Potomac Economics is held to the same standard of liability for calculations Default Energy Bids. Finally, under Section 14.4, each Market Participant must indemnify the CAISO against damages arising from the Market Participant's acts or omissions except in the case of the CAISO's negligence or intentional wrongdoing.[3] The CAISO is proposing to amend the MRTU Tariff in each instance such that standard of liability would be limited to gross negligence or intentional wrongdoing. This change would be consistent with the standard of liability accepted by FERC for a number of other independent system operators (ISOs) and Regional Transmission Organizations (RTOs) including ISO New England, PJM, the Midwest ISO, and the Southwest Power Pool (SPP).

A. Background

As initially filed in 1997, the ISO Tariff would have limited the CAISO's liability for damages unless a tariff violation directly caused physical damage to property, death, or injury. The Tariff would also have excluded consequential damages or indirect financial loss. FERC rejected these limitations and directed that the tariff "be modified so as not to provide any limitation on liability of the ISO ... in the cases of [its] negligence or intentional wrongdoing."[4] This directive was consistent with the *pro forma* open access tariff adopted by the Commission in order No. 888 under which the only liability protection provided a transmission provider was against tariff violations due to force majeure and pursuant to which

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[3] The same standard is set forth in Sections 14.2, 14.3 and 14.4 of the currently effective ISO. These sections are identical to the sections in the MRTU Tariff except for numbering changes and the fact the Potomac Economics calculates reference levels under the currently effective tariff.

[4] *Cal. Ind. Sys. Operator Corp.*, 81 FERC ¶ 61,122 at 61,520 (1997).

a transmission customer was not required to indemnify the transmission provider against third party claims in cases of negligence or intentional wrongdoing.[5]

The CAISO sought rehearing of this determination, citing California law limiting the liability of public utilities in various respects. The CAISO asked that, at the very least, the commission authorize a gross negligence standard with regard to activities that went beyond open access transmission, as it had done for the New York ISO with respect to its market monitoring activities.[6]

In an order issued on November 22, 2002, the Commission noted that the ISO had misunderstood its order. Contrary to the Commission's intended directive, the CAISO had not deleted the liability provisions, but rather had modified them in a compliance filing to specify a negligence standard and to allow the recovery of consequential damages. After discussing its ongoing consideration of the inclusion of liability provisions in tariffs as part of its Standard Market Design, the Commission reversed itself and allowed the CAISO to include liability provisions in the ISO Tariff. If did not approve the original tariff, however, but the compliance filing provisions specifying a negligence standard. The approval was subject to the outcome of the Standard Market Design rulemaking and without prejudice to the CAISO's making a filing that would limit its liability to direct damages.[7]

The Commission never completed its Standard Market Design rulemaking and has subsequently addressed liability limitations on a case-by-case basis. In every instance in which an RTO or ISO has proposed limiting its liability to instance of gross negligence – PJM, SPP, the Midwest ISO, and ISO New England[8] – the Commission has approved the limitation.[9]

B. Justification for the "Gross Negligence" Standard

In its orders approving limitations on liability for ISOs and RTOs, the Commission has made a number of findings justifying those provisions:

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[5] Order No. 888, Open Access Non-Discriminatory Transmisison Services Provided by Public Utilities; Whole Competition Promotion; Stranded Cost Recovery by Public and Transmitting Utilities; Final Rule, 61 Fed. Reg. 21540, 21616 (1996) (subsequent history omitted).

[6] *New York Ind. Sys. Operator Corp.*, 89 fERC ¶ 61,196 at 61,604 (1999).

[7] *Cal. Ind. Sys. Operator Corp.*, 101 FERC ¶ 61,219 at P 110-113 (2002).

[8] *See* PJM Interconnection L.L.C., 112 FERC ¶ 61,264 at pp 9-10; Southwest Power Pool, Inc., 112 FERC ¶ 61,100, pp 36-44 (2005) ("SPP"); Midwest Indep. Transmission Sys. Operator, Inc., 110 FERC ¶ 61, 164 at p 29 (2005). The relevant provision of theapproved ISO New England Tariff is § I.5.2. FERC was never called upon to rule directed on this provision.

[9] The Commission has also stated that it does not intend to extend this policy to all transmission providers. Southwest Power Pool at P 39.

1) A gross negligence standard strikes an appropriate balance between lower rates for all customers and the burden of limited recover for some.

    a. Excessive damage awards would be reflected in higher insurance premiums and higher cost of capital, costs that would be borne by all customers.

    b. Excessive damage awards would be passed through to all customers.[10]

2) As courts have found, the technological complexity of modern utility systems increases the potential for system failures unrelated to human errors, necessitating greater liability protection.[11]

3) ISOs and RTOs cannot deny service to particular customers or adjust rates based on the potential risk of damages associated with service to those customers. Absent limitations on liability, all customers would ultimately bear the cost associated with the service to high risk customers, including those customers that do not have special reliability needs.[12]

Although in these cases FERC also discussed state law liability applicable to retail electric provider that are not relevant to California, the policy considerations reflected in these findings form the core of FERC reasoning in approving the liability limitations. Each of these justifications would be equally applicable to the CAISO. As the Commission stated in *Southern Company Services, Inc.*, "The Commission has provided such liability protection to RTOs/ISOs because they were created by and solely regulated by the Commission, and otherwise would be without limitations on liability."[13] As the CAISO implements its LMP market design, with the attendant exposures due to the new markets, hardware, and software, it is an appropriate time to obtain the protection afforded similarly situated organizations.

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10 *SSP* at P 36; *PJM* at P 7; Midwest Indep. Transmission Sys. Operator, Inc., at P29.

11 *SSP* at P 36, citing *Trans. Access Policy Study Group v. FERC*, 225 F.3d 667. 727 (D.C. Cir. 2000).

12 *SSP* at P 38, *PJM* at P 8.

13 113 FERC ¶ 61,239 at P 7 (2005).

Attachment F

California ISO
Your Link to Power

California Independent
System Operator Corporation

Memorandum

To: ISO Board of Governors

From: Jim Detmers, Vice President, Operations

cc: ISO Officers

Date: **July 9, 2007**

Re: **Price Validation and Correction and Standard of Liability under MRTU**

This memorandum requires Board action.

EXECUTIVE SUMMARY

The CAISO is seeking Board approval to file two new proposals with the Federal Energy Regulatory Commission. The CAISO has always had authority under the ISO Tariff and the "filed rate" doctrine to validate and correct prices. With the addition of a Day Ahead Market and locational marginal pricing (LMP) under the Market Redesign and Technology Upgrade program (MRTU), the CAISO now proposes to add processes in the tariff for validating and correcting all the prices produced by the new market design under MRTU.

In addition, FERC requires the CAISO to include stakeholders in the development of the CAISO's price validation and correction policies and to file any necessary tariff language. The CAISO published a white paper on this issue, engaged with stakeholders, worked with consultants and examined the practices of other ISOs to distill their best practices. From the information developed through these processes, the CAISO is recommending the market validation and price correction process described below. In addition, the CAISO proposes to amend the standard of liability that would be applicable to the CAISO in certain actions for damages. Management proposes to replace the "negligence" standard currently in effect with the "gross negligence" in line with the standard of liability accepted by FERC for other ISOs and RTOs.

Moved, that the ISO Board of Governors approve the policy principles related to Price Validation and Correction as well as the change in the standard of liability from "negligence" to "gross negligence" as described in the memorandum dated July 9, 2007; and

That the ISO Board of Governors authorize Management to make all appropriate and necessary filings with the FERC in support of this policy proposal.

PRICE VALIDATION AND CORRECTION

The CAISO has always had authority, and has authority under the MRTU Tariff, to correct prices to ensure that the prices paid and the charges collected are consistent with the tariff. With the introduction of LMP pricing and a Day Ahead Market, the magnitude of the CAISO's price setting responsibility is substantially increased. Accordingly, and consistent with other ISOs and RTOs, the CAISO will be implementing business processes to ensure that prices are validated and corrected within reasonable time frames.

The CAISO has invested substantial time and effort reviewing the provisions of other ISOs and RTOs and has even visited the eastern ISOs to help ascertain which practices are best suited for the CAISO and are compatible with existing authority and procedures. For simplicity the CAISO has separated this initiative into two main tasks, both of which will be performed in the Market Services group. These two processes are Market Validation and Price Correction.

Market Validation

One of the insights that emerged clearly from the practices of the other ISOs was the importance of a real-time validation process to continuously monitor the price-setting process and to correct any anomalous results as soon as possible. The PJM Interconnection and the New England Independent System Operator (ISO-NE) both have such a system and the New York Independent System Operator (NYISO) has plans to move in this direction. Under MRTU, the CAISO will continuously monitor market clearing results to identify anomalous resource commitment, dispatch levels, and prices that may have resulted from erroneous input data and/or hardware/software failure of the market applications. All markets in Day Ahead and Real Time shall be subject to this Market Validation process. Although the CAISO will make every effort to validate market clearing processes and results prior to publication of results, this will not always be the case, particularly for Real Time markets.

The goal of the Market Validation process is to validate all final market solutions and to minimize the occurrence and length (number of market intervals) of intervals where invalid or problematic market solutions affect the dispatch or pricing of energy, Ancillary Services, and Residual Unit Commitment Capacity. Meeting this goal will minimize the number of corrections to prices published from such invalid market solutions, and will increase the quality of our dispatch and pricing. To accomplish this goal, the CAISO will closely monitor results from all final market runs, and if time permits, correct problems and re-run markets as necessary to minimize the number of post-publication Price Corrections

Once prices are published to the Open Access Same-Time Information System ("OASIS") for the first time, they are then subject to the second process, namely the Price Correction process. All prices from all markets are preliminary, or "reserved," until such time as CAISO completes the subsequent Price Correction process.

Price Correction

The Price Correction process is a comprehensive evaluation of all prices for all intervals for a given Trading Day. The CAISO is proposing to set a timetable for this process, such that all prices published to OASIS shall be validated on or before the end of the Price Correction Time Horizon. The CAISO has authority to correct prices if necessary after the Price Correction Time Horizon has expired for a given Trading Day, however, this timetable will indicate to Market Participants when the Price Correction Process is complete. In addition the CAISO will post a monthly Price Correction status report on its website which summarizes Price Corrections for all market runs for all Trading Days in that month. This report will include an account of any erroneous prices, and will describe what actions were taken to correct the market prices, including which intervals were affected and which Pricing Locations were corrected.

The goal of the Price Correction process is to correct invalid prices to conform with relevant CAISO Tariff provisions and to be consistent with prevalent market and system conditions. In the event that it is not feasible or practical to correct invalid prices to be perfectly consistent with the above stated goal, the prices will be corrected as close as is reasonably possible to the price that should have resulted under the Tariff, and that is consistent with the prevalent system conditions. Other RTOs have similar tariff authority. Price Corrections shall be made within a time certain following each Trading Day. The CAISO will update OASIS with corrected prices at the earliest time within the Price Correction Time Horizon, and will provide notification for each Trading Day when its comprehensive validation analyses for the Trading Day is complete. The CAISO has proposed the following staged Price Correction Time Horizon, which will move the CAISO towards a time frame broadly similar to other ISOs.

- Eight calendar days for the first 90 days of MRTU operations
- Five calendar days between the 91st day and the one year anniversary of the MRTU deployment
- Three calendar days beginning exactly one year after MRTU deployment.

Development of CAISO Proposal for Price Validation and Correction[1]

The CAISO views this proposal as fairly uncontroversial as it is a standard feature of operation for the other eastern ISOs that have LMP systems. In October of 2006, a number of CAISO personnel visited three eastern ISOs, namely the PJM Interconnection, the New York Independent System Operator (NYISO) and the Independent System Operator of New England (ISO-NE). The purpose of these visits was to benefit from the experiences of these other ISOs so that the CAISO could start this process higher up the learning curve. Thereafter the CAISO formulated a white paper and gained internal consensus as to where this function should reside. After extensive discussion the CAISO personnel decided that the function should best reside in Market Services, although close cooperation with Grid Operations is required for the Market Validation aspect. The Price Correction aspect has historically resided in Market Services and this will continue. The CAISO then initiated a stakeholder process.

CHANGING THE STANDARD OF LIABILITY UNDER THE CAISO TARIFF

Under Section 14.5 of the MRTU Tariff, the CAISO is liable for direct and consequential damages from the performance or non-performance of its duties to the extent that the damages result from negligence or intentional wrongdoing. Under Section 14.4, each Market Participant must indemnify the CAISO against damages arising from the Market Participant's acts or omissions except in the case of the CAISO's negligence or intentional wrongdoing.[2] Under Section 14.6, Potomac Economics is held to the same standard of liability for calculations Default Energy Bids. The CAISO is proposing to amend the MRTU Tariff in each instance such that standard of liability would be limited to gross negligence or intentional wrongdoing. This change would be consistent with the standard of liability accepted by FERC for a number of other independent system operators (ISOs) and Regional Transmission Organizations (RTOs) including ISO New England, PJM, the Midwest ISO, and the Southwest Power Pool (SPP).

[1] Further details of the Market Validation and Price Correction process is available at http://www.caiso.com/17ba/17ba873e19350.html under the topic "Price Validation and Correction"

[2] The same standard is set forth in Sections 14.2, 14.3 and 14.4 of the currently effective ISO Tariff. These sections are identical to the sections in the MRTU Tariff except for numbering changes and the fact the Potomac Economics calculates reference levels under the currently effective tariff and will be calculating Default Energy Bids under the MRTU Tariff.

STAKEHOLDER PROCESS

FERC requires the CAISO to include stakeholders in the development of the CAISO's price validation and correction policies and to file any necessary tariff language. On June 15, 2007, the CAISO posted a white paper on its external website and sent out a market notice detailing the procedures for the stakeholder input. The CAISO received written comments from one stakeholder. On July 2, 2007, the CAISO hosted a conference call with market participants to discuss the written comment and any other comments or questions that market participants wanted to discuss concerning these proposals. Fifteen market participants participated and were generally supportive of both initiatives, Price Correction and Market Validation, as well as the change in the standard of liability, and the call ended early. No objections to these proposals were lodged by market participants during the stakeholder process.

Attachment G

California ISO
Your Link to Power

California Independent
System Operator Corporation

Memorandum

To: CAISO Board of Governors

From: Karen Edson, Vice President of External Affairs
Don Fuller, Director, Customer Services & Industry Affairs
Tom Delaney, Account Manager

Date: April 12, 2007

Re: **Authorization to File Tariff Amendment to Enable Business Practice Manuals (BPMs) Change Management Process**

This item requires board approval.

Executive Summary

Over the past year, the CAISO and stakeholders have been working to develop a set of manuals that provide detailed instructions to stakeholders on how to operate consistent with the CAISO's new Market Redesign and Technology Upgrade (MRTU). While the MRTU Tariff defines all the necessary FERC jurisdictional rates, terms and conditions, the Business Practice Manuals or BPMs will contain the implementation detail and other helpful information that need not be in the tariff.

The BPMs are intended to be changed and improved over time to provide additional clarity or information, such as examples and timelines, consistent with existing tariff authority. Keeping in mind that BPMs are not tariffs, they contain procedures and other information that are important to stakeholders and the orderly operation of our CAISO markets. Thus, stakeholders have requested and FERC has directed that BPM changes be managed in an orderly and transparent manner.

In response, the CAISO has worked with stakeholders to develop a separate BPM for BPM change management that details the process for all changes to the BPMs. Both stakeholders and CAISO staff can propose changes with a Proposed Revision Request (PRR). A special web page will host all PRR postings, facilitate the stakeholder comment periods, track monthly stakeholder meeting discussions, and ultimate disposition of the request. In cases where the CAISO must implement emergency changes, those changes will be communicated through market notices and postings on the web, followed by the normal PRR review process which will occur after the changes go into effect.

This memo seeks Board authorization to make an appropriate tariff amendment filing to authorize the BPM change management process.

Background

In 2005, as part of the stakeholder process for developing the MRTU Tariff, the CAISO expressed its vision for a comprehensive Tariff for MRTU with supporting implementation detail to be included in Business Practice Manuals (BPMs) that would not be on file at FERC. The CAISO intended that the BPMs would also include examples, and templates and other information to assist market participants in operating within the MRTU markets. A total of 14 BPMs have been developed, supported by an extensive review effort by Stakeholders. They address the following functional areas:

1. Market Operations
2. Market Instruments
3. Settlements & Billing
4. Scheduling Coordinator Certification & Termination
5. Congestion Revenue Rights
6. Managing Full Network Model
7. Rule of Conduct Administration
8. Outage Management
9. Metering
10. Reliability Requirements
11. Credit Management
12. Compliance Monitoring
13. Definitions & Acronyms
14. BPM Change Management

Stakeholder concerns regarding BPMs fell into two general areas: (1) BPMs contain rates, terms and conditions and, therefore, some or all of the material must be filed with FERC; and (2) if BPMs are not filed with FERC, the CAISO must have a BPM change management process that affords interested parties with due process, including notice and an opportunity to comment prior to the effective date of proposed changes.

In the September 21, 2006 MRTU Order,[1] FERC agreed that BPMs would not need to be filed with FERC but required the CAISO to engage in a review process with stakeholders to consider whether any additional tariff language is necessary to support the BPMs.[2] The CAISO is engaged in that process now and will be making its compliance filing on May 2, 2007 to be followed by a Technical Conference to be scheduled by FERC, likely this summer. FERC also required the CAISO to file proposed draft tariff language for a BPM change management process at the same time.[3]

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[1] *Order Conditionally Accepting the California Independent System Operator's Electric Tariff Filing to Reflect Market Redesign and Technology Upgrade,* 116 FDERC ¶ 61,274 (2006) (September 21 MRTU Order).

[2] September 21 MRTU Order at P 1370.

[3] September 21 MRTU Order at P 1371.

The BPM Change Management Process

The CAISO has developed proposed tariff language and a draft Business Practice Manual devoted to the BPM change management process. These materials are posted at: http://www.caiso.com/1ba3/1ba39e1613f80.pdf . Consistent with the CAISO's tariff vision, the tariff language includes general enabling language while the BPM provides the implementation detail.

The CAISO's change management process is a hybrid of other ISOs' stakeholder processes, and the process used during the stakeholder review of the CAISO BPMs in 2006. The process will facilitate the exchange of ideas and information regarding maintenance and modifications to CAISO's BPMs in as transparent a way as possible so that decisions can be made in light of all relevant information and in consideration of the impact of proposed changes on Market Participants. Furthermore, a record will be built recording participant positions and CAISO positions offering a history of how decisions were developed. The CAISO's change management proposal borrows from ERCOT's web-based approach, which can be found at: http://www.ercot.com/mktrules/protocols/index.html. The proposal requires use of a simple request template, which will trigger a systematic review process that the submitter and interested stakeholders alike can follow on a devoted page on the CAISO's website to provide transparency.

The process starts with a Proposed Revision Request (PRR). The PRR is a template on which a submitter outlines the proposed change, the reason for the change, impacts and benefits of the change on CAISO Market Operations and on stakeholders, and offers suggested language to implement the proposed change. The same form will be used by everyone requesting a change whether it is requested by a market participant or CAISO staff. Complete forms will be posted on the Web page for a 10-day comment period.

A designated CAISO BPM Change Management Coordinator will manage the overall process with the help of the CAISO BPM Owners. The BPM Change Management Coordinator will make a preliminary categorization of incoming PRRs:

1. Clarifications of existing tariff language, grammatical errors and or revisions with minor significance
   - If no comments are received in the 10-day period, these can be implemented at any time and will be included in next regular scheduled version release.
2. Revisions of substantial significance or changes to CAISO or Market Participant systems
   - These revisions will not be implemented until after a discussion at the next scheduled BPM Change Management meeting unless emergency or urgent circumstances exist.
3. Revisions implementing significant new CAISO policies and/or requiring revisions to the CAISO tariff.
   - These type of changes will likely fall outside the BPM process and require alternative treatment.

The CAISO Change Management Coordinator will host the monthly meetings that may be held in Folsom or may be held by conference call depending on the volume and complexity of changes in a particular month. The monthly meeting discussion could lead to a recommendation, or additional analysis and review. In cases requiring additional consideration, the change will be taken up again at a subsequent monthly meeting. Following that meeting, the CAISO Change Management Coordinator will publish a decision on the website, which will become final in the absence of an appeal. Actual implementation could occur immediately thereafter or may be deferred until a scheduled BPM update.

Emergency Changes by the CAISO and Stakeholder Appeal

The CAISO is committed to the public, transparent process described above. In some circumstances, however, immediate changes are essential to protect the system or comply with lawful directives. In the event such changes are necessary, the CAISO will continue a public process by:

- Soliciting stakeholder comments prior to an emergency change, if practicable,
- Issuing a Market Notice concerning emergency revisions,
- Posting a notice on the web, and
- Subjecting the emergency change to the standard review process while the change remains in effect

The BPM addresses emergencies by allowing unilateral changes by the CAISO when a change is necessary to avoid substantial adverse impact on system reliability, security or CAISO Markets. Emergency changes also include those that are required to comply with the CAISO Tariff; any applicable law or regulation; NERC or WECC policies, guidelines or standards; or a FERC Order. Most importantly, the CAISO will in every case attempt to avoid emergency changes. When an emergency change cannot be avoided, the CAISO will, as described above, conduct a robust public process for considering the change while it remains in effect.

To address the stakeholder concern for an appeal process, the draft BPM proposes to permit appeals to a CAISO Officer Committee within 10 Business Days from the date the decision is posted on the website. The CAISO Officer Committee will issue a decision on appeal within 30 days. While the BPM does not expressly provide for an appeal to the governing board, stakeholders always have the ability to address the Governing Board in public session and/or to file a complaint with FERC.

Stakeholder Process to develop the Change Management BPM

The initial straw proposal for the BPM Change Management process was discussed with stakeholders in mid-2006. Subsequent revisions to the straw proposal were made in December 2006 and March 2007, and most recently, in April 2007 in response to stakeholder comments. The proposal was presented at three MRTU forums and stakeholders were encouraged to comment. Written comments submitted by stakeholders are attached to this memo, and have been helpful in shaping this recommendation. Stakeholder support has grown, with a majority of stakeholders expressing some level of support for the proposed BPM change management process. Nevertheless, concerns remain. Some stakeholders oppose CAISO having unilateral authority to make final decisions; some seek a formal stakeholder voting structure; some want formal board approval of all changes; and some still seek to have all the BPMs filed at FERC.

Management believes that the proposed process represents an appropriate starting place that reasonably balances competing interests. It provides for both a public, transparent process and direct stakeholder participation. At the same time, it retains direct management accountability for business practices and the successful operation of CAISO markets and systems.

Next Steps

With Governing Board approval, the CAISO will file the necessary enabling tariff language to support the BPM for BPM Change Management so that it may be included in the May 2 compliance filing. Pursuant to P 1370 of the September 21 MRTU Order, FERC will establish a formal comment period and schedule a Technical Conference to

assess whether the MRTU Tariff has adequate enabling language for all of the BPMs and to clarify what should be in the BPMs and what should be in the tariff. That conference is not scheduled, but likely will occur this summer. We expect this Change Management Process to be a topic at that conference. Finally, the CAISO will work between now and February 2008 to finalize the web-site design and development and to ensure that internal processes are ready to implement the BPM change management process by January 31, 2008.

Motion

Moved,

That the ISO Board of Governors approve the proposal for the CAISO to implement the Business Practice Manual change management process as described in this memorandum dated April 12, 2007; and

That the ISO Board of Governors authorize Management to make all necessary and appropriate filings with the Federal Energy Regulatory Commission to implement this proposal.

Attachment H

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BPM for BPM Change Management - Questions & Comments

Organization	Submitter	Dated Received	Participant Question	CAISO Response
Power Costs, Inc.	Douglas Logan	01-Jan-07	It is of utmost importance for efficient and uninterrupted operation of the CAISO market that any changes in CAISO operations, interfaces, or calculations that may potentially affect participant operations, interfaces, or calculations be developed and implemented by CAISO in a way that allows full involvement by market participants in the design of the changes and appropriate lead time for participants and their system vendors to implement the changes. PCI strongly supports the adoption of a change management process with minimum timelines for review, comment, approval, and implementation of market changes that may require changes to market participant software, whether or not such changes entail business practice manual revisions.	California ISO agrees and thanks Power Cost for these comments.
Power Costs, Inc.	Douglas Logan	01-Jan-07	we urge that the development of change management rules not be limited to BPM changes. Change management must address any change potentially affecting market participant software, interfaces, or processes even if it does not entail a BPM revision.	California ISO agrees and thanks Power Cost for these comments.
Power Costs, Inc.	Douglas Logan	01-Jan-07	lead time between release by CAISO of final BPM revisions, technical interface specifications, or other documentation that may be needed by participants or vendors to implement the corresponding changes on the participant side, must not be less that one to two months. Any emergency process with a shorter lead time must be strictly defined to prevent use in non-emergency situations or other abuses.	California ISO agrees and thanks Power Cost for these comments.
Williams	Brian Theaker	15-Jan-07	When will the BPMs be locked down so that this process applies to prospective changes?	Most feedback on this issue can be summarized as follows; - BPM's must be reasonably complete first. - Knowing that some manuals will be less subject change and/or developed than others, locked down so that this process applies to prospective changes should be on a BPM by BPM basis. - Some believe lock down should be just before the start of MRTU and - Some believe CAISO should wait a few months after the start of MRTU knowing that adjustments will be necessary. This may requires utilization of an interim or scaled version of the CM proposal as a bridge until the future process and platforms can be created. Therefore, the California ISO seeks further customer feedback as to when the BPM change management process should be evoked and in place. This topic would be an appropriate topic for the FERC Technical conference.
Williams	Brian Theaker	15-Jan-07	CAISO's general policy of making information available through its web site, which is beyond the scope of this process. I know the sentence says "at least" 180 days, but is the CAISO considering a policy in which materials would be made available on its web site only for a limited amount of time and then removed at some future date? I perceive that is not its current practice – that it posts everything from start-up. Maybe the second sentence should be deleted to avoid raising this question, unless the CAISO wants it raised.	California ISO should research this provision further. The 180 day availability of online information was not meant as a new CAISO policy limiting how long such postings remain on our web site. It was offered in this draft as a suggestion only. The CAISO's current thinking is that information should remain available, although older information will likely be archived.
Williams	Brian Theaker	15-Jan-07	To facilitate arranging travel, this group should probably meet on a given date – say the Nth [Weekday] of each month – or publish a meeting schedule a year in advance. I urge the CAISO to consider committing to posting the meeting materials a set number of days (5? 7?) in advance of the meeting.	California ISO agrees with stakeholders in this area. CAISO's intent of having a regularly scheduled monthly meeting was to facilitate better coordination of schedules between the California ISO and its customers.

California ISO
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BPM for BPM Change Management - Questions & Comments

Organization	Submitter	Dated Received	Participant Question	CAISO Response
Williams	Brian Theaker	15-Jan-07	Trying to create a laundry list of who can submit PRRs. And in regards to 5 (a) and (b) – I can understand the CAISO's desire to not be inundated with PRRs from entities that have no interest in the change proposed, but is that restriction really necessary? If someone from Williams somehow found a mistake in the CRR BPM, would Williams be precluded from bringing this to the CAISO's attention if Williams had not been allocated any CRRs? Is the BPMCMG better suited to filter out any "hazing" PRRs, if indeed there are any?	CAISO's intent in this language was not to purposely limit any stakeholders' ability to comment on any PRR posted. The process will likely evolve based on actual experience and through submission of a PRR proposing in the event problems arise.
Williams	Brian Theaker	15-Jan-07	CAISO's section about emergency circumstances does not seem like a unreasonable provision, but it's full of undefined buzzwords. How would the CAISO define system "security" as differentiated from "reliability"? What is market "efficiency"? Given that this provision is likely to be a lightning rod anyway, can the CAISO be more specific about these things?	It is not likely to be possible to capture all possible emergency circumstances. The CIASO hopes that these will be rare and that there will likely be consensus on the need for more expedited action.
Williams	Brian Theaker	15-Jan-07	Is it possible that someone other than the CAISO could identify a BPM change that should be implemented on an emergency basis? How would that happen? Would they notify the CAISO, who would then implement the change on an emergency basis in accordance with the steps listed?	Yes, participants other than California ISO can identify BPM changes requiring emergency consideration. One enhancement to the process requires all participants [including the California ISO] use the same process to invoke consideration for action under emergency circumstances.
Williams	Brian Theaker	15-Jan-07	CAISO decides it needs an emergency change to a BPM. Does the urgent change automatically go into effect, and then the BPMCMG considers the PRR for the change after the fact at the next meeting? Or does the emergency change not go into effect until the BPMCMG chair calls a special meeting of the BPMCMG? Would the BPMCMG only hold a special meeting if a non-CAISO entity submits an urgent change request?	The process will depend on the nature of the emergency. It is reasonable to believe that on occasions emergency circumstances will necessitate changes that cannot be done under normal time constraints. We anticipate that this will be rare and infrequent. California ISO does not intend to a fast-track as a mechanism to abate stakeholder input, but rather, as a pragmatic necessity. Moreover, under such circumstances CAISO intends to engage with customers to determine whether or not the emergency change should remain in effect or whether other means should be considered and/or substituted. Special meeting may not be necessary considering change management meetings are prescheduled on a standing monthly basis, but when necessary special meetings would be held on regardless of whom requiring the emergency measures.
Williams	Brian Theaker	15-Jan-07	What if the BPMCMG Chair modifies the language in such a way that the party submitting the original PRR opposes the change? Granting this kind of unfettered editing power to the chair seems to have the potential to render the submittal process moot.	The description of the BPM change management chair, now refered to as coordinator, was to facilitate discussion. CAISO management will, necessarily, have more editorial control over language than market particpants. Conceivably California ISO could morph the original requested languageresulting in a PRR that is undesirable to its original owner. Therefore, the original submitter of the PRR can request to withdrawal unless another given party requests to be the new owner of the language. In such cases, the suggesting party will be adopting the language for their own. This does not foreclose on the original owners ability to appeal such developments as well.

California ISO
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BPM for BPM Change Management - Questions & Comments

Organization	Submitter	Dated Received	Participant Question	CAISO Response
Williams	Brian Theaker	15-Jan-07	Requiring the CAISO to perform an evaluation of the impact of the PRR for every PRR that comes in – including, potentially, goofy ones – may not be reasonable. Is there a way to triage the initial PRRs and then determine which PRRs warrant evaluation? Or is the CAISO OK with performing initial impact evaluations on all submitted PRRs?	CAISO agrees that some PRRs will not require impact evaluations. Some might need some form of objective criteria to measure its true impacts and other not. Requests shall range such as; - Clarification of language - Grammatical in nature - Meaningful impacts to California ISO markets - Meaningful impacts to market participants It is the intent to triage requests into generic categories before the regularly scheduled monthly participant meeting to determine the scope of the request and its potential requirements.
Williams	Brian Theaker	15-Jan-07	the role and authority of the BPMCMG Chair relative to the BPMCMG as a whole. The first sentence says the group Chair will [unilaterally] review the IA at the next regularly scheduled BPMCMG meeting. If that authority resides solely in the Chair, why wait to the next meeting? The presentation makes clear that the role of the BPMCMG is still under consideration, but this language doesn't seem to hold out much of a meaningful role for anyone other than the Chair.	The intent of BPM Change Management Process is to facilitate the exchange of ideas and information regarding maintenance and modifications to CAISO's BPMs in as transparent a way as possible so that decisions can be made in light of all relevant information and in consideration of the affect of proposed changes on Market Participants. Furthermore, a record should be built recording customer's positions offering a history of how decisions were developed. But, if stakeholders cannot come to consensus the California ISO by default is left in a position as the decider amongst competing alternatives. For that very reason, we encourage stakeholders to reach consensus rather than having the ISO be the arbitrator of the final decision. The BPM process now includes the right to appeal to an Executive Committe and staekhodlers can always raise issues of concern to the Board.
Williams	Brian Theaker	15-Jan-07	Does this mean that the BPMCMG might take on a responsibility to revise proposed language? What if the request is revised in a way that isn't supported by the original party that submitted the PRR? Should that trigger a withdrawal of a PRR and a resubmittal of a new PRR by the CAISO? Should the BPMCMG have a binary role – reject or approve?	Conceivably, as participants [including CAISO] offer inputs throughout the process the original PRR and/or requested language can evolve leaving the original modified undesirable to its original owner. Therefore, the original submitter of can request to withdrawal the PRR unless another given party requests to be the new owner/sponsor of the language. This does not foreclose on the original PRR owner ability to appeal such developments.
SCE	David Schiada	26-Jan-07	SCE is encouraged by the CAISO's Straw Proposal. The Straw Proposal would establish a formal stakeholder process for BPM changes, something that was absent from the CAISO's MRTU Tariff filing.	California ISO appreciates stakeholders' statements and support in the further development of the change management protocols.
SCE	David Schiada	26-Jan-07	SCE supports the Straw Proposal's recommendation that the CAISO use the same process as stakeholders to request BPM changes.	California ISO believes transparency includes the CAISO subject ourselves to the same process. This represents a cultural change to the California ISO's business processes. California ISO appreciates market participants' recognition of this transformation.
SCE	David Schiada	26-Jan-07	SCE also supports the Straw Proposal's allowance of BPM changes to be reviewed and approved by the CAISO Board if necessary and the accelerated process for changes necessary due extenuating circumstances.	California ISO appreciates stakeholders support for an accelerated processes used on a case-by-case basis and the pragmatic recognition that not all BPM changes necessitate board review. However the CAISO notes that the current proposal does not expressly provide a role fore the Board and believes that the kinds of changes likely to be made to BPMs are not the kinds of issues that should rise to the level of Board consideration.

BPM for BPM Change Management - Questions & Comments

Organization	Submitter	Dated Received	Participant Question	CAISO Response
SCE	David Schiada	26-Jan-07	SCE supports the non-voting structure of the BPM Change Management Group, at least for initial implementation. The issue of stakeholder committee voting rights has been previously debated at the CAISO and, to date, there has not been a proposal that has been able to satisfy various stakeholder interests. SCE does not believe it would be appropriate to try to develop a formal stakeholder committee voting structure as part of the establishment of a BPM change management process.	California ISO believes a using segments and voting structures offers a more conflict-ridden arrangement than other viable options adn the CAISO is no longer considering developing a structured process at this time. At the end of the BPM stakeholder sessions held in the summer of 2006, many customers made a very strong expression of support to continue the open robust process used at that time. California ISO believes using segments is fundamentally flawed and has concerns about; - The number of segments, - Categories of segments, - Who could populate segments - Whether entities can be adequately covered by any single segment. A broad category of customers [IOUs, Municipalities, Generators, Marketers, Load Service and others] have already stated a deep concern about the potential of being cut out of the process by being funneled into the customer class or segment. California ISO believes it can accurately record participants' positions, issues, concerns and objections forming a historic record much like federal regulators do today.
SCE	David Schiada	26-Jan-07	While the proposal appears workable after MRTU is operational, it does not appear workable for the period prior to MRTU implementation. There will likely need to be a different process to incorporate changes that are identified during market simulation. In addition, SCE believes the details of the change management process (e.g. PRR forms, timing, committee meeting frequency, etc.) would benefit from discussion at a stakeholder meeting.	California ISO will continue to work with stakeholders to develop an interim process before the more elaborate change management process goes in effect for all the BPM's. California ISO looks forward to continued work with stakeholders in development of PRR forms, timing, meeting frequency and other tools necessary to ensure the process works for all participants in a fair and transparent fashion.
SCE	David Schiada	26-Jan-07	It appears that the formal BPM change management process would not be implemented until after MRTU implementation. SCE expects that there will need to be changes to the BPMs prior to MRTU start-up, particularly to incorporate feedback from the market simulations. The CAISO should work with stakeholders to develop a methodology to incorporate BPM changes that are necessary based on "lessons learned" from market simulations. One approach for consideration would be to use a process like the Joint Application Design (JAD) sessions that were used for Phase 1B to identify and incorporate changes to BPMs based on market simulation findings.	California ISO agrees and looks forward to working with stakeholders developing an interim process before the full-blown BPM change management process becomes effective.
SCE	David Schiada	26-Jan-07	From Settlements perspective, due to the large volume of calculation details published in the Settlements BPM, there will be likely be requests to the CAISO for corrections or further clarifications, both prior and post MRTU production date. It may be necessary to develop an expedited process to incorporate these changes rather than using the more formal PRR process, particularly prior to MRTU start-up. Changes accepted under this expedited process could then be released to stakeholders prior to the release of a new version of the entire BPM.	California ISO agrees that the development of an interim process to incorporate rapid changes in the beginning of the MRTU evolution is necessary. This may requires utilization of a temporary or scaled version of the CM proposal as a bridge until the future process and platforms can be created. California ISO continues to look for further feedback in this area from stakeholders and looks forward to working with stakeholders in furthering such developments.
SCE	David Schiada	26-Jan-07	Based on input from stakeholders, the CAISO should make necessary modifications to its December 1 BPM change management proposal. The CAISO should then issue a revised BPM Change Management Straw Proposal at least two weeks prior to having a stakeholder meeting to discuss the proposal (see next comment for timing of stakeholder meeting). SCE recommends that the proposal be in the form of a White Paper rather than Tariff language at this stage (or have Tariff language supplement the White Paper).	California ISO appreciates this recommendation. The CAISO will be proposing modifications to both the draft tariff language and the draft BPM for BPM Changemanagment prior to the May 2 filing of additional tariff language with FERC in complaince with P 1370 of the Sept. 21 MRTU order.

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BPM for BPM Change Management - Questions & Comments

Organization	Submitter	Dated Received	Participant Question	CAISO Response
SCE	David Schiada	26-Jan-07	CAISO should conduct a stakeholder meeting to review the revised BPM change management proposal. This meeting should take place no later than three weeks prior to the completion of the BPM stakeholder process (April 2). This will allow the CAISO to incorporate stakeholder feedback prior to the conclusion of the BPM stakeholder process.	BPM Change Management stakeholder input will not in fact "end" on April 2, 2007. Most BPMs substantially developed but could still be reviwed as a result of further stakeholder comments and useful in events such as MRTU Market Simulation. CAISO seeks stakeholder input and to be compliant in accordance with Paragraphs 1370 and 1371 of September 21, 2006 MRTU Order. The CAISO will be seeking authority from the Board to file enabling tariff languageto support the change managment process but will continue to work with stakeholders on the specific details of the process to be incldued in the change management BPM.
SCE	David Schiada	26-Jan-07	After receiving stakeholder input, the CAISO should draft tariff language detailing its BPM change management process and file that tariff language with FERC on May 2 as part of the tariff filing to address BPM issues.	California ISO shall publish revised BPM tariff language and the BPM change management document for further stakeholder review prior to the May 2, 2007 filing to the FERC. CAISO shall continue to seek further customer input.
SCE	David Schiada	26-Jan-07	The BPM change management process should be an agenda item at the BPM technical conference to be held in June or July.	Once FERC schedules a technical conference [anticipated for June or July 2007], it is reasonable that FERC might include BPM change management process as a part of its technical conference and the CAISO does not oppose this suggestion.
BPA	Don Wolfe	30-Jan-07	Make it easy for participants in the process to be able to find their proposed change and stay up to date on its progress and any analysis or commentary that the process generates.	California ISO anticipates utilizing a new web-based BPM change management process for customers to follow and track issues in a more user-friendly manner similar to what is used in other ISO's.
BPA	Don Wolfe	30-Jan-07	In MRTU comments, my experience has been that my comments go into a vast collection of comments, categorized by CAISO staff, and I need to recognize my comment in many pages of a comment matrix, because it doesn't have my name or organization on it, and there is no process for the people keeping the matrix to notify me when there is a response. So to find out the CAISO response, I have to keep checking the posted matrix from time to time.	California ISO has recently changed its format for BPM Stakeholder Questions and ISO Responses allowing participants to find the status of all comments received. California ISO now publishes "red-lines" of re-drafted BPM's and tariff language when posted to CAISO website. California ISO anticipates using a much more user-friendly web-based system in the future which are similar to that used in other ISOs. CAISO seeks feedback from customers as to the usefulness of its current changes.
BPA	Don Wolfe	30-Jan-07	This is broader than change management - I hope the final product really fits the term "manual" which in the dictionary is supposed to be a small handbook of instructions. If it doesn't explain what actions to take, in logical order, then market participants will be asking for another reference that does the job. Make it truly user-friendly, and try not to overload it with technical background or the rationale for MRTU or particular features. Keep asking "How does this help market participants to know what they need to do?" and avoid material that doesn't help	Change management BPM is different from other BPM's and is anticipated to be developed as more user-friendly means by which customers can engage in the process.
Williams	Brian Theaker	27-Mar-07	The most disconcerting aspect of the CAISO's proposed BPM Change Management process remains that, while the CAISO is required by proposed tariff section 22.11.1.1 to submit a revision request through the same channel as market participants (except in "emergency circumstances" as provided in section 22.11.1.2), and while the BPM for BPM Change Management sets forth a proposed "due process" regarding such requests, the CAISO BPM Change Management Coordinator retains sole, unilateral discretion regarding whether to implement, reject or modify any proposed change. Given that the process for change management is itself contained not in the tariff but in a BPM (which Williams finds troubling), this unilateral authority could conceivably be used to change the change management process itself, as long as the CAISO submits a revision in accordance with section 22.11.1.1.	The intent of BPM Change Management Process is to facilitate the exchange of ideas and information regarding maintenance and modifications to CAISO's BPMs in as transparent a way as possible so that decisions can be made in light of all relevant information and in consideration of the affect of proposed changes on Market Participants. Furthermore, a record should be built recording customer's positions offering a history of how decisions were developed. But, if stakeholders cannot come to consensus the California ISO by default is left in a position as the decider amongst competing alternatives. For that very reason, we encourage stakeholders to reach consensus rather than having the ISO be the arbitrator of the final decision.

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BPM for BPM Change Management - Questions & Comments

Organization	Submitter	Dated Received	Participant Question	CAISO Response
Williams	Brian Theaker	27-Mar-07	Unilateral authority of the BPM Change Manager Coordinator, which is set forth in BPM for CM Section 2.4.8, is not mentioned in the benign description of the BPM Change Management Coordinator in BPM for BPM CM Section 2.2.	The BPM Coordinator wil be an CAISO employee representing CAISO management. CAISO will have more control over the pen than other market particpants, but will be representing management.
Williams	Brian Theaker	27-Mar-07	BPM for BPM CM makes no mention of appealing a decision of the BPM Change Management Coordinator to the CAISO Board of Governors, but only to a CAISO officer committee.	The current BPM for BPM change management includes the right to appeal to an Executive Committee and does not expressly allow for an appeal to the Board. The CAISO believes that BPMs that contain impelemntation detail are properly within management's resposniblity. Stakeholders are always free, however, to raise any concerns they may have to the Board.
Williams	Brian Theaker	27-Mar-07	CAISO has proposed a BPM Change Management process which may, on the surface, appear to provide due process but which ultimately provides no assurance that the CAISO cannot or will not take unilateral action to the detriment of its market participants.	The intent of BPM Change Management Process is to facilitate the exchange of ideas and information regarding maintenance and modifications to CAISO's BPMs in as transparent a way as possible so that decisions can be made in light of all relevant information and in consideration of the affect of proposed changes on Market Participants. Furthermore, a record should be built recording customer's positions offering a history of how decisions were developed. But, if stakeholders cannot come to consensus the California ISO by default is left in a position as the decider amongst competing alternatives. For that very reason, we encourage stakeholders to reach consensus rather than having the ISO be the arbitrator of the final decision.
TANC	Shawn Matchim	27-Mar-07	When should the BPM's be tied down so the Change Management Process can begin	Most feedback on this issue can be summarized as follows; - BPM's must be reasonably complete first. - Knowing that some manuals will be less subject change and/or developed than others, locked down so that this process applies to prospective changes should be on a BPM by BPM basis. - Some believe lock down should be just before the start of MRTU and - Some believe CAISO should wait a few months after the start of MRTU knowing that adjustments will be necessary. This may requires utilization of an interim or scaled version of the CM proposal as a bridge until the future process and platforms can be created. Therefore, the California ISO seeks further customer feedback as to when the BPM change management process should be evoked and in place.
TANC	Shawn Matchim	27-Mar-07	PG&E representative even mentioned "grandfathering" certain matters that should not be subject to the future BPM Change Management Process. Is the issue here that not all matters pertaining to the BPMs will be hammered out by the time MRTU goes live and the CAISO is looking for feedback from stakeholders on how to address the modifications that will be needed to the BPMs (i.e. With or without going throught the Change Management Process).	Some issues in the BPM are not covered at length because they are still subject to stakeholder processes and clarifications. There are two BPMs in particular that will need more work than others: CRR and Reliability Requirements BPM. The California ISO could be clearer on what potential grandfathering issues might entail that are already covered under contracts or articulated in the MRTU design itself.

BPM for BPM Change Management - Questions & Comments

Organization	Submitter	Dated Received	Participant Question	CAISO Response
CPUC	Larry Chaset	30-Mar-07	Last September, the CPUC Staff commented on an earlier version of this BPM. At that time, we expressed the concerns that the options presented in the CAISO's straw proposal BPM on Change Management Processes lacked transparency, representation and equity, could be perceived to be inconsistent with regulated tariffs and with CPUC and State policies, and appeared not to be in conformity with nationwide best practices for RTOs/ISOs. We are pleased to note that the CAISO's most recent version of this proposed BPM appears to address some of the key concerns that we noted last September. For example, some of the features of this latest draft, such as a web-based Protocol Revision Request (PRR) submission system, mark real improvements in efficiency and transparency. Also, the proposed monthly Change Management stakeholder meetings would appear to play a useful role in managing a meaningful public process for changing BPMs. However, the CPUC Staff believes that the Change Management BPM requires significant further revision in order to improve the administration of BPM change decisions.	California ISO appreciates support from stakeholders and regulators in this area. We endeavor to improve the process as we go along utilizing stakeholder input. The CPUC has been valuable part of this process throughout. We encourage the CPUC to continue offering the California ISO its advice and input.
CPUC	Larry Chaset	30-Mar-07	The Order does not explicitly state that this process must provide a voting mechanism for stakeholders or that if there is such a voting mechanism, how voting sectors would be defined.	The September 21, 2006 Order does not explicitly require the CAISO utilize a voting mechanism for stakeholders. California ISO believes a using segments and voting structures offers a more conflict-ridden arrangement than other viable options. At the end of the BPM stakeholder sessions held in the summer of 2006, customers made a very strong expression of support to continue the open robust process used at that time. California ISO believes using segments is fundamentally flawed and has concerns about; - The number of segments, - Categories of segments, - Who could populate segments - Whether entities can be adequately covered by any single segment. On this issue the CPUC is the only clear voice advocating voting segments. A broad category of customers [IOUs, Municipalities, Generators, Marketers, Load Service and others] have already stated a deep concern about the potential of being cut out of the process by being funneled into the customer class or segment. California ISO believes it can accurately record participants' positions, issues, concerns and objections forming a historic record much like federal regulators do today. The CAISO bel
CPUC	Larry Chaset	30-Mar-07	The most recent version of the Change Management BPM does provide for stakeholder input at several points during the process of evaluating a PRR, but there is no formalized mechanism to solicit stakeholder approval of a given PRR, and there is a very vaguely defined appeals process.	California ISO will add detail to its next revision making it clear how stakeholder input is gathered and shared with the public in a transparent fashion. California ISO is encourage that the process being offered is transparent and utilizes one similar to the FERC were all stakeholders positions are restated as a means to capture the history of the process and how decisions are ultimately developed.

BPM for BPM Change Management - Questions & Comments

Organization	Submitter	Dated Received	Participant Question	CAISO Response
CPUC	Larry Chaset	30-Mar-07	CPUC Staff continues to believe (as we did last September) that rather than relying on CAISO staff to manage the BPM change management process, the CAISO should establish a formal stakeholder process, much like those currently in effect in other RTOs/ISOs, including ERCOT, PJM and the New York ISO, that can oversee the Change Management process, as well as to provide formal guidance to the CAISO's Board and management on other important CAISO functions that directly affect those stakeholders.	At the end of the BPM stakeholder sessions held in the summer of 2006, customers made a very strong expression of support to continue the open robust process used at that time. California ISO believes using segments is fundamentally flawed and has concerns about; - The number of segments, - Categories of segments, - Who could populate segments - Whether entities can be adequately covered by any single segment. California ISO's proposal is a hybrid of what other ISO's are doing as it pertains to stakeholder processes. Moreover, it takes into consideration the actual process used during the BPM developments in the summer of 2006. The ISO believes that the current BPM change management proposal reflects those suggestions.
CPUC	Larry Chaset	30-Mar-07	Neither the current proposed Change Management BPM, nor the associated proposed tariff language, provides market participants and other key stakeholders with real decision making power or formal access to the Board in the event of unresolved issues relating to PRRs.	The intent of BPM Change Management Process is to facilitate the exchange of ideas and information regarding maintenance and modifications to CAISO's BPMs in as transparent a way as possible so that decisions can be made in light of all relevant information and in consideration of the affect of proposed changes on Market Participants. Furthermore, a record should be built recording customer's positions offering a history of how decisions were developed. But, if stakeholders cannot come to consensus the California ISO by default is left in a position as the decider amongst competing alternatives. For that very reason, we encourage stakeholders to reach consensus rather than having the ISO be the arbitrator of the final decision. CAISO continues to investigate methodologies by which appeals can be facilitated before requiring Board review. Future BPM change management revisions hopefully shall reflect the concerns raised here.
CPUC	Larry Chaset	30-Mar-07	Although it might be perceived by some to be "inefficient" to establish formal stakeholder sectors that can consider and make formal recommendations on matters like PRRs, it is standard practice in the world of grid reliability organizations (as it is at NERC, WECC and most of the other RTOs/ISOs) to rely on the formal recommendations reflecting the input from all market sectors.	The September 21, 2006 Order does not explicitly require the CAISO utilize a voting mechanism for stakeholders. California ISO believes a using segments and voting structures offers a more conflict-ridden arrangement than other viable options. At the end of the BPM stakeholder sessions held in the summer of 2006, customers made a very strong expression of support to continue the open robust process used at that time. California ISO believes using segments is fundamentally flawed and has concerns about; - The number of segments, - Categories of segments, - Who could populate segments - Whether entities can be adequately covered by any single segment. On this issue the CPUC is the only clear voice advocating voting segments. A broad category of customers [IOUs, Municipalities, Generators, Marketers, Load Service and others] have already stated a deep concern about the potential of being cut out of the process by being funneled into the customer class or segment. California ISO believes it can accurately record participants' positions, issues, concerns and objections forming a historic record much like federal regulators do today. The CAISO bel

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BPM for BPM Change Management - Questions & Comments

Organization	Submitter	Dated Received	Participant Question	CAISO Response
CPUC	Larry Chaset	30-Mar-07	CPUC Staff is concerned that unique sector interests can easily be overlooked if left undefined in connection with something that will be as crucial to the CAISO's long-term operations as a BPM Change Management process.	California ISO is optimistic that customers' issues will be treated in a meaningful fashion by utilizing a process similar to that of the FERC rather than being registered through segment votes.
CPUC	Larry Chaset	30-Mar-07	Change Management BPM should be revised to require that the Change Management Coordinator must base his/her decisions and recommendations on any PRR on input obtained from five (5) defined Energy Sectors: Transmission Owners, Generation Owners, Wholesale Customers, State Agencies and Power Marketers.	California ISO believes that getting segments "right" is a challenge. History shows that customer segments can proliferate into larger and larger numbers for participants who feel their concerns cannot be covered within the segment being offered. California ISO believes requiring all entities to agree on one course of action through Committee structures/segments will substantially weaken market participants' ability to effectively participate in the BPM process. Accordingly, the CAISO has decided to improve the existing stakeholder process.
CPUC	Larry Chaset	30-Mar-07	Change Management Coordinator's formal decision on a given PRR should be required to specify the input gathered from each of these sectors. The CAISO's good faith efforts to solicit stakeholder input on PRRs do not necessarily guarantee that this input will become the grounds for actual decision making. Thus, both the proposed Change Management BPM, as well as the associated proposed tariff language, should be revised to provide for a more formal role for such stakeholder sectors.	The intent of BPM Change Management Process is to facilitate the exchange of ideas and information regarding maintenance and modifications to CAISO's BPMs in as transparent a way as possible so that decisions can be made in light of all relevant information and in consideration of the affect of proposed changes on Market Participants. Furthermore, a record should be built recording customer's positions offering a history of how decisions were developed. But, if stakeholders cannot come to consensus the California ISO by default is left in a position as the decider amongst competing alternatives. For that very reason, we encourage stakeholders to reach consensus rather than having the ISO be the arbitrator of the final decision.
CPUC	Larry Chaset	30-Mar-07	Change Management BPM is silent on the make-up of the "officer committee" that is responsible for handling appeals of the Change Management Coordinator's decision on a given PRR, and, more importantly, does not provide for an ultimate appeal by a dissatisfied stakeholder to the CAISO's Board of Directors. This is, in the view of the CPUC Staff, a glaring omission.	California ISO will seek to give further clarification in this area in its next revision on the nature of the officer committee. The CAISO does not intend to add a specific appeal right to the Board as it belives that the business details in the BPM are within managment's area of responsibility. Of course, any proposed change that is not supported by adequate tariff language, requires a tariff amendment and Board authorization.
CPUC	Larry Chaset	30-Mar-07	PRR could initiate changes that could affect certain stakeholders, or a category of stakeholders, in detrimental ways. Such rare, but controversial, PRRs must be subjected to the scrutiny of the CAISO's Board of Directors in a public meeting. Reliance on an "officer committee" acting behind closed doors to resolve appeals, even though the ultimate decision of that committee would be published, does not satisfy the due process rights of stakeholders whose interests could be directly and adversely affected by a given PRR.	In the next revision we will provide more detail on the ISO Officer Committee appeal function.
CPUC	Larry Chaset	30-Mar-07	Although there is a requirement for publication of the Change Management Coordinator's final decision on a PRR, there is no requirement that there be any formal record of the "officer committee's" review of an appeal of a PRR, other than that this committee "shall issue a decision within 21 Business days." Should the CAISO determine to retain this appeal to an "officer committee," the CPUC Staff believes that there needs to be a public record of that committee's deliberations on which the CAISO's Board of Governors (Board) and, potentially, FERC would base their decisions on a given PRR in the event that such change is challenged by any of the CAISO's stakeholders.	In the next revision we will provide more detail on the ISO Officer Committee appeal function.

California ISO
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BPM for BPM Change Management - Questions & Comments

Organization	Submitter	Dated Received	Participant Question	CAISO Response
CPUC	Larry Chaset	30-Mar-07	Change Management BPM relies on a process that may be initiated by stakeholders, but which is entirely managed by the CAISO staff. The establishment of monthly stakeholder BPM meetings should have a useful role in providing input on proposed or potential PRRs, but the CAISO should go one step further, and provide for the use of ad hoc working groups, to be staffed by stakeholder volunteers, to work on specific PRRs that would appear to be problematic or potentially controversial. Such ad hoc working groups are likely to be especially adept – and efficient – at gathering input from all affected sectors. Accordingly, both the Change Management BPM and the associated tariff language should be revised to include a defined trigger to remand certain PRRs to an appropriate working group, when and if the initial comments on that PRR as well as a process by which market participants may request such an analysis in the event that a PRR is not assigned to a working group.	California ISO agrees that working groups will be a very useful role in the stakeholder process and working groups be formed on ad hoc basis utilizing the special adept talents of those willing to volunteer.
CPUC	Larry Chaset	30-Mar-07	CAISO will review all PRRs for completeness within 10 business days of receipt. This is fine as far as it goes, but the CPUC Staff recommends that during this initial review period, the CAISO should also review each submitted PRR to make sure that it is based on accurate information. This initial verification by the CAISO that a given PRR is accurate should facilitate the subsequent stakeholder review of the PRR.	As part of the PRR process, California ISO will be reviewing submissions for completeness and reasonable accuracy of information given. Deficient PRRs require further processing before posting.
CPUC	Larry Chaset	30-Mar-07	CPUC Staff would prefer a true stakeholder-driven process, and we encourage the CAISO to renew talks with its stakeholders towards the implementation of a formal sector-based stakeholder process similar to those employed at all other ISO/RTOs nationwide.	California ISO expects further talks with stakeholders necessary for the implementation of the Change Management process. ISO believes utilizing a process similar to that of the FERC will provide a formal means by which to capture stakeholders' positions and inputs. California ISO believes that getting segments "right" is a challenge. History shows that customer segments can proliferate into larger and larger numbers for participants who feel their concerns cannot be covered within the segment being offered. California ISO believes requiring all entities to agree on one course of action through Committee structures/segments will substantially weaken market participants' ability to effectively participate in the BPM process.

Attachment I

Customer Comments
BPM Change Management Tariff Language

Friday, June 8, 2007

Submitter	Topic	Comment	CAISO Response
WPTF	WPTF offers an alternative appeal process	Uses an appeal committee made up of CAISO employees and market participant representatives by industry segment structured.	The BPM change management process and the appeals process, as approved by the Governing Board, is designed to elicit and consider all stakeholder interests. ISO Management should retain the responsibility and accountability for making these business decisions involving BPM details.
Williams	Tariff Section (22.11.1) entitled "Process for Revisions of Business Practice Manuals", that section, in six places, still defers to the BPM for BPM Change Management details of the process: 1. BPM PRR Request ("PRR") *(Section 22.11)*; 2. PRR process *(Section 22.11.1)*; 3. PRR consideration *(Sections 22.11.1, 22.11.1.3, 22.11.1.5)*; 4. PRR impact analysis *(Section 22.11.1.4)*; 5. Stakeholders comments on posted BPM PRRs *(Section 22.11.1.5)*; 6. CAISO published recommendation for a BPM change and stakeholders comment on that recommendation *(Section 22.11.1.5)*.	These elements of BPM change management process must be detailed in the tariff – and not merely relegated to a BPM – so as to comply with FERC's directive in paragraph 1371 of the September 21, 2006 MRTU Order.	The CAISO understands FERC's directive to address BPM change management in the CAISO tariff to be consistent with the "rule of reason," which permits implementation detail to be included in non-filed manuals. Nonetheless, the CAISO has added additional tariff language from the BPM to the tariff. In addition, the CAISO has added tariff language requiring changes to the BPM for change management to be approved by the Board.
Williams	Concerns regarding critical details are still missing from the Tariff.	Form of or information necessary in the PRR is not specified in the proposed tariff language, which may undermine due process given that Section 22.11.1.2 allows the CAISO to withhold consideration of a PRR until the PRR is complete.	The CAISO believes that it is not reasonable or practical to address this issue in tariff language. The CAISO intends to consider all BPM PRRs and questions about "completeness" in good faith.
Williams	Concerns regarding critical	Language does not set forth	The change management

Customer Comments
BPM Change Management Tariff Language

Friday, June 8, 2007

Submitter	Topic	Comment	CAISO Response
	details are still missing from the Tariff.	how PRR recommendations are approved, rejected or modified. Such authority appears to lie solely in the discretion of the BPM Change Management Coordinator (Section 22.11.1.5), but that authority is not expressly described in Section 22.11.1.3.	coordinator represents CAISO management. The decisions will reflect consideration of all factors and it is not reasonable or practical to include such details in tariff language.
Williams	Concerns regarding critical details are still missing from the Tariff.	Section 22.11.1.5 both describes "regularly established" public meetings to consider PRRs and also allows for "specially noticed" meetings – in neither case indicating when such meetings would be held and how they would be noticed.	Standing Monthly meetings will be set well in advance. The BPM will be amended to incorporate a one-week notice for special meetings. .
Williams	Appeal handled by a committee of at least three "CAISO executives".	Who "CAISO executives" are remains undefined, this reasonably leaves open the possibility that an appeal of a proposed BPM modification concerning market details could be heard by three CAISO executives whose expertise does not extend to the details of the markets – for example, the CFO, Vice President of External Affairs and CIO.	The executive committee is not intended to be standing committee so that any three disinterested executives could consider a BPM PRR appeal. The CAISO proposes to exclude the executive responsible for Business Unit affected by the BPM PRR to ensure that the appeal is considered by executives that are disassociated from the management decision under appeal.
Williams	Appeals process	Williams would support an appeals process overseen by a committee comprised of CAISO employees and representatives from segments of the industry. This committee could be structured so that the CAISO membership (assumed to be voting in a bloc) plus some reasonable segment of the industry would constitute a majority.	The BPM change management process and the appeals process, as approved by the Governing Board, is designed to elicit and consider all stakeholder interests. ISO Management should retain the responsibility and accountability for making these business decisions involving BPM details.
SCE	Overall	Much improved over the	Thank you

Customer Comments
BPM Change Management Tariff Language
Friday, June 8, 2007

Submitter	Topic	Comment	CAISO Response
		pre-Board meeting draft. .	
SCE	Edison offered non-substantive editorial sections to the following sections: 22.11.1.1 through 22.11.16		SCE's non-substantive editorial suggestions have been accepted in large part
SCE	22.11.1.6 Right to Appeal to CAISO.	Light Edited language	Some editorial suggestions accepted. The CAISO management and Board rejected the suggestion that would require the executive committee to review appeals of BPM PRR decisions with the Board. However, the CAISO added tariff language to require the reports to the Board include discussion of decisions on appeal. In addition, the CAISO added tariff language excluding executives from reviewing any BPM PRR appeal that they have sponsored. For example, if the CAISO is proposing changes to the Settlements BPM, the Vice-President of Operations would be excluded from sitting on that particular executive review committee in case of an appeal.
SWP	§22.11 Operating Procedures and Business Practice Manuals Development and Amendment Process	Change to "The CAISO shall establish a stakeholder process as set forth in Section 22.11.1 and in a Business Practice Manual for BPM change management in order to ensure that all affected parties have an opportunity to comment on proposed changes to any Operating Procedures and Business Practice Manual". Such a change will be consistent with the first sentence of this section, "The CAISO shall prepare, maintain, promulgate and update the Operating Procedures and	Order 890 requires the CAISO to establish a change management process for operating procedures. This will be addressed with stakeholders in the Order 890 stakeholder process.

Customer Comments
BPM Change Management Tariff Language

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Submitter	Topic	Comment	CAISO Response
		Business Practice Manuals".	
SWP	§22.11.1 Process for Revisions of Business Practice Manuals	Ambiguity in paragraph. It indicates a PRR should have PRR impact analysis submitted by CAISO management. BPM PRR should not require an impact analysis by a market participant. The impact analysis should be done by CAISO after the submittal of a BPM or Operating Procedure PRR by a market participant or an affected entity.	The CAISO agrees and clarified in the tariff language that market participants need not submit an impact analysis but that the CAISO may prepare an impact analysis in its discretion for BPM PRRs submitted by other entities.
CPUC	Segments	Still feels strongly that voting segments should exist with extensive use of working groups as necessary.	The CAISO management and Board believe that the structure proposed and approved by the Board constitutes a meaningful, transparent change management process that provides due process for changes to details appropriately included in a BPM that should be implemented. Both CAISO management and the Board have expressed a willingness to evaluate the change management process after a reasonable period of time of actual experience.
CPUC	Voting segments and appeals	The appeals process at best is suspect, at worst is nonexistent or engaged by the same people rejecting other views to be repeated at executive level. Moreover, there is no clear way to understand who at the executive level is reviewing this and what duties are common upon them to perform or do	The CAISO believes that business details in the BPMs are fundamentally a matter that is appropriately the responsibility of CAISO management. The CAISO added tariff language to exclude an executive sponsor of a BPM PRR from sitting on the executive committee reviewing an appeal of a

Customer Comments
BPM Change Management Tariff Language
Friday, June 8, 2007

Submitter	Topic	Comment	CAISO Response
		anything in a meaningful fashion.	final BPM PRR decision.
CPUC	Voting segments and appeals	Pervasiveness that allows the California ISO to be a unilateral decider without meaningful checks and balances.	When it comes to business details implementing FERC approved tariff language, it is appropriate for the CAISO management to be the decision maker. All interested stakeholders nevertheless, have the right to bring any matter to the Board's attention and have the right to complain to FERC if the CAISO is acting outside its authority.
CPUC	Appeals	Right of dissatisfied "appellant" to request management to address BPM PRR through tariff amendment.	Incorporating a transparent mechanism to consider tariff changes when a PRR is rejected because it conflicts with CAISO tariff authority requires further consideration. CAISO asks stakeholders to address this proposal and any suggested changes at the stakeholder call on June 15, 2007. ISO Management has designed with stakeholder input a process that is highly transparent. Other suggestions on transparency are welcome also during the June 15 discussion.
CPUC	Appeals	Proposal for appeals committee to include stakeholders	The CAISO management and the CAISO Board believe that the details in the BPMs and any decisions concerning changes should be the responsibility of CAISO management and not the Board. The BPM change management process is designed to elicit and consider all stakeholder interests.

Customer Comments
BPM Change Management Tariff Language

Friday, June 8, 2007

Submitter	Topic	Comment	CAISO Response
PG&E	Appeals	Appeals of Category B and BPM PRR decisions reviewed by the Board	The CAISO added tariff language to section 22.11.1.6 to clarify appellant's ability to raise concerns to the board at regularly scheduled board meetings.
WPTF	Section 22.11 – details Section 22.11.1.5 -- details	– one week advance notice of meetings; length of meetings; 10-day written response to stakeholder comments – 10 day comment period with 10 days to respond	The ISO will schedule standing monthly stakeholders meetings for the purposes of the change management process. Specially noticed meetings are for those proposed changes that must be considered prior to the next regularly scheduled meeting and the CAISO commits to provide as much notice as practicable, and will include a one week minimum notice period in the BPM. The ISO intends to respond in a timely manner but with the uncertainty regarding the volume of suggested requests that may arise at startup, it is difficult to establish a hard timeline until we have more experience with the process. The CAISO agrees that successful implementation of the BPM change

Customer Comments
BPM Change Management Tariff Language
Friday, June 8, 2007

Submitter	Topic	Comment	CAISO Response
			management process depends on factors such as those idenfitied by WPTF and recognizes that it will be judged on its performance accordingly.
WPTF	Section 22.11.1.1 –form of BPM PPR	Requirement that BPM PRR form not be changed except on 10 days notice, opportunity to comment, discussion at BPM PRR meeting and responding in writing.	The CAISO does not believe that it is necessary or appropriate to include these requirements in the tariff but agrees that changes to the BPM PRR should be subject t o the BPM PRR process and has added proposed language to that effect to Section 22.11.1.1
WPTF	Section 22.11.1.6--appeals	Appeals committee to include stakeholder representation and minimum number of votes	The CAISO believes that business details in the BPMs are fundamentally a matter that is appropriately the responsibility of CAISO management. The CAISO added tariff language to exclude an executive sponsor of a BPM PRR from sitting on the executive committee reviewing an appeal of a final BPM PRR decision.

Attachment J



California ISO
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Residual Unit Commitment Zones under MRTU

June 22, 2007

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I. Background

In Paragraph 151 of the September 21, 2006 Order Conditionally Accepting the California Independent System Operator Corporation's Electric Tariff Filing to Reflect Market Redesign and Technology Upgrade, 116 FERC ¶ 61,274 (September 21 MRTU Order), the FERC found that "*the MRTU Tariff provisions on RUC provide market participants details of how the baseline RUC procurement target is established and how the CAISO will adjust its forecasted target under various circumstance*s." However, FERC found in Paragraph 152 that the Tariff "*fails to define RUC Zones and the methodology that the CAISO will use to define those zones.*" The Commission required that the CAISO discuss the methodology for developing RUC Zones in stakeholder meetings and then submit tariff sheets to include the definition of RUC Zones and the methodology used to define a RUC zone within six days of completion of the stakeholder process.

Herein, the CAISO provides discussion regarding the basis for the proposed initial RUC Zones, how the RUC Zones are defined and modified, and provides certain recommended changes to the BPM.

II. Residual Unit Commitment Zones

A. Overview of RUC Procurement Target Determination

After the Integrated Forward market (IFM) is completed, an additional Security Constrained Unit Commitment (SCUC) process is run to procure an amount of RUC Capacity that best represents the anticipated Imbalance Energy requirement in Real Time (RT). To achieve this, the RUC process performs an optimization that is very similar to the SCUC that is run in the IFM, except for the following: (a) the Demand Schedules and Bids from IFM are replaced by the CAISO Forecast of CAISO Demand (CFCD), for each RUC Zone, (b) the Day-Ahead Schedules for Energy from IFM are "locked in" at their final IFM levels, and (c) the only commodity cleared in RUC is RUC Capacity.

B. Definition of RUC Zone

A RUC Zone is a designated area representing a UDC, MSS, Local Capacity Area, or other collection of CNodes for which the CAISO has developed sufficient historical CAISO Demand and relevant weather data to perform a Demand Forecast. RUC Zones are defined to allow CAISO Operators to adjust if necessary the CFCD on a local area basis as input to the RUC process, to ensure that the RUC process results in adequate local capacity procurement. The CFCD for a RUC Zone is produced by the CAISO's Demand forecasting tools and is adjustable by CAISO Operators on a RUC Zone basis.

The amount of RUC capacity to be procured for each Trading Hour of the next Operating Day is the amount of capacity above the IFM Energy Schedules necessary to meet the CFCD as may be adjusted by the CAISO on a RUC Zone while respecting the transmission constraints. In order to ensure sufficient capacity and resources are committed while at the same time reducing the possibility of systematic over-procurement or under-procurement in RUC, this hourly procurement quantity may be adjusted. In principle, these adjustments are performed to address (i) Demand Forecast error, and (ii) refining the net short calculated from the net difference between CFCD and the IFM Energy Schedules to account for changes in Supply and Demand that is expected to be scheduled in the HASP run for each Trading Hour of the next day.

The RUC procurement target is not a quantity that is supplied to the RUC process, but rather it is a quantity that is calculated from the RUC process. The CFCD, as adjusted by the CAISO on a

system or RUC Zone basis, is the input to the RUC Process. There is no explicit formula for the procurement of RUC Capacity, other than the SCUC optimization process as a whole.

The adjustments to the procurement quantity are fully described in the Market Operations BPM, and are not the subject of this discussion paper. In addition, on November 20, 2006, in compliance with P 566 of the September 21, 2006 MRTU Order, the CAISO included additional detail in Section 31.5.3 on the adjustments it may make to the RUC procurement target.

C. Highlighted Elements of the CAISO Forecast of CAISO Demand

The CFCD is provided to the Day-Ahead Market process at an aggregation level including Utility Distribution Company (UDC), Metered Subsystem (MSS), Local Capacity Area, or other collection of CNodes for which the CAISO has sufficient historical CAISO Demand and relevant weather data to perform a demand forecast. Currently, these forecast regions include:

- PG&E UDC
- SCE UDC
- SDG&E UDC
- NCPA MSS
- Anaheim
- Pasadena
- Azusa
- Banning
- Colton
- Riverside
- Vernon
- Local Capacity Areas for which sufficient forecasting data exists
- State Water Project

The CAISO will forecast CAISO Demand for each hour of the next Operating Day for each RUC Zone utilizing neural-network forecasting software that is widely used in the utility industry. To forecast the weather, the CAISO utilizes multiple weather forecasting data sources to reduce forecasting errors. The CAISO will continually monitor its weather forecasting and Load forecasting results to ensure the average forecast error is minimized.

The CFCD is distributed to the nodal level using Load Distribution Factors (LDF). The same CFCD and LDFs used in the Market Power Mitigation / Reliability Requirement Determination (MPM/RRD) process prior to IFM are used as the basis for RUC distribution of Demand.

Adjustments made to the CFCD for RUC shall benefit from the locational nature of the source of the Demand Forecast. In so doing, factors that are cause for demand forecast adjustments for RUC can be applied at the sub-regional level for improved accuracy.

D. Designation and Use of RUC Zones

The CAISO is proposing to designate the RUC Zones to be equivalent to the current regional dissection of the system represented in the CFCD, as listed above. In so doing, the RUC Zones do not coincide with Load Zones by definition, but may share some similarities since the Load Zones are naturally somewhat coincidental with some of the Demand Forecast regions.

Prior to the RUC optimization run, the CFCD is reviewed on a regional basis to determine if any of the RUC procurement adjustments are needed. If no adjustments are made to the CFCD for RUC, then the amount of RUC Capacity is procured to meet the net difference between the CFCD and the final IFM Energy Schedules (i.e., Day-Ahead Schedules), minus any RMR

capacity determined in MPM/RRD but not fully scheduled in IFM.

If adjustments are made to the CFCD to account for (i) Demand Forecast error, (ii) MSS opting out of RUC, or (iii) Demand response adjustments, then such adjustments are made directly to the applicable Demand Forecast region(s), by using the associated RUC Zone. The adjustment is made throughout the affected RUC Zone consistent with the subset of system LDFs for CNodes defined within the RUC Zone(s). For CFCD adjustments related to DA AS requirements that are unfulfilled in IFM, the net upward residual AS requirement is calculated for the entire system, and is applied to the system-wide CFCD as a whole.

For adjustments that are intended to address incremental changes in Supply from resources that are expected to be scheduled in the HASP relative to the IFM Energy Schedules, these resources must first be mapped to associated RUC Zones. These adjustments include (i) positive changes to eligible Intermittent Resource Schedules, and (ii) negative differences between IFM Energy Schedule and estimated HASP Self Schedules. For these adjustments, the RUC software calculates the net adjustment for each RUC Zone by summing the individual adjustments for all applicable resources associated with CNodes defined within the RUC Zone. The net adjustment is then applied to the CFCD for each RUC Zone individually. Note, for positive differences between IFM Energy Schedule and estimated HASP Self Schedule, the incremental Supply adjustments are represented on the individual resources, and do not affect the RUC adjustments to CFCD.

The CAISO adjusts the CFCD of each affected RUC Zone, preserving the LDFs within each RUC Zone. Note, if such RUC Zone CFCD adjustments are made, the relative weighting of LDFs within each RUC Zone will not change, but the relative weighting of LDFs across the system will deviate from the original LDFs.

After all adjustments are made to the CFCDs for each RUC Zone, then the RUC Zone has no other influence on the RUC procurement or Settlement calculations.

E. Highlighted Elements of RUC Procurement and Settlement

As stated above, the RUC process performs an optimization that is very similar to the IFM SCUC run. Similar to how the IFM clears Energy at a nodal level across the system, subject to transmission constraints to meet scheduled Demand, the RUC procures capacity incremental to the IFM Energy Schedules to meet the adjusted CFCD subject to the same network constraints.

If RUC Zones are implemented to help localize adjustments to the CFCD to achieve a more accurate representation of the net short Energy Demand relative to the IFM Schedules, after the adjusted CFCD is distributed to the individual CNodes on the Full Network Model (FNM), then the procurement of the RUC Capacity is not directly affected by the RUC Zone designations. In other words, the RUC Zones do not directly introduce any constraints to the locational procurement of RUC Capacity. However, the use of higher Demand in RUC may cause transmission constraints to be binding in RUC that were not binding in the IFM run, particularly in Local Capacity Areas.

Like the IFM produces Energy LMPs for settlement of Energy, the RUC optimization produces RUC LMPs for settlement of RUC availability revenues to resources awarded RUC Availability Capacity. However, unlike the IFM where Demand resources are also settled based on the nodal LMPs, as aggregated in most cases, the RUC costs, including RUC availability revenues and uplift payments for Start-Up and Minimum Load Costs, are pooled together to establish the RUC Compensation Costs. The RUC Compensation Costs are then allocated first to entities that have net short Demand for the MW difference between the IFM Energy Schedule (Day-Ahead Schedule) and the metered Demand (See CAISO Tariff § 11.8.6.5 as posted on the CAISO website on April 9, 2007, http://www.caiso.com/1bbb/1bbb13cef298f0.doc).

One of the principles behind adjusting the CFCD for RUC is to more accurately represent the expected net short Demand in Real Time compared to the simple difference between the CFCD and the IFM Energy Schedules. These adjustments made to the RUC CFCD will directly impact the RUC Compensation Costs by influencing the total market clearing costs for RUC Availability and commitment costs.

Some of the adjustments to the CFCD for RUC will have the effect of potentially increasing the RUC Market Clearing costs, and therefore increasing the RUC Compensation Cost, such as adjustments for (i) decremental estimated HASP Self Schedules and (ii) upward Demand Forecast error. Other adjustments to the CFCD for RUC will have the effect of potentially reducing the RUC Market Clearing costs, and therefore decreasing the RUC Compensation Cost. Such adjustments include (i) downward Demand Forecast error, (ii) incremental estimated HASP Self Schedules, (iii) MSS opting out of RUC, (iv) Demand response, and (v) positive Schedule changes for Participating Intermittent Resources.

Either way, the effect of the adjustments to the CFCD for RUC is made more efficient by the application of RUC Zones to localize the adjustments to regions of the grid where the basis for the adjustment is applicable. Alternatively, without the application of RUC Zones, such adjustments to the CFCD for RUC could only be made as a whole across the system, which in most cases would reduce the consistency of the resulting nodal Demand on the FNM in RUC to the metered Demand in Real Time.

Regardless if the RUC Zone granularity adjustments to CFCD are made, the CAISO will allocate the cost of RUC Capacity in two tiers, first to Net Negative CAISO Demand Deviation and then to a Scheduling Coordinator's CAISO Measured Demand consistent with Section 11.8.6.5.

F. Changing the Status of RUC Zones and Introducing New Ones

The CAISO is proposing to define the RUC Zones to be equivalent to the existing aggregation level of CAISO Demand Forecast systems, as listed above. The mapping of RUC Zones to CNodes shall be static data, maintained in the CAISO Master File.

The status of each RUC Zone shall remain active for as long as the CAISO's Automated Demand Forecast System (ALFS), or its successor, maintains such regional forecasting capabilities.

In the future, if the CAISO improves its Demand forecasting capabilities to represent greater locational diversity and there is a reliability need to make adjustments to CFCD on a more granular RUC Zone basis, then the definition of RUC Zones may be modified to reflect these changes. Such changes would be presented to Market Participants for review and comment prior to implementation.

III. Proposed Modifications to BPM for Market Operations

CAISO believes that the existing language in the BPM covering the adjustments to CFCD for RUC is sufficiently covered.

Two additions are proposed for the BPM:

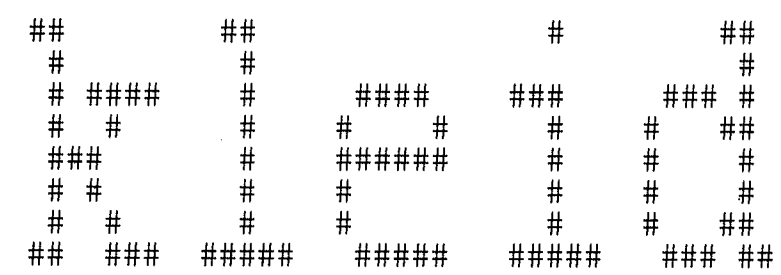
1. Add language to existing Section 6.7.2.2 RUC Zones to state that the basis of the RUC Zones implemented in the initial release of MRTU is the UDC, MSS, Local Capacity Area, or other collection of CNodes for which the CAISO currently has sufficient

historical CAISO Demand and relevant weather data to perform a demand forecast.

2. Add language to existing *Section 6.7.2.2 RUC Zones* to include RUC Zone status and introduction of new RUC Zones, as described above.

On July 2, 2007, the CAISO will post any additional necessary language that will be incorporated into the tariff. The CAISO intends to define term RUC Zones, both in the BPM and in the CAISO Tariff as: A designated area representing a UDC, MSS, Local Capacity Area, or other collection of CNodes for which the CAISO has developed sufficient historical CAISO Demand and relevant weather data to perform a Demand Forecast.

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California ISO
Your Link to Power

California ISO White Paper

Modification of MRTU Real-Time LAP Price Computation

February 14, 2007

Modification of Real-Time LAP Price Computation

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1 Executive Summary

The MRTU Tariff as filed on February 9, 2006 provides for the settlement of Real-time Load Aggregation Point (LAP) load deviations (LAP level uninstructed imbalance energy) through the combination of an hourly LAP price (Tier 2 UIE price) and an hourly LAP price adjustment (UIE Adjustment). Scheduling Coordinators (SCs) that have real-time LAP load in excess of the day-ahead LAP load schedule are charged the sum of the LAP price and the LAP price adjustment. SCs that have real-time LAP load below the day-ahead LAP schedule are paid the difference of the LAP price and the LAP price adjustment (Tariff Section 11.5.2).

Some stakeholders (SCE and NCPA) raised concerns that the initially filed design was not compatible with Convergence Bidding which is scheduled to be implemented 12 months after the initial MRTU implementation. They noted that having two different real-time LAP prices (depending on over or under consumption) is not compatible with the idea of "price convergence" between day-ahead and real-time markets. Further scrutiny, primarily based on input from SCE and NCPA revealed that under some (albeit rare) conditions, the two-price methodology as stated in the Tariff might lead to excessive charges to a single Scheduling Coordinator (SC).

In response, the CAISO proposed to change the originally filed real-time LAP settlement methodology to address these concerns. The changes proposed here are a result of stakeholder input that included comments on the initial white papers posted on October 26, 2006 and December 6, 2006 and further discussed at the Market Initiatives Stakeholder meeting on November 29, 2006. The CAISO proposes to change to originally filed real-time LAP pricing methodology to a single real-time price for settlement of both over- and under- consumption[1], using as weights (for the relevant real-time nodal load LMPs) the real-time LAP nodal loads (rather than the absolute value of LAP nodal load deviations, as proposed in February 9, 2006 FERC filing) and eliminating the real-time adjustment element. However, by implementing this change, the real-time LAP settlement may not be revenue neutral due to the changes in the LAP Load Distribution Factors (LDFs) between day-ahead and real-time.[2] To address this issue, the CAISO proposed two possible approaches for maintaining revenue neutrality. The first neutrality allocation scheme was presented in the both the first and second white papers issued on the real-time LAP allocation and allocated over or under collected revenue based on the real-time metered CAISO Demand (i.e., metered demand excluding exports). The second neutrality allocation scheme, presented as an alternative to the first allocation scheme in the second white paper posted on December 6, 2006, allocated over or under collected revenue based on the day-ahead scheduled CAISO Demand, i.e. CAISO internal load cleared in the day-ahead market.

In responding to the alternatives presented by the CAISO, stakeholders unanimously supported the proposed change of the real-time price methodology with neutrality allocation applied to real-time metered CAISO Demand. Additionally, some stakeholders further proposed that

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[1] This is in line with the practice at the Eastern ISOs, where the real-time price for settlement with zonal load deviations in each load zone is the same for over- and under-consumption. In fact, the real-time zonal price in each zone is computed using total real-time zonal load and real-time Load Distribution Factors (LDFs) as proposed in this white paper. However, the resulting revenue neutrality is not separated from other real-time neutrality revenues/costs such as marginal loss surplus or net real-time congestion revenues/costs, and is thus allocated along with other real-time neutrality.

[2] Revenue neutrality was the main reason for having two real-time prices in the initial filed methodology

allocation should also be applied to exports and convergence bids, however, for reasons described below, the CAISO does not believe that it is appropriate to allocate neutrality revenues to convergence bids and exports. Therefore, the CAISO recommends changing the real-time LAP price methodology filed on February 9, 2006 to:

- A single real-time price for settlement of both over- and under- consumption, using as weights (for the relevant real-time nodal load LMPs) the real-time LAP nodal loads
- Neutrality allocated to real-time metered CAISO Demand
- Neutrality not allocated to convergence bids or exports

The following describes the stakeholder process for this market initiative and presents the new approach in the computing the real-time LAP price as opposed to the method already filed at FERC. The two alternatives for neutrality allocation are also discussed. Finally, the inputs from stakeholders in responding to CAISO new proposed methodology are summarized. The changes to the real-time LAP pricing methodology proposed herein if agreed upon by the stakeholders will be included as a 205 filing shortly after the stakeholder process on this issue has been completed.

2 Process and Timetable

- The first white paper on the proposed change in real-time LAP price methodology was posted on October 26, 2006.
- Request for stakeholders' comments on the white paper was posted on October 27, 2006 with November 15, 2006 as the deadline for stakeholders to submit comments.
- Comments on the white paper from three stakeholders including Northern California Power Agency (NCPA), Pacific Gas and Electric Company (PG&E) and Southern California Edison (SCE) were received.
- The issue was presented to stakeholders at the November 29, 2009 market initiative stakeholder meeting at CAISO.
- A revised version of the white paper was posted on December 6, 2006. Comments on the proposed alternatives were accepted through December 22, 2006. Comments were received from NCPA, PG&E, SCE and State Water Project (SWP).

3 Background

The filed MRTU Tariff (as filed on February 9, 2006) provides for the settlement of real-time LAP load deviations (LAP level uninstructed imbalance energy) through a combination of an hourly LAP price (Tier 2 UIE price) and an hourly LAP price adjustment (UIE Adjustment). Over consumption (real-time LAP load in excess of the day-ahead LAP load schedule) is charged the sum of the LAP price and the LAP price adjustment and under consumption (real-time LAP load below the day-ahead LAP schedule) is paid the difference of the LAP price and the LAP price adjustment (Tariff Section 11.5.2).

Some stakeholders (SCE and NCPA) raised concerns about this approach. Moreover, in the stakeholder discussions related to the design of Convergence Bidding, it appeared that having two different real-time LAP prices (depending on over or under consumption) would not be

compatible with the idea of "price convergence" between day-ahead and real-time markets. Further scrutiny, primarily based on input from SCE and NCPA revealed that under some (albeit rare) conditions, the two-price methodology as stated in the Tariff might lead to excessive charges to a single Scheduling Coordinator (SC).

Thus, the CAISO proposes to change the real-time LAP settlement methodology to address these concerns.

4 Existing Market Design and Tariff Provisions

The filed methodology is described in Section 11.5 in the February 6, 2006 MRTU Tariff filing at FERC. Examples for the filed methodology are provided in the testimony of Farrokh Rahimi as part of the filing.

5 Design Objectives and Criteria

Design objectives for the real-time LAP price methodology are:

- Single real-time price applied to both over- and under-consumption
- Price transparency
- Cost socialization among all LAP load
- Mitigate possibilities for excessive charges to Scheduling Coordinators
- Not incent perverse market behavior

6 Candidate Design Options and Proposal Details

Description of the New Method Proposed

The new proposed method consists of

1. Computing the real-time LAP price using as weights (for the relevant real-time nodal load LMPs) the real-time LAP nodal loads (rather than the absolute value of LAP nodal load deviations, as initially proposed).

2. Eliminating the LAP price adjustment element, thereby potentially introducing revenue neutrality issues.

3. Computing and allocating revenue neutrality resulting from the changes in the LAP Load Distribution Factors (LDFs) between day-ahead and real-time to either 1) all metered CAISO Demand (i.e., metered demand excluding exports) as the first alternative for allocation or 2) all day-head (DA) scheduled CAISO Demand (i.e. CAISO demand cleared in the DA market excluding exports) as the second alternative.

Rationale for the New Method Proposed

The filed methodology was created with two objectives: (1) avoid the potential for excessively high rates ($/MWh) that could result from a single revenue neutral LAP price, (2) achieve

revenue neutrality. This led to the need for two prices, namely the LAP price plus or minus the LAP price Adjustment, for over- or under- consumption. The filed methodology does indeed achieve the second objective (revenue neutrality), but as pointed out by SCE and NCPA, under some (rather rare) circumstances may not quite achieve the first objective, i.e., may give rise to excessive or counter-intuitive rates under certain conditions.

The main problem lies in that real-time changes in "nodal" loads derived from LAP schedules may not be only due to changes in the LAP load (over- or under- consumption), but may also be caused by changes in the LAP Load Distribution Factors (LDFs) from day-ahead to real-time. The latter (LDF changes) could give rise to revenue non-neutrality that the currently filed methodology folds into the combination of the LAP price and the LAP price adjustment, i.e. allocates to only those SCs with LAP load deviations. Changes in LDFs between the DA and real-time market may require real-time re-dispatch and thus real-time costs (to compensate for changes in real-time congestion and losses resulting from LDF changes). Under circumstances where real-time re-dispatch costs resulting from the changes in the LDFs are much higher than the real-time re-dispatch cost to meet the change in the LAP load itself (with no change in LDFs), the filed approach may lead to excessive or counter-intuitive prices. A more appropriate approach would be to isolate the real-time revenue requirement due to changes in the LDFs and allocate it to all load rather than to LAP load deviations. This is the basis of the revised methodology proposed above and illustrated via examples below.

In neutrality allocation, the justification for alternative 1, i.e. on real-time metered CAISO Demand, stems from the fact the neutrality is incurred in the real-time market and the changes in LDF from day-ahead to real-time is not solely attributable to deviation from day-ahead load schedule. Hence the real-time CAISO Demand should share the allocation. On the other hand, the rationale for alternative 2, i.e. on DA scheduled CAISO Demand, is based on the observation that neutrality amount is directly related to the DA scheduled Demand with derivation to be given in Section 12 of this white paper. Further, the portion of the real-time load corresponding to the deviation from the day-ahead schedule is already assessed with the new proposed real-time LAP price. Therefore, applying allocation to DA scheduled CAISO Demand can be justified.

Design Options

Including the filed methodology and the new proposed real-time LAP price with the two neutrality allocation alternatives, three design options were considered:

1. The currently filed methodology featuring hourly real-time LAP price and hourly real-time LAP adjustment.

2. New proposed real-time LAP price with neutrality allocated to real-time metered CAISO Demand.

3. New proposed real-time LAP price with neutrality allocated to DA scheduled CAISO Demand.

Examples

The following examples are intended to clarify and compare the filed methodology with the other methodologies that were considered.

Example 1[3]

Consider a LAP with only two nodes 1 and 2, and assume there are two SCs, SCA and SCB respectively. The following table shows the day-ahead (IFM) and real-time LAP loads, LDFs, and SC day-ahead LAP schedules and real-time LAP consumptions.

	LAP load (MW)	LDF1	LDF2	Node 1 (MW)	Node 2 (MW)	SCA Load (MW)	SCB Load (MW)	LMP1	LMP2
IFM	20,000	50%	50%	10,000	10,000	10,000	10,000		
Real Time	20,005	51%	49%	10,202.55	9,802.45	10,100	9,905	$25	$10
Change	5			202.55	-197.55	100	-95		

Settlement based on the current (filed) methodology

The LAP price based on the filed methodology is the weighted average of the absolute values of nodal MW deviations:

LAP Price (filed methodology) = (202.55*$25 + 197.45*$10)/(202.55+197.45) = $17.59

The LAP price adjustment based on the filed methodology is computed as follows using nodal MW deviations and SC specific LAP MW deviations:

*LAP price Adj. = ((202.55*$25 - 197.45*$10) - $17.59 * (100 - 95)) / (100+95) = $15.39*

Thus the effective rate for over-consumption (SCA) is $17.59 + $15.39 = $32.98 and for under-consumption (SCB), it is $17.59 - $15.39 = $2.21. Both rates are positive, meaning that the SC(s) with overconsumption (positive real-time LAP deviation MWh) are charged and those with underconsumption (negative real-time LAP deviation MWh) are paid.

The following table summarizes the real-time LAP load deviation settlement with the two SCs under the procedure in the current filing:

	LAP MW Deviation	Real-time Settlement Amounts			Effective Rate ($/MWh)
		LAP price	LAP price Adjustment	Net	
SCA	100	$1,759	$1,539	$3,298	$32.98
SCB	-95	-$1,671	$1,461	-$210	$2.21
Total	5	$88	$3,000	$3,088	$617.65

Settlement based on the proposed new methodology: alternative 1 & 2 in neutrality allocation

The LAP price is determined based on the total real-time nodal demand as LMP weights:

*LAP Price (new methodology) = (10,202.55*$25 + 9,802.45*$10)/20,005 = $17.65*

Each SC is charged/paid this rate for over- or under- consumption. This results in a net collection from the SCs of $17.65*(100-95) = $88.

[3] This example is similar to that included in Farrokh Rahimi's testimony as part of the February 6, 2006 MRTU tariff filing at FERC.

The difference between the total revenue requirement ($3,088), which ISO must collect to stay revenue neutral (based on the underlying nodal settlement), and the net amount ($88) collected from the SCs for their LAP load deviation based on the new proposed rate may be attributed to the change in the LDFs from day-ahead to real-time. In fact, if the real-time LAP MW had stayed at its day-ahead level of 20,000 MW, but the LDFs had changed as in this example, the change in LDFs would have changed the nodal loads at node 1 and node 2 as follows:

Change in Node 1 load: 20,000 * (51% - 50%) = 200 MW

Change in Node 2 load: 20,000 * (49% - 50%) = -200 MW

Assuming this would not have impacted the LMPs, the net real-time cost associated with LDF change would have been $25*200 - $10*200 = $3,000, which is exactly the difference between the total revenue requirement ($3,088) and the amount ($88) collected for LAP deviation based on the new rate. The new proposed method under the first allocation alternative allocates this neutrality amount to all real-time load. The neutrality allocation is thus $1,514.62 to SCA and $1,485.38 to SCB.

The following table summarizes the real-time LAP load deviation settlement with the two SCs including the associated neutrality allocation to real-time load under the new proposed procedure:

	LAP MW Deviation	Real-time Settlement Amounts		
		LAP price	Neutrality	Net
SCA	100	$1,765	$1,514.62	$3,279.62
SCB	-95	-$1,677	$1,485.38	-$191.62
Total	5	$88	$3,000	$3,088

The new proposed method under the second allocation alternative allocates this neutrality amount to all day-ahead scheduled load. The neutrality allocation is thus $1,500 to SCA and $1,500 to SCB.

The following table summarizes the real-time LAP load deviation settlement with the two SCs including neutrality allocation to day-ahead scheduled load under the new proposed method:

	LAP MW Deviation	Real-time Settlement Amounts		
		LAP price	Neutrality	Net
SCA	100	$1,765	$1,500	$3,265
SCB	-95	-$1,677	$1,500	-$177
Total	5	$88	$3,000	$3,088

Note that the end result (net settlement amount for each SC) is not markedly different in this example 1 between the filed method and the new proposed method under the two neutrality allocation alternatives. The difference may be more significant under some conditions as illustrated in the next two examples. Note the difference in the amounts of neutrality allocation between the two allocation alternatives.

Example 2

Consider a change in the data for example 1 whereby the real-time LDFs are slightly different from those in example 1; also, the real-time LAP MW deviations are 2 MW for SCA and 1 MW for SCB as summarized in the following table.

	LAP load (MW)	LDF1	LDF2	Node 1 (MW)	Node 2 (MW)	SCA Load (MW)	SCB Load (MW)	LMP1	LMP2
IFM	20,000	50%	50%	10,000	10,000	10,000	10,000		
Real Time	20,001	50.9975%	49.0025%	10,200	9,801	10,002	9,999	$25	$10
Change	1			200	-199	2	-1		

Settlement based on the current (filed) methodology

The LAP price based on the filed methodology is the weighted average of the absolute values of nodal MW deviations:

LAP Price (filed methodology) = (200$25 + 199*$10)/(200+199) = $17.52

The LAP price adjustment based on the filed methodology is computed as follows:

*LAP price Adj. = ((200*$25 – 199*$10) - $17.52 * (2-1)) / (2+1) = $997.49*

Thus the effective rate for over-consumption (SCA) is $17.52 + $997.49 = $1,015.01, and for under-consumption it is $17.52 - $997.49 = - $979.97. The former is very high, and the latter is counter-intuitive (a SC that under consumes would still have to pay since it will face a negative effective price). The following table summarizes the real-time LAP load deviation settlement with the two SCs:

	LAP MW Deviation	Real-time Settlement Amounts			Effective Rate ($/MWh)
		LAP price	LAP price Adjustment	Net	
SCA	2	$35.04	1,994.99	2,030.03	1,015.01
SCB	-1	-$17.52	997.49	979.97	-979.97
Total	1	$17.52	2,992.48	3,010.00	3,010.00

Settlement based on the proposed new methodology: alternative 1 & 2 in neutrality allocation

The LAP price is determined based on the total real-time nodal demand as LMP weights:

LAP Price (new methodology) = (10,200*$25 + 9,801*$10)/20,001 = $17.65

Each SC is charged/paid this rate for over- or under- consumption. This results in a net collection from the SCs of $17.65*(2-1) = $17.65.

The difference between the total revenue requirement ($3,010), which ISO must collect to stay revenue neutral, and the net amount ($17.65) collected from the SCs for their LAP load deviation, i.e., $2,992.35, may be attributed to the change in the LDFs from day-ahead to real-time. In fact, if the real-time LAP MW had stayed at its day-ahead level of 20,000 MW, but the LDFs had changed, the change in LDFs would have changed the nodal loads at node 1 and node 2 as follows:

Change in Node 1 load: 20,000 * (50.9975% - 50%) = 199.49 MW

Change in Node 2 load: 20,000 * (49.0025% - 50%) = -199.49 MW

Assuming this would not have impacted the LMPs, the net real-time cost associated with LDF change would have been $25*199.49 - $10*199.49 = $2,992.35. The new proposed method allocates this neutrality amount to all real-time load under the first allocation alternative. The neutrality allocation is thus $1,496.40 to SCA and $1,495.95 to SCB.

The following table summarizes the real-time LAP load deviation settlement with the two SCs including the associated neutrality allocation to real-time load under the new proposed procedure:

	LAP MW Deviation	Real-time Settlement Amounts		
		LAP price	Neutrality	Net
SCA	2	$35.30	$1,496.40	$1,531.70
SCB	-1	-$17.65	$1,495.95	$1,478.30
Total	1	$17.65	$2,992.35	$3,010.00

Note that the effective rate for SCA is still rather high ($1,531.70) and SCB is charged (at a net rate of -$1,478.30) despite having real-time LAP underconsumption. But these allocations (a combination of a real-time LAP rate of $17.65 and revenue neutrality charge) are more transparent and intuitive than the two rates under the filed methodology.

The new proposed method under the second allocation alternative allocates this neutrality amount to all day-ahead scheduled load. The neutrality allocation is thus $1,496.175 to SCA and the same amount to SCB.

The following table summarizes the real-time LAP load deviation settlement with the two SCs including neutrality allocation to day-ahead scheduled load under the new proposed method:

	LAP MW Deviation	Real-time Settlement Amounts		
		LAP price	Neutrality	Net
SCA	2	$35.30	$1,496.175	$1,531.475
SCB	-1	-$17.65	$1,496.175	$1,478.525
Total	1	$17.65	$2,992.35	$3,010.00

Settlements between the two neutrality allocation alternatives for this example under the new proposed method are extremely close to each other because the changes in LAP loads from DA to RT are very insignificant for both SCs.

Example 3[4]

Consider a small change in the data for example 2 whereby only one SC (SCA) has a real-time LAP MW deviation of 1 MW, but the other SC (SCB) has no LAP MW deviation as summarized in the following table.

[4] This example is a variant of Example 1 above and is based on an example initially suggested by NCPA in a communication with CAISO dated September 13, 2006.

	LAP load (MW)	LDF1	LDF2	Node 1 (MW)	Node 2 (MW)	SCA Load (MW)	SCB Load (MW)	LMP1	LMP2
IFM	20,000	50%	50%	10,000	10,000	10,000	10,000		
Real Time	20,001	50.9975%	49.0025%	10,200	9,801	10,001	10,000	$25	$10
Change	1			200	-199	1	0		

Settlement based on the current (filed) methodology

The LAP price based on the filed methodology is the weighted average of the absolute values of nodal MW deviations:

*LAP Price (filed methodology) = (200$25 + 199*$10)/(200+199) = $17.52*

The LAP price adjustment based on the filed methodology is computed as follows:

*LAP price Adj. = ((200*$25 - 199*$10) - $17.52 * (1-0)) / (1+0) = $2,992.48*

Thus the effective rate for over-consumption (SCA) is $17.52 + $2,992.48 = $3,010, and for under-consumption it is $17.52 - $2,992.48 = - $2,974.96. Again, the former is very high, and the latter is counter-intuitive (a SC that under consumes would still have to pay since it will face a negative effective price). The following table summarizes the real-time LAP load deviation settlement with the two SCs:

	LAP MW Deviation	Real-time Settlement Amounts			Effective Rate ($/MWh)
		LAP price	LAP price Adjustment	Net	
SCA	1	$17.52	$2,992.48	$3,010	$3,010
SCB	0	$0	$0	$0	-
Total	1	$17.52	$2,992.48	$3,010	$3,010

Settlement based on the proposed new methodology: alternative 1 & 2 in neutrality allocation

The LAP price is determined based on the total real-time nodal demand as LMP weights:

*LAP Price (new methodology) = (10,200*$25 + 9,801*$10)/20,001 = $17.65*

Each SC is charged/paid this rate for over- or under- consumption. This results in a net collection from the SCs of $17.65*(1-0) = $17.65.

The difference between the total revenue requirement ($3,010), which ISO must collect to stay revenue neutral, and the net amount ($17.65) collected from the SCs for their LAP load deviation, i.e., $2,992.35, may be attributed to the change in the LDFs from day-ahead to real-time. In fact, if the real-time LAP MW had stayed at its day-ahead level of 20,000 MW, but the LDFs had changed, the change in LDFs would have changed the nodal loads at node 1 and node 2 as follows:

Change in Node 1 load: 20,000 * (50.9975% - 50%) = 199.49 MW

Change in Node 2 load: 20,000 * (49.0025% - 50%) = -199.49 MW

Assuming this would not have impacted the LMPs, the net real-time cost associated with LDF change would have been $25*199.49 - $10*199.49 = $2,992.35. The new proposed method allocates this neutrality amount to all real-time load. The neutrality allocation is thus $1,496.25 to SCA and $1,496.10 to SCB.

The following table summarizes the real-time LAP load deviation settlement with the two SCs including the associated neutrality allocation to real-time load under the new proposed procedure:

	LAP MW Deviation	Real-time Settlement Amounts		
		LAP price	Neutrality	Net
SCA	1	$17.65	$1,496.25	$1,513.90
SCB	0	0	$1,496.10	$1,496.10
Total	1	$17.65	$2,992.35	$3,010.00

Note that the effective rate for SCA is still rather high ($1,513.90) and that SCB is charged despite having no real-time LAP deviation. But these allocations (a combination of a real-time LAP rate of $17.65 and revenue neutrality charge) are more transparent and intuitive than the two rates under the filed methodology.

The new proposed method under the second allocation alternative allocates this neutrality amount to all day-ahead scheduled load. The neutrality allocation is thus $1,496.175 to SCA and the same amount to SCB.

The following table summarizes the real-time LAP load deviation settlement with the two SCs including neutrality allocation to day-ahead scheduled load under the new proposed method:

	LAP MW Deviation	Real-time Settlement Amounts		
		LAP price	Neutrality	Net
SCA	1	$17.65	$1,496.175	$1,513.825
SCB	0	$0	$1,496.175	$1,496.175
Total	1	$17.65	$2,992.35	$3,010.00

Settlements between the two neutrality allocation alternatives for this example under the new proposed method are extremely close to each other because the changes in LAP loads from DA to RT are very insignificant for both SCs.

Discussion of the New Proposed Method

As previously stated, if there is no change in the LAP LDFs between the day-ahead and real-time markets, the filed method and the new proposed method yield identical results. However, it is unlikely that the LDFs will stay the same between day-ahead and real time. Changes in the LDFs can result in real-time re-dispatch costs (real-time revenue non-neutrality). The filed method allocates this cost only to SCs with LAP load deviations, whereas the new proposed method allocates it to all LAP load. The rationale for allocating to all LAP load is that 1) all actual loads of the LAP for allocation alternative 1 or 2) all DA scheduled load for allocation alternative 2 should share the costs of changes in the LDFs between the day-ahead and real-time time frames.

The examples presented above represent conditions involving very small (almost negligible) volume of net LAP level underscheduling. In these examples, the volume of load underscheduling is only 5 MW in example 1 and only 1 MW in examples 2 and 3, compared to the LAP load of 20,000 MW. Thus in these examples, even small changes in the LAP LDFs between the day-ahead and real-time markets can result in real-time costs (real-time revenue non-neutrality) far exceeding real-time costs attributable to load underscheduling.

With higher levels of load underscheduling, the filed methodology is not expected to result in excessive or counter intuitive rates illustrated in these examples. In fact, in the above examples if only 95% of the LAP load were scheduled in the day-ahead market (i.e., if underscheduling were about 1,000 MW), even with changes in LAP LDFs by as much as 3% (i.e., 53% / 47% in Real-time compared to 50% / 50% in the day-ahead market) the filed methodology would have resulted in relatively small LAP price adjustment rates, i.e., reduced gap between the two effective real-time rates, i.e., the LAP price plus or minus LAP price adjustment (although these effective prices would still be different from the price resulting from the new proposed methodology).

Since underscheduling has been minimal under the current market for the past few years, it is expected that under MRTU implementation the level of load underscheduling is likely to remain low and could be much less than 5% (i.e., day-ahead load schedules would exceed 95% of the real-time load and possibly approach 100%), the filed methodology would not be quite suitable for such mature (close to 100% load scheduling) conditions. The CAISO proposes to file the methodology with FERC for initial MRTU implementation.

Between neutrality allocation alternatives 1 and 2 under the new proposed real-time LAP price, the rationale behind each allocation scheme has already been addressed. If the neutrality is quite predictable, depending on whether it is positive or negative value, allocation alternative 2, i.e. allocation applied to DA scheduled load, could possibly encourage market participants to under or over schedule their load in DA market respectively.

7 Evaluation of Options Against Criteria

In evaluating the three design options as stated in Section 7 against the Criteria as stated in Section 6, it is quite clear that the filed methodology, i.e. design option 1, is not able to the meet the first four criteria. On the other hand, the new proposals on real-time LAP price, both design option 2 and 3, are able to meet these criteria. As for the last criterion which is on not causing perverse market behavior, stakeholders are critical to design option 3, i.e. neutrality allocation alternative 2 which allocates to DA scheduled load, as described in next section.

8 Summary of Stakeholder Process and Input

The CAISO has received comments from four stakeholders including CDWR-SWP, NCPA, PG&E and SCE on the real-time LAP Price proposal following the posting of the previous version of this white paper on December 6, 2006. Their comments are summarized next.

- Stakeholders who provided comments support the proposed method of calculating the real-time LAP price as weighted average of real-time locational marginal prices with weighting factors the real-time nodal loads of the LAP.
- Stakeholders support the neutrality uplift resulting from the change in LAP LDF from day-ahead to real-time to be allocated on the basis of real-time metered LAP loads.

They assert that the use day-ahead scheduled loads for allocation is inappropriate because it will provide disincentives for market participants to schedule load in the day-ahead market.

- PG&E and SCE further suggest convergence bids in day-ahead and exports for the neutrality allocation.

9 CAISO Recommendations

The CAISO fully supports a single price real-time LAP price methodology with neutrality allocation. Taking into consideration the concern of stakeholders that neutrality allocation to day-ahead scheduled load could give rise to disincentive for market participants to schedule load in day-ahead market, the CAISO makes the following final recommendations.

- Adoption of the new proposed real-time LAP price with neutrality allocation. The CAISO agrees with stakeholders that the neutrality arising from the change in LAP LDF from day-ahead to real-time should be allocated to real-time metered LAP loads.
- The CAISO disagrees with the suggestion from PG&E and SCE that exports should be part of the neutrality allocation. From cost causation perspective, LAP load, not exports, with LDF undergoing changes from day-ahead to real-time is the cause of neutrality uplift.
- The CAISO disagrees with the suggestion from PG&E and SCE that convergence bids should be part of the neutrality allocation. Contrary to the claim of SCE, convergence bidding is proposed to initially be limited to the LAP level. Even if convergence bidding is opened up on a nodal basis at some future time, the convergence bidding should not affect the change in the LDFs from day-ahead to real-time. Finally, if the neutrality uplift is allocated to real-time metered loads, a load measuring zero energy in real-time will not be subject to the neutrality allocation even though it could submit bids with non-zero energy in the day-ahead market. Since a convergence bid is submitted in the day-ahead and is canceled out in the real-time market (zero energy), allocating convergence bids the neutrality uplift charges would constitute an inconsistency with respect to the proposed treatment of allocating neutrality uplift charges to real-time metered load.

10 References

California ISO's February 9, 2006 Tariff Filing at FERC in Docket No. ER06-615-000 for the California ISO's Market Redesign and Technology Upgrade (MRTU)

11 Appendix

This section demonstrates mathematically that the neutrality requirement under the new proposed real-time LAP price is directly related to the day-ahead scheduled load.

Define the notations as follows:

Let LMP_j^{DA} and LMP_j^{RT} denote the DA LMP and RT LMP of node j of the LAP respectively

Let LDF_j^{DA} and LDF_j^{RT} denote the DA LDF and RT LDF of node j of the LAP respectively

Let $LAP^{DA,SC}$ and $LAP^{RT,SC}$ denote the DA LAP load and RT LAP load of the SC respectively

Given the notations defined above, the LAP load settlement for a Scheduling Coordinator (SC) in DA is $\sum_j LMP_j^{DA} \cdot \left(LDF_j^{DA} \cdot LAP^{DA,SC}\right)$. For revenue neutral in real-time market, the total revenue requirement from all SCs LAP load is $\sum_{SC}\sum_j LMP_j^{RT} \cdot \left(LDF_j^{RT} \cdot LAP^{RT,SC} - LDF_j^{DA} \cdot LAP^{DA,SC}\right)$ and the contribution from a SC LAP load to the total revenue requirement in real-time market is $\sum_j LMP_j^{RT} \cdot \left(LDF_j^{RT} \cdot LAP^{RT,SC} - LDF_j^{DA} \cdot LAP^{DA,SC}\right)$.

Further manipulation of the expression $\sum_j LMP_j^{RT} \cdot \left(LDF_j^{RT} \cdot LAP^{RT,SC} - LDF_j^{DA} \cdot LAP^{DA,SC}\right)$ results in the following.

$$\sum_j LMP_j^{RT} \cdot \left(LDF_j^{RT} \cdot LAP^{RT,SC} - LDF_j^{DA} \cdot LAP^{DA,SC}\right)$$
$$= \sum_j LMP_j^{RT} \cdot \left(LDF_j^{RT} \cdot LAP^{RT,SC} - LDF_j^{RT} \cdot LAP^{DA,SC} + LDF_j^{RT} \cdot LAP^{DA,SC} - LDF_j^{DA} \cdot LAP^{DA,SC}\right)$$
$$= \sum_j LMP_j^{RT} \cdot LDF_j^{RT} \cdot \left(LAP^{RT,SC} - LAP^{DA,SC}\right) + \sum_j LMP_j^{RT} \cdot LAP^{DA,SC} \cdot \left(LDF_j^{RT} - LDF_j^{DA}\right)$$
$$= \left(LAP^{RT,SC} - LAP^{DA,SC}\right) \cdot \sum_j LMP_j^{RT} \cdot LDF_j^{RT} + LAP^{DA,SC} \cdot \sum_j LMP_j^{RT} \cdot \left(LDF_j^{RT} - LDF_j^{DA}\right)$$

In second expression of the equality chain, the second and third terms within the parenthesis cancel each other. Grouping of the four terms within the parenthesis into two results in the third and final expressions. The first term of the final expression is the RT LAP load deviation multiplied by the proposed RT LAP price. This is the proposed settlement associated with the real-time LAP load deviation. The second term is the contribution to neutrality from a SC, which is proportional to the day-ahead scheduled LAP load of the SC.