California Independent
System Operator Corporation

February 16, 2010

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

Re: California Independent System Operator Corporation
Docket No. ER10-____-000
Tariff Amendment to Implement
Proxy Demand Resource Product

Dear Secretary Bose:

The California Independent System Operator Corporation ("ISO") submits this filing to modify the ISO tariff in order to reduce barriers to the participation of demand response in the ISO's market through the implementation of a new demand response product, the proxy demand resource ("PDR").[1] The ISO proposes the proxy demand resource product in order to increase demand response participation in the ISO market and respond to stakeholders' requests for a demand response product that will facilitate the participation of existing retail demand programs in the ISO market. The tariff provisions implementing the proxy demand resource product will satisfy the directives of the Commission's Order No. 719 that independent system operators should develop the capability to permit an aggregator of retail customers to bid demand response on behalf of retail customers directly into the ISO's organized markets to the extent permitted by applicable laws and regulations regarding retail customers.

The ISO respectfully requests that the proposed *pro forma* proxy demand resource agreement included in this filing be made effective on April 19, 2010, so that the ISO can begin entering into contracts with demand response providers that seek to take advantage of the new proxy demand resource product, and so

[1] The ISO submits this filing pursuant to Section 205 of the Federal Power Act, 16 U.S.C. § 824d, and Section 35.13 of the Commission's regulations, 18 C.F.R. § 35.13. The ISO is also sometimes referred to as the CAISO. Capitalized terms not otherwise defined herein have the meanings set forth in Appendix A to the ISO tariff, and except where otherwise noted herein, references to section numbers are references to sections of the tariff.

that demand response providers can begin to seek approval from the load serving entities ("LSEs") for retail customers to participate in proxy demand resources and demand response providers can begin to register proxy demand resources at the ISO. The ISO requests that the rest of the tariff changes contained in this filing be made become effective on May 1, 2010, which is the date that the ISO's proxy demand resource market systems will become operational and can accept bids from scheduling coordinators for proxy demand resources in the ISO's market. Although it is requesting two different effective dates, the ISO requests that the Commission address all aspects of this tariff amendment filing in a single order.

Two extra copies of this filing are also enclosed. Please stamp these copies with the date and time filed and return them to the messenger.

I. Background

A. Development and Benefits of the Proxy Demand Resource Product

Wholesale demand response products, such as the ISO's proxy demand resource proposal, are designed to compensate market participants for responding to ISO price signals by reducing electricity use by end-use customers based on cleared day-ahead schedules and/or real-time energy dispatch instructions issued by the ISO. Under the ISO's proposal, a proxy demand resource is defined as a load or an aggregation of loads capable of measurably and verifiably reducing their electric demand in response to ISO dispatch instructions.

A proxy demand resource is controlled by a demand response provider but participates in the ISO market through an ISO-certified scheduling coordinator.[2] The scheduling coordinator representing a demand response provider submits schedules and bids for proxy demand resources to curtail load at a pricing node ("PNode") (or aggregated PNode) using a "proxy generator" as the modeled resource. The scheduling coordinator that represents the load serving entity will continue to schedule forecasted load at the default load aggregation point. The load serving entity and the demand response provider may be the same entity or different entities. Similarly, the load serving entity and demand response provider can be represented by the same scheduling coordinator or two different scheduling coordinators. The settlement for the curtailed portion of the load will be settled by the ISO directly with the demand response provider's scheduling coordinator at the proxy demand resource's specified PNode or aggregated PNode. Determination of actual delivery by the

[2] A demand response provider can also be an ISO-certified scheduling coordinator, which will allow the demand response provider to schedule and bid its own proxy demand resources in the ISO market.

proxy demand resource will be calculated as the difference between actual metered load for the proxy demand resource and a pre-determined baseline.[3] The load serving entity and the proxy demand response provider may enter into a bilateral agreement that addresses compensation for the energy procured by the load serving entity but not consumed as a result of load curtailment actions taken by the demand response provider. Alternatively, this compensation issue may be addressed by the local regulatory authority rules or regulation. For example, the compensation issue is currently being considered in the CPUC demand response proceeding discussed below in this transmittal letter. Accordingly, the ISO tariff will not indicate if and how revenues will be shared between the load serving entity and the demand response provider.

The proxy demand resource proposal is the result of efforts by the ISO to enhance stakeholder opportunities for demand response in the ISO's newly redesigned market structure. Culminating many years of work on the market redesign (also called the Market Redesign and Technology Upgrade or "MRTU"), the ISO implemented the ISO's new market and new tariff on March 31, 2009. The new tariff was initially filed in February 2006 and was further enhanced consistent with Commission directives in Docket No. ER06-615. In its September 21, 2006 order conditionally approving the MRTU tariff, the Commission discussed the benefits of demand response products and directed the ISO to work with market participants to develop additional opportunities for demand response resources to participate in the ISO market:

> MRTU provides loads with demand response capability – the opportunity to participate in the CAISO day-ahead, real-time, and ancillary services markets under comparable requirements as supply, and receive the corresponding market value. Price-responsive demand moderates price increases and price volatility for all customers . . . and it also helps to check potential market power because it provides a countervailing willingness to reduce demand in the face of high prices. Further, demand response contributes to reliability by shaving peak demand and providing reserves.
>
> . . . .
>
> Recognizing the importance of demand response programs for the effective operation of electricity markets, we direct the CAISO to

---

[3] *See* "Business Requirements Specification: Demand Response – Proxy Demand Resource (PDR), Version 1.8" (Dec. 23, 2009), at 17 ("Draft PDR Business Requirements Specification"). This ISO document is available on the ISO's website at http://www.caiso.com/2494/249473613ffe0.pdf.

work with market participants to present additional opportunities for demand response resources to participate in the CAISO market.[4]

Since the issuance of the September 21, 2006 MRTU order, the ISO has worked extensively with stakeholders to achieve the goal of developing opportunities for market participation by demand response resources.[5] However, to date, the ISO's current market rules have not allowed the ISO to tap the full spectrum of potential demand response resources available in California in a fully effective and efficient manner.

The ISO currently provides for demand response resources to participate in wholesale markets primarily as "participating load,"[6] which enables resources to provide curtailable demand in the ISO market.[7] Over the summer of 2009, eight participating load resources actively participated in the ISO's new market.[8] The ISO is developing refinements to allow participating load to participate more fully in the ISO market in its upcoming "Markets and Performance" ("MAP") initiative.[9]

Although the ISO believes that the participating load tariff provisions provide an appropriate opportunity for certain demand response resources to participate in the ISO market, the ISO also believes that it is appropriate to

---

[4] *California Independent System Operator Corp.*, 116 FERC ¶ 61,274, at PP 10, 689 (2006). Subsequently, the Commission directed the ISO to file annual reports evaluating participation of demand response in the ISO market. *California Independent System Operator Corp.*, 119 FERC ¶ 61,313, at P 226 (2007).

[5] *See, e.g.*, *id.* at P 218 ("We fully support the CAISO and stakeholders' efforts to establish a collaborative process to address questions on how to develop and integrate demand response resources into MRTU"); *California Independent System Operator Corp.*, 126 FERC ¶ 61,148, at P 29 (2009) ("We note that the Commission has directed the CAISO to work with interested stakeholders to develop proposals for integrating demand response resources into the MRTU markets, and that the CAISO is complying with this directive").

[6] *See* "Third Annual Report of the California Independent System Operator Evaluating Demand Response Participation in the ISO," Docket No. ER06-615-000 (Jan. 15, 2010), at 4 ("2009 Demand Response Report"). In 2009, the ISO implemented a number of small-scale demand response pilot programs to explore the feasibility of aggregating certain smaller demand response resources and bidding them into the ISO's day-ahead and real-time markets for ancillary services. *Id. See also California Independent System Operator Corp.*, 128 FERC ¶ 61,184 (2009) (accepting participating load pilot agreements filed by the ISO).

[7] A participating load is defined in Appendix A to the ISO tariff as "[a]n entity, including an entity with Pumping Load or Aggregated Participating Load, providing Curtailable Demand, which has undertaken in writing by execution of a Participating Load Agreement to comply with all applicable provisions of the CAISO Tariff." Curtailable demand is defined in Appendix A as "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."

[8] 2009 Demand Response Report at 6-7.

[9] *See, e.g.*, *California Independent System Operator Corp.*, 129 FERC ¶ 61,157, at P 35 (2009).

develop an alternative mechanism for participation in the ISO market by demand response resources that do not satisfy the criteria to be participating load. Further, the ISO's current participating load model is not readily compatible with existing retail demand response programs managed by the three large investor-owned utilities ("IOUs") in California (Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company). Currently, existing IOU retail demand response programs can only be triggered based on a number of conditions such as price, ISO load forecast, and temperature forecast. In 2007, as an incremental step towards integrating the retail demand response programs into the ISO market, the ISO implemented a manual process for the IOUs to report to the ISO when their retail demand response programs were triggered.[10] Under the ISO's new market design, the ISO uses this information to adjust the procurement target for residual unit commitment ("RUC") in the day-ahead market and the forecast for real-time energy procurement to account for the expected demand response.[11]

During the summer of 2008, the ISO held a series of demand response technical design sessions with the goal of learning how to integrate retail demand response programs into the ISO's market.[12] The technical design sessions indicated that the existing participating load model did not provide the flexibility needed to integrate the IOUs' retail demand response programs into the ISO wholesale energy and ancillary services markets. In particular, the load serving entities expressed concern about the difficulty of forecasting the load of the underlying customers that make up a participating load resource separately and distinctly from their overall load. This load forecasting concern is exacerbated by the fact that retail demand response programs can experience customer migrations though changes in enrollment from month to month. Also, stakeholders expressed a concern that direct access customers whose load is not served by an IOU, actively participate in the IOU's demand response program, which further complicates load forecasting and raises other policy concerns.

In the technical design sessions, the ISO first proposed to develop the concept of a proxy demand resource in order to enhance its existing demand response capability and address the concerns raised by stakeholders.[13] The proxy demand resource proposal would be designed to allow participants in the

---

[10] The ISO implemented this process in compliance with the Commission's directive in *California Independent System Operator Corp.*, *supra*, 119 FERC ¶ 61,313, at P 221.

[11] *See* ISO tariff, Section 31.5.3.2.

[12] Materials related to the demand response technical design sessions are available on the ISO's website at http://www.caiso.com/1cbb/1cbbc8ec52810.html.

[13] *See, e.g.*, "Guidance Document on MRTU Release 1 Provisions to Support 'Demand Response' Programs" at 9-19 (concerning the ISO's proposed "Post-MRTU Release 1 Functionality: 'Proxy Demand Resource' – NEW"). This guidance document is among the materials posted on the ISO's website in connection with the demand response technical design session held on July 30, 2008.

IOUs' retail demand response programs to participate in the ISO market through a market bid rather than through a manual process, provide the flexibility to accommodate direct access customers that participate in IOU demand response programs and simplify forecasting and scheduling requirements for load serving entities to facilitate end-use customer participation.

In late 2008, the ISO established the proxy demand resource stakeholder process.[14] A list of the key dates in the stakeholder process is provided in Attachment E to this filing. This stakeholder process included over fifteen meetings and conference calls and eight opportunities for written stakeholder comments. The stakeholder process resulted in a final proposal for implementing the proxy demand resource product that was presented to and approved by the ISO Governing Board ("Board") at its meeting held on September 10, 2009.[15] An additional component of the proxy demand resource design, pertaining to the treatment of proxy demand resources in the local market power mitigation process, was presented to and approved by the Board at its February 11, 2010 meeting.[16]

In August 2009, the California Public Utilities Commission ("CPUC") issued a decision adopting the IOU demand response programs for the current 2009 to 2011 demand response program cycle.[17] This decision included the requirement that the IOUs modify a portion of their demand response portfolios to participate as proxy demand resources in the ISO market:

> Within 30 days of the filing of CAISO's Proxy Demand Resource tariff with the Federal Energy Regulatory Commission, the utilities shall propose modifications to one or more existing demand response programs that will make at least 10 percent of the megawatts enrolled in the demand response programs authorized in this decision comply with the requirements of CAISO's Proxy Demand Resource.
>
> Within 30 days of the approval of CAISO's Proxy Demand Resource tariff by the Federal Energy Regulatory Commission, each utility shall file a proposal with the Commission to make at least one new or existing demand response program or option within a program comply with the 10-minute dispatch notification

---

[14] Materials related to the proxy demand resource stakeholder process are available on the ISO's website at http://www.caiso.com/23bc/23bc873456980.html.

[15] Materials related to the September 10, 2009 Board meeting are available on the ISO's website at http://www.caiso.com/241e/241ea8bb13ed0.html.

[16] Materials related to the February 11, 2010 Board meeting are available on the ISO's website at http://www.caiso.com/2732/2732dc1726d0.html.

[17] CPUC Decision 09-08-027, "Decision Adopting Demand Response Activities and Budgets For 2009 Through 2011" (Aug. 20, 2009). That CPUC decision is available on the CPUC website at http://docs.cpuc.ca.gov/word_pdf/FINAL_DECISION/106008.pdf.

time requirements for participation in the CAISO's ancillary services market as either Proxy Demand Resource or Participating Load.[18]

By increasing the quantity of resources participating in the energy and ancillary services markets, the proxy demand resource product will provide greater market liquidity and help to mitigate potential market power concerns. In particular, the ISO believes that implementation of the proxy demand resource product may have the following benefits:

- Due to proxy demand resources participating in the ancillary services markets, the cost of procurement for ancillary services may be reduced. Additionally, given the greater liquidity and depth of these markets resulting from implementation of the proxy demand resource product, the chances of triggering scarcity reserve pricing pursuant to the ISO tariff[19] may also be reduced.

- Proxy demand resource performance could potentially reduce the cost of serving load at the applicable load aggregation point ("LAP") by reducing demand, and therefore reducing congestion costs, resulting in a lower locational marginal price ("LMP") at high-priced nodes.

- The cleared proxy demand resource schedule in the integrated forward market will be considered as a supply contribution towards the scheduled load in the integrated forward market, thereby reducing the RUC target, and thus reducing the amount of generator capacity procurement.

As noted above, the ISO proposes to implement the proxy demand resource product on May 1, 2010. The ISO also plans to explore enhancements to both the participating load product and the proxy demand response product and to consider further demand response products in the future as the ISO market evolves and additional needs and opportunities are identified.

B. Order No. 719

In addition to enhancing the ISO's demand response capabilities, the proxy demand resource proposal satisfies certain requirements of the Commission's Order No. 719.[20] Among other things, Order No. 719 established a number of requirements for independent system operators ("ISOs") and

---

[18] *Id* at pp. 240-41, Ordering Paragraphs 25-26.

[19] *See* ISO tariff, Section 27.1.2.3.

[20] *Wholesale Competition in Regions with Organized Electric Markets*, FERC Stats. & Regs. ¶ 31,281 (2008) ("Order No. 719"), *order on reh'g*, Order No. 719-A, FERC Stats. & Regs. ¶ 31,292, *order on reh'g and clarification*, Order No. 719-B, 129 FERC ¶ 61,252 (2009). Order Nos. 719, *et seq.* also added to the Commission's regulations 18 C.F.R. § 35.28(g), which includes demand response requirements applicable to ISOs and RTOs.

regional transmission organizations ("RTOs") related to demand response. Relevant to the instant filing, in Order No. 719, the Commission directed ISOs and RTOs to take actions that included amending their market rules as necessary to permit aggregators of retail customers ("ARCs") to bid demand response on behalf of retail customers into the organized electricity markets operated by the ISOs and RTOs (unless prohibited by the laws or regulations of the relevant electric retail regulatory authority).[21] The Commission also explained that it would permit each ISO or RTO to design ARC provisions that account for differences in each region's market design. Therefore, instead of developing *pro forma* language or requiring RTOs and ISOs to make detailed generic market rule amendments, the Commission "direct[ed] RTOs and ISOs to amend their tariffs and market rules as necessary to allow an ARC to bid demand response directly into the RTO's or ISO's organized market in accordance with" a number of "criteria and flexibilities" specified in Order No. 719.[22]

The Commission directed each ISO and RTO to submit a filing demonstrating its compliance with Order No. 719, within six months after Order No. 719 was published in the Federal Register.[23] The Commission also explained, however, that "the compliance requirement is not meant to displace the timelines of any market improvements that RTOs or ISOs are currently undertaking."[24]

The ISO timely submitted a filing to comply with Order No. 719 within six months of its publication in the Federal Register. The ISO's Order No. 719 compliance filing included a discussion of the ISO's efforts to satisfy the directives in Order No. 719 regarding demand response, including the proxy demand response proposal that was being developed by the ISO and stakeholders.[25] In its November 2009 order on the ISO's Order No. 719 compliance filing, the Commission conditionally accepted the ISO's compliance filing and its plan to enhance the ISO's demand response market features as complying with the demand response requirements of Order No. 719.[26]

In the November 2009 order, the Commission also found that the ISO's roadmap to the development of the proxy demand resource proposal satisfied the ARC-related compliance obligation set forth in Order No. 719, and the

---

[21] Order No. 719 at PP 3, 154. The Commission defined the relevant electric retail regulatory authority as "the entity that establishes the retail electric prices and any retail competition policies for customers, such as the city council for a municipal utility, the governing board of a cooperative utility, or the state public utility commission." *Id.* at P 158.

[22] *Id.* As explained in Section III, below, the ISO's proxy demand resource proposal satisfies each of the criteria and flexibilities contained in Order No. 719.

[23] Order No. 719 at P 578.

[24] *Id.* at P 579.

[25] ISO Compliance Filing, Docket No. ER09-1048-000 (Apr. 28, 2009), at 16-23.

[26] *California Independent System Operator Corp.*, 129 FERC ¶ 61,157, at PP 35-43 (2009).

Commission noted that it would examine the ISO's proxy demand resource filing to ensure that it satisfies the requirements of Order No. 719:

> The CAISO states that the CAISO Tariff, market design, and software cannot currently accommodate the provision of demand response through an ARC. The CAISO claims that the implementation of such functionality requires resolution of complex scheduling, metering, and settlement issues. The CAISO expects to resolve these issues through the MAP initiative, specifically by implementation of the PDR product. . . . We find the CAISO in compliance with the directive of Order No. 719 regarding ARCs, insofar as the CAISO has provided us with an adequate roadmap to full compliance. Development and implementation of ARCs in the CAISO markets should be fully addressed by the CAISO in its MAP initiative filings providing for demand resource enhancements. However, we note that, once filed, the MAP initiative filings will be reviewed closely by the Commission to ensure that the CAISO's ARC proposal meets the Commission's objectives laid out in Order No. 719.[27]

In the course of the stakeholder process to develop the proxy demand resource product, the ISO and stakeholders agreed upon the use of the term *demand response providers* or "DRPs" to describe the entities in the ISO's market that Order No. 719 refers to as ARCs.[28] As explained below, the proxy demand response proposal submitted in the instant filing will allow demand response providers to aggregate retail customers for the purpose of bidding demand response directly into the ISO's market and will meet the objectives set forth in Order No. 719.

II. Components of the Proxy Demand Resource Product and Proposed Tariff Changes

A. Overview

Through the ISO's proxy demand resource product, demand response providers will each be authorized to take part in the ISO's day-ahead and real-time markets, including bidding to provide eligible ancillary services, once they have executed a *pro forma* proxy demand resource agreement with the ISO and

---

[27] *Id.* at PP 51, 56.

[28] As reflected in some of the materials posted in the stakeholder process on proxy demand resources, demand response providers also were referred to as curtailment service providers or "CSPs".

satisfied of other applicable requirements to participate in the ISO market, including requirements of the local regulatory authority.[29]

The process for proxy demand resources to participate in the ISO's market will begin with the registration of such resources by the demand response provider that represents them. Information provided to the ISO and completion of the registration steps will be contained within an information system developed by the ISO that is known as the *demand response system*. Through the registration process, the demand response provider will identify the certified scheduling coordinator that will represent the discrete proxy demand resources to which the demand response provider wishes to assign a resource ID (as defined in the ISO tariff) and the load serving entity that serves the underlying load customer(s) which make up the resource ID. Each load serving entity is also represented by a certified scheduling coordinator (or acts as its own scheduling coordinator) in the ISO market.

The proxy demand resource product design separates the functions of these two scheduling coordinators (although a single scheduling coordinator could be utilized), in that the scheduling coordinator that represents the load serving entity will continue to schedule the demand for the end-use customers in the day-ahead market, while the scheduling coordinator representing the demand response provider will schedule and bid its proxy demand resources into the ISO market. This will allow the settlement for energy delivered (defined in the proposed tariff amendments as the *PDR energy measurement*) to be paid to the demand response provider's scheduling coordinator. Through identification of the scheduling coordinator representing the load serving entity, the quantity of the PDR energy measurement will be added to the demand of the scheduling coordinator representing the load serving entity to prevent that scheduling coordinator from being compensated for the imbalance energy provided by the proxy demand resource, which would result in a double payment to the load serving entity's scheduling coordinator.

The *pro forma* proxy demand resource agreement requires that the demand response provider certify to the ISO that its participation is authorized by the local regulatory authority and that it has satisfied all applicable rules and regulations established by the local regulatory authority. This extends to the execution of any bilateral agreements between the demand response provider and the load serving entities that the local regulatory authority may require. In this manner, the proxy demand resource amendments require that appropriate relationships be in place between the demand response provider and the load serving entity (whether this is established by bilateral agreement or rules and

[29] The local regulatory authority is defined in the ISO tariff as "[t]he or local governmental authority, or the board of directors of an electric cooperative responsible for the regulation or oversight of a utility." *Cf.* footnote 21, *supra* (setting forth Order No. 719 definition of relevant electric retail regulatory authority).

regulations governing the relationship). These relationships are established externally, and not within the ISO. The separate agreement entered into by these parties or the applicable local regulatory authority rules will provide the means for the demand response provider and the load serving entity to share the ISO revenues, in order to compensate the load serving entity for the energy that is purchased by the load serving entity but is not used due to the demand response service provided by the proxy demand resource.

After it is authorized to participate in the ISO market, the scheduling coordinator, on behalf of the demand response provider that represents one or more proxy demand resources, will be able to submit bids for proxy demand resources into the ISO market. Specific details of the ISO's proxy demand resource proposal, and the tariff changes needed to implement the proposal, are discussed below.

B. Definitions of Entities and Services

The ISO proposes to add the following interrelated defined terms to Appendix A to the ISO tariff in order to set forth in tariff language the types of entities and services to implement the proxy demand resource product:

- The term *demand response provider*, defined as an entity responsible for delivering demand response services from a proxy demand resource, which has undertaken in writing by execution of the proxy demand resource agreement to comply with all applicable provisions of the ISO tariff.

- The term *proxy demand resource agreement*, defined as an agreement between the ISO and a demand response provider, a *pro forma* version of which is set forth in Appendix B.14 to the ISO tariff.[30]

- The term *proxy demand resource*, defined as a load or aggregation of loads capable of measurably and verifiably providing demand response services pursuant to a proxy demand resource agreement.

- The term *demand response services*, defined as demand from a proxy demand resource that can be bid into the day-ahead market and real-time market and be dispatched at the direction of the ISO. While the current functionality for proxy demand resources is only demand *reduction*, the ISO has used the broader term *services* in contemplation of future demand response products with the ability to accept a dispatch to increase load (*i.e.*, increase consumption).

---

[30] The proxy demand resource agreement is discussed further in Section II.C, below.

C. Proxy Demand Resource Agreement and Demand Response System

The ISO proposes to add a new *pro forma* agreement – the proxy demand resource agreement – to Appendix B to the ISO tariff, in order to establish the terms and conditions pursuant to which the ISO and each demand response provider agree to discharge their respective duties and responsibilities under the ISO tariff.[31] The *pro forma* proxy demand resource agreement is largely modeled after the existing *pro forma* participating load agreement contained in Appendix B.4 to the ISO tariff, the provisions of which the Commission has accepted.[32]

The differences between the proxy demand resource agreement and the participating load agreement reflect the differences in entities and services involved under those two agreements. The proxy demand resource agreement includes provisions specific to proxy demand resources and demand response providers. For example, the proxy demand resource agreement contains several provisions regarding the inclusion of information on proxy demand resources in the ISO's new demand response system.[33] The ISO proposes to define the *demand response system* in Appendix A to the ISO tariff as a collective name for a set of functions of an ISO application used to collect, approve, and report on information and measurement data for proxy demand resources.[34]

Section 4.3 of the proxy demand resource agreement includes the requirement that the demand response provider must certify to the ISO that its participation is authorized by the local regulatory authority applicable to demand response providers, that the demand response provider has satisfied all applicable rules and regulations of the local regulatory authority, and that any agreements required by the local regulatory authority are fully executed. The inclusion of these provisions is consistent with Order No. 719, which explains that

> [t]he RTO or ISO may specify certain requirements, such as registration with the RTO or ISO, creditworthiness requirements, and certification that participation is not precluded by the relevant electric retail regulatory authority. The RTO or ISO should not be in

---

[31] *See pro forma* proxy demand resource agreement, Recital (D).

[32] *See California Independent System Operator Corp.*, 88 FERC ¶ 61,182, at 61,590-91 (1999).

[33] *See pro forma* proxy demand resource agreement, Sections 2.2, 3.2.2, 4.3, 6.1.

[34] Further details regarding the collection of, approval of, and reporting on information and measurement data under the demand response system are provided on pages 18-23 of the "Draft Final Proposal for the Design of Proxy Demand Resource (PDR)" (Aug. 28, 2009) ("Draft Final PDR Proposal") and pages 21-26 of the Draft PDR Business Requirements Specification. The Draft Final PDR Proposal is available on the ISO's website at http://www.caiso.com/241d/241da56c5950.pdf. Details regarding the demand response system will be included in the Business Practice Manuals.

> the position of interpreting the laws or regulations of a relevant electric retail regulatory authority.[35]

Consistent with these same directives, although the ISO's demand response system will include a registration requirement for proxy demand resources, the ISO will not ensure the existence of or monitor the commercial arrangements associated with proxy demand resources, such as the exchange of settlements data and revenues between a demand response provider and the load serving entity for the proxy demand resource that the demand response provider represents. These commercial arrangements are to be addressed by the demand response provider and the load serving entity and appropriately take place outside of the ISO processes. Further, any retail rules applicable to the commercial arrangements should be established by the local regulatory authority rather than by the ISO.

D. Roles and Responsibilities of Demand Response Providers and Proxy Demand Resources

The ISO proposes to add new Section 4.13 to the ISO tariff to set forth the roles and responsibilities of demand response providers and proxy demand resources under the tariff.

Section 4.13.1 explains the relationship between the ISO and demand response providers. The section states that the ISO will only accept bids for energy or ancillary services, submissions to self-provide ancillary services, or submissions of energy self-schedules from scheduling coordinators representing proxy demand resources if such proxy demand resources are represented by a demand response provider that has entered into a proxy demand resource agreement with the ISO. Section 4.13.1 also provides that a demand response provider must accurately provide the information required in the demand response system, satisfy all proxy demand resource registration requirements, and meet standards adopted by the ISO and published on the ISO's website.

Section 4.13.2 requires that a single demand response provider must represent each proxy demand resource, although a demand response provider may represent more than one proxy demand resource. A demand response provider may be, but is not required to be, a load serving entity or a utility distribution company ("UDC"). This provision permits a demand response provider that is not a load serving entity or a utility distribution company to be an aggregator of other entities' loads.

Section 4.13.2 also requires that each demand response provider must satisfy registration requirements and must provide information that allows the

---

[35] Order No. 719 at P 49 n.78.

ISO to establish customer baselines in accordance with the applicable Business Practice Manuals ("BPMs"). *Customer baseline* is a new term defined in Appendix A to mean a value or values determined by the ISO based on historical load meter data to measure the delivery of demand response services. The customer baseline represents an estimate of metered demand that normally would be expected for a particular proxy demand resource in the absence of a demand response bid, based on historical data.

The customer baseline methodology that the ISO will initially use when the proxy demand resource product goes into effect is described in the attached Declaration of Margaret Miller, Manager, Market Design and Regulatory Policy for the ISO.[36] As Ms. Miller explains, the ISO and stakeholders developed this initial methodology based on an evaluation of the design features appropriate to the ISO market and features of the customer baseline methodologies employed by other ISOs and RTOs that have demand response products, including PJM Interconnection, L.L.C. ("PJM"), the New York Independent System Operator, Inc. ("NYISO"), and ISO New England Inc. ("ISO-NE").[37]

As explained by Ms. Miller, several focused working group meetings with stakeholders were spent discussing baseline methodologies and reviewing related studies written by Christensen Associates Energy Consulting, LLC, Lawrence Berkeley National Laboratory, DTE Energy, and documents from ISO-NE and PJM. Discussions were also held with stakeholders concerning issues such as market manipulation by market participants of the baseline methodology used to settle proxy demand resources in the ISO market.[38] In addition, the ISO contracted with Utility Integration Solutions, Inc. to provide consulting services to help the ISO determine the appropriate baseline methodology to apply in order to settle proxy demand resources and to perform additional benchmarking and analysis regarding how other independent system operators and regional transmission organizations have implemented products similar to the proxy demand resource.

In the course of evaluating customer baseline methodologies, the ISO learned that no single customer baseline methodology meets every need and/or load type, and evidence shows that morning-adjusted and/or temperature-adjusted baselines tend to produce better results than unadjusted baselines. As

---

[36] Ms. Miller's Declaration is provided in Attachment D to this filing. *See also* Draft Final PDR Proposal at 26-27 and 36-38 (containing discussion of the customer baseline methodology).

[37] Declaration of Margaret Miller at 9. *See also* "Customer Baseline Load Review and Recommendation" (May 26, 2009). This presentation is available on the ISO's website at http://www.caiso.com/23ca/23ca96e026e90.pdf.

[38] *See* "Overview of Findings from Baseline Studies" (May 26, 2009), available on the ISO's website at http://www.caiso.com/23ca/23ca94ed1a490.pdf;
"Baseline Analyses Using DBP (2006) and AMP (2008) Program Data" (May 26, 2009), available on the ISO's website at http://www.caiso.com/23ca/23ca93c0100e0.pdf;
"Customer Baseline Load Review and Recommendation", *supra*.

Ms, Miller explains, other ISOs and RTOs have had to make numerous refinements and enhancements to their own various customer baseline methodologies.[39] Consequently, the ISO has chosen to implement a simple core methodology for establishing customer baselines that it expects will be re-examined and refined based on the ISO's initial experience with the proxy demand response product.

In order to have sufficient flexibility to refine the customer baseline methodology or to tune the methodology for particular types of demand response providers based on its experience with the product, the ISO will publish the initial methodology and any modifications to it in the applicable Business Practice Manuals following the stakeholder process for changing BPMs in accordance with the requirements of the Business Practice Manual for BPM Change Management.[40] This approach is consistent with the practices of the NYISO and ISO-NE. In this regard, the NYISO includes its customer baseline calculation in its Day-Ahead Demand Response Manual.[41] ISO-NE also includes substantive details for calculation of demand response customer baselines in the ISO New England Manuals.[42]

---

[39] Declaration of Margaret Miller at 6-7. In this regard, the Commission has explained that determining an appropriate customer baseline methodology requires the application of judgment based on the specific circumstances:

> We note that under the current DALRP [Day-Ahead Load Response Program] construct (where the Customer Baseline is only updated on days when offers in the DALRP are not accepted), there will always be a trade-off between baseline accuracy and participation in the DALRP – i.e., as the number of days in which DALRP offers are rejected increases, by default the Customer Baseline will be more accurate, at the expense of short term (and potentially long-term) DALRP participation. . . . *As such, a reasonable judgment has to be made concerning an acceptable baseline error rate so as not to discourage participation in programs like the DALRP*.

ISO New England Inc., 123 FERC ¶ 61,021 at P 27 (2008) (emphasis added).

[40] Declaration of Margaret Miller at 9-11.

[41] New York Independent System Operator, Inc. Manual 5, "Day-Ahead Demand Response Program Manual," Section 5.0. The manual can be accessed on the NYISO website at http://www.nyiso.com/public/webdocs/documents/manuals/planning/dadrp_mnl.pdf.

[42] See ISO New England Inc. FERC Electric Tariff No. 3,Section III, Market Rule 1, Appendix E, Load Response Program, which contains the following provisions:

> **III.E.6. Metering and Settlement**:
> Additional details concerning metering requirements and settlement procedures along with calculation of baseline quantities to be used to calculate the amount of interruption actually obtained are contained within the ISO New England Manuals.
>
> **III.E.8.3.3 Performance Measurement**. DR Resource performance will be determined in the same manner as in the existing Real-Time 30-Minute Demand Response Program as described in the ISO New England Load Response

Pursuant to new Section 4.13.2 of the ISO tariff, each proxy demand resource that is not within a metered subsystem ("MSS") is required to be associated with a single load serving entity and utility distribution company, and each proxy demand resource that is within an MSS is required to be associated with a single load serving entity. All underlying locations of a single proxy demand resource must be located within a single Sub-LAP. The ISO originally contemplated allowing the load of multiple load serving entities to be aggregated and to constitute a single proxy demand resource. However, upon further consideration of the issue, the ISO determined that allowing such an aggregation may have detrimental impacts on the registration and settlement of proxy demand resources. Therefore, the ISO modified its proposal so that, at least initially, a proxy demand resource must be associated with a single load serving entity and utility distribution company as discussed above. The ISO will consider allowing the load of multiple load serving entities to constitute a single proxy demand resource as a future enhancement to the proxy demand resource product.

Section 4.13.2 states that registration of a location for participation in the proxy demand resource product requires the approval of the underlying load's load serving entity and/or utility distribution company. Disputes regarding the rejection of a registration of a location will be undertaken with the applicable local regulatory authority and will not be arbitrated or in any way resolved through an ISO mechanism or process.[43] Further, Section 4.13.2 specifies that the meter data for each proxy demand resource will be metered load data.[44]

Section 4.13.3 requires each demand response provider to provide data, as described in the Business Practice Manual, identifying each of its proxy demand resources and such information regarding the capacity and operating characteristics of the proxy demand resource as the ISO may reasonably request from time to time. All information provided to the ISO regarding the operational and technical constraints in the Master File are required to be accurate and based on actual physical characteristics of the resources.

Section 4.13.4 addresses the authority of the ISO, which the ISO expects it will apply only in rare circumstances, to temporarily suspend the ability of a

---

Program Manual, provided, however, that the customer baseline adjustment for the DRR Pilot program will be increased or decreased to reflect actual metered consumption during the two hours prior to the dispatch of the Demand Resources (i.e., adjusted symmetrically).

The ISO-NE tariff can be accessed on its website at http://www.iso-ne.com/rules_proceds/index.html. The ISO New England Load Response Program Manual (Revision 12, Effective Date: October 1, 2007) can be accessed on the ISO-NE website at http://www.iso-ne.com/rules_proceds/isone_mnls/index.html.

[43] *See supra* footnote 35 and accompanying text.

[44] Metering of proxy demand resources is discussed further in Section II.F, below.

scheduling coordinator for a demand response provider to submit bids from one or more proxy demand resources. The suspension provision is discussed below in Section II.J of this transmittal letter.

E. Bidding and Scheduling of Proxy Demand Resources

The ISO proposes to add new Section 30.6 to the ISO tariff to set forth the requirements for bidding and scheduling proxy demand resources. Section 30.6 states that, unless otherwise specified in the ISO tariff and applicable Business Practice Manuals, the ISO will treat bids for energy and ancillary services on behalf of proxy demand resources like bids for energy and ancillary services on behalf of other types of supply resources. Pursuant to that provision, a scheduling coordinator submitting a bid for energy or ancillary services for a proxy demand resource will be subject to the same processes, bid validation, and market timelines as a scheduling coordinator that submits a bid for any other type of resource, unless otherwise specified in the tariff or a Business Practice Manual. For bidding and scheduling purposes, proxy demand resources will be modeled in the ISO's systems in the same manner as generators.

Section 30.6 specifies that a scheduling coordinator for a demand response provider representing a proxy demand resource may submit bids in the day-ahead and real-time markets for energy, in the RUC process, and in the ancillary services markets for which it is certified. A scheduling coordinator for a demand response provider representing a proxy demand resource may also self-provide ancillary services for which the proxy demand resource is certified. Demand response services will be bid separately from the underlying demand for the proxy demand resources.

During the stakeholder process that led to this tariff amendment, the ISO contemplated whether proxy demand resources should be permitted to participate in the hour-ahead scheduling process ("HASP"), the portion of the ISO's real-time market processes that addresses transactions over interties with neighboring balancing authority areas. After further analysis, the ISO determined that including proxy demand resources in HASP presents a significant implementation effort, considering that HASP currently is used primarily to pre-dispatch hourly intertie resources. Not all resources internal to the ISO balancing authority area, which include participating load and generation, are currently eligible to participate in HASP. Further, proxy demand resource participation in HASP would need to be based on hourly metering, which might create undesirable incentives for proxy demand resources to participate in the HASP market and would be inconsistent with the treatment given to other types of resources located within the ISO balancing authority area. Moreover, since MRTU start-up, the ISO has experienced some price volatility in the HASP market and it does not want to make any significant changes to HASP until those issues are resolved.

At the time the proxy demand resource product is first implemented, the non-spinning reserve market will be the only ancillary services market for which proxy demand resources will be certified. The ISO plans to augment the functionality in the future to permit the certification of proxy demand resources to provide additional types of ancillary services. In this regard, the ISO is undertaking a separate stakeholder initiative to modify ISO operating and technical requirements for ancillary services in order to facilitate further participation by non-generator resources in the ISO's ancillary services markets. The stakeholder initiative also includes recommended market enhancements that create an option for resources to allow the ISO to manage the energy output and usage of a resource providing regulation service. If adopted, these modifications would apply to both generation and non-generation resources, including proxy demand resources, that participate in the ISO's ancillary services markets.[45]

The ISO believes that the existing language in the ISO tariff is sufficient for purposes of providing notification of changes in enrollments and schedule changes for proxy demand resources that may occur between day-ahead and real-time dispatch of proxy demand resources. Both demand response providers and load serving entities need to be aware of proxy demand resource enrollments and scheduling changes. Demand response providers need to be aware because they are the entities responsible for forecasting and scheduling of all customer load. The ISO has existing mechanisms for communicating schedules in the day-ahead market and dispatches in the real-time market to market participants. The ISO has identified no need to modify the existing notification mechanisms other than a need to communicate megawatt quantities of dispatches to both demand response providers and load serving entities, which does not require a tariff change.[46]

---

[45] The ISO commenced this stakeholder initiative in order to comply with a directive in Order No. 719 (at P 49) to RTOs and ISOs to allow demand response resources to participate in ancillary services markets assuming the demand response resources are technically capable of providing the ancillary service within feasible response times, and to comply with directives in the Commission's Order No. 890 requiring ISOs and RTOs to evaluate non-generation resources, such as demand response and storage, on a comparable basis to services provided by generation resources in meeting mandatory reliability standards, providing ancillary services, and planning the expansion of the transmission grid. *See Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, FERC Stats. & Regs. ¶ 31,241, at PP 479, 888 (2007). Information regarding the ISO's non-generation initiative can be accessed on the ISO's website at http://www.caiso.com/2415/24157662689a0.html.

[46] For the proxy demand resource product, demand response providers and LSEs will have access to day-ahead generation market results, day-ahead expected energy information, and real-time dispatch information regarding their proxy demand resources. In cases where the demand response provider and the LSE are the same entity, that entity will have access to these types of information as to the proxy demand resources that the entity represents. In cases where the demand response provider and the LSE are separate entities, the LSE will be provided solely with read-only access to the information and only for the specific resource IDs of any proxy demand resources that are among the LSE's customers.

F. Metering and Telemetry of Proxy Demand Resources

The ISO proposes to require settlement quality meter data for proxy demand resources rather than using estimated meter data. This requirement is appropriate because, as discussed below, the ISO will settle transactions involving proxy demand resources by comparing the customer baseline of a proxy demand resource against its actual underlying load for a demand response event. The only means of accurately determining the actual underlying load in this calculation is to use settlement quality meter data.

To implement the requirement that proxy demand resources provide settlement quality meter data, the ISO proposes to modify Section 10.3.2.1, regarding the duty to provide settlement quality meter data, to state that each scheduling coordinator for a demand response provider is required to aggregate the settlement quality meter data of the underlying load to the level of the registration configuration of the proxy demand resource in the demand response system. Further, the ISO proposes to modify Sections 10.3.6.1 and 11.1.5, regarding the timing of the submission of settlement quality meter data, to state that scheduling coordinators cannot submit estimated settlement quality meter data for proxy demand resources and that the ISO will not estimate settlement quality meter data for proxy demand resources. For similar reasons, the ISO proposes to add new Section 4.9.12.2.6 to the ISO tariff to state that an MSS operator that owns or has an entitlement to a system unit is required to provide, through the scheduling coordinator representing the MSS operator, settlement quality meter data for the system unit's proxy demand resources.

Section 4.5.1.1.3 of the current ISO tariff states that, if two or more scheduling coordinators apply simultaneously to register with the ISO at a single meter or meter point for a CAISO metered entity or if a scheduling coordinator applies to register with the ISO for a meter or meter point for a CAISO metered entity for which a scheduling coordinator has already registered, the ISO will return the application with an explanation that only one scheduling coordinator may register with the ISO 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 ISO proposes that proxy demand resources will be scheduling coordinator metered entities rather than CAISO metered entities. Therefore, the current tariff provisions in Section 4.5.1.1.3 are not applicable to proxy demand resources. Nonetheless, in order to clarify that the "one scheduling coordinator per meter" rule does not affect the ability of the ISO to implement the proxy demand resource product, the ISO proposes to modify Section 4.5.1.1.3 to state that nothing in the section will prohibit one scheduling coordinator from registering with the ISO to submit bids for demand response services from a proxy demand resource associated with a given meter or meter point where a different

scheduling coordinator is registered for load associated with that meter or meter point.

The ISO proposes that proxy demand resources not be required to have telemetry under Section 31.5.7.1 (regarding rescission of payments for undispatchable RUC capacity) and has revised that section to reflect its proposal. Telemetry is required for all proxy demand resources that are providing ancillary services or are over 10 MW.[47]

G. Inclusion of Proxy Demand Resources in Resource Adequacy

The ISO proposes to allow proxy demand resources to satisfy the resource adequacy requirements of the ISO tariff. Therefore, the ISO makes modifications to Section 40.6.12 of the ISO tariff to establish that proxy demand resources, like participating loads, may be included in a resource adequacy plan and supply plan consistent with terms and conditions established by the CPUC or applicable local regulatory authority. The ISO also proposes to add new Section 40.8.1.3 to the ISO tariff to state that the default qualifying capacity[48] (*i.e.*, the maximum capacity of a resource adequacy resource) of a proxy demand resource, for each month, will be based on the resource's average monthly historic demand reduction performance during that same month during the availability assessment hours (as described in Section 40.9.3), using a three-year rolling average. For a proxy demand resource with fewer than three years of performance history, for all months for which there is no historic data, the ISO will utilize a monthly megawatt value as certified and reported to the ISO by the demand response provider; otherwise, where available, the ISO will use the average of historic demand reduction performance data available, by month, for a proxy demand resource. Proxy demand resources must be available at least four hours per month in which they are eligible to provide resource adequacy capacity and must be dispatchable for a minimum of thirty minutes per event within each of those months.

H. Exclusion of Proxy Demand Resources from Certain ISO Market Processes

The ISO proposes to modify Sections 31.2 and 33.4 of the ISO tariff to state that bids on behalf of proxy demand resources are not mitigated and are not considered in the ISO's market power mitigation-reliability requirement

---

[47] *See, e.g.*, Draft PDR Business Requirements Specification at 37-39 (indicating that proxy demand resources must meet certain specified telemetry requirements only if they are providing ancillary services or are over 10 MWs).

[48] This provision applies only when the local regulatory authority has not established and provided to the ISO 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, *e.g.*, proxy demand resources.

determination ("MPM-RRD") process for either the day-ahead market or the real-time market. The ISO originally intended to include proxy demand resources in the MPM-RRD process but not to subject proxy demand resource bids to market power mitigation due to the challenges of determining how to calculate cost-based default energy bids for these resources. After the ISO Board approved the proxy demand resource design in September 2009, however, the Department of Market Monitoring ("DMM") identified significant concerns with this approach. As the DMM explained in a memorandum it provided to the Board in February 2010,[49] including proxy demand resource bids in the MPM-RRD process without mitigating their bids could cause bids from generation resources with significantly lower costs (but higher-priced market bids) to be displaced by proxy demand resource bids in this mitigation process and the final market dispatch. Excluding proxy demand resource bids from this process avoids such economically inefficient outcomes and prevents the ISO's local market power mitigation provisions from being undermined. This is the same approach the ISO will use to handle convergence bids in the MPM-RRD process. In other words, the bids will be considered in the integrated forward market or real-time market without being mitigated and without being considered in the MPM-RRD. This change for proxy demand resources was approved by the ISO Board in February 2010.

The ISO also proposes to modify Section 36.8.4, regarding eligible sources for congestion revenue right ("CRR") allocation, to state that a proxy demand resource cannot be a nominated CRR source in a CRR allocation process. The ISO has made this change in response to a stakeholder comment that there could be potential gaming opportunities as a result of the interaction between the CRR allocation process and the dispatch of proxy demand resources.

I. Settlement of Demand Response Services

Settlement of demand response services provided by a proxy demand resource will be with the scheduling coordinator for the demand response provider that represents the proxy demand resource. The ISO proposes to add new Section 11.6.1 to the ISO tariff to state that settlements for energy provided by demand response providers from proxy demand resources will be based on the PDR energy measurement for the proxy demand resources. The ISO will provide payment under this tariff language for demand response services based on the verified performance of proxy demand resources (actual underlying load for a demand response event) as compared with historical metered demand customer baselines based on historical metered demand established for those proxy demand resources.

---

[49] The February 2010 DMM memorandum to the Board is available on the ISO's website at http://www.caiso.com/2733/2733950e66db2.pdf.

Consistent with the existing settlement provisions in Section 11 of the ISO tariff, the amount of energy provided by a proxy demand resource will be multiplied by the applicable LMPs (either day-ahead or real-time) at the Sub-LAPs for the proxy demand resources, and the schedules of resources serving load will be adjusted so as to avoid double payments, *i.e.*, payments for the demand response services provided in addition to payments to the resources serving the load for uninstructed deviations (*i.e.,* reductions of load) based on the demand response services provided.[50] In order to ensure the correct settlement amount, the ISO proposes to modify Section 11.5.2 to include proxy demand resources in the settlement of uninstructed imbalance energy, and to add new Section 11.5.2.4 to the ISO tariff to state that, for the purpose of settling uninstructed imbalance energy of a scheduling coordinator representing a load serving entity, the amount of PDR energy measurement delivered by a proxy demand resource will be added to the metered load quantity of the scheduling coordinator's load resource ID with which the proxy demand resource is associated.

J. Rescission of Payments for Demand Response Services Not Actually Provided and Temporary Suspension of Market Participation for Proxy Demand Resources

As Ms. Miller explains in her Declaration,[51] during the development of the proxy demand resource product, one significant concern was whether demand response providers could be paid for demand response services not actually provided to the market, *e.g.*, whether an end-user might not reduce its actual consumption of electricity any more than the end-user would have in the absence of a demand response market or whether the reduction in the use of electricity might be overstated, resulting in an overpayment to the demand response provider. Such overpayment could occur where there is intentional gaming or manipulation of customer baselines. For example, ISO-NE needed to obtain Commission approval of a tariff amendment to correct a flaw in the rules of its demand response program that allowed day-ahead load reduction program participants to exaggerate the load reductions from their demand response assets by overstating their assets' customer baseline.[52] As Ms. Miller explains, proxy demand resources, and demand response products in general, are uniquely susceptible to gaming.[53] Overpayments could also occur even if there is no overt intentional act by a market participant, but simply a flaw in the way an individual customer's baseline is determined.

---

[50] The ISO provides an example of a settlement calculation for proxy demand resources in the Draft Final PDR Proposal at pages 39-40.

[51] Declaration of Margaret Miller at 12.

[52] *See ISO New England Inc*, 123 FERC ¶ 61,021 (2008).

[53] Declaration of Margaret Miller at 18-19.

In light of the challenges in establishing accurate customer baselines and measuring the actual services provided by proxy demand resources, as described above, the DMM made the following recommendation in its September 2009 memo to the ISO Board regarding the proxy demand resource product:[54]

> With respect to how potential gaming might be avoided or stopped once it is observed, we recommend that the ISO rely primarily on actions that could be directly implemented by the ISO such as modifying the details of baseline measurement rules and/or denying participation by PDR specific loads – rather than relying on any referrals of suspected gaming to FERC under federal rules prohibiting market manipulation. Absent clear evidence of fraudulent behavior, behavior that may be considered gaming may not be effectively mitigated by a referral under FERC anti-manipulation rules. Instead, we recommend the ISO establish its own authority to take mitigating actions if gaming is suspected.

As Ms. Miller further explains, in the ISO market, there is also the concern about the potential for load arbitrage between custom load aggregation points and default load aggregation points.[55] This concern exists because the load serving entity in the ISO market will continue to schedule its load at the default load aggregation point and the curtailable portion of the load which would be the proxy demand resource is bid and paid at a custom aggregation of nodes. LECG, LLC ("LEGC") raised this concern in its "Comments on the California ISO MRTU LMP Market Design", which were provided in Attachment C to the ISO's May 13, 2005 amendment to its conceptual market redesign submitted in Docket No. ER02-1256. LECG raised the following concern on page 62 of its Comments:

> Since demand response buys power at the zonal/LAP price in the DAM [day-ahead market] and sells power back at the nodal price, demand response at nodes within constrained regions have a money machine whenever their actual load is less than their allowed maximum demand response offer. The LSE providing demand response would merely buy power equal to its demonstrated dispatch capability at the LAP price in the DAM and bid demand response at a low enough price to ensure it is dispatched nodally down to its planned consumption in RT [real-time], earning the difference between the nodal price and the zonal price for doing nothing. This would be equivalent to the effect of virtual demand purchases at zonal prices in the DAM that are settled at nodal pricing in real-time.

---

[54] The September 2009 DMM memorandum to the Board is available on the ISO's website at http://www.caiso.com/241e/241ec4e711e00.pdf.

[55] Declaration of Margaret Miller at 19.

In order to address concerns about gaming and the potential for inaccuracies in establishing customer baselines, the ISO has included in its proxy demand resource software requirements the ability to monitor certain metrics once the proxy demand resource product goes into effect. These metrics will include, but are not limited to, statistically high adjustment factors, statistically high revenues, statistically low bids, and statistically poor baseline model fits.[56] Should a proxy demand resource repeatedly fall outside of identified ranges, or fail multiple metrics, the ISO will perform a study to determine if there is a likelihood that the proxy demand resource has been compensated for demand response that was not really provided to the market.

The ISO proposes to add two related tariff provisions to address this possibility. First, in new Section 11.6.2, the ISO proposes language to make it clear that all bids for energy on behalf of proxy demand resources must represent actual adjustments of proxy demand resources taken in response to a dispatch instruction. If requested by the ISO, the demand response provider for a proxy demand resource dispatched by the ISO must provide to the ISO data to support proof of performance of the proxy demand resource. The ISO is including these requirements in order to ensure that payments for load adjustments pursuant to the proxy demand resource product are made only when such payments are justified. As stated in Section 11.6.2, in the event that the ISO determines through evaluation of the proof of performance or its own analysis that a bid for energy from a proxy demand resource: (i) does not represent an actual adjustment of the proxy demand resource taken in response to a dispatch instruction and (ii) has resulted or will result in a payment for demand response services not actually provided by the proxy demand resource, the ISO may rescind such payment. This provision implements the principle that the ISO only pays resources for services actually provided to the ISO's market. The ISO has comparable authority to rescind RUC Availability Payments for undispatchable or undelivered RUC capacity (Section 11.2.2.2 of the ISO tariff) and to rescind payments for ancillary services capacity that is undispatchable, unavailable, or undelivered (Section 11.10.9 of the ISO tariff).

Second, in new Section 4.13.4, the ISO proposes that, in the event that the ISO determines through evaluation of the proof of performance described in Section 11.6.2 or its own analysis that a bid for energy from a proxy demand resource: (i) does not represent an actual adjustment of the proxy demand resource taken in response to a dispatch instruction and (ii) has resulted or will result in a payment for demand response services not actually provided by the proxy demand resource, the ISO may immediately suspend the ability of the proxy demand resource to provide demand response services by sending written notification of the suspension to the scheduling coordinator for the demand response provider representing the proxy demand resource. Within two business

[56] *See* Draft Final PDR Proposal at 16-18.

days of the notice of suspension, the ISO will provide the scheduling coordinator and the demand response provider with the information justifying the decision to suspend. The ISO and the affected scheduling coordinator and demand response provider will confer and exchange information in an effort to resolve any dispute as to whether suspension is warranted. The ISO will submit to the Commission supporting documentation, including any information provided by the affected scheduling coordinator and demand response provider, within ten business days after any suspension unless the ISO concludes that suspension is not warranted. The ISO will provide the affected scheduling coordinator and demand response provider with a copy of any documentation submitted to the Commission. The suspension will remain in effect for ninety days after the ISO submits its initial filing of supporting documentation, unless the Commission directs otherwise or the ISO determines that the suspension should continue for fewer than ninety days. After the ninety-day period expires, the suspension will remain in effect only if the Commission requires it to remain in effect.

The ISO's proposed tariff language provides a sufficient opportunity for the affected scheduling coordinator and demand response provider to confer with the ISO as to whether suspension is warranted, and the ISO will timely provide all documentation supporting any suspension with the Commission. As a result, the Commission will timely be made aware of each suspension and, if it so chooses, the Commission can take any action it deems appropriate regarding the suspension. Each suspension will be limited to a maximum of ninety days after the ISO submits its initial filing of supporting documentation unless the Commission finds that extending the suspension is appropriate. The time frames that the ISO proposes will also provide sufficient time to identify and correct any flaws in the customer baseline for the affected proxy demand resource, including any changes to the Business Practice Manuals to reflect the changes in the baseline methodology.

The ISO's proposal to suspend the provision of demand response services and rescind payment in the event that a bid from a proxy demand resource does not represent an actual adjustment of load is comparable to provisions in PJM's open access transmission tariff ("OATT"). Pursuant to its OATT, PJM disallows payments to so-called economic load response participants (which provide demand response in PJM) that are not the result of demand reductions executed in response to the locational marginal price in the day-ahead energy market and/or the real-time energy market, and PJM may suspend market activity by economic load response participants if they continue to submit settlements for such demand reductions.[57]

[57] PJM OATT, Attachment K – Appendix, Section 3.3A.6.

K. Modifications of Existing Tariff Provisions to Accommodate the Implementation of the Proxy Demand Resource Product

The ISO proposes to modify a number of ISO tariff provisions in order to integrate the components of the proxy demand resource product into the existing structure of the tariff. Most of these tariff modifications consist of adding the term proxy demand resource and/or the term demand response provider to existing tariff language, or of making tariff changes regarding the proxy demand resource or demand resource provider that parallel existing tariff language. Due to the large number of these tariff revisions, the ISO has listed them in Attachment C to this tariff amendment instead of in this transmittal letter.

L. Miscellaneous Minor Clarifications

The ISO proposes to make minor, non-substantive clarifications to the following tariff sections: Sections 4.9.13, 11.23(b), 31.5.4(c), 31.5.7, 34, and 34.5(1), and the definition of energy bid curve in Appendix A. The ISO also proposes to clarify that the term "Load" means "Participating Load" in certain language in the following tariff sections: Sections 6.3.1, 8.3.1, 8.3.4, 8.4.5, 8.4.6, 8.9, 8.9.3.2, 8.9.7.1, 8.9.11, 8.10, 8.10.3, and 8.10.6, and Sections C 15 and C 16 of Attachment K.

III. The Proxy Demand Resource Product Satisfies the Requirements of Order No. 719

As explained in Section I, above, in Order No. 719, the Commission directed RTOs and ISOs to amend their tariffs and market rules as necessary to allow an ARC to bid demand response directly into the RTO's or ISO's organized market subject to a number of criteria and flexibilities specified in Order No. 719.[58] The revisions to the ISO tariff contained in the instant filing satisfy of the criteria and include each of the flexibilities required by the Commission. The criteria and flexibilities specified in Order No. 719 (underlined in the text below), and the means by which the instant tariff amendment satisfies each of them, are as follows:

- The ARC's demand response bid must meet the same requirements as a demand response bid from any other entity, such as an LSE.[59] Pursuant

---

[58] *See* Order No. 719 at P 158.

[59] In this regard, the Commission stated that, for example, (1) the ARC's demand response must be as verifiable as that of an eligible LSE or large industrial customer's demand response that is bid directly into the market, (2) the requirements for measurement and verification of aggregated demand response should be comparable to the requirements for other providers of demand response resources, regarding such matters as transparency, ability to be documented, and ensuring compliance, and (3) demand response bids from an ARC must not be treated differently than the demand response bids of an LSE or large industrial customer. *Id.*

to the instant tariff amendment, bids for demand response services from proxy demand resources represented by an ARC must meet the same requirements as bids from proxy demand resources represented by other types of entities. The proposed tariff provisions treat a demand response provider (the ISO's term for the ARC) the same, whether the demand response provider is a UDC, LSE,[60] end-use customer representing its own load, or aggregator of other entities' load.

- The bidder must have only an opportunity to bid demand response in the organized market and not have a guarantee that its bid will be selected. The ISO's tariff amendment gives bidders of demand response services the opportunity to bid demand response from proxy demand resources into the ISO market. Like other resources participating in the ISO's market, demand response providers have no guarantee that the ISO will accept their bids.

- An ARC must have the ability to bid demand response either on behalf of only one retail customer or multiple retail customers. Pursuant to the instant tariff amendment, a single demand response provider may submit bids on behalf of single retail customer under a proxy demand resource or multiple, aggregated retail customers under a proxy demand resource. A demand response provider may operate multiple proxy demand resources within its portfolio.

- Except for circumstances where the laws and regulations of the relevant retail regulatory authority do not permit a retail customer to participate, there can be no prohibition on who may be an ARC. The ISO does not propose any prohibitions as to who may become a demand response provider. Any entity is eligible to become a demand response provider so long as it meets the requirements for all demand response providers established by the ISO. The ISO notes that the CPUC opened a "Direct Participation Phase" of its ongoing demand response proceeding 07-01-041 in November 2009, through issuance of an Assigned Commissioner's Ruling that stated in relevant part that:

> Specifically, this Ruling identifies issues the Commission [*i.e.*, the CPUC] should address given a Federal Energy Regulatory Commission (FERC) order that requires CAISO to allow retail electric customers to bid Demand Response resources directly in the CAISO's wholesale electricity markets if state laws and rules do not prohibit such bidding,

[60] An LSE can be either a utility load serving entity or an electric service provider, which is defined in the California Public Utilities Code as an entity that provides electric service to retail or end-use customers but does not fall within the definition of an electrical corporation. *See* California Public Utilities Code, Sections 218, 218.3.

> and subsequent CAISO efforts to allow such direct participation. The comment process initiated in this Ruling aims to identify whether there are state laws and/or rules that either directly or indirectly prohibit retail customers from bidding into CAISO wholesale markets. This Ruling further seeks input on whether any such prohibitory laws and/or rules warrant modification in light of the potential benefits arising from additional Demand Response options in California, and if so, what modifications to state laws and/or rules are necessary to support the CAISO's efforts to allow direct participation. Finally, this Ruling requests comment on technical and/or policy issues or challenges that the Commission should address that may arise from CAISO's compliance with this FERC order, with specific proposals for how those challenges may be addressed.[61]

The Assigned Commissioner's Ruling sets forth a schedule that provides for a proposed decision in mid-February and a final decision in mid-March of 2010.[62] In addition to LSEs that are CPUC-jurisdictional entities, the ISO's proxy demand response will be available to demand response providers from other local jurisdictions.

- An individual customer must be permitted to serve as an ARC on behalf of itself and others. So long as it meets the ISO's requirements, an end-use customer may act as a demand response provider for its own load or on behalf of other retail customers.

- The RTO or ISO may specify certain requirements, such as registration with the RTO or ISO, creditworthiness requirements, and certification that participation is not precluded by the relevant electric retail regulatory authority. The ISO's tariff amendment requires registration of proxy demand resources with the ISO through its demand response system. Because the demand response providers will take part in the ISO's energy and ancillary services markets, they are considered market participants.[63]

---

[61] "Assigned Commissioner And Administrative Law Judges' Ruling Amending Scoping Memo, Establishing A Direct Participation Phase Of This Proceeding, And Requesting Comment On Direct Participation Of Retail Demand Response In CAISO Electricity Markets" (Nov. 9, 2009), at p. 2 ("Assigned Commissioner's Ruling"). This ruling can be accessed on the CPUC's website at http://docs.cpuc.ca.gov/efile/RULINGS/109611.pdf.

[62] Assigned Commissioner's Ruling at p. 9.

[63] *See* ISO tariff, Appendix A, definition of "Market Participant" (defining a market participant as "[a]n 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.").

Therefore, like other market participants, demand response providers are subject to the ISO's creditworthiness requirements.[64]

- The RTO or ISO may require the ARC to be an RTO or ISO member if its membership is a requirement for other bidders. As explained above, demand response providers are market participants and the proxy demand resources of demand response providers can only be bid into the ISO market by an ISO scheduling coordinator. The demand response provider must be an ISO-certified scheduling coordinator in order to schedule, bid, and settle its registered proxy demand resources with the ISO; otherwise, the demand response provider can hire the services of a scheduling coordinator.

- Single aggregated bids consisting of individual demand response from a single area, reasonably defined, may be required by RTOs and ISOs. Pursuant to the ISO's tariff amendment, each proxy demand resource is required to be associated with a single LSE and a single UDC (or with a single LSE in the case of a proxy demand resource within an MSS) as discussed in Section II, above, and all underlying locations of a single proxy demand resource must be located in a single Sub-LAP.

- An RTO or ISO may place appropriate restrictions on any customer's participation in an ARC-aggregated demand response bid to avoid counting the same demand response resource more than once. The ISO will ensure that the same customer locations (*i.e.*, customer service accounts) are not registered with the same proxy demand resource more than once or included in the portfolio of more than one demand response provider.

- The market rules must allow bids from an ARC unless this is not permitted under the laws or regulations of a relevant electric retail regulatory authority. The ISO's tariff amendment will allow bids from a demand response provider through its scheduling coordinator subject to any applicable requirements of the CPUC and local regulatory authorities. As noted above, the CPUC has opened a "Direct Participation Phase" of its demand response proceeding 07-01-041 in order to evaluate issues related to ISO's implementation of Order 719. The CPUC has indicated that will conduct its proceeding in parallel with the ISO stakeholder process and the CPUC has laid out a schedule that accommodates ISO's intended May 1, 2010 date for implementing the proxy demand response product.

---

[64] *See* ISO tariff, Section 12.1 ("Each Market Participant shall have the responsibility to maintain an Aggregate Credit Limit that is at least equal to its Estimated Aggregate Liability").

IV. Effective Date

The ISO requests that proposed *pro forma* proxy demand resource agreement be made effective on April 19, 2010, and that the balance of the tariff changes contained in this filing be made become effective on May 1, 2010. The earlier effective date for the *pro forma* agreement will allow the ISO to begin entering into contracts with demand response providers that seek to take advantage of the new proxy demand resource product, will allow demand response providers to begin to seek approval from LSEs for retail customers to participate as proxy demand resources, and will allow demand response providers to begin the registration of such proxy demand resources at the ISO. As noted above, although the ISO requests one effective date for the *pro forma* agreement and a later effective date for the remaining tariff provisions, the ISO requests that the Commission address all aspects in this tariff amendment filing in a single order.

V. Communications

Communications regarding this filing should be addressed to the following individuals, whose names should be put on the official service list established by the Commission with respect to this submittal:

Nancy Saracino
General Counsel
Sidney M. Davies
Assistant General Counsel
Baldassaro "Bill" Di Capo
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
bdicapo@caiso.com

Sean A. Atkins
Bradley R. Miliauskas
Alston & Bird LLP
The Atlantic Building
950 F Street, NW
Washington, DC 20004
Tel: (202) 756-3300
Fax: (202) 756-3333
E-mail: sean.atkins@alston.com
bradley.miliauskas@alston.com

VI. Service

The ISO has served copies of this transmittal letter, and all attachments, on the California Public Utilities Commission, the California Energy Commission, and all parties with effective Scheduling Coordinator Service Agreements under the ISO tariff. In addition, the ISO is posting this transmittal letter and all attachments on the ISO website.

VII. Attachments

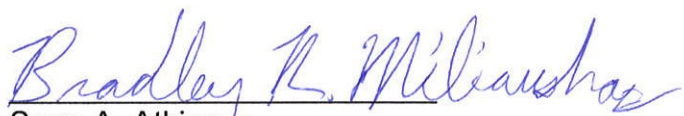
The following attachments, in addition to this transmittal letter, support the instant filing:

Attachment A	Revised ISO tariff sheets that incorporate the proposed changes described above
Attachment B	The proposed changes to the ISO tariff shown in black-line format
Attachment C	Listing of modifications to existing ISO tariff provisions to accommodate the implementation of the proxy demand resource product
Attachment D	Declaration of Margaret Miller, Manager, Market Design and Regulatory Policy for the ISO
Attachment E	List of key dates in the proxy demand resource stakeholder process

VIII. Conclusion

For the foregoing reasons, the Commission should accept the proposed tariff changes contained in the instant filing without modification. Please contact the undersigned if you have any questions regarding this matter.

Respectfully submitted,



Nancy Saracino
General Counsel
Sidney M. Davies
Assistant General Counsel
Baldassaro "Bill" Di Capo
Counsel
California Independent System
Operator Corporation
151 Blue Ravine Road
Folsom, CA 95630

Sean A. Atkins
Bradley R. Miliauskas
Alston & Bird LLP
The Atlantic Building
950 F Street, NW
Washington, DC 20004

Counsel for the California Independent System Operator Corporation

Attachment A – Clean Sheets
Proxy Demand Resource Amendment
Fourth Replacement CAISO Tariff
February 16, 2010

4 ROLES AND RESPONSIBILITIES.

4.1 [NOT USED]

4.2 Market Participant Responsibilities

4.2.1 Comply with Dispatch Instructions and Operating Orders Issued

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

4.2.2 Implementation of Instructions.

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

4.3 Relationship Between CAISO and Participating TOs.

4.5.1.1.1 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. Nothing in this Section 4.5.1.1.3 shall prohibit one Scheduling Coordinator from registering with the CAISO to submit Bids for Demand Response Services from a Proxy Demand Resource associated with a given meter (or Meter Point) where a different Scheduling Coordinator is registered for purposes of serving the demand of the Load associated with that meter (or Meter Point).

4.9.8 Ancillary Services Obligations for MSS

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

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

4.9.9 [NOT USED]

4.9.10 Information Sharing.

4.9.10.1 System Planning Studies and Forecasts.

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

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

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

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

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

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

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

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

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

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

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

4.9.13 MSS Elections and Participation in CAISO Markets

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

The default for the first twelve (12) 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, Participating Loads or Proxy Demand Resources within the MSS. An MSS Operator also may purchase Ancillary Services from CAISO or third parties to meet its Ancillary Service Obligations under the CAISO Tariff.

4.9.13.1 Gross or Net Settlement.

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

4.9.13.2 Load-Following or Non Load-Following Election.

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

4.12.4 Recordkeeping.

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

4.12.5 Access Right.

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

4.13 Demand Response Providers and Proxy Demand Resources

4.13.1 Relationship Between CAISO and DRPs

The CAISO shall only accept Bids for Energy or Ancillary Services, Submissions to Self-Provide Ancillary Services from Proxy Demand Resources, or Submissions of Energy Self-Schedules from Proxy Demand Resources that have provided Submissions to Self-Provide Ancillary Services, if such Proxy Demand Resources are represented by a Demand Response Provider that has entered into a Proxy Demand Resource Agreement with the CAISO, has accurately provided the information required in the Demand Response System, has satisfied all Proxy Demand Resource registration requirements, and has met standards adopted by the CAISO and published on the CAISO Website. The CAISO shall not accept submitted Bids for Energy or Ancillary Services from a Demand Response Provider other than through a Scheduling Coordinator, which Scheduling Coordinator may be the Demand Response Provider itself or another entity.

4.13.2 Applicable Requirements for PDRs and DRPs

A single Demand Response Provider must represent each Proxy Demand Resource and may represent more than one (1) Proxy Demand Resource. Each Proxy Demand Resource that is not within a MSS must be associated with a single Load Serving Entity and a single Utility Distribution Company, and each Proxy Demand Resource that is within a MSS must be associated with a single Load Serving Entity. A Demand Response Provider may be, but is not required to be, a Load Serving Entity or a Utility Distribution Company. Each Proxy Demand Resource is required to be located in a single Sub-LAP. All underlying Locations of a Proxy Demand Resource must be located in a single Sub-LAP. The Meter Data for each Proxy Demand Resource will be metered Load data. Each Demand Response Provider is required to satisfy registration requirements and to provide information to allow the CAISO to establish Customer Baselines in accordance with the applicable Business Practice Manuals. Registration of a Location for participation in Proxy Demand Resources requires the approval of the underlying Loads' Load Serving Entity and/or Utility Distribution Company. Disputes regarding the rejections of a registration of a Location shall be undertaken with the applicable Local Regulatory Authority and shall not be arbitrated or in any way resolved through a CAISO dispute resolution mechanism or process.

4.13.3 Identification of Proxy Demand Resources

Each Demand Response Provider shall provide data, as described in the Business Practice Manual, identifying each of its Proxy Demand Resources and such information regarding the capacity and the operating characteristics of the Proxy Demand Resource as may be reasonably requested from time to time by the CAISO. All information provided to the CAISO regarding the operational and technical constraints in the Master File shall be accurate and actually based on physical characteristics of the resources.

4.13.4 Suspension of Market Participation for a PDR

In the event that the CAISO determines through evaluation of the proof of performance described in Section 11.6.2 or its own analysis that a Bid for Energy from a Proxy Demand Resource (i) does not represent a actual adjustment of the Proxy Demand Resource taken in response to a Dispatch Instruction and (ii) has resulted or will result in a payment for Demand Response Services not actually provided by the Proxy Demand Resource, the CAISO may immediately suspend the ability of the Proxy Demand Resource to provide Demand Response Services by sending written notification of the suspension to the Scheduling Coordinator for the Demand Response Provider representing the Proxy Demand Resource. Within two Business Days of the notice of suspension, the CAISO will provide the Scheduling Coordinator and Demand Response Provider representing the affected Proxy Demand Resource with the information justifying the decision to suspend. The CAISO and the affected Scheduling Coordinator and Demand Response Provider will confer and exchange information in an effort to resolve any dispute as to whether suspension is warranted. The CAISO will submit supporting documentation, including any information provided to the affected Scheduling Coordinator and the Demand Response Provider to FERC within ten (10) Business Days after any suspension unless the CAISO concludes that suspension is not warranted. The CAISO will provide the affected Scheduling Coordinator and the Demand Response Provider with a copy of any documentation submitted to FERC. The suspension will remain in effect for ninety (90) days after the CAISO submits its initial filing of supporting documentation to FERC, unless FERC directs otherwise or the CAISO determines that the suspension should continue for fewer than ninety (90) days. After the ninety (90) day period expires, the suspension will remain in effect only if FERC requires it to remain in effect.

5 [NOT USED]

6.2.1.5 Confidentiality.

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

6.2.1.6 Standards of Conduct.

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

6.2.2 Public Market Information.

6.2.2.1 Non-Discriminatory Access to Information.

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

6.2.2.2 Open Access Same-Time Information System.

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

6.3 Communication of Dispatch Instructions

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

6.3.1 SC Responsibility to Pass Dispatch Instructions

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

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

6.3.2 Recording of Dispatch Instructions.

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

6.3.3 Contents of Dispatch Instructions.

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

(a) specific resource being dispatched;

(b) specific MW value of the resource being dispatched;

(c) specific type of instruction (action required);

(d) time the resource is required to begin initiating the Dispatch Instruction;

(e) time the resource is required to achieve the Dispatch Instruction;

(f) time of notification of the Dispatch Instruction; and

(g) any other information which the CAISO considers relevant.

7.1.3 CAISO Control Center Authorities

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

(a) direct the physical operation by the Participating TOs of transmission facilities under the Operational Control of the CAISO, including (without limitation) circuit breakers, switches, voltage control equipment, protective relays, metering, and Load Shedding equipment;

(b) commit and dispatch Reliability Must-Run Units, except that the CAISO shall only commit Reliability Must-Run Generation for Ancillary Services capacity according to Section 41;

(c) order a change in operating status of auxiliary equipment required to control voltage or frequency;

(d) take any action it considers to be necessary consistent with Good Utility Practice to protect against uncontrolled losses of Load or Generation and/or equipment damage resulting from unforeseen occurrences;

(e) control the output of Generating Units, Interconnection schedules, and System Resources that are selected to provide Ancillary Services or Energy;

(f) Dispatch Curtailable Demand and Demand Response Services which have been scheduled to provide Non-Spinning Reserve or Energy from Participating Loads or Proxy Demand Resources;

(g) procure Energy for a threatened or imminent System Emergency;

(h) require the operation of resources which are at the CAISO's disposal in a System Emergency, as described in Section 7.7;

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

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

The CAISO procurement of Ancillary Services for the Real-Time Market is for a fifteen (15) minute RTUC Time Horizon. The CAISO's procurement of Ancillary Services from imports or System Resources in the Real-Time Market is based on the Ancillary Service Bids submitted in the HASP.

8.3.3.5 Base Market Model and Ancillary Services Procurement

The Base Market Model is used in the SCUC application, which optimizes the provision of Ancillary Services and Energy in order to meet Ancillary Service requirements and Energy requirements. The Base Market Model models network constraints as described in Section 27.5.1. The Ancillary Services Awards reflect the Ancillary Service Region and Sub-Region definitions and requirements. The Ancillary Service requirements, the definition of Ancillary Service Regions and Ancillary Service Sub-Regions, and any minimum or maximum limit that is used within an Ancillary Service Region or Ancillary Service Sub-Region are all inputs to the CAISO Market Processes.

8.3.4 Certification and Testing Requirements

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

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

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

8.3.6 Market-Based Prices.

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

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

Scheduling Coordinators may submit Bids or Submissions to Self-Provide an Ancillary Service consistent with the rules specified in Section 30 and any further requirements in this Section 8.3.7. Scheduling Coordinators may (i) submit Bids or Submissions to Self-Provide an Ancillary Service from resources located within the CAISO Balancing Authority Area or Dynamic System Resources certified to provide Ancillary Services, (ii) submit Submissions to Self-Provide an Ancillary Service from resources located outside the CAISO Balancing Authority Area if provided pursuant to ETCs, TORs, or Converted Rights, (iii) submit Bids for Ancillary Services from resources located outside the CAISO Balancing Authority Area, or (iv) specify Inter-SC Trades of Ancillary Services. Ancillary Services in the Day-Ahead Market 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, Proxy Demand Resource, 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 30.7.7. There is no ability to procure Ancillary Services for export. To the extent a Scheduling Coordinator has an on-demand obligation to serve loads outside the CAISO Balancing Authority Area, it can do so provided that (1) it is using export transmission capacity available in Real-Time, and (2) the resource capacity providing Energy to satisfy the on-demand obligation is not under an RMR Contract or Resource Adequacy Capacity obligation, and has not been paid a RUC Availability Payment for the Trading Hour.

8.4 Technical Requirements for Providing Ancillary Services

All Generating Units, System Units, Participating Loads, Proxy Demand Resources, 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, Proxy Demand Resource, or System Resource, or to provide a Submission to Self-Provide an Ancillary Service from a Generating Unit, System Unit, Participating Load, Proxy Demand Resource, 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, Proxy Demand Resource, 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, Proxy Demand Resources, 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, Proxy Demand Resource, or System Resource concerned.

8.4.1 Operating Characteristics Required to Provide Ancillary Services

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

8.4.5 Communication Equipment

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

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

8.4.6 Metering Infrastructure

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

(a) meter type;

(b) meter location;

(c) meter reading responsibility;

(d) meter capability in regard to AGC response; and

(e) any other aspect of metering infrastructure required by the CAISO under this CAISO Tariff.

8.4.6.1 Additional Requirements for Black Start Units.

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

8.5 Time Frame for Submitting and Evaluating Ancillary Services Bids.

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

8.7 Scheduling of Units to Provide Ancillary Services.

The CAISO shall provide Scheduling Coordinators with Ancillary Services Awards for the Day-Ahead and Real-Time Markets. The CAISO shall notify each Scheduling Coordinator no later than 1:00 p.m. of the day prior to the Operating Day of their Ancillary Service Awards and Ancillary Service Schedules for the Day-Ahead Market and no later than fifteen (15) minutes prior to the next Commitment Interval in the Real-Time Market. Where long-term contracts are involved, the information may be treated as standing information for the duration of the contract.

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

8.8 Black Start.

(a) Black Start shall meet the standards specified for Black Start in this CAISO Tariff and Appendix K; and

(b) the CAISO will dispatch Black Start Generating Units as required in accordance with the applicable Black Start agreement.

8.9 Verification, Compliance Testing, and Audit of Ancillary Services

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

System Units or System Resources, owners or operators of reactive devices and Scheduling Coordinators shall notify the CAISO immediately whenever they become aware that an Ancillary Service or RUC Capacity is not available in any way. All Participating Generators, owners or operators of Participating Loads, Demand Response Providers, operators of System Units or System Resources and owners or operators of reactive devices shall check, monitor and/or test their system and related equipment routinely to assure availability of the committed Ancillary Services and RUC Capacity. These requirements apply to Ancillary Services whether the Ancillary Services are contracted or self-provided. For a duration specified by the CAISO, the CAISO may suspend the technical eligibility certificate of a Scheduling Coordinator for a Generating Unit, System Unit, Participating Load, Proxy Demand Resource, or System Resource, which repeatedly fails to perform. The CAISO shall develop measures to discourage repeated non-performance on the part of both bidders and self-providers. In addition, a Proxy Demand Resource that does not reduce Demand to demonstrate the availability of Non-Spinning Reserve in accordance with the submitted Bid may be subject to rescission of payment pursuant to Section 11.6.2 and/or suspension of market participation pursuant to Section 4.13.4.

8.9.1 Compliance Testing for Spinning Reserve.

Compliance testing for Spinning Reserve is addressed in Section 8.10.2.

8.9.2 Compliance Testing for Regulation.

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

8.9.3 Compliance Testing for Non-Spinning Reserve.

8.9.3.1 Compliance Testing: Unit or Resources

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

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

8.9.3.2 Compliance Testing of Loads as Resources

The CAISO may test the Non-Spinning Reserve capability of a resource providing Curtailable Demand or Proxy Demand Resource providing Demand Response Services by issuing unannounced Dispatch Instructions requiring the operator of the Participating Load or Demand Response Provider to report the Curtailable Demand of that Participating Load or Demand Response Services of that Proxy Demand Resource actually being served by the operator at the time of the instruction. No Participating Load or Proxy Demand Resource will be disconnected as part of the test conducted pursuant to this Section 8.9.3.2.

8.9.4 Compliance Testing for Voltage Support.

8.9.4.1 Compliance Testing of a Generating Unit.

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

8.9.4.2 Compliance Testing of Other Reactive Devices.

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

8.9.5 Compliance Testing for Black Start.

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

8.9.6 Compliance Testing for RUC Capacity.

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

8.9.7 Consequences of Failure to Pass Compliance Testing

8.9.7.1 Notification of Compliance Testing Results

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

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

8.9.11 Performance Audit for Non-Spinning Reserve

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

8.9.12 Performance Audit for Voltage Support.

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

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

8.9.13 Performance Audit for Black Start.

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

8.9.14 Performance Audit for RUC Capacity

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

8.10 Periodic Testing of Units

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

8.10.1 Regulation Up and Regulation Down Reserves.

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

8.10.2 Spinning Reserve.

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

8.10.3 Non-Spinning Reserve

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

8.10.4 Voltage Support.

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

8.10.5 Black Start.

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

8.10.6 RUC Capacity

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

8.10.7 Penalties for Failure to Pass Tests

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

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

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

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

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

If Ancillary Services capacity that receives an AS Award or Self-Provided Ancillary Services capacity provided from a Generating Unit, Participating Load, Proxy Demand Resource, 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, Proxy Demand Resource, 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, Proxy Demand Resource, 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, Proxy Demand Resource, 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 in the Day-Ahead Market are required to electronically tag (E-Tag as prescribed by the WECC) the Ancillary Services capacity. If the amounts of Ancillary Services capacity in an electronic tag differ from the amounts of Ancillary Services capacity for the System Resource, the Undispatchable Capacity will equal the amount of the difference, and will be settled in accordance with the provisions of Section 11.10.9.1.

8.10.8.2 Rescission of Payments for Unavailable Ancillary Service Capacity

If the CAISO determines that a Scheduling Coordinator has supplied Uninstructed Imbalance Energy to the CAISO during a Settlement Interval from the capacity of a Generating Unit, Participating Load, Proxy Demand Resource, 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, Proxy Demand Resource, 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.

than the day specified in Section 10.3.6. Each Scheduling Coordinator for a Demand Response Provider shall aggregate the Settlement Quality Meter Data of the underlying Proxy Demand Resource to the level of the registration configuration of the Proxy Demand Resource in the Demand Response System. 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.

10.3.6.1 Timing of Settlement Quality Meter Data Submission for Calculation of Initial Settlement Statement T+7B

Scheduling Coordinators must submit Actual Settlement Quality Meter Data or Scheduling Coordinator Estimated Settlement Quality Meter Data for the Scheduling Coordinator Metered Entities they represent to the CAISO no later than noon on the fifth Business Day after the Trading Day (T+5B) for the Initial Settlement Statement T+7B calculation. Scheduling Coordinators cannot submit Estimated Settlement Quality Meter Data for Proxy Demand Resources.

(a) In the absence of Actual Settlement Quality Meter Data, Scheduling Coordinators may submit Scheduling Coordinator Estimated Settlement Quality Meter Data using interval metering when available, sound estimation practices, and other available information including, but not limited to, bids, schedules, forecasts, temperature data, operating logs, recorders, and historical data. Scheduling Coordinator Estimated Settlement Quality Meter Data must be a good faith estimate that reasonably represents Demand and/or Generation quantities for each Settlement Period.

(b) When Actual Settlement Quality Meter Data or Scheduling Coordinator Estimated Settlement Quality Meter Data is not received by the CAISO for a Scheduling Coordinator Metered Entity within five (5) Business Days from the Trading Day (T+5B), the CAISO will estimate the entity's Settlement Quality Meter Data for any outstanding metered Demand and/or Generation, excluding a Proxy Demand Resource, for use in the Initial Settlement Statement T+7B calculation, as provided in Section 11.1.5.

10.3.6.2 Timing of Settlement Quality Meter Data Submission for Recalculation Settlement Statement T+38B.

Scheduling Coordinators must submit Actual Settlement Quality Meter Data for the Scheduling Coordinator Metered Entities they represent to the CAISO no later than midnight on the forty-third (43) calendar day after the Trading Day (T+43C) for the Recalculation Settlement Statement T+38B. A Scheduling Coordinator that timely submits Actual Settlement Quality Meter Data for the Initial Settlement Statement T+7B pursuant to Section 10.3.6.1 may submit revised Actual Settlement Quality Meter Data for the Recalculation Settlement Statement T+38B no later than the forty-third (43) calendar day after the Trading Day pursuant to this Section.

11.1.3 Financial Transaction Conventions and Currency.

The following conventions have been adopted in defining sums of money to be remitted to or received by the CAISO:

(a) Where the CAISO is to receive a sum of money in accordance with this CAISO Tariff, this is defined as a "charge."

(b) Where the CAISO is required to pay a sum of money in accordance with this CAISO Tariff, this is defined as a "payment."

(c) All financial transactions are denominated in United States dollars and cents.

(d) All payments by the CAISO to Business Associates shall be made by Fed-Wire. All payments to the CAISO by Business Associates shall be made by Fed-Wire

11.1.4 [NOT USED]

11.1.5 Settlement Quality Meter Data for Initial Settlement Statement T+7B Calculation

The CAISO's Initial Settlement Statement T+7B shall be based on the Settlement Quality Meter Data (actual or Scheduling Coordinator estimated) received in SQMDS. In the event Actual Settlement Quality Meter Data or Scheduling Coordinator Estimated Settlement Quality Meter Data is not received from a Scheduling Coordinator or CAISO Metered Entity, the CAISO will estimate Settlement Quality Meter Data for that outstanding metered Demand or Generation, excluding a Proxy Demand Resource, for the Initial Settlement Statement T+7B calculation.

(a) CAISO Estimated Settlement Quality Meter Data for metered Generation will be based on total Expected Energy and dispatch of that resource as calculated in the Real-Time Market and as modified by any applicable corrections to the Dispatch Operating Point for the resource.

(b) CAISO Estimated Settlement Quality Meter Data for metered Demand will be based on Scheduled Demand by the appropriate LAP. This value will be increased by fifteen percent (15%) if the total actual system Demand in Real Time, as determined by the CAISO each hour, is greater than the total estimated metered demand by more than fifteen percent (15%). Total estimated metered demand is the sum of the value of Scheduling Coordinator submitted metered Demand, CAISO polled estimated Settlement quality metered Demand, and Scheduled Demand for unsubmitted metered Demand at the fifth (5) Business Day after the Trading Day (T+5B). CAISO Estimated Settlement Quantity Meter Demand for Participating Load will not be increased by fifteen percent (15%).

(c) CAISO will not estimate Settlement Quality Meter Data for Proxy Demand Resources.

11.2 Settlement of Day-Ahead Market Transactions.

All transactions in the IFM and RUC as specified in the Day-Ahead Schedule, AS Awards and RUC Awards, respectively, are financially binding and will be settled based on the Day-Ahead LMP, ASMP or RUC Price for the relevant Location for the specific resource identified in the Bid. The CAISO will settle the costs of Demand, capacity, Energy and Ancillary Services as separate Settlement charges and payments for each Settlement Period of the Day-Ahead Schedule, Day-Ahead AS Award or RUC Award, as appropriate.

11.2.1 IFM Settlements.

11.2.1.1 IFM Payments For Supply of Energy

For each Settlement Period for which the CAISO clears Energy transactions in the IFM, the CAISO shall pay the relevant Scheduling Coordinator for the MWh quantity of Supply of Energy from all Generating Units, Participating Loads, Proxy Demand Resources, and System Resources in an amount equal to the IFM LMP at the applicable PNode multiplied by the MWh quantity specified in the Day-Ahead Schedule for Supply (which consists of the Day-Ahead Scheduled Energy).

11.2.1.2 IFM Charges for Demand at LAPS.

For each Settlement Period that the CAISO clears Energy transactions in the IFM, except as specified in Section 30.5.3.2 and except for Participating Loads, which shall be subject to the charges specified in 11.2.1.3, the CAISO shall charge Scheduling Coordinators for the MWh quantity of Demand scheduled at an individual LAP in the Day-Ahead Schedule, in an amount equal to the IFM LMP for the applicable LAP multiplied by the MWh quantity scheduled in the Day-Ahead Schedule at the relevant LAP.

11.2.1.3 IFM Charges for Demand by Participating Loads, Including Aggregated Participating Load.

For each Settlement Period that the CAISO clears Energy transactions in the IFM for Demand by Participating Loads, the CAISO shall charge the Scheduling Coordinators an amount equal to the MWh quantity of Demand scheduled in the Day-Ahead Schedule for the relevant Participating Load at the PNode (or Custom LAP, in the case of Aggregated Participating Load), multiplied by the IFM LMP at that PNode (or Custom LAP, in the case of Aggregated Participating Load).

11.2.2.2 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, Proxy Demand Resource, 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, Proxy Demand Resource, 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.

11.5.1.1 Total IIE Settlement Amount.

The total IIE Settlement Amount ($) per Settlement Interval for each Scheduling Coordinator is the sum of the IIE Settlement Amounts for the Standard Ramping Energy, MSS Load Following Energy, Optimal Energy, Real-Time Minimum Load Energy, HASP Scheduled Energy, Regulation, Ramping Energy Deviation, Derate Energy, Real-Time Self-Schedule Energy, Residual Imbalance Energy, Exceptional Dispatch Energy, Real-Time Pumping Energy and Operational Adjustments for the Day-Ahead and Real-Time.

11.5.1.2 Total IIE Quantity.

The total IIE quantity (MWh) per Settlement Interval for each Scheduling Coordinator is the sum of Standard Ramping Energy, MSS Load Following Energy, Optimal Energy, HASP Scheduled Energy, Real-Time Minimum Load Energy, Regulation Energy, Ramping Energy Deviation, Derate Energy, Real-Time Self-Schedule Energy, Residual Imbalance Energy, and Exceptional Dispatch Energy, Real-Time Pumping Energy, and Operational Adjustments for the Day-Ahead and Real-Time.

11.5.2 Uninstructed Imbalance Energy

Scheduling Coordinators shall be paid or charged a UIE Settlement Amount for each LAP, PNode or Scheduling Point for which the CAISO calculates a UIE quantity. UIE quantities are calculated for each resource that has a Day-Ahead Schedule, Dispatch Instruction, Real-Time Interchange Export Schedule or Metered Quantity. For MSS Operators electing gross Settlement, regardless of whether that entity has elected to follow its Load or to participate in RUC, the UIE for such entities is settled similarly to how UIE for non-MSS entities is settled as provided in this Section 11.5.2. The CAISO shall account for UIE in two categories: (1) Tier 1 UIE is accounted as the quantity deviation from the resource's IIE; and (2) Tier 2 UIE is accounted as the quantity deviation from the resource's Day-Ahead Schedule or as described in Section 11.2.5.4. For Generating

Units, System Units of MSS Operators that have elected gross Settlement, Physical Scheduling Plants, System Resources and all Participating Load and Proxy Demand Resources, 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.

11.5.2.4 Adjustment to Metered Load to Settle UIE

For the purpose of settling Uninstructed Imbalance Energy of a Scheduling Coordinator representing a Load Serving Entity, the amount of PDR Energy Measurement delivered by a Proxy Demand Resource that is also served by that Load Serving Entity will be added to the metered load quantity of the Load Serving Entity's Scheduling Coordinator's Load Resource ID with which the Proxy Demand Resource is associated.

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, the Demand response portion of a Participating Load, and Proxy Demand Resources for Settlement of Imbalance Energy. The Dispatch Interval LMP will be calculated at each PNode associated with such resource irrespective of whether the resource at that PNode has received Dispatch Instructions. The Dispatch Interval LMPs are then used to calculate a Resource-Specific Settlement Interval LMP and a Resource Specific Tier 1 UIE Settlement Interval Price for each Generating Unit, System Unit or MSS Operator that has elected gross Settlement, Physical Scheduling Plant, Dynamic System Resource, Participating Load, and Proxy Demand Resource 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, UFE, and the Real-Time Ancillary Services Congestion Revenues.

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 excluding Demand associated with ETC, Converted Right, or TOR Self-Schedules for which an IFM Congestion Credit was provided as specified in Section 11.2.1.5; 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

11.5.8.2 Settlement for Energy Supplied by the CAISO in Response to a Request for Emergency Assistance.

The Settlement price for emergency Energy that is delivered by the CAISO to a utility in another Balancing Authority Area in response to a request for emergency assistance shall be the simple average of the relevant Dispatch Interval LMPs at the applicable Scheduling Point, which shall serve as the effective market price for that Energy, plus all other charges applicable to exports from the CAISO Balancing Authority Area, as specified in the CAISO Tariff and will be included in the total IIE Settlement Amount as described in Section 11.5.1.1 and will be allocated according to Section 11.5.4.2. Such price may be estimated prior to delivery and finalized in the Settlement process. The CAISO will establish a Scheduling Coordinator account, if necessary, for the purchaser for the sole purpose of facilitating the Settlement of such emergency assistance. Payment to the CAISO for such emergency assistance shall be made in accordance with the Settlement process, billing cycle, and payment timeline set forth in the CAISO Tariff.

11.6 Settlement of Transactions Involving Proxy Demand Resources

11.6.1 Settlement of Energy Transactions Involving PDR

Settlements for Energy provided by Demand Response Providers from Proxy Demand Resources shall be based on the PDR Energy Measurement for the Proxy Demand Resources.

11.6.2 Rescission of Payment for Proxy Demand Resources

All Bids for Energy from Proxy Demand Resources are required to represent actual adjustments of the Proxy Demand Resources taken in response to a Dispatch Instruction. If requested by the CAISO, a Demand Response Provider shall provide to the CAISO data to support proof of performance for a Proxy Demand Resource dispatched by the CAISO. In the event that the CAISO determines, through evaluation of the proof of performance provided by the Demand Response Provider or the CAISO's own analysis, that a Bid for Energy from the Proxy Demand Resource dispatched by the CAISO: (i) does not represent an actual adjustment of the Proxy Demand Resource taken in response to a Dispatch Instruction and (ii) has resulted or will result in a payment for Demand Response Services not actually provided by the Proxy Demand Resource, the CAISO may rescind such payment.

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:

11.8 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 or a Proxy Demand Resource, 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 SCADA data by telemetry to the CAISO's EMS in accordance with Section 4.12.3 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

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 and Demand Response Providers shall not be subject to the first tier allocation of RUC Compensation Costs to the extent that the Participating Load's or Demand Response Provider's Net Negative CAISO Demand Deviation in that Trading Hour is incurred pursuant to a CAISO directive to consume in a Dispatch Instruction.

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, Proxy Demand Resource, 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 charge for Congestion assessed pursuant to Section 11.10.1.1.1, but at the lower of the Day-Ahead and simple average of the fifteen (15) minute Real-Time Shadow Price over the applicable Trading Hour 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, Proxy Demand Resource, 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, Proxy Demand Resource, 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, Proxy Demand Resource, 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. If, after the issuance of a Dispatch Instruction associated with Non-Spinning Reserves, the actual response of a Proxy Demand Resource is insufficient to supply the amount of Instructed Imbalance Energy associated with a Dispatch Instruction issued in accordance with awarded or self-provided Non-Spinning Reserves, then the capacity payment associated with the difference between the scheduled amount and the actual amount attributed to the response to the Dispatch Instruction (as established pursuant to the applicable Business Practice Manual) shall be rescinded. However, no capacity payment shall be rescinded if the shortfall in the metered output of the Generating Unit, Participating Load, Proxy Demand Resource, System Unit, or System Resource is less than a deadband amount published by CAISO on the CAISO Website at least twenty-four hours prior to the Settlement Interval. For any Settlement Interval with respect to which no deadband amount has been published by the CAISO, the deadband amount shall be zero MWh.

11.10.9.4 Allocation of Rescinded Ancillary Services Capacity Payments.

Payments rescinded pursuant to Sections 8.10.8 and 11.10.9 shall be allocated to Scheduling Coordinators in proportion to CAISO Balancing Authority Area Measured Demand for the same Trading Day. Regulation capacity payments rescinded pursuant to Section 8.10.8.6 shall be allocated to Scheduling Coordinators in proportion to CAISO Balancing Authority Area metered CAISO Demand for the same Trading Day.

11.11 High Voltage Access Charges and Transition Charges, and Wheeling Through and Wheeling Out Transactions.

11.11.1 High Voltage Access Charges and Transition Charges.

High Voltage Access Charges and Transition Charges will be levied in accordance with Section 26.1 and Appendix F, Schedule 3.

11.16.1 Order of Payment Rescission for Resources with More Than One Capacity Obligation in a Settlement Interval

If the Generating Unit, Participating Load, Proxy Demand Resource, 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 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.

including the CAISO, due to a curtailment of transmission capability or to prevent curtailment of native firm load occurring subsequent to issuing the pre-Dispatch Instruction, (iii) the Uninstructed Deviation Penalty will not apply to Uninstructed Imbalance Energy resulting from declining subsequent intra-hour Dispatch Instructions. Dynamically scheduled Dynamic System Resources, to the extent they deviate from their Day-Ahead Schedule plus any Dispatch Instructions, will be subject to the Uninstructed Deviation Penalty.

(c) The Uninstructed Deviation Penalty will not apply to Load, Curtailable Demand, or Demand Response Services.

(d) **[NOT USED]**

(e) The Uninstructed Deviation Penalty will not apply to Regulatory Must-Run Generation or Participating Intermittent Resources that meet the scheduling obligations established in the Eligible Intermittent Resources Protocol in Appendix Q. No other applicable charges will be affected by this exemption. The Uninstructed Deviation Penalty also will not apply to Qualifying Facilities (QFs), including those that are dynamically scheduled, that have not executed and are not required pursuant to this CAISO Tariff to execute a Participating Generator Agreement (PGA) or Qualifying Facility Participating Generator Agreement.

(f) All MSS resources designated as Load-following resources pursuant to Section 4.9.13.2 (regardless of gross or net settlement election) are exempt from Uninstructed Deviation Penalties in this Section 11.23. All MSS resources not designated as Load-following resources pursuant to Section 4.9.13.2 (regardless of gross or net Settlement election) are subject to Uninstructed Deviation Penalties in this Section 11.23.

(b) For any given Trading Hour in which the Scheduling Coordinator's Net Negative CAISO Demand Deviation in its applicable LAP minus the CAISO Curtailed IFM Quantity is greater than or equal to twenty percent (20%) of the maximum of the Scheduling Coordinator's cleared total CAISO Demand as represented in its Day-Ahead Schedule in its applicable LAP or its submitted Self-Schedule for that LAP, the Scheduling Coordinator shall pay $250/MWh for its Net Negative CAISO Demand Deviation minus the CAISO Curtailed IFM Quantity minus twenty percent (20%) of the maximum of the Scheduling Coordinator's cleared total CAISO Demand as represented in its Day-Ahead Schedule or its submitted Self-Schedule for that LAP, plus $150/MWh for five percent (5%) of the maximum of its cleared total CAISO Demand as represented in its Day-Ahead Schedule or its submitted Self-Schedule for that LAP.

11.24.3 Exemptions from the Interim Scheduling Charge

The Interim Scheduling Charge shall not apply to the following circumstances:

(a) For any given Trading Day for Scheduling Coordinators in each applicable LAP in which the CAISO's daily Day-Ahead peak CAISO Forecast of CAISO Demand is ninety-five percent (95%) or less than daily actual metered CAISO Demand in the respective northern and southern regions of the CAISO Balancing Authority Area as further described in the Business Practice Manuals.

(b) For any given Trading Hour when a Scheduling Coordinator's metered CAISO Demand is less than or equal to 500 MW in a particular LAP, that Scheduling Coordinator shall not be subject to the Interim Scheduling Charge.

(c) For metered CAISO Demand by Participating Loads and Proxy Demand Resources.

(d) For metered CAISO Demand that is MSS Load following Demand.

(e) For any given Trading Hour when the Hourly Real-Time LAP Price is less than the Day-Ahead LAP Price for the same Trading Hour in the applicable LAP.

(f) For metered CAISO Demand of Station Power Loads.

(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, Demand Response Providers, Balancing Authorities (to the extent the agreement between the Balancing Authority and the CAISO so provides), and MSS Operators within the CAISO Balancing Authority Area and all System Resources must comply fully and promptly with CAISO Dispatch Instructions and operating orders, unless such operation would impair public health or safety. The CAISO will honor the terms of Existing Contracts, provided that in a System Emergency and circumstances in which the CAISO considers that a System Emergency is imminent or threatened, holders of Existing Rights must follow CAISO operating orders even if those operating orders directly conflict with the terms of Existing Contracts, unless such operating orders are inconsistent with the terms of an agreement between the CAISO and a Balancing Authority. In the event of a conflict between the CAISO Tariff and an agreement between the CAISO and a Balancing Authority, the agreement will govern. For this purpose CAISO operating orders to shed Load shall not be considered as an impairment to public health or safety. This section does not prohibit a Scheduling Coordinator from modifying its Bid or re-purchasing Energy in the HASP or Real-Time Market.

16.6 Valid ETC Self-Schedules.

The CAISO will accept a valid ETC Self-Schedule from a Scheduling Coordinator. That Scheduling Coordinator shall be either the holder of Existing Rights or its designee, the Participating TO, (in the case that no Scheduling Coordinator has been so identified by the parties to the Existing Contract, the Participating TO shall be the Scheduling Coordinator for the holder of the Existing Contract). ETC Self-Schedules submitted by Scheduling Coordinators to the CAISO, which use Existing Rights, must be submitted in accordance with this CAISO Tariff.

(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 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, Demand Response Providers, Demand Response Providers, Balancing Authorities (to the extent the agreement between the Balancing Authority and the CAISO so provides), and MSS Operators within the CAISO Balancing Authority Area and all System Resources must comply fully and promptly with the CAISO's Dispatch Instructions and operating orders, unless such operation would impair public health or safety. The CAISO will honor the terms of TORs, provided that in a System Emergency and circumstances in which the CAISO considers that a System Emergency is imminent or threatened, to enable the CAISO to exercise its responsibilities as Balancing Authority in accordance with Applicable Reliability Criteria, holders of TORs must follow CAISO operating orders even if those operating orders directly conflict with the terms of applicable Existing Contracts or any other contracts pertaining to the TORs, unless such operating orders are inconsistent with the terms of an agreement between the CAISO and a Balancing Authority. In the event of a conflict between the CAISO Tariff and an agreement

Forecast for the MSS. For an MSS that elects Load following, the MSS Operator shall also self-schedule or bid Supply to match the Demand Forecast. All Bids for MSSs must be identify each Generating Unit on an individual unit basis or a System Unit. For an MSS that elects Load following consistent with Section 4.9.13.2, the Scheduling Coordinator for the MSS Operator must include the following additional information with its Bids: the Generating Unit(s) that are Load following; the range of the Generating Unit(s) being reserved for Load following; whether the quantity of Load following capacity is either up or down; and, if there are multiple Generating Units in the MSS, the priority list or distribution factors among the Generating Units. The CAISO will not dispatch the resource within the range declared as Load following capacity, leaving that capacity entirely available for the MSS to dispatch. The CAISO uses this information in the IFM runs and the RUC to simulate MSS Load following. The Scheduling Coordinator for the MSS Operator may change these characteristics through the Bid submission process in the HASP.

If the Load following resource is also an RMR Unit, the MSS Operator must not specify the Maximum Net Dependable Capacity specified in the RMR Contract as Load following up or down capacity to allow the CAISO to access such capacity for RMR Dispatch.

30.5.2.6 Ancillary Services Bids

There are four distinct Ancillary Services: Regulation Up, Regulation Down, Spinning Reserve and Non-Spinning Reserve. Participating Generators are eligible to provide all Ancillary Services. Dynamic System Resources are eligible to provide Operating Reserves and Regulation. Non-Dynamic System Resources are eligible to provide Operating Reserves only. No System Resource (including Non-Dynamic Resource-Specific System Resources) can be used for self-provision of Ancillary Services, except for Dynamic System Resources which can be used for self-provision of Ancillary Services as specified in Section 8. All System Resources, including Dynamic Resource-Specific System Resources and Non-Dynamic Resource-Specific System Resources, will be charged the Shadow Price as prescribed in Section 11.10. Participating Loads and Demand Response providers are eligible to provide Non-Spinning Reserve only. A Scheduling Coordinator may submit Ancillary Services Bids for Regulation Up, Regulation Down, Spinning Reserve, and Non-Spinning Reserve for the same capacity by providing a separate price in

30.5.2.6.3 Non-Spinning Reserve Capacity

In the case of Non-Spinning Reserve, the Ancillary Service Bid must also contain: (a) the MW capability available within ten (10) minutes; (b) the Bid price of the capacity reservation; (c) time of synchronization following notification (minutes); and (d) an indication whether the capacity reserved would be available to supply Imbalance Energy only in the event of the occurrence of an unplanned Outage, a Contingency or an imminent or actual System Emergency (Contingency Flag). In the case of Non-Spinning Reserve Capacity from System Resources, the Ancillary Services Bid must also contain: (a) Interchange ID code of the selling entity, (b) Schedule ID (NERC ID number); and (c) a Contract Reference Number, if applicable. In the case of Non-Spinning Reserve Capacity from Participating Load within the CAISO Balancing Authority Area, the Ancillary Service Bid must also contain: (a) a Load identification name and Location Code, (b) Demand reduction available within ten (10) minutes, (c) time to interruption following notification (minutes), and (d) maximum allowable curtailment duration (hour). In the case of Aggregated Participating Load, and Proxy Demand Resources, Scheduling Coordinators must submit Bids using a Generating Unit, Physical Scheduling Plant Resource ID, or Resource ID for the Proxy Demand Resource for the Demand reduction capacity of the Aggregated Participating Load through a Bid to provide Non-Spinning Reserve or a Submission to Self-Provide an Ancillary Service for Non-Spinning Reserve. Ancillary Services Bids and Submissions to Self-Provide an Ancillary Services submitted to the Real-Time Market for Non-Spinning Reserves must also submit an Energy Bid that covers the Ancillary Services capacity being offered into the Real-Time Market.

30.5.2.6.4 Additional Rules For Self-Provided Ancillary Services.

Scheduling Coordinators electing to self-provide Ancillary Services shall supply the information referred to in this Section 30.5 in relation to each Ancillary Service to be self-provided, excluding the capacity price information, but including the name of the trading Scheduling Coordinator in the case of Inter-Scheduling Coordinator Ancillary Service Trades. The portion of the Energy Bid that corresponds to the high end of the resource's operating range, shall be allocated to any awarded or Self-Provided Ancillary

30.6 Bidding and Scheduling of Proxy Demand Resources

Unless otherwise specified in the CAISO Tariff and applicable Business Practice Manuals, the CAISO will treat Bids for Energy and Ancillary Services on behalf of Proxy Demand Resources like Bids for Energy and Ancillary Services on behalf of other types of supply resources. A Scheduling Coordinator for a Demand Response Provider representing a Proxy Demand Resource may submit (1) Energy Bids only in the Day-Ahead Market and in the Real-Time Market; (2) RUC Availability Bids; and (3) Ancillary Service Bids in the Day-Ahead Market and Real-Time Market for those Ancillary Services for which the Proxy Demand Resource is certified. A Scheduling Coordinator for a Demand Response Provider representing a Proxy Demand Resource may Self-Provide Ancillary Services for which it is certified. Demand Response Services will be bid separately from the underlying demand for Proxy Demand Resources.

30.7 Bid Validation.

The CAISO shall validate submitted Bids pursuant to the procedures set forth in this Section 30.7 and the rules set forth in the Business Practice Manuals.

30.7.1 Scheduling Coordinator Access.

Each Scheduling Coordinator will be provided access to the CAISO's secure communication system to submit, modify and cancel Bids prior to the close of both the DAM and HASP, as specified in Section 30.5.1. The CAISO shall provide information regarding submitted Bids including, but not be limited to, the following: (i) notification of acceptance; (ii) notification of validation; (iii) notification of rejection; (iv) notification of status; (v) notification of submission error(s); and (vi) default modification or generation of Bids as further provided below, if any, on behalf of Scheduling Coordinators.

30.7.2 Timing of CAISO Validation.

Once a Bid is submitted to the CAISO Markets, the Bid is available for validation, which is conducted in multiple steps. Clean Bids will be generated after Market Close.

30.7.3 DAM Validation.

30.7.3.1 Validation Prior to Market Close and Master File Update.

The CAISO conducts Bid validation in three steps:

Step 1: The CAISO will validate all Bids after submission of the Bid for content validation which determines that the Bid adheres to the structural rules required of all Bids as further described in the Business Practices Manuals. If the Bid fails any of the content level rules the CAISO shall assign it a rejected status and the Scheduling Coordinator must correct and resubmit the Bid.

Step 2: After the Bids are successfully validated for content, but prior to the Market Close of the DAM, the Bids will continue through the second level of validation rules to verify that the Bid adheres to the

capacity for Regulation, or Operating Reserves on the Generating Units, System Units, Participating Loads, Proxy Demand Resources, and external imports/exports bid. The Scheduling Coordinator will be notified within a reasonable time of any validation errors. For each error detected, an error message will be generated by the CAISO in the Scheduling Coordinator's notification screen, which will specify the nature of the error. The Scheduling Coordinator can then look at the notification messages to review the detailed list of errors, make changes, and resubmit if it is still within the CAISO's timing requirements. The Scheduling Coordinator is also notified of successful validation. If a resource is awarded or has qualified Self-Provided Ancillary Services in the Day-Ahead Market, if no Energy Bid is submitted to cover the awarded or Self-Provided Ancillary Services by the Market Close of HASP and the RTM, the CAISO will generate or extend an Energy Bid as necessary to cover the awarded or Self-Provided Ancillary Services capacity using the registered values in the Master File and relevant fuel prices as described in the Business Practice Manuals for use in the HASP and IFM. If an AS Bid or Submission to Self-Provide an AS is submitted in the Real-Time for Spinning Reserve or Non-Spinning Reserve without an accompanying Energy Bid at all, the AS Bid or Submission to Self-Provide an Ancillary Service will be erased. If an AS Bid or Submission to Self-Provide an AS is submitted in the Real-Time Market for Spinning Reserve and Non-Spinning Reserve with only a partial Energy Bid for the AS capacity, the CAISO will generate an Energy Bid for the uncovered portions. For Generating Units with certified Regulation capacity, if there no Bid for Regulation in the Real-Time Market, but there is a Day-Ahead award for Regulation Up or Regulation Down or a submission to self-provide Regulation Up or Regulation Down, respectively, the CAISO will generate a Regulation Up or Regulation Down Bid at the default Ancillary Service Bid price of $0 up to the certified Regulation capacity for the Generating Unit minus any Regulation awarded or self-provided in the Day-Ahead. If there is a Bid for Regulation Up or Regulation Down in the Real-Time Market, the CAISO will increase the respective Bid up to the certified Regulation capacity for the Generating Unit minus any Regulation awarded or self-provided in the Day-Ahead. If a Self-Schedule amount is greater than the Regulation Limit for Regulation Up, the Regulation Up Bid will be erased.

Notwithstanding any of the provisions of Section 30.7.6.1 set forth above, the CAISO will not insert or extend any Bid for a Resource Adequacy Resource that is a Use-Limited Resource.

30.7.6.2 Treatment of Ancillary Services Bids

When Scheduling Coordinators bid into the Regulation Up, Regulation Down, Spinning Reserve, and Non-Spinning Reserve markets, they may submit Bids for the same capacity into as many of these markets as desired at the same time by providing the appropriate Bid information to the CAISO. The CAISO optimization will evaluate AS Bids simultaneously with Energy Bids. A Scheduling Coordinator may specify that its Bid applies only the markets it desires. A Scheduling Coordinator shall also have the ability to specify different capacity prices for the Spinning Reserve, Non-Spinning Reserve, and Regulation markets. A Scheduling Coordinator providing one or more Regulation Up, Regulation Down, Spinning Reserve or Non-Spinning Reserve services may not change the identification of the Generating Units or Proxy Demand Resources offered in the Day-Ahead Market or in the Real-Time Market for such services unless specifically approved by the CAISO (except with respect to System Units, if any, in which case Scheduling Coordinators are required to identify and disclose the resource specific information for all Generating Units. Participating Loads, and Proxy Demand Resources constituting the System Unit for which Bids and Submissions to Self-Provide Ancillary Services are submitted into the CAISO's Day-Ahead Market and Real-Time Market).

The following principles will apply in the treatment of Ancillary Services Bids in the CAISO Markets:

(a) not differentiate between bidders for Ancillary Services and Energy other than through cost, price, effectiveness, and capability to provide the Ancillary Service or Energy, and the required locational mix of Ancillary Services;

(b) select the bidders with most cost effective Bids for Ancillary Service capacity which meet its technical requirements, including location and operating capability to minimize the costs to users of the CAISO Controlled Grid;

(c) evaluate the Day-Ahead Bids over the twenty-four (24) Settlement Periods of the following Trading Day along with Energy, taking into transmission constraints and AS Regional Limits;

(d) evaluate Import Bids along with internal resources;

(e) establish Real-Time Ancillary Service Awards through RTUC from imports and resources internal to the CAISO Balancing Authority Area at fifteen (15) minutes intervals to the hour of operation; and

(f) procure sufficient Ancillary Services in the Day-Ahead and Real-Time Markets to meet its forecasted requirements.

30.7.7 Format and Validation of Operational Ramp Rates.

The submitted Operational Ramp Rate expressed in megawatts per minute (MW/min) as a function of the operating level, expressed in megawatts (MW), must be a staircase function with up to four segments. There is no monotonicity requirement for the Operational Ramp Rate. The submitted Operational Ramp Rate shall be validated as follows:

(a) The range of the submitted Operational Ramp Rate must cover the entire capacity of the resource, from the minimum to the maximum operating capacity, as registered in the Master File for the relevant resource.

(b) The operating level entries must match exactly (in number, sequence, and value) the corresponding minimum and maximum Operational Ramp Rate breakpoints, as registered in the Master File for the relevant resource.

(c) If a Scheduling Coordinator does not submit an Operational Ramp Rate for a generating unit for a day, the CAISO shall use the maximum Ramp Rate for each operating range set forth in the Master File as the Ramp Rate for that unit for that same operating range for the Trading Day.

30.7.8 Format and Validation of Start-Up and Shut-Down Times

For a Generating Unit or a Resource-Specific System Resource, the submitted Start-Up Time expressed in minutes (min) as a function of down time expressed in minutes (min) must be a staircase function with up to three (3) segments defined by a set of 1 to 4 down time and Start-Up Time pairs. The Start-Up Time is the time required to start the resource if it is offline longer than the corresponding down time. The last segment will represent the time to start the unit from a cold start and will extend to infinity. The submitted Start-Up Time function shall be validated as follows:

(a) The first down time must be zero (0) min.

(b) The down time entries must match exactly (in number, sequence, and value) the corresponding down time breakpoints of the maximum Start-Up Time function, as registered in the Master File for the relevant resource.

(c) The Start-Up Time for each segment must not exceed the Start-Up Time of the corresponding segment of the maximum Start-Up Time function, as registered in the Master File for the relevant resource.

(d) The Start-Up Time function must be strictly monotonically increasing, i.e., the Start-Up Time must increase as down time increases.

For Participating Load and for a Proxy Demand Resource, a single Shut-Down time in minutes is the time required for the resource to Shut-Down after receiving a Dispatch Instruction.

30.7.9 Format and Validation of Start-Up Costs and Shut-Down Costs

For a Generating Unit or a Resource-Specific System Resource, the submitted Start-Up Cost expressed in dollars ($) as a function of down time expressed in minutes must be a staircase function with up to three (3) segments defined by a set of 1 to 4 down time and Start-Up Cost pairs. The Start-Up Cost is the cost incurred to start the resource if it is offline longer than the corresponding down time. The last segment will represent the cost to start the resource from cold Start-Up and will extend to infinity. The submitted Start-Up Cost function shall be validated as follows:

(a) The first down time must be zero (0) min.

(b) The down time entries must match exactly (in number, sequence, and value) the corresponding down time breakpoints of the Start-Up Cost function, as registered in the Master File for the relevant resource as either the Proxy Cost or Registered Cost.

(c) The Start-Up Cost for each segment must not be negative and must be equal to the Start-Up Cost of the corresponding segment of the Start-Up Cost function, as registered in the Master File for the relevant resource. If a value is submitted in a Bid for the Start-Up Cost, it will be overwritten by the Master File value as either the Proxy Cost or Registered Cost based on the option elected pursuant to Section 30.4. If no value for Start-Up Cost is submitted in a Bid, the CAISO will insert the Master File value, as either the Proxy Cost or Registered Cost based on the option elected pursuant to Section 30.4.

(d) The Start-Up Cost function must be strictly monotonically increasing, i.e., the Start-Up Cost must increase as down time increases.

For Participating Loads and Proxy Demand Resources, a single Shut-Down Cost in dollars ($) is the cost incurred to Shut-Down the resource after receiving a Dispatch Instruction. The submitted Shut-Down Cost must not be negative.

30.7.10 Format and Validation of Minimum Load Costs.

For a Generating Unit or a Resource-Specific System Resource, 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.

31 Day-Ahead Market

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

31.1 Bid Submission and Validation in the Day-Ahead Market.

Bids, including Self-Schedules and Ancillary Services Bids, and Submissions to Self-Provide an Ancillary Service shall be submitted pursuant to the submission rules specified in Section 30. Scheduling Coordinators submit a single Bid to be used in the DAM, which includes the MPM-RRD, the IFM and RUC. Scheduling Coordinators may submit Bids for the DAM as early as seven (7) days ahead of the targeted DAM and up to Market Close of the DAM for a targeted Trading Day. The CAISO will validate all Bids submitted to the DAM pursuant to the procedures set forth in Section 30.7. Scheduling Coordinators must submit Bids for participation in the IFM for Resource Adequacy Capacity as required in Section 40.

31.2 Market Power Mitigation and Reliability Requirement Determination (MPM-RRD)

After the Market Close of the DAM, and after the CAISO has validated the Bids pursuant to Section 30.7, the CAISO will perform the MPM-RRD procedures in a series of processing runs that occur prior to the IFM Market Clearing run. The MPM process determines which Bids need to be mitigated in the IFM. The RRD process is the automated process for determining RMR Generation requirements for RMR Units. The MPM-RRD process optimizes resources using the same optimization used in the IFM, but instead of

using Demand Bids as in the IFM the MPM-RRD process optimizes resources to meet one hundred percent of the CAISO Demand Forecast and Export Bids to the extent the Export Bids are selected in the MPM-RRD process, and meet one hundred percent of Ancillary Services requirements based on Supply Bids submitted to the DAM. Bids on behalf of Proxy Demand Resources are not mitigated and are not considered in the MPM-RRD process. The mitigated or unmitigated Bid identified in the MPM-RRD process for all resources that cleared in the MPM-RRD are then passed to the IFM. The CAISO performs the MPM-RRD for the DAM for the twenty-four (24) hours of the targeted Trading Day.

31.2.1 The Reliability and Market Power Mitigation Runs.

The first run of the MPM-RRD procedures is the Competitive Constraints Run (CCR), in which only limits on transmission lines pre-designated as competitive are enforced. The only RMR Units considered in the CCR are Condition 1 RMR Units that have provided market Bids for the DAM and Condition 2 RMR Units when obligated to submit a Bid pursuant to an RMR Contract. The second run is the All Constraints Run (ACR), during which all transmission Constraints that are expected to be enforced in the Integrated Forward Market are enforced. All RMR Units, Condition 1 and Condition 2, are considered in the ACR.

31.2.2 Bid Mitigation.

The CAISO shall compare the resource dispatch levels derived from CCR and ACR and will mitigate Bids as follows.

31.3.1.3 Reduction of Self-Scheduled LAP Demand.

In the IFM, to the extent the market software cannot resolve a non-competitive transmission Constraint utilizing Effective Economic Bids such that Self-Scheduled Load at the LAP level would otherwise be reduced to relieve the Constraint, the CAISO Market software will adjust Non-priced Quantities in accordance with the process and criteria described in Section 27.4.3. For this purpose the priority sequence, starting with the first type of Non-priced Quantity to be adjusted, will be:

(a) Schedule the Energy from Self-Provided Ancillary Service Bids from capacity that is obligated to offer an Energy Bid under a must-offer obligation such as from an RMR Unit or a Resource Adequacy Resource. Consistent with Section 8.6.2, the CAISO Market software could also utilize the Energy from Self-Provided Ancillary Service Bids from capacity that is not under a must-offer obligation such as from an RMR or a Resource Adequacy Resource, to the extent the Scheduling Coordinator has submitted an Energy Bid for such capacity. The associated Energy Bid prices will be those resulting from the MPM process.

(b) Relax the Constraint consistent with Section 27.4.3.1, and establish prices consistent with Section 27.4.3.2. No Constraints on Interties with adjacent Balance Authority Areas will be relaxed in this procedure.

31.3.1.4 Eligibility to Set the Day-Ahead LMP

All Generating Units, Participating Loads, non-Participating Loads, Proxy Demand Resources, System Resources, System Units, or Constrained Output Generators subject to the provisions in Section 27.7, with Bids, including Generated Bids, that are unconstrained due to Ramp Rates, Forbidden Operating Regions, or other temporal constraints are eligible to set the LMP, provided that (a) the Schedule for the Generating Unit or Resource-Specific System Resource is between its Minimum Operating Limit and the highest MW value in its Economic Bid or Generated Bid, or (b) the Schedule for the Participating Load, non-Participating Load, Proxy Demand Resource, non-Resource-Specific System Resource, or System Unit is between zero (0) MW and the highest MW value in its Economic Bid or Generated Bid. If (a) a resource's Schedule is constrained by its

Generation Units, net imports, Participating Loads, and Proxy Demand Resources plus the Minimum Load Energy committed by RUC is not greater than a configurable percentage of the system CAISO Forecast of CAISO Demand.

(c) The CAISO can limit the amount of RUC Capacity it will procure from resources that could otherwise be started during the Operating Day based on operational factors such as: (1) historical confidence that a Short Start Unit actually starts when needed based on the assessment of the CAISO Operators of the historical performance of Short Start Units; (2) need to conserve the number of run-hours and number of starts per year for critical loading periods; and (3) seasonal Constraints such as Overgeneration. The CAISO will verify that the total Day-Ahead Schedules and RUC Capacity from such resources is not greater than a configurable percentage of the total available capacity of all such resources.

31.5.5 Selection and Commitment of RUC Capacity.

Capacity that is not already scheduled in the IFM may be selected as RUC Capacity through the RUC process of the DAM. The RUC optimization will select RUC Capacity and produce nodal RUC Prices by minimizing total Bid cost based on RUC Availability Bids and Start-Up and Minimum Load Bids. RUC will not consider Start-Up and Minimum Load Bids for resources already committed in the IFM. The RUC Capacity of a resource is the incremental amount of capacity selected in RUC above the resource's Day-Ahead Schedule. The resource's Day-Ahead Schedule plus its RUC Capacity comprise the resource's RUC Schedule. The CAISO will only issue RUC Start-Up Instructions to resources committed in RUC that must receive a Start-Up Instruction in the Day-Ahead in order to be available to meet Real-Time Demand. RUC Schedules will be provided to Scheduling Coordinators even if a RUC Start-Up Instruction is not issued at that time. RUC shall not reverse commitments issued through the IFM. If the RUC process cannot find a feasible solution given the resources committed in the IFM, the RUC process will adjust Constraints as described in Section

31.5.4 to arrive at a feasible solution that accommodates all the resources committed in the IFM, and any necessary de-commitment of IFM committed units shall be effectuated through an Exceptional Dispatch.

31.5.6 Eligibility for RUC Compensation.

All RUC Capacity is eligible for the RUC Availability Payment except for: (i) RUC Capacity from RMR Units that has been designated as RMR Dispatch and included in RUC as a Self-Schedule; (ii) Resource Adequacy Capacity; and (iii) RUC Capacity that corresponds to the resource's Minimum Load, which is compensated through the Bid Cost Recovery as described in Section 11.8. Resources not committed in the IFM that are committed in RUC, including RMR Units that were not designated for RMR Dispatches and Resource Adequacy Resources, are also eligible for RUC Cost Compensation, which includes Start-Up and Minimum Load Cost compensation, and Bid Cost Recovery, subject to the resource actually following its Dispatch Instructions as verified by the CAISO pursuant to procedures set forth in the Business Practice Manuals.

31.5.7 Rescission of Payments for Undispatchable and Undelivered RUC Capacity

If capacity committed in RUC provided from a Generating Unit, Participating Load, Proxy Demand Resource, 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, Proxy Demand Resource, 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, Proxy Demand Resource, 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 (0).

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, Proxy Demand Resource, 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 (or, in the case of Proxy Demand Resources, an estimate of actual output), and Operational Ramp Rate as described in Section 30.10. If the Undispatchable Capacity is capacity committed in RUC and is from a Generating Unit, System Unit or System Resource that is a Resource Adequacy Resource, there is no payment obligation to the CAISO for the Undispatchable Capacity. The CAISO will report the instance of non-compliance by the Resource Adequacy Resource to the appropriate Local Regulatory Authority.

31.5.7.2 Rescission of Payments for Undelivered RUC Capacity

For each Settlement Interval in which a Generating Unit, Participating Load, Proxy Demand Resource, 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:

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. Bids on behalf of the Proxy Demand Resources are not mitigated and are not considered in the MPM-RRD process. The MPM-RRD process for the HASP and RTM produces results for each fifteen (15) minute interval of the Trading Hour and thus may produce up to four mitigated Bids for any given resource for the Trading Hour. A single mitigated Bid for the entire Trading Hour is calculated using the minimum Bid price of the four mitigated Bid curves at each Bid quantity level. The Bids are mitigated only for the Bid quantities that are above the minimum quantity cleared in the CCR across all four fifteen-minute intervals. For a Condition 1 RMR Unit, if the dispatch level produced through the ACR is greater than the dispatch level produced through the CCR, and for a Condition 2 RMR Unit that is dispatched through the ACR, the resource will be flagged as an RMR Dispatch in the RTM and shall constitute a Dispatch notice pursuant to the RMR Contract.

34. REAL-TIME MARKET

The RTM is the market conducted by the CAISO during any given Operating Day in which Scheduling Coordinators may provide Real-Time Imbalance Energy and Ancillary Services. The Real-Time Market consists of the Real-Time Unit Commitment (RTUC), the Short-Term Unit Commitment (STUC) and the Real-Time Dispatch (RTD) processes. The Short-Term Unit Commitment (STUC) runs once per hour near the top of the hour and utilizes the SCUC optimization to commit Medium Start, Short Start and Fast Start Units to meet the CAISO Demand Forecast. The CAISO shall dispatch all resources, including Participating Load and Proxy Demand Resources, pursuant to submitted Bids or pursuant to the provisions below on Exceptional Dispatch. In Real-Time, resources are required to follow Real-Time Dispatch Instructions. The Time Horizon of the STUC starts with the third fifteen-minute interval of the current Trading Hour and extending for the next four Trading Hours. The RTUC runs every fifteen (15) minutes and utilizes the SCUC optimization to commit Fast Start and some Short Start resources and to procure any needed AS on a fifteen-minute basis. Any given run of the RTUC will have a Time Horizon of approximately sixty (60) to 105 minutes (four to seven fifteen-minute intervals) depending on when during the hour the run occurs. Not all resources committed in a given STUC or RTUC run will necessarily receive CAISO commitment instructions immediately, because during the Trading Day the CAISO may issue a commitment instruction to a resource only at the latest possible time that allows the resource to be ready to provide Energy when it is expected to be needed. The RTD uses a Security Constrained Economic Dispatch (SCED) algorithm every five minutes throughout the Trading Hour to determine optimal Dispatch Instructions to balance Supply and Demand. Updates to the FNM used in the RTM optimization include current estimates of real-time unscheduled flow at the Interties. The RTD optimization utilizes up to a sixty-five (65) minute Time Horizon (thirteen (13) five (5) minute intervals), but the CAISO issues Dispatch Instructions only for the next target five (5) minute Interval. The RTUC, STUC and RTD processes of the RTM use the same FNM used in the DAM and the HASP, subject to any necessary updates of the FNM pursuant to changes in grid conditions after the DAM has run.

in a subsequent STUC or RTUC run based on its Start-Up Time. A binding Dispatch Instruction produced by STUC that results in a change in Commitment Status will be issued, in accordance with Section 6.3, after review and acceptance of the Start-Up Instruction by the CAISO Operator. The STUC will only decommit a resource to the extent that resource's physical characteristics allow it to be cycled in the same Time Horizon for which it was decommitted. STUC does not produce prices for Settlement.

34.5 General Dispatch Principles

The CAISO shall conduct all Dispatch activities consistent with the following principles:

(1) The CAISO shall issue AGC instructions electronically as often as every four (4) seconds from its Energy Management System (EMS) to resources providing Regulation and on Automatic Generation Control to meet NERC and WECC performance requirements;

(2) In each run of the RTED or RTCD the objective will be to meet the projected Energy requirements over the Time Horizon of that run, subject to transmission and resource operational Constraints, taking into account the short term CAISO Forecast of CAISO Demand adjusted as necessary by the CAISO Operator to reflect scheduled changes to Interchange and non-dispatchable resources in subsequent Dispatch Intervals;

(3) Dispatch Instructions will be based on Energy Bids for those resources that are capable of intra-hour adjustments and will be determined through the use of SCED except when the CAISO must utilize the RTMD;

(4) When dispatching Energy from awarded Ancillary Service capacity the CAISO will not differentiate between Ancillary Services procured by the CAISO and Submissions to Self-Provide an Ancillary Service;

(5) The Dispatch Instructions of a resource for a subsequent Dispatch Interval shall take as a point of reference the actual output obtained from either the State Estimator solution or the last valid telemetry measurement and the resource's operational ramping capability;

(6) In determining the Dispatch Instructions for a target Dispatch Interval while at the same time achieving the objective to minimize Dispatch costs to meet the forecasted conditions of the entire Time Horizon, the Dispatch for the target Dispatch Interval will be affected by: (a) Dispatch Instructions in prior intervals, (b) actual output of the resource, (c) forecasted conditions in subsequent intervals within the Time Horizon of the optimization, and (d) operational Constraints of the resource, such that a resource may be dispatched in a direction for the immediate target Dispatch Interval that is different than the direction of change in Energy needs from the current Dispatch Interval to the next immediate Dispatch Interval;

(7) Through Start-Up Instructions the CAISO may instruct resources to start up or shut down, or may reduce Load for Participating Loads and Proxy Demand Resources, over the Time Horizon for the RTM based on submitted Bids, Start-Up Costs and Minimum Load Costs, Pumping Costs and Pump Shut-Down Costs, as appropriate for the resource, consistent with operating characteristics of the resources that the SCED is able to enforce. In making Start-Up or Shut-Down decisions in the RTM, the CAISO may factor in limitations on number of run hours or Start-Ups of a resource to avoid exhausting its maximum number of run hours or Start-Ups during periods other than peak loading conditions;

(8) The CAISO shall only start up resources that can start within the Time Horizon used by the RTM optimization methodology;

34.6 Dispatch of Dispatch to Units, Participating Loads, and PDR

The CAISO may issue Dispatch Instructions covering:

(a) Ancillary Services;

(b) Energy, which may be used for:

(i) Congestion relief;

(ii) provision of Imbalance Energy; or

(iii) replacement of an Ancillary Service;

(c) agency operation of Generating Units, Participating Loads, Proxy Demand Resources, or Interconnection schedules, for example:

(i) output or Demand that can be Dispatched to meet Applicable Reliability Criteria;

(ii) Generating Units that can be Dispatched for Black Start;

(iii) Generating Units that can be Dispatched to maintain governor control regardless of their Energy schedules;

(d) the operation of voltage control equipment applied on Generating Units as described in this CAISO Tariff;

(e) MSS Load following instructions provided to the CAISO, which the CAISO incorporates to create their Dispatch Instructions; or

(f) necessary to respond to a System Emergency or imminent emergency.

34.7 Utilization of the Energy Bids.

The CAISO uses Energy Bids for the following purposes: (i) satisfying Real-Time Energy needs; (ii) mitigating Congestion; (iii) maintaining aggregate Regulation reserve capability in Real-Time; (iv) allowing recovery of Operating Reserves utilized in Real-Time operations; (v) procuring Voltage Support required from resources beyond their power factor ranges in Real-Time; (vi) establishing LMPs; (vii) as the basis for Bid Cost Recovery; and (viii) to the extent a Real-Time Energy Bid Curve is submitted starting at minimum operating level for a Short Start resource that is scheduled to be on-line, the RTM may Dispatch such a resource down to its minimum operating level and may issue a Shut-Down Instruction to the resource based on its Minimum Load Energy costs.

34.8 Dispatch of Energy From Ancillary Services

The CAISO may issue Dispatch Instructions to Participating Generators, Participating Loads, Proxy Demand Resources, (via communication with the Scheduling Coordinators of Demand Response Providers) System Units and System Resources contracted to provide Ancillary Services (either procured through the CAISO Markets, Self-Provided by Scheduling Coordinators, or dispatched in accordance with the RMR Contract) for the Supply of Energy. During normal operating conditions, the CAISO shall Dispatch those Participating Generators, Participating Loads, Proxy Demand Resources, System Units and System Resources that have contracted to provide Spinning and Non-Spinning Reserve, except for those reserves designated as Contingency Only, in conjunction with the normal Dispatch of Energy. Contingency Only reserves are Operating Reserve capacity that have been designated, either by the Scheduling Coordinator or the CAISO, as available to supply Energy in the Real-Time only in the event of the occurrence of an unplanned Outage,

34.9 Exceptional Dispatch.

The CAISO may issue Exceptional Dispatches for the circumstances described in this Section 34.9, which may require the issuance of forced Shut-Downs or forced Start-Ups and shall be consistent with Good Utility Practice. Dispatch Instructions issued pursuant to Exceptional Dispatches shall be entered manually by the CAISO Operator into the Day-Ahead or RTM optimization software so that they will be accounted for and included in the communication of Day-Ahead Schedules and Dispatch Instructions to Scheduling Coordinators. Exceptional Dispatches are not derived through the use of the IFM or RTM optimization software and are not used to establish the LMP at the applicable PNode. The CAISO will record the circumstances that have led to the Exceptional Dispatch. Except as provided in this Section 34.9, the CAISO shall consider the effectiveness of the resource along with Start-Up Costs and Minimum Load Costs when issuing Exceptional Dispatches to commit a resource to operate at Minimum Load. When the CAISO issues Exceptional Dispatches for Energy, the CAISO shall also consider Energy Bids, if available and as appropriate. The goal of the CAISO will be to issue Exceptional Dispatches on a least-cost basis. Imbalance Energy delivered or consumed pursuant to the various types of Exceptional Dispatch is settled according to the provisions in Section 11.5.6.

34.9.1 System Reliability Exceptional Dispatches

The CAISO may issue a manual Exceptional Dispatch for Generation Units, System Units, Participating Loads, Proxy Demand Resources, Dynamic System Resources, and Condition 2 RMR Units pursuant to Section 41.9, in addition to or instead of resources with a Day-Ahead Schedule dispatched by RTM optimization software during a System Emergency, or to prevent an imminent System Emergency or a situation that threatens System Reliability and cannot be addressed by the RTM optimization and system modeling. To the extent possible, the CAISO shall utilize available and effective Bids from resources before dispatching resources without Bids. To deal with any threats to System Reliability, the CAISO may also issue a manual Exceptional Dispatch in the Real-Time for Non-Dynamic System Resources that have not been or would not be selected by the RTM for Dispatch, but for which the relevant Scheduling Coordinator has submitted a Bid into the HASP.

34.19.1 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, Participating Loads, and Proxy Demand Resources 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 Imbalance Energy needs and will Dispatch Generating Units, System Units, Dynamic System Resources, Participating Load, and Proxy Demand Resources 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, Proxy Demand Resources, Dynamic System Resources, System Units, or COGs subject to the provisions in Section 27.7, with Bids, including Generated Bids, that are unconstrained due to Ramp Rates or other temporal constraints are eligible to set the LMP, provided that (a) a Generating Unit or a Dynamic Resource-Specific System Resource is Dispatched between its Minimum Operating Limit and the highest MW value in its Economic Bid or Generated Bid, or (b) a Participating Load, a Proxy Demand Resource, a Dynamic System Resource that is not a Resource-Specific System Resource, or a

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, except that a Proxy Demand Resource cannot be a nominated CRR Source in a CRR Allocation process. An LSE or a Qualified OBAALSE may nominate up to one hundred percent (100%) of its Adjusted Verified CRR Source Quantities for Seasonal or Monthly CRRs in the combined tiers of the annual and monthly CRR Allocation processes as provided in this Section. For tiers 1 and 2 of the annual CRR Allocation in CRR Year One, an LSE may nominate CRRs from each of its verified CRR Sources in a quantity no greater than seventy-five percent (75%) of the Adjusted Verified CRR Source Quantity corresponding to each verified CRR Source. The LSE may then use tier 1 of the monthly CRR Allocations in CRR Year One to nominate up to the full one hundred percent (100%) of the Adjusted Verified CRR Source Quantity corresponding to each verified CRR Source. In tiers 1, 2 and 3 of the annual CRR Allocation in each year in which it participates, a Qualified OBAALSE may nominate CRRs from each of its verified CRR Sources in a quantity no greater than seventy-five percent (75%) of the Adjusted Verified CRR Source Quantity corresponding to each CRR Source. The Qualified OBAALSE may then use tiers 1 and 2 of the monthly CRR Allocations in the same year to nominate up to the full one hundred percent (100%) of the Adjusted Verified CRR Source Quantity corresponding to each verified CRR Source.

36.8.4.1 CRRs with Trading Hub Sources.

For purposes of the CRR Allocation processes the CAISO shall disaggregate CRR nominations with Trading Hub CRR Sources into Point-to-Point CRR nominations each of whose CRR Source is a Generating Unit PNode that is an element of the Trading Hub. In performing this disaggregation the MW quantity of each Point-to-Point CRR nomination will equal the MW quantity of the CRR nomination multiplied by the weighting factor of the corresponding Generating Unit PNode in the defined Trading Hub. The disaggregated, individual Point-to-Point CRRs will be used by the CAISO in conducting the SFTs for the nominated CRRs. In CRR years other than CRR Year One, an LSE may nominate in the

did or did not occur, and if DMM concurs with the CAISO's conclusion that the circumstances preclude such an objective determination, then DMM shall refer the matter to FERC under the protocol on referrals outlined in Section 11 of Appendix P. The time limitation contained in Section 37.10.1 to assess a Sanction under this Section 37 shall be determined as of the date that a Sanction is initially assessed by the CAISO, excluding the time required for FERC to investigate a potential Rules of Conduct violation and/or determine a Sanction in accordance with this section, Sections 37.2.5, 37.4.4, or 37.9.1.

37.8.3 Investigation.

The CAISO shall conduct a reasonable investigation seeking available facts, data, and other information relevant to the potential Rules of Conduct violation.

37.8.4 Notice

The CAISO shall provide notice of the investigation in sufficient detail to allow for a meaningful response to the Scheduling Coordinator and, as limited below, to all Market Participants the Scheduling Coordinator represents that are the subject(s) of the investigation. The CAISO shall contact the Market Participant(s) that may be involved, so long as the CAISO has sufficient objective information to identify and verify the role of the Market Participant(s) in the potential Rules of Conduct violation. Such Market Participant(s) will likely have an existing contractual relationship with the CAISO (e.g., UDC, MSS, CAISO Metered Entity, Participating Transmission Owner, Participating Generator, Participating Load, or Demand Response Provider).

37.8.5 Opportunity to Present Evidence.

The CAISO shall provide an opportunity to the Market Participant(s) that are the subject(s) of the investigation to present any issues of fact or other information relevant to the potential Rules of Conduct violation being investigated. The CAISO shall consider all such information or data presented.

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 or Proxy Demand Resources 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.

40.6.3 Additional Availability Requirements for Short Start Units.

A Short Start Unit that is a Resource Adequacy Resource and that does not have an IFM Schedule or a RUC Schedule for any of its capacity for a given Trading Hour is required to participate in the Real Time Market in accordance with Section 40.6.2. Such a resource that is also a Use-Limited Resource subject to Section 40.6.4 is required, consistent with their applicable use plan, to submit Economic Bids or Self Schedules for Resource Adequacy Capacity into the Real Time Market.

The CAISO may waive these availability obligations for a Short Start Unit that does not have an IFM Schedule or a RUC Schedule 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

Hydroelectric Generating Units, Proxy Demand Resources, and Participating Load, including Pumping Load, are deemed to be Use-Limited Resources for purposes of this Section 40 and are not required to submit the application described in this Section 40.6.4.1. Scheduling Coordinators for other Use-Limited Resources, 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

40.6.12 Participating Loads and Proxy Demand Resources

Participating Loads or Proxy Demand Resources that are included in a Resource Adequacy Plan and Supply Plan, if the Scheduling Coordinator for the Participating Loads or Proxy Demand Resources is not the same as that for the Load Serving Entity, will be administered by the CAISO in accordance with the terms and conditions established by the CPUC or the Local Regulatory Authority.

40.7 Compliance.

The CAISO will evaluate whether each annual and monthly Resource Adequacy Plan submitted by a Scheduling Coordinator on behalf of a Load Serving Entity demonstrates Resource Adequacy Capacity sufficient to satisfy the Load Serving Entity's (i) allocated responsibility for Local Capacity Area Resources under Section 40.3.2 and (ii) applicable Demand and Reserve Margin requirements. If the CAISO determines that a Resource Adequacy Plan does not demonstrate Local Capacity Area Resources sufficient to meet its allocated responsibility under Section 40.3.2, compliance with applicable Demand and Reserve Margin requirements, or compliance with any other resource adequacy requirement in this Section 40 or adopted by the CPUC, Local Regulatory Authority, or federal agency, as applicable, the CAISO will notify the relevant Scheduling Coordinator, CPUC, Local Regulatory Authority, or federal agency with jurisdiction over the relevant Load Serving Entity, or in the case of a mismatch between Resource Adequacy Plan(s) and Supply Plan(s), the relevant Scheduling Coordinators, in an attempt to resolve any deficiency in accordance with the procedures set forth in the Business Practice Manual. The notification will include the reasons the CAISO believes a deficiency exists. If the deficiency relates to the demonstration of Local Capacity Area Resources in a Load Serving Entity's annual Resource Adequacy Plan, and the CAISO does not provide a written notice of resolution of the deficiency as set forth in the Business Practice Manual, the Scheduling Coordinator for the Load Serving Entity may demonstrate that the identified deficiency is cured by submitting a revised annual Resource Adequacy Plan within thirty (30) days of the beginning of the Resource Adequacy Compliance Year. For all other identified

Bids has an allocation of import capacity at the import Scheduling Point under Section 40.4.6.2 that is not less than the Resource Adequacy Capacity provided by the Dynamic System Resource.

40.8.1.12.2 Non-Dynamic System Resources.

For Non-Dynamic System Resources, the Scheduling Coordinator must demonstrate that the Load Serving Entity for which the Scheduling Coordinator is scheduling Demand has an allocation of import capacity at the import Scheduling Point under Section 40.4.6.2 that is not less than the Resource Adequacy Capacity from the Non-Dynamic System Resource. The Scheduling Coordinator must also demonstrate that the Non-Dynamic System Resource is covered by Operating Reserves, unless unit contingent, in the sending Balancing Authority Area. Eligibility as Resource Adequacy Capacity is contingent upon a showing by the Scheduling Coordinator of the System Resource that it has secured transmission through any intervening Balancing Authority Areas for the Operating Hours that cannot be curtailed for economic reasons or bumped by higher priority transmission. With respect to Non-Dynamic System Resources, any inter-temporal constraints, such as multi-hour run blocks, must be explicitly identified in the monthly Resource Adequacy Plan, and no constraints may be imposed beyond those explicitly stated in the plan.

40.8.1.13 Proxy Demand Resources

The Qualifying Capacity of a Proxy Demand Resource, for each month, will be based on the resource's average monthly historic demand reduction performance during that same month during the Availability Assessment Hours, as described in Section 40.9.3, using a three-year rolling average. For a Proxy Demand Resource with fewer than three years of performance history, for all months for which there is no historic data, the CAISO will utilize a monthly megawatt value as certified and reported to the CAISO by the Demand Response Provider; otherwise, where available, the CAISO will use the average of historic demand reduction performance data available, by month, for a Proxy Demand Resource. Proxy Demand Resources must be available at least four (4) hours per month in which they are eligible to provide RA Capacity and must be dispatchable for a minimum of thirty (30) minutes per event within each of those months.

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 Balancing Authority Area, or if insufficient Bids for the Supply of Energy and Ancillary Services have been submitted in the HASP for the CAISO Balancing Authority Area.
All Constraints Run (ACR)	The second optimization run of the MPM-RRD process through which all transmission Constraints that are expected to be enforced in the market-clearing processes (IFM, RUC, STUC, RTUC and RTD) 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 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 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 or Proxy Demand Resource.
Ancillary Service Marginal Price (ASMP)	The marginal cost of providing an Ancillary Service as further provided in Section 27.1.2.
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, System Resource operator, Participating Load, or Proxy Demand Response that is certified to provide an Ancillary Service.
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 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 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 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.

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, Participating Loads, and Proxy Demand Resources.
Bid Costs	The costs for resources manifested in the Bid components submitted, which include the Start-Up Cost, Minimum Load Cost, Energy Bid Cost, Pump Shut-Down Cost, Pumping Cost, Ancillary Services Bid Cost and RUC Availability Payment.
Black Start	The procedure by which a Generating Unit self-starts without an external source of electricity thereby restoring a source of power to the CAISO Balancing Authority Area following system or local area blackouts.
Black Start Generator	A Participating Generator in its capacity as party to an Interim Black Start Agreement with the CAISO for the provision of Black Start services, but shall exclude Participating Generators in their capacity as providers of Black Start services under their Reliability Must-Run Contracts.
BPM	Business Practice Manual
BPM PRR	Business Practice Manual Proposed Revision Request
Bulk Supply Point	A Utility Distribution Company or Small Utility Distribution Company metering point.
Business Associate	Any entity with whom the CAISO interacts related to the CAISO Markets.

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	Second, third and fourth quarters of calendar year 2011 and first quarter of calendar year 2012.
CRR Year One	Second, third and fourth quarters of calendar year 2008 and first quarter of calendar year 2009.
CRR Year Three	Second, third and fourth quarters of calendar year 2010 and first quarter of calendar year 2011.
CRR Year Two	Second, third and fourth quarters of calendar year 2009 and first quarter of calendar year 2010.
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.
Customer Baseline	A value or values determined by the CAISO based on historical Load meter data to measure the delivery of Demand Response Services.
DAM	Day-Ahead Market

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 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.
Demand Response Provider	An entity that is responsible for delivering Demand Response Services from a Proxy Demand Resource providing Demand Response Services, which has undertaken in writing by execution of the applicable agreement to comply with all applicable provisions of the CAISO Tariff.
Demand Response Services	Demand from a Proxy Demand Resource that can be bid into the Day-Ahead Market and Real-Time Market and dispatched at the direction of the CAISO.
Demand Response System	A collective name for a set of functions of a CAISO application used to collect, approve, and report on information and measurement data for Proxy Demand Resources.
Department of Market Monitoring (DMM)	The department of the CAISO established under Section 1 of Appendix P.

Electric Facility	An electric resource, including a Generating Unit, System Unit, Participating Load, or Proxy Demand Resource.
Eligible Capacity	Capacity of Generating Units, System Units, System Resources, or Participating Load that is not already under a contract to be a Resource Adequacy Resource, is not under an RMR Contract or is not currently designated as ICPM Capacity that effectively resolves a procurement shortfall or reliability concern and thus is eligible to be designated under the ICPM in accordance with Section 43.1.
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 by one of the following sources, except for a de minimis amount of Energy from other sources: 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
Emissions Cost Demand	The level of Demand specified in Section 11.18.3.
Emissions Cost Invoice	The invoice submitted to the CAISO in accordance with Section 11.18.6.
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

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 Intertie Scheduling Points with interconnected Balancing Authority Areas.
Expected Congestion Revenue	The mean value based on the probability distribution of the historic Congestion revenue of a CRR.
Expected Energy	The total Energy that is expected to be generated or consumed by a resource, based on the Dispatch of that resource, as calculated by the Real-Time Market (RTM), and as finally modified by any applicable Dispatch Operating Point corrections. Expected Energy includes the Energy scheduled in the IFM, and it is calculated the applicable Trading Day. Expected Energy is calculated for Generating Units, System Resources, Resource-Specific System Resources, Participating Loads, and Proxy Demand Resources. The calculation is based on the Day-Ahead Schedule and the Dispatch Operating Point trajectory for the three-hour period around the target Trading Hour (including the previous and following hours), the applicable Real-Time LMP for each Dispatch Interval of the target Trading Hour, and any Exceptional Dispatch Instructions. Energy from Non-Dynamic System Resources is converted into HASP Intertie Schedules. Expected Energy is used as the basis for Settlements.
Export Bid	A Demand Bid submitted to a CAISO Market at a Scheduling Point.
Exporting Participating Intermittent Resource	A Participating Intermittent Resource with a PIR Export Percentage greater than zero (0).
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.

Local Capacity Area Resource Deficiency	The monthly difference in MW between any applicable Local Capacity Area Resource requirements for an LSE as established pursuant to Section 40.3.2 and the quantity of monthly MW shown in the LSE's Resource Adequacy Plan.
Local Capacity Area Resources	Resource Adequacy Capacity from a Generating Unit listed in the technical study or Participating Load or Proxy Demand Resource that is located within a Local Capacity Area capable of contributing toward the amount of capacity required in a particular Local Capacity Area.
Local Capacity Technical Study	The study performed by the CAISO pursuant to Section 40.3.
Local Furnishing Bond	Tax-exempt bonds utilized to finance facilities for the local furnishing of electric energy, as described in section 142(f) of the Internal Revenue Code, 26 U.S.C. § 142(f).
Local Furnishing Participating TO	Any Tax-Exempt Participating TO that owns facilities financed by Local Furnishing Bonds.
Local Market Power Mitigation (LMPM)	The mitigation of market power that could be exercised by an entity when it is needed for local reliability services due to its location on the grid and a lack of competitive supply at that location pursuant to Section 39.7.
Local Publicly Owned Electric Utility	A municipality or municipal corporation operating as a public utility furnishing electric services, a municipal utility district furnishing electric services, a public utility district furnishing electric services, an irrigation district furnishing electric services, a state agency or subdivision furnishing electric services, a rural cooperative furnishing electric services, or a Joint Powers Authority that includes one or more of these agencies and that owns Generation or transmission facilities, or furnishes electric services over its own or its members' electric Distribution System.
Local Regulatory Authority (LRA)	The state or local governmental authority, or the board of directors of an electric cooperative, responsible for the regulation or oversight of a utility.

Metered Balancing Authority Area Load	For purposes of calculating and billing the Grid Management Charge, Metered Balancing Authority Area Load is: (a) all metered Demand for Energy of Scheduling Coordinators for the supply of Loads in the CAISO's Balancing Authority Area, plus (b) all Energy for exports by Scheduling Coordinators from the CAISO Balancing Authority Area; less (c) Energy associated with the Load of a retail customer of a Scheduling Coordinator, Utility Distribution Company, Small Utility Distribution Company or Metered Subsystem that is served by a Generating Unit that: (i) is located on the same site as the customer's Load or provides service to the customer's Load through arrangements as authorized by Section 218 of the California Public Utilities Code; (ii) is a qualifying small power production facility or qualifying cogeneration facility, as those terms are defined in FERC's regulations implementing Section 201 of the Public Utility Regulatory Policies Act of 1978; and (iii) the customer secures Standby Service from a Participating TO under terms approved by a Local Regulatory Authority or FERC, as applicable, or the customer's Load can be curtailed concurrently with an Outage of the Generating Unit.
Metered Control Area Load	Metered Balancing Authority Area Load.
Metered Quantities	For each Direct Access End-User, the actual metered amount of MWh and MW; for each Participating Generator the actual metered amounts of MWh, MW, MVar and MVarh.
Metered Subsystem (MSS)	A geographically contiguous system located within a single zone which has been operating as an electric utility for a number of years prior to the CAISO Operations Date as a municipal utility, water district, irrigation district, state agency or federal power marketing authority subsumed within the CAISO Balancing Authority Area and encompassed by CAISO certified revenue quality meters at each interface point with the CAISO Controlled Grid and CAISO certified revenue quality meters on all Generating Units or, if aggregated, each individual resource, Participating Load, and Proxy Demand Resource internal to the system, which is operated in accordance with a MSS Agreement described in Section 4.9.1.

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.
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	For a Generating Unit, the minimum sustained operating level at which it can operate at a continuous sustained level. For a Participating Load, the Operating Level at reduced consumption pursuant to a Dispatch Instruction. For a Proxy Demand Resource, the smallest discrete load reduction possible for the Proxy Demand Resource.
Minimum Load Bid	The Bid component that indicates the Minimum Load Cost for the Generating Unit, Participating Load, or Proxy Demand Resource 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, Participating Load, or Proxy Demand Resource incurs operating at Minimum Load, which in the case of Participating Load or Proxy Demand Resource may not be negative.
Minimum Load Energy	The product of the relevant Minimum Load and the duration of the Settlement Interval.

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 Appendix A to the 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.
PDR	Proxy Demand Resource
PDRA	Proxy Demand Resource Agreement
PDR Energy Measurement	The Energy quantity calculated by comparing the Customer Baseline of a Proxy Demand Resource against its actual underlying Load for a Demand response event.
PGA	Participating Generator Agreement
Phase I Interconnection Study	The engineering study conducted or caused to be performed by the CAISO, in coordination with the applicable Participating TO(s), 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 (ies) were interconnected without identified project modifications or system modifications, as provided in the On-Peak Deliverability Assessment or Off-Peak Deliverability Assessment, and other potential impacts, including but not limited to those identified in the Scoping Meeting as described in the Large Generator Interconnection Procedures set forth in Appendix Y. The study will also identify the approximate total costs, based on per unit costs, of mitigating these impacts, along with an equitable allocation of those costs to Interconnection Customers for their individual Generating 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).
Proxy Demand Resource Agreement (PDRA)	An agreement between the CAISO and a Demand Response Provider, a *pro forma* version of which is set forth in Appendix B.14.
Proxy Demand Resource (PDR)	A Load or aggregation of Loads capable of measurably and verifiably providing Demand Response Services pursuant to a Proxy Demand Resource Agreement.
PSS	Power System Stabilizers
PTDF	Power Transfer Distribution Factor
PTO	Participating TO or Participating Transmission Owner

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 produced or consumed due to deviation from the Standard Ramp because of ramp constraints, Start-Up, or Shut-Down. Ramping Energy Deviation may overlap with Standard Ramping Energy, and both Standard Ramping Energy and Ramping Energy Deviation may overlap with Day-Ahead Scheduled Energy, but with no other IIE subtype. Ramping Energy Deviation may be composed of two parts: a) the part that overlaps with Standard Ramping Energy whenever the DOP crosses the Standard Ramping Energy region; and b) the part that does not overlap with Standard Ramping Energy. The latter part of Ramping Energy Deviation consists only of extra-marginal IIE contained within the hourly schedule change band and not attributed to Exceptional Dispatch or derates. Ramping Energy Deviation does not apply to Non-Dynamic System Resources (including Resource-Specific System Resources). Ramping Energy Deviation is settled as described in Section 11.5.1, and it is included in BCR only for market revenue calculations as provided in Section 11.8.1.4.5.
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 and Proxy Demand Resources, for which the Scheduling Coordinator is submitting Energy Bids or Ancillary Services Bids.

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	Extra-marginal IIE produced or consumed at the start or end of a Trading Hour outside the hourly schedule-change band and not attributed to Exceptional Dispatch. Residual Imbalance Energy is due to a Dispatch Instruction in the previous Trading Hour or a Dispatch Instruction in the next Trading Hour. Residual Imbalance Energy may overlap only with Day-Ahead Scheduled Energy. Residual Imbalance Energy does not apply to Non-Dynamic System Resources (including Resource-Specific System Resources). Residual Imbalance Energy is settled as bid, based on the Real-Time Energy Bid of the reference hour, as described in Section 11.5.5 and it is not included in BCR as described in Section 11.8.4. The reference hour is the previous Trading Hour, if Residual Imbalance Energy occurs at the start of a Trading Hour, or the next Trading Hour, if Residual Imbalance Energy occurs at the end of a Trading Hour.
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, Participating Loads, and Proxy Demand Resources are committed to meet the CAISO Forecast of CAISO Demand.
Resource Adequacy Capacity or RA Capacity	The supply 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 designated in a Supply Plan to provide Resource Adequacy Capacity. The criteria for determining the types of resources that are eligible to provide Qualifying Capacity may be established by the CPUC or other applicable Local Regulatory Authority and provided to the CAISO.
Resource ID	Identification characters assigned by the CAISO to Generating Units, Loads, Participating Loads, Proxy Demand Resources, System Units, System Resources, and Physical Scheduling Plants.
Resource Location	The Resource ID for a Generating Unit, Participating Load, Proxy Demand Resource, 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.

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 Pumping Bid Cost	Real-Time Market Pumping Bid Cost
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, Participating Load, or Proxy Demand Resource 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 11.2.2.1.
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.

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, End-User, or Proxy Demand Resource that is not a CAISO Metered Entity.
Scheduling Point	A location at which the CAISO Controlled Grid or a transmission facility owned by a Transmission Ownership Right holder 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.

STUC	Short-Term Unit Commitment
Study Plan	The plan to be developed pursuant to Section 24.2.1, which sets forth the technical studies to be performed during the annual Transmission Planning Process.
Sub-LAP	A CAISO defined subset of PNodes within a Default LAP.
Submission to Self-Provide an Ancillary Service	A submission to the CAISO containing all of the bidding requirements for an Ancillary Service with the exception of price information.
Sub-Region	A region identified by the CAISO for procurement of Ancillary Services within the System Region.
SUDC	Small Utility Distribution Company.
SUDC Operating Agreement	Small Utility Distribution Company Operating Agreement
Supervisory Control and Data Acquisition (SCADA)	A computer system that allows an electric system operator to remotely monitor and control elements of an electric system.
Supply	The Energy delivered from a Generating Unit, System Unit, Physical Scheduling Plant, System Resource, the Curtailable Demand provided by a Participating Load, or the Demand Response Services provided by a Proxy Demand Resource.
Supply Plan	A submission by a Scheduling Coordinator for a Resource Adequacy Resource in order to satisfy the requirements of Section 40.
System Emergency	Conditions beyond the normal control of the CAISO that affect the ability of the CAISO Balancing Authority Area to function normally, including any abnormal system condition which requires immediate manual or automatic action to prevent loss of Load, equipment damage, or tripping of system elements which might result in cascading Outages or to restore system operation to meet Applicable Reliability Criteria.

CAISO TARIFF APPENDIX B.14

Proxy Demand Resource Agreement

CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

AND

[DEMAND RESPONSE PROVIDER]

PROXY DEMAND RESOURCE AGREEMENT

PROXY DEMAND RESOURCE AGREEMENT (PDRA)

THIS AGREEMENT is dated this _____ day of _____, _____ and is entered into, by and between:

(1) **[Full legal name],** having its registered and principal place of business located at [legal address] (the ”Demand Response Provider”);

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 Demand Response Provider and the CAISO are hereinafter referred to as the “Parties”.

Whereas:

A. The CAISO Tariff provides that the CAISO shall only accept Bids for a Proxy Demand Resource from a Scheduling Coordinator.

B. The CAISO Tariff further provides that Demand Response Services may be provided by Demand Response Providers.

C. The Demand Response Provider desires to provide Demand Response Services from Proxy Demand Resources through a Scheduling Coordinator and represents to the CAISO that it will comply with the applicable provisions of the CAISO Tariff.

D. The Parties are entering into this Agreement in order to establish the terms and conditions on which the CAISO and the Demand Response Provider 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 DEMAND RESPONSE PROVIDER AND CAISO

2.1 CAISO Responsibility. The Parties acknowledge that the CAISO is responsible for the efficient use and reliable operation of the CAISO Controlled Grid consistent with achievement of planning and Operating Reserve criteria no less stringent than those established by the Western Electricity Coordinating Council and the North American Electric Reliability Corporation and further acknowledge that the CAISO may not be able to satisfy fully these responsibilities if the Demand Response Provider fails to fully comply with all of its obligations under this Agreement and the CAISO Tariff.

2.2 Scope of Application to Parties. The Demand Response Provider and CAISO acknowledge that to submit Bids for Proxy Demand Resources to the CAISO through a Scheduling Coordinator, the Demand Response Provider must register its Proxy Demand Resources in the CAISO's Demand Response System. The Demand Response Provider warrants that it owns, operates, or has sufficient contractual entitlement to provide Demand Response Services from the Proxy Demand Resources it represents in accordance with the CAISO Tariff.

ARTICLE III

TERM AND TERMINATION

3.1 Effective Date. This Agreement shall be effective as of the later of the date it is executed by the Parties or the date accepted for filing and made effective by FERC, if such FERC filing is required, and shall remain in full force and effect until terminated pursuant to Section 3.2 of this Agreement.

3.2 Termination

3.2.1 Termination by CAISO. Subject to Section 5.2, the CAISO may terminate this Agreement by giving written notice of termination in the event that the Demand Response Provider commits any material default under this Agreement and/or the CAISO Tariff which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given, to the Demand Response Provider, written notice of the default, unless excused by reason of Uncontrollable Forces in accordance with Article X of this Agreement; provided, however, that any outstanding financial right or obligation or any other obligation under the CAISO Tariff of the Demand Response Provider that has arisen while the Demand Response Provider was submitting Bids for Proxy Demand Resources, and any provision of this Agreement necessary to give effect to such right or obligation, shall survive until satisfied. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement was filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the filing of the notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within sixty (60) days after issuance of the notice of default; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if filed with FERC, or thirty (30) days after the date of the CAISO's notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

3.2.2 Termination by Demand Response Provider. In the event that the Demand Response Provider no longer wishes to submit Bids or transmit Energy over the CAISO Controlled Grid, it may terminate this Agreement, on giving the CAISO not less than ninety (90) days written notice, provided, however, that in accordance with Section 4.5, the Demand Response Provider may eliminate from the Demand Response System Proxy Demand Resources which it no longer provides for and such modification shall be effective upon receipt of notice by the CAISO; and provided further that any outstanding financial right or obligation or any other obligation under the CAISO Tariff of the Demand Response Provider that has arisen while the Demand Response Provider was submitting Bids for Proxy Demand Resources, and any provision of this Agreement necessary to give effect to such right or obligation, shall survive until satisfied. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the request to file a notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within thirty (30) days of receipt of such request; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if such notice is required to be filed with FERC, or upon ninety (90) days after the CAISO's receipt of the Demand Response Provider's notice of termination, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

ARTICLE IV

GENERAL TERMS AND CONDITIONS

4.1 Technical Characteristics. As required by Sections 8.3.4 and 8.4 of the CAISO Tariff, the Demand Response Provider shall provide the CAISO with all technical and operational information required for each Proxy Demand Resource that it owns, operates, or to which it has a contractual entitlement. For those Proxy Demand Resources designated by the Demand Response Provider as providing Demand Response Services, the Demand Response Provider shall indicate whether the Proxy Demand Resource can submit Bids as qualifying Ancillary Services. Pursuant to Sections 8.9 and 8.10 of the CAISO Tariff, the CAISO may verify, inspect and test the capacity and operating characteristics provided for Proxy Demand Resources. The CAISO will maintain the required technical and operational information, which has been verified by the appropriate Load Serving Entity and Utility Distribution Company, as appropriate.

4.2 Metering and Communication. Metering requirements for the submittal of Settlement Quality Meter Data for Scheduling Coordinator Metered Entities will be in accordance with Section 10.3 of the CAISO Tariff. Pursuant to Sections 8.4.5 and 8.4.6 of the CAISO Tariff, Demand Response Services that are scheduled or bid as qualifying Ancillary Services are required to comply with the CAISO's communication and metering requirements.

4.3 Demand Response Provider Requirements. The Demand Response Provider must register with the CAISO through the Demand Response System and comply with all terms of the CAISO Tariff and certify to the CAISO that its participation is authorized by the Local Regulatory Authority applicable to Demand Response Providers, and that it has satisfied all applicable rules and regulations of the Local Regulatory Authority. The Demand Response Provider must certify to the CAISO that any required bilateral agreements between the Demand Response Provider and the Load Servicing Entities or other agreements required by the Local Regulatory Authority are fully executed.

4.4 Notification of Changes. The Demand Response Provider shall notify the CAISO of any proposed change(s) to registration to technical information. The CAISO will update the Master File in accordance with Section 30.7.3.2 of the CAISO Tariff. Pursuant to Sections 8.9 and 8.10 of the CAISO Tariff, the CAISO may verify, inspect and test the capacity and operating characteristics of the revised information provided. Unless the Proxy Demand Resource fails to test at the values in the proposed change(s), the Demand Response Provider's proposed change(s) will become effective upon the effective date for the next scheduled update of the Master File, provided that the Demand Response Provider submits the changed information by the applicable deadline and is tested by the deadline. Subject to such notification, this Agreement shall not apply to any Proxy Demand Resources which the Demand Response Provider no longer owns, operates or to which it no longer has a contractual entitlement.

4.5 Agreement Subject to CAISO Tariff. The Parties will comply with all applicable provisions of the CAISO Tariff. This Agreement shall be subject to the CAISO Tariff, which shall be deemed to be incorporated herein.

4.6 Obligations Relating to Ancillary Services

4.6.1 Submission of Bids and Self-provided Schedules. When the Scheduling Coordinator on behalf of the Demand Response Provider submits a Bid, the Demand Response Provider will, by the operation of this Section 4.6.1, warrant to the CAISO that it has the capability to provide that service in accordance with the CAISO Tariff and that it will comply with CAISO Dispatch Instructions for the provision of the service in accordance with the CAISO Tariff.

4.6.2 Ancillary Service Certification. The Demand Response Provider shall not use a Scheduling Coordinator to submit a Bid for the provision of an Ancillary Service or submit a Submission to Self-Provide an Ancillary Service unless the Scheduling Coordinator serving that Demand Response Provider is in possession of a current Ancillary Service certificate pursuant to Sections 8.3.4 and 8.4 of the CAISO Tariff.

4.7 Obligations relating to Major Incidents. The Demand Response Provider shall promptly provide such information as the CAISO may reasonably require in relation to the CAISO's investigations of operating situations or events, or for the CAISO's reporting to the authorities such as the FERC, California Public Utilities Commission, Western Electricity Coordinating Council, or North American Electric Reliability Corporation.

ARTICLE V

PENALTIES AND SANCTIONS

5.1 Penalties. If the Demand Response Provider fails to comply with any provisions of this Agreement, the CAISO shall be entitled to impose penalties and sanctions on the Demand Response Provider, including the penalties set forth in Sections 8.9.7 and 8.10.7 of the CAISO Tariff. No penalties or sanctions may be imposed under this Agreement unless a Schedule or CAISO Tariff provision providing for such penalties or sanctions has first been filed with and made effective by FERC. Nothing in this Agreement, with the exception of the provisions relating to the CAISO ADR Procedures, shall be construed as waiving the rights of the Demand Response Provider to oppose or protest any penalty proposed by the CAISO to the FERC or the specific imposition by the CAISO of any FERC-approved penalty on the Demand Response Provider.

5.2 Corrective Measures. If the Demand Response Provider fails to meet or maintain the requirements set forth in this Agreement and/or the CAISO Tariff, the CAISO shall be permitted to take any of the measures, contained or referenced in the CAISO Tariff, which the CAISO deems to be necessary to correct the situation.

ARTICLE VI

COSTS

6.1 Operating and Maintenance Costs. The Demand Response Provider shall be responsible for all its costs incurred in meeting its obligations under this Agreement for the Proxy Demand Resources identified in the Demand Response System.

ARTICLE VII

DISPUTE RESOLUTION

7.1 Dispute Resolution. The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that any reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to the Demand Response Provider and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE VIII

REPRESENTATIONS AND WARRANTIES

8.1 Authorization to Enter Into Agreement. Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.

8.2 Necessary Approvals as to Proxy Demand Resources. The Demand Response Provider represents that all necessary leases, approvals, permits, licenses, easements, rights of way or access to install, own and/or operate the Proxy Demand Resources for which it will Bid or otherwise act under this Agreement have been obtained by the Demand Response Provider prior to submitting technical information.

8.3 Local Regulatory Authority. The Demand Response Provider represents and warrants that, with respect to any and all Proxy Demand Resources for which it shall submit Bids or otherwise act under this Agreement, the applicable Local Regulatory Authority which regulates the Proxy Demand Resources does not prohibit the participation by the Proxy Demand Resource as contemplated in this Agreement or in the CAISO Tariff.

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 Demand Response Provider 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 Demand Response Provider and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE XI

MISCELLANEOUS

11.1 Assignments. Either Party may assign or transfer any or all of its rights and/or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff. Such consent shall not be unreasonably withheld. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest was an original Party to this Agreement.

11.2 Notices. Any notice, demand, or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff, provided that all references in Section 22.4 of the CAISO Tariff to Market Participants shall be read as a reference to the Demand Response Provider and references to the CAISO Tariff shall be read as references to this Agreement, and unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 2. A Party must update the information in Schedule 2 of this Agreement as information changes. Such changes shall not constitute an amendment to this Agreement.

11.3 Waivers. Any waiver at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.

11.4 Governing Law and Forum. This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in accordance with, the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement to which the CAISO ADR Procedures do not apply, shall be brought in any of the following forums, as appropriate: any court of the State of California, any federal court of the United States of America located in the State of California, or, where subject to its jurisdiction, before the Federal Energy Regulatory Commission.

11.5 Consistency with Federal Laws and Regulations. This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.

11.6 Merger. This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.

11.7 Severability. If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.

11.8 Amendments. This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. Nothing herein shall be construed as affecting in any way the right of the CAISO to make unilateral application to FERC for a change in the rates, terms and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder, and the Demand Response Provider shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to Section 206 or any other applicable provision of the FPA and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein. The standard of review FERC 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 FERC shall apply when acting upon proposed modifications to this Agreement by FERC'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 FERC review.

11.9 Counterparts. This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date hereinabove written.

California Independent System Operator Corporation

By: _____

Name: _____

Title: _____

Date: _____

Demand Response Provider

By: _____

Name: _____

Title: _____

Date: _____

SCHEDULE 1

CAISO IMPOSED PENALTIES AND SANCTIONS

[Section 5.1]

TO BE INSERTED UPON FERC APPROVAL

SCHEDULE 2

NOTICES

(Section 11.2)

Demand Response Provider

Name of Primary Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

Name of Alternative Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

CAISO

Name of Primary Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

Name of Alternative Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

PART C

CERTIFICATION FOR NON-SPINNING RESERVE

C 1 An Ancillary Service Provider wishing to provide Non-Spinning Reserve as an Ancillary Service from a Generating Unit or System Resource whether pursuant to the CAISO's auction or as part of a self-provision arrangement must meet the following requirements in order to be certified by the CAISO to provide Non-Spinning Reserve service:

C 1.1 the rated capacity of the Generating Unit or System Resource must be 1 MW or greater unless the Generating Unit is participating in an aggregation arrangement approved by the CAISO;

C 1.2 the Generating Unit must be able to increase output as soon as possible to the value indicated in a Dispatch Instruction, reaching the indicated value within ten minutes after issue of the instruction and be capable of maintaining output for 2 hours.

C 2 An Ancillary Service Provider wishing to provide Non-Spinning Reserve as an Ancillary Service from Curtailable Demand or Demand Response Services whether pursuant to a CAISO award or as part of a self-provision arrangement must meet the following requirements in order to be certified by the CAISO to provide Non-Spinning Reserve service:

C 2.1 the operator must be able to completely disconnect the required Load or provide the adjustment requested by the CAISO through the Proxy Demand Resource pursuant to a Dispatch Instruction within ten minutes after issue of the instruction;

C 2.2 the minimum change in the electrical consumption of the Load must be at least 1 MW (for a Generating Unit or a Proxy Demand Resource); and

C 2.3 the Load or Proxy Demand Resource must be capable of being interrupted for at least two hours.

C 3 An Ancillary Service Provider wishing to provide Non-Spinning Reserve as an Ancillary Service, whether pursuant to a CAISO award or as part of a self-provision arrangement, must also meet the following requirements in order to be certified by the CAISO to provide Non-Spinning Reserve service:

C 3.1 the operator of the Generating Unit, System Resource, the Curtailable Demand, or the Demand Response Services must have a means of receiving a Dispatch Instruction to initiate an increase in real power output or a reduction in Demand (MW) within one minute of the CAISO Control Center's determination that Non-Spinning Reserve capacity must be dispatched; and

C 3.2 the communication system and the Generating Unit, System Resource, Load, or Proxy Demand Resource must pass a qualification test to demonstrate the overall ability to meet the performance requirements of the ASRP for Non-Spinning Reserve.

C 4 An Ancillary Service Provider wishing to be considered for certification for Non-Spinning Reserve service must make a written request to the CAISO, giving details of the technical capability of the Generating Unit, System Resource, Load, or Proxy Demand Resource concerned and identifying the Scheduling Coordinator through whom the Ancillary Service Provider intends to offer Non-Spinning Reserve. The Ancillary Service Provider shall at the same time send a copy of the request to that Scheduling Coordinator. Technical review request forms will be available from the CAISO.

C 13 When it is satisfied that its plant, equipment and communication systems meet the CAISO's requirements, the Ancillary Service Provider shall request in writing that the CAISO conduct a certification test with a suggested primary date and time and at least two alternative dates and times. The CAISO shall, within two Business Days of receipt of the Ancillary Service Provider's request, accept a proposed time if possible or suggest at least three alternatives. If the CAISO responds by suggesting alternatives, the Ancillary Service Provider shall, within two Business Days of receipt of the CAISO's response, respond in turn by accepting a proposed alternative if possible or suggesting at least three alternatives, and this procedure shall continue until agreement is reached on the date and time of the test. The Ancillary Service Provider shall inform its Scheduling Coordinator of the agreed date and time of the test.

C 14 Testing shall be performed under the direction of the CAISO. Such tests shall include, but not be limited to, the following:

C 14.1 confirmation of control communication path performance;

C 14.2 confirmation of primary and secondary voice circuits for receipt of Dispatch Instructions;

C 14.3 confirmation of the Generating Unit, System Resource, Load, or Proxy Demand Resource control performance; and

C 14.4 confirmation of the range of Generating Unit, System Resource, or Proxy Demand Resource control to include changing the output over the range of Non-Spinning Reserve proposed.

C 15 Upon successful completion of the test, the CAISO shall certify the Generating Unit, System Resource, Load, or Proxy Demand Resource as being permitted to provide Non-Spinning Reserve as an Ancillary Service and shall provide a copy of the certificate to the Scheduling Coordinator at the same time. The CAISO shall change its data base to reflect the permission for the Generating Unit, Participating Load, or Proxy Demand Resource to provide Non-Spinning Reserve service.

C 16 The Scheduling Coordinator may bid Non-Spinning Reserve service from the certified Generating Unit, Participating Load, or Proxy Demand Resource into the CAISO Markets starting with the Day-Ahead Market for the hour ending 0100 on the second Trading Day after the CAISO issues the certificate.

C 17 The certification to provide Non-Spinning Reserve shall remain in force until withdrawn by the Scheduling Coordinator or the Ancillary Service Provider by written notice to the CAISO to take effect at the time notified in the notice, which must be the end of a Trading Day.

C 18 The certification may be revoked by the CAISO only under provisions of the CAISO Tariff.

Attachment B - Blacklines

Proxy Demand Resource Amendment

Fourth Replacement CAISO Tariff

February 16, 2010

* * *

4.2 Market Participant Responsibilities.

4.2.1 Comply with Dispatch Instructions and Operating Orders Issued.

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

* * *

4.5.1.1.3 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. Nothing in this Section 4.5.1.1.3 shall prohibit one Scheduling Coordinator from registering with the CAISO to submit Bids for Demand Response Services from a Proxy Demand Resource associated with a given meter (or Meter Point) where a different Scheduling Coordinator is registered for purposes of serving the demand of the Load associated with that meter (or Meter Point).

* * *

4.9.8 Ancillary Services Obligations for MSS.

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

* * *

4.9.12 MSS System Unit.

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

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

4.9.12.2.1 is required to have a direct communication link to the CAISO's EMS satisfying the requirements applicable to Generating Units owned by Participating Generators,or Participating Loads or

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

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

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

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

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

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

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

*** * ***

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

MSS Operators must make an election or choice on four (4) issues that govern the manner in which the MSS participates in the CAISO Markets. The MSS Operator must choose either: (i) net Settlements or gross Settlements, (ii) to Load follow or not Load follow with its generating resources, (iii) to have its Load participate in the RUC procurement process or not have its Load participate in the RUC procurement process; and (iv) whether or not to charge the CAISO for their Emissions Costs as provided in Section

11.7.4. The MSS Operator shall make annual elections regarding these four (4) sets of options pursuant to the timeline specified for such elections in the Business Practice Manuals.

The default for the first twelve (12) 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 or Proxy Demand Resources within the MSS. An MSS Operator also may purchase Ancillary Services from CAISO or third parties to meet its Ancillary Service Obligations under the CAISO Tariff.

* * *

4.13 Demand Response Providers and Proxy Demand Resources

4.13.1 Relationship Between CAISO and DRPs

The CAISO shall only accept Bids for Energy or Ancillary Services, Submissions to Self-Provide Ancillary Services from Proxy Demand Resources, or Submissions of Energy Self-Schedules from Proxy Demand Resources that have provided Submissions to Self-Provide Ancillary Services, if such Proxy Demand Resources are represented by a Demand Response Provider that has entered into a Proxy Demand Resource Agreement with the CAISO, has accurately provided the information required in the Demand Response System, has satisfied all Proxy Demand Resource registration requirements, and has met standards adopted by the CAISO and published on the CAISO Website. The CAISO shall not accept submitted Bids for Energy or Ancillary Services from a Demand Response Provider other than through a

Scheduling Coordinator, which Scheduling Coordinator may be the Demand Response Provider itself or another entity.

4.13.2 Applicable Requirements for PDRs and DRPs

A single Demand Response Provider must represent each Proxy Demand Resource and may represent more than one (1) Proxy Demand Resource. Each Proxy Demand Resource that is not within a MSS must be associated with a single Load Serving Entity and a single Utility Distribution Company, and each Proxy Demand Resource that is within a MSS must be associated with a single Load Serving Entity. A Demand Response Provider may be, but is not required to be, a Load Serving Entity or a Utility Distribution Company. Each Proxy Demand Resource is required to be located in a single Sub-LAP. All underlying Locations of a Proxy Demand Resource must be located in a single Sub-LAP. The Meter Data for each Proxy Demand Resource will be metered Load data. Each Demand Response Provider is required to satisfy registration requirements and to provide information to allow the CAISO to establish Customer Baselines in accordance with the applicable Business Practice Manuals. Registration of a Location for participation in Proxy Demand Resources requires the approval of the underlying Loads' Load Serving Entity and/or Utility Distribution Company. Disputes regarding the rejections of a registration of a Location shall be undertaken with the applicable Local Regulatory Authority and shall not be arbitrated or in any way resolved through a CAISO dispute resolution mechanism or process.

4.13.3 Identification of Proxy Demand Resources

Each Demand Response Provider shall provide data, as described in the Business Practice Manual, identifying each of its Proxy Demand Resources and such information regarding the capacity and the operating characteristics of the Proxy Demand Resource as may be reasonably requested from time to time by the CAISO. All information provided to the CAISO regarding the operational and technical constraints in the Master File shall be accurate and actually based on physical characteristics of the resources.

4.13.4 Suspension of Market Participation for a PDR

In the event that the CAISO determines through evaluation of the proof of performance described in Section 11.6.2 or its own analysis that a Bid for Energy from a Proxy Demand Resource (i) does not represent a actual adjustment of the Proxy Demand Resource taken in response to a Dispatch Instruction and (ii) has resulted or will result in a payment for Demand Response Services not actually provided by the Proxy Demand Resource, the CAISO may immediately suspend the ability of the Proxy Demand Resource to provide Demand Response Services by sending written notification of the suspension to the Scheduling Coordinator for the Demand Response Provider representing the Proxy Demand Resource. Within two Business Days of the notice of suspension, the CAISO will provide the Scheduling Coordinator and Demand Response Provider representing the affected Proxy Demand Resource with the information justifying the decision to suspend. The CAISO and the affected Scheduling Coordinator and Demand Response Provider will confer and exchange information in an effort to resolve any dispute as to whether

suspension is warranted. The CAISO will submit supporting documentation, including any information provided to the affected Scheduling Coordinator and the Demand Response Provider to FERC within ten (10) Business Days after any suspension unless the CAISO concludes that suspension is not warranted. The CAISO will provide the affected Scheduling Coordinator and the Demand Response Provider with a copy of any documentation submitted to FERC. The suspension will remain in effect for ninety (90) days after the CAISO submits its initial filing of supporting documentation to FERC, unless FERC directs otherwise or the CAISO determines that the suspension should continue for fewer than ninety (90) days. After the ninety (90) day period expires, the suspension will remain in effect only if FERC requires it to remain in effect.

* * *

6.3 Communication of Dispatch Instructions~~.~~

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

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

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

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

* * *

7.1.3 CAISO Control Center Authorities~~.~~

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

(a) direct the physical operation by the Participating TOs of transmission facilities under the Operational Control of the CAISO, including (without limitation) circuit breakers, switches, voltage control equipment, protective relays, metering, and Load Shedding equipment;

(b) commit and dispatch Reliability Must-Run Units, except that the CAISO shall only commit Reliability Must-Run Generation for Ancillary Services capacity according to Section 41;

(c) order a change in operating status of auxiliary equipment required to control voltage or frequency;

(d) take any action it considers to be necessary consistent with Good Utility Practice to protect against uncontrolled losses of Load or Generation and/or equipment damage resulting from unforeseen occurrences;

(e) control the output of Generating Units, Interconnection schedules, and System Resources that are selected to provide Ancillary Services or Energy;

(f) Dispatch Curtailable Demand and Demand Response Services which haves been scheduled to provide Non-Spinning Reserve or Energy from Participating Loads or Proxy Demand Resources;

(g) procure Energy for a threatened or imminent System Emergency;

(h) require the operation of resources which are at the CAISO's disposal in a System Emergency, as described in Section 7.7;

(i) exercise Operational Control of all transmission lines greater than 230kV and associated equipment on the CAISO Controlled Grid;

(j) exercise Operation Control of all Interconnections; and

(k) exercise Operational Control of all 230kV and lower voltage transmission lines and associated station equipment identified in the CAISO Register as that portion of the CAISO Controlled Grid.

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

* * *

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 NERC and WECC reliability standards, including any requirements of the NRC. 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 and the RTM consistent with Section 8.3. The provision of Ancillary Services from the Interties with interconnected Balancing Authority Areas is limited to Ancillary Services bid into the competitive procurement processes in the IFM and RTM. The CAISO will not accept Submissions to Self-Provide Ancillary Services that are imports to the CAISO Balancing Authority Area over the Interties with interconnected Balancing Authority Areas, except from Dynamic System Resources certified to provide Ancillary Services or if provided pursuant to ETCs, TORs or Converted Rights. The CAISO will calculate payments for Ancillary Services supplied by Scheduling Coordinators and charge the cost of Ancillary Services to Scheduling Coordinators based on their Ancillary Service Obligations.

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

These services will be procured as stated in Section 8.3.5. Bids for Non-Spinning Reserve may be submitted by Scheduling Coordinators for Curtailable Demand and Demand Response Services as well as for Generation. Bids for Regulation, Spinning Reserve, Non-Spinning Reserve, and Voltage Support may

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

* * *

8.3.1 Procurement of Ancillary Services.

The CAISO shall operate competitive Day-Ahead and Real-Time Markets to procure Ancillary Services. The Security Constrained Unit Commitment (SCUC) and Security Constrained Economic Dispatch (SCED) applications used in the Integrated Forward Market (IFM) and the Real-Time Market (RTM) shall calculate optimal resource commitment, Energy, and Ancillary Services Awards and Schedules at least cost to End-Use Customers consistent with maintaining System Reliability. Any Scheduling Coordinator representing Generating Units, System Units, Participating Loads, Proxy Demand Resources, or imports of System Resources may submit Bids into the CAISO's Ancillary Services markets provided that it is in possession of a current certificate for the Generating Units, System Units, imports of System Resources, ~~or~~Participating Loads, or Proxy Demand Resources concerned. Regulation Up, Regulation Down, and Operating Reserves necessary to meet CAISO requirements not met by self-provision will be procured by the CAISO as described in this CAISO Tariff. The amount of Ancillary Services procured in the IFM and in the Real-Time Market is based upon the CAISO Forecast of CAISO Demand plus HASP Intertie Schedule for the Operating Hour net of (i) Self-Provided Ancillary Services from Generating Units internal to the CAISO Balancing Authority Area and Dynamic System Resources certified to provide Ancillary Services and (ii) Ancillary Services self-provided pursuant to an ETC, TOR or Converted Right. The CAISO will manage both CAISO procured and Self-Provided Ancillary Services as part of the Real-Time Dispatch. In the Day-Ahead Market, the CAISO procures one-hundred percent (100%) of its Ancillary Service requirements

based on the Day-Ahead Demand Forecast net of Self-Provided Ancillary Services. After the Day-Ahead Market, the CAISO procures additional Ancillary Services needed to meet system requirements from all resources, including imports from System Resources and Generation from internal resources in the Real-Time Market. The amount of Ancillary Services procured in the Real-Time Market is based upon the CAISO Forecast of CAISO Demand for the RTUC Time Horizon net of Self-Provided Ancillary Services.

The CAISO procurement of Ancillary Services for the Real-Time Market is for a fifteen (15) minute RTUC Time Horizon. The CAISO's procurement of Ancillary Services from imports or System Resources in the Real-Time Market is based on the Ancillary Service Bids submitted in the HASP.

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

* * *

8.3.4 Certification and Testing Requirements.

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

Resources that submit Bids to provide Non-Spinning Reserve from imports, or System Units, which have been certified and tested by the CAISO using the process defined in Part C of Appendix K. Voltage Support may only be provided from resources including Participating 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.

* * *

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

Scheduling Coordinators may submit Bids or Submissions to Self-Provide an Ancillary Service consistent with the rules specified in Section 30 and any further requirements in this Section 8.3.7. Scheduling Coordinators may (i) submit Bids or Submissions to Self-Provide an Ancillary Service from resources located within the CAISO Balancing Authority Area or Dynamic System Resources certified to provide Ancillary Services, (ii) submit Submissions to Self-Provide an Ancillary Service from resources located outside the CAISO Balancing Authority Area if provided pursuant to ETCs, TORs, or Converted Rights, (iii) submit Bids for Ancillary Services from resources located outside the CAISO Balancing Authority Area, or (iv) specify Inter-SC Trades of Ancillary Services. Ancillary Services in the Day-Ahead Market 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, Proxy Demand Resource, 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 30.7.7. There is no ability to procure Ancillary Services for export. To the extent a Scheduling Coordinator has an on-demand obligation

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

* * *

8.4 Technical Requirements for Providing Ancillary Services.

All Generating Units, System Units, Participating Loads, Proxy Demand Resources, 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, Proxy Demand Resource, or System Resource, or to provide a Submission to Self-Provide an Ancillary Service from a Generating Unit, System Unit, Participating Load, Proxy Demand Resource, 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, Proxy Demand Resource, 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, Proxy Demand Resources, 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, Proxy Demand Resource, or System Resource concerned.

8.4.1 Operating Characteristics Required to Provide Ancillary Services.

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

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

(a) Ramp Rate increase and decrease (MW/minute);

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

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

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

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

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

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

* * *

8.4.5 Communication Equipment.

Unless otherwise authorized by the CAISO, all Scheduling Coordinators wishing to submit an Ancillary Service Bid must have the capability to submit to and receive information from the CAISO's secure communication system. In addition, they must be capable of receiving Dispatch Instructions electronically and they must provide the CAISO with a telephone number, or fax number through which Dispatch Instructions for each Generating Unit, System Unit, Participating Load, Proxy Demand Resource, and System Resource may be given if necessary. The CAISO will determine which method of communication is appropriate; provided that the CAISO will consult with the Scheduling Coordinator, if time permits, and will consider the method of communication then utilized by such Scheduling Coordinator; provided further, that the CAISO shall make the final determination as to the additional communication methods. Participating Generators, owners or operators of Participating Loads, and operators of System Units or System Resources whose resources are scheduled, bid in or under contract, shall ensure that there is a twenty-four (24) hour personal point of contact with the CAISO for the Generating Unit, System Unit, Participating Load

or System Resource. Scheduling Coordinators representing Proxy Demand Resources that are scheduled, bid in or under contract shall ensure that there is a twenty-four (24) hour personal point of contact with the CAISO for the Proxy Demand Resource. A Participating Generator, or provider of Curtailable Demand wishing to offer any Ancillary Service must provide a direct ring down voice communications circuit (or a dedicated telephone line available twenty-four (24) hours a day every day of the year) between the control room operator for the Generating Unit or Curtailable Demand providing the Ancillary Service and the CAISO Control Center. Each Participating Generator must also provide an alternate method of voice communications with the CAISO from the control room in addition to the direct communication link required above. Operators of Dynamic System Resources from which Dynamic Schedules or Bids are submitted to the CAISO shall provide communications links meeting CAISO standards for dynamic imports from System Resources. Participating Generators and operators of System Units providing Regulation shall also provide communication links meeting CAISO standards for direct digital control. Operators of System Resources providing Regulation shall provide communications links meeting CAISO standards for imports of Regulation. If any communication system becomes unavailable, the relevant Participating Generators, operators of System Units, Participating Loads, Proxy Demand Resources, and System Resources and the CAISO shall take immediate action to identify the cause of the interruption and to restore the communication system. A Scheduling Coordinator that has provided a Submission to Self-Provide an Ancillary Service, or has submitted a Bid to provide or contracted for Ancillary Services, shall ensure that the Generating Unit, System Unit, Participating Load, Proxy Demand Resource, or System Resource concerned is able to receive and implement Dispatch Instructions.

8.4.6 Metering Infrastructure.

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

(a) meter type;

(b) meter location;

(c) meter reading responsibility;

(d) meter capability in regard to AGC response; and

(e) any other aspect of metering infrastructure required by the CAISO under this CAISO Tariff.

* * *

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

Availability of contracted and Self-Provided Ancillary Services and RUC Capacity shall be verified by the CAISO by unannounced testing of Generating Units, Participating Loads, Proxy Demand Resources, and System Resources, by auditing of response to CAISO Dispatch Instructions, and by analysis of the appropriate Meter Data, or Interchange Schedules. The CAISO may test the capability of any Generating Unit, System Unit, System Resource, external import of a System Resource, Participating Load, Proxy Demand Resource, or reactive device providing Ancillary Services or RUC Capacity. Participating Generators, owners or operators of Participating Loads, Scheduling Coordinators representing owners or operators of Proxy Demand Resources, operators of System Units or System Resources, owners or operators of reactive devices and Scheduling Coordinators shall notify the CAISO immediately whenever they become aware that an Ancillary Service or RUC Capacity is not available in any way. All Participating Generators, owners or operators of Participating Loads, Demand Response Providers, operators of System Units or System Resources and owners or operators of reactive devices shall check, monitor and/or test their system and related equipment routinely to assure availability of the committed Ancillary Services and RUC Capacity. These requirements apply to Ancillary Services whether the Ancillary Services are contracted or self-provided. For a duration specified by the CAISO, the CAISO may suspend the technical eligibility certificate of a Scheduling Coordinator for a Generating Unit, System Unit, Participating Load, Proxy Demand Resource, or System Resource, which repeatedly fails to perform. The CAISO shall develop measures to discourage repeated non-performance on the part of both bidders and self-providers. In addition, a Proxy Demand Resource that does not reduce Demand to demonstrate the availability of Non-Spinning Reserve in accordance with the submitted Bid may be subject to rescission of payment pursuant to Section 11.6.2 and/or suspension of market participation pursuant to Section 4.13.4.

* * *

8.9.3.1 Compliance Testing: ~~of a Generating Unit, System~~ Unit or ~~System~~ Resources~~.~~

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

8.9.3.2 Compliance Testing of ~~Curtailable Demand~~ Loads as Resources~~.~~

The CAISO may test the Non-Spinning Reserve capability of a resource~~Load~~ providing Curtailable Demand or Proxy Demand Resource providing Demand Response Services by issuing unannounced Dispatch Instructions requiring the operator of the Participating Load or Demand Response Provider to report the Curtailable Demand of that Participating Load or Demand Response Services of that Proxy Demand Resource actually being served by the operator at the time of the instruction. No Participating Load or Proxy Demand Resource will be disconnected as part of the test conducted pursuant to this Section 8.9.3.2.

* * *

8.9.7 Consequences of Failure to Pass Compliance Testing~~.~~

8.9.7.1 Notification of Compliance Testing Results~~.~~

If a Generating Unit, Participating Load, Proxy Demand Resource, or System Resource fails a compliance test, the CAISO shall notify the Scheduling Coordinator whose resource was the subject of the test and the provider or owner or operator of the Generating Unit, Participating Load, Proxy Demand Resource, or System Resource providing Ancillary Services or RUC Capacity of such failure by any means as soon as reasonably practicable after the completion of the test. In addition, regardless of the outcome of the test, the CAISO shall provide the Scheduling Coordinator whose resource was subject to a compliance test written notice of the results of such test. The CAISO shall at the same time send a copy of the notice to the

provider or owner or operator of the Generating Unit, Participating Load, Proxy Demand Resource, or System Resource providing Ancillary Services or RUC Capacity. For any Resource Adequacy Resource failing a compliance test, the CAISO also will provide notification of the failure to the California Public Utilities Commission, Local Regulatory Authority, or federal agency with jurisdiction over the Load Serving Entity that listed the Resource Adequacy Resource on its Resource Adequacy Plan, and FERC.

* * *

8.9.11 Performance Audit for Non-Spinning Reserve.

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

* * *

8.9.14 Performance Audit for RUC Capacity.

The CAISO will audit the performance of a Generating Unit, Participating Load, Proxy Demand Resource, or System Resource providing RUC Capacity by auditing its response to Dispatch Instructions, and by

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

* * *

8.10 Periodic Testing of Units.

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

* * *

8.10.3 Non-Spinning Reserve.

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

* * *

8.10.6 RUC Capacity.

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

8.10.7 Penalties for Failure to Pass Tests.

A Generating Unit, Participating Load, Proxy Demand Resource, System Unit or System Resource that fails an availability test, as determined under criteria to be established by the CAISO, shall be deemed not to have been available to provide the RUC Capacity or Ancillary Service concerned or the relevant portion of that service for the entire period the Generating Unit, Participating Load, Proxy Demand Resource, System Unit or System Resource was committed to provide the service, unless appropriate documentation (i.e., daily test records) confirming the availability of that service during the committed period(s) is presented to

the CAISO. The "committed period" is defined as the total of all the hours/days the Generating Unit, Participating Load, Proxy Demand Resource, System Unit or System Resource was scheduled by the CAISO to provide the RUC Capacity or Ancillary Service beginning from: (i) the last successful availability test; or (ii) the last time the Generating Unit, Participating Load, Proxy Demand Resource, System Unit or System Resource actually provided Energy or reduced Demand to provide RUC Capacity or provided Energy or reduced Demand as part of the Ancillary Service; whichever results in a shorter committed period. The Scheduling Coordinator for a Generating Unit, Participating Load, Proxy Demand Resource, System Unit or System Resource that fails an availability test shall not be entitled to a RUC Availability Payment or payment for the Ancillary Service concerned for the committed period and adjustments to reflect this shall be made in the calculation of payments to the Scheduling Coordinator, provided that any such penalty shall be reduced to reflect any adjustment made over the duration of the committed period under Section 8.10.8 or Section 31.5.7.

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

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

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

If Ancillary Services capacity that receives an AS Award or Self-Provided Ancillary Services capacity provided from a Generating Unit, Participating Load, Proxy Demand Resource, 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, Proxy Demand Resource, 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, Proxy Demand Resource, 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, Proxy Demand Resource, 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 in the Day-Ahead Market are required to electronically tag (E-Tag as prescribed by the WECC) the Ancillary Services capacity. If the amounts of Ancillary Services capacity in an electronic tag differ from the amounts of Ancillary Services capacity for the System Resource, the Undispatchable Capacity will equal the amount of the difference, and will be settled in accordance with the provisions of Section 11.10.9.1.

8.10.8.2 Rescission of Payments for Unavailable Ancillary Service Capacity.

If the CAISO determines that a Scheduling Coordinator has supplied Uninstructed Imbalance Energy to the CAISO during a Settlement Interval from the capacity of a Generating Unit, Participating Load, Proxy Demand Resource, 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, Proxy Demand Resource, 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.

* * *

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. Each Scheduling Coordinator for a Demand Response Provider shall aggregate the Settlement Quality Meter Data of the underlying Proxy Demand Resource to the level of the registration configuration of the Proxy Demand Resource in the Demand Response System. 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.

* * *

10.3.6.1 Timing of Settlement Quality Meter Data Submission for Calculation of Initial Settlement Statement T+7B.

Scheduling Coordinators must submit Actual Settlement Quality Meter Data or Scheduling Coordinator Estimated Settlement Quality Meter Data for the Scheduling Coordinator Metered Entities they represent to the CAISO no later than noon on the fifth Business Day after the Trading Day (T+5B) for the Initial Settlement Statement T+7B calculation. Scheduling Coordinators cannot submit Estimated Settlement Quality Meter Data for Proxy Demand Resources.

(a) In the absence of Actual Settlement Quality Meter Data, Scheduling Coordinators may submit Scheduling Coordinator Estimated Settlement Quality Meter Data using interval

metering when available, sound estimation practices, and other available information including, but not limited to, bids, schedules, forecasts, temperature data, operating logs, recorders, and historical data. Scheduling Coordinator Estimated Settlement Quality Meter Data must be a good faith estimate that reasonably represents Demand and/or Generation quantities for each Settlement Period.

(b) When Actual Settlement Quality Meter Data or Scheduling Coordinator Estimated Settlement Quality Meter Data is not received by the CAISO for a Scheduling Coordinator Metered Entity within five (5) Business Days from the Trading Day (T+5B), the CAISO will estimate the entity's Settlement Quality Meter Data for any outstanding metered Demand and/or Generation, excluding a Proxy Demand Resource, for use in the Initial Settlement Statement T+7B calculation, as provided in Section 11.1.5.

* * *

11.1.5 Settlement Quality Meter Data for Initial Settlement Statement T+7B Calculation.

The CAISO's Initial Settlement Statement T+7B shall be based on the Settlement Quality Meter Data (actual or Scheduling Coordinator estimated) received in SQMDS. In the event Actual Settlement Quality Meter Data or Scheduling Coordinator Estimated Settlement Quality Meter Data is not received from a Scheduling Coordinator or CAISO Metered Entity, the CAISO will estimate Settlement Quality Meter Data for that outstanding metered Demand or Generation, excluding a Proxy Demand Resource, for the Initial Settlement Statement T+7B calculation.

(a) CAISO Estimated Settlement Quality Meter Data for metered Generation will be based on total Expected Energy and dispatch of that resource as calculated in the Real-Time Market and as modified by any applicable corrections to the Dispatch Operating Point for the resource.

(b) CAISO Estimated Settlement Quality Meter Data for metered Demand will be based on Scheduled Demand by the appropriate LAP. This value will be increased by fifteen percent (15%) if the total actual system Demand in Real Time, as determined by the CAISO each hour, is greater than the total estimated metered demand by more than fifteen percent (15%). Total estimated metered demand is the sum of the value of Scheduling Coordinator

submitted metered Demand, CAISO polled estimated Settlement quality metered Demand, and Scheduled Demand for unsubmitted metered Demand at the fifth (5) Business Day after the Trading Day (T+5B). CAISO Estimated Settlement Quantity Meter Demand for Participating Load will not be increased by fifteen percent (15%).

(c) CAISO will not estimate Settlement Quality Meter Data for Proxy Demand Resources.

* * *

11.2.1.1 IFM Payments For Supply of Energy.

For each Settlement Period for which the CAISO clears Energy transactions in the IFM, the CAISO shall pay the relevant Scheduling Coordinator for the MWh quantity of Supply of Energy from all Generating Units, Participating Loads, Proxy Demand Resources, and System Resources in an amount equal to the IFM LMP at the applicable PNode multiplied by the MWh quantity specified in the Day-Ahead Schedule for Supply (which consists of the Day-Ahead Scheduled Energy).

*** * ***

11.2.2.2.1 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, Proxy Demand Resource, 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, Proxy Demand Resource, 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.

* * *

11.5.2 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 or as described in Section 11.2.5.4. For Generating Units, System Units of MSS Operators that have elected gross Settlement, Physical Scheduling Plants, System Resources and all Participating Load and Proxy Demand Resources, 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.

* * *

11.5.2.4 Adjustment to Metered Load to Settle UIE

For the purpose of settling Uninstructed Imbalance Energy of a Scheduling Coordinator representing a Load Serving Entity, the amount of PDR Energy Measurement delivered by a Proxy Demand Resource that is also served by that Load Serving Entity will be added to the metered load quantity of the Load Serving Entity's Scheduling Coordinator's Load Resource ID with which the Proxy Demand Resource is associated.

* * *

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, and Proxy Demand Resources for Settlement of Imbalance Energy. The Dispatch Interval LMP will be calculated at each PNode associated with such resource irrespective of whether the resource at that PNode has received Dispatch Instructions. The Dispatch Interval LMPs are then used to calculate a Resource-Specific Settlement Interval LMP and a Resource Specific Tier 1 UIE Settlement Interval Price for each Generating Unit, System Unit or MSS Operator that has elected gross Settlement, Physical Scheduling Plant, Dynamic System Resource, and Participating Load, and Proxy Demand Resource 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.

* * *

11.6 [NOT USED] Settlement of Transactions Involving Proxy Demand Resources

11.6.1 Settlement of Energy Transactions Involving PDR

Settlements for Energy provided by Demand Response Providers from Proxy Demand Resources shall be based on the PDR Energy Measurement for the Proxy Demand Resources.

11.6.2 Rescission of Payment for Proxy Demand Resources

All Bids for Energy from Proxy Demand Resources are required to represent actual adjustments of the Proxy Demand Resources taken in response to a Dispatch Instruction. If requested by the CAISO, a Demand Response Provider shall provide to the CAISO data to support proof of performance for a Proxy Demand Resource dispatched by the CAISO. In the event that the CAISO determines, through evaluation of the proof of performance provided by the Demand Response Provider or the CAISO's own analysis, that a Bid for Energy from the Proxy Demand Resource dispatched by the CAISO: (i) does not represent an actual adjustment of the Proxy Demand Resource taken in response to a Dispatch Instruction and (ii) has resulted or will result in a payment for Demand Response Services not actually provided by the Proxy Demand Resource, the CAISO may rescind such payment.

* * *

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 or a Proxy Demand Resource, 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 SCADA data by telemetry to the CAISO's EMS in accordance with Section 4.12.3 demonstrating that they have performed in accordance with their CAISO commitments.

* * *

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 and Demand Response Providers shall not be subject to the first tier allocation of RUC Compensation Costs to the extent that the Participating Load's or Demand Response Provider's Net Negative CAISO Demand Deviation in that Trading Hour is incurred pursuant to a CAISO directive to consume in a Dispatch Instruction.

(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.

* * *

11.10.9.1 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, Proxy Demand Resource, 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 charge for Congestion assessed pursuant to Section 11.10.1.1.1, but at the lower of the Day-Ahead and simple average of the fifteen (15) minute Real-Time Shadow Price over the applicable Trading Hour 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, Proxy Demand Resource, 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, Proxy Demand Resource, 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, Proxy Demand Resource, 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. If, after the issuance of a Dispatch Instruction associated with Non-Spinning Reserves, the actual response of a Proxy Demand Resource is insufficient to supply the amount of Instructed Imbalance Energy associated with a Dispatch Instruction issued in accordance with awarded or self-provided Non-Spinning Reserves, then the capacity payment associated with the difference between the scheduled amount and the actual amount attributed to the response to the Dispatch Instruction (as established pursuant to the applicable Business Practice Manual) shall be rescinded. However, no capacity payment shall be rescinded if the shortfall in the metered output of the Generating Unit, Participating Load, Proxy Demand Resource, 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.

* * *

11.16.1 Order of Payment Rescission for Resources with More Than One Capacity Obligation in a Settlement Interval.

If the Generating Unit, Participating Load, Proxy Demand Resource, 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 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.

* * *

11.23 Penalties for Uninstructed Imbalance Energy.

Effective December 1, 2004, the CAISO shall not charge any Uninstructed Deviation Penalties pursuant to this Section 11.23 until FERC issues an order authorizing the CAISO to charge Uninstructed Deviation Penalties pursuant to this section. Beginning with Settlement Statements for the first Trading Day for which FERC authorizes the CAISO to charge Uninstructed Deviation Penalties pursuant to this section, the CAISO shall charge Scheduling Coordinators Uninstructed Deviation Penalties for Uninstructed Imbalance Energy resulting from resource deviations outside a Tolerance Band from their Dispatch Operating Point, for dispatched resources, or their Day-Ahead Schedule otherwise. Publishing of Uninstructed Deviation

Penalty results will not occur on the Initial Settlement Statement T+7B but rather will occur on the Recalculation Settlement Statement T+38B. The Uninstructed Deviation Penalty will be applied as follows:

(a) The Uninstructed Deviation Penalty for negative Uninstructed Imbalance Energy will be calculated and assessed in each Settlement Interval. The Uninstructed Deviation Penalty for positive Uninstructed Imbalance Energy will be calculated and assessed in each Settlement Interval in which the CAISO has not declared a staged System Emergency;

(b) The Uninstructed Deviation Penalty will apply to pre-Dispatched Bids from Non-Dynamic System Resources identified, when such a pre-Dispatch Instruction is issued more than forty (40) minutes prior to the relevant Operating Hour, subject to the following conditions: i) the Uninstructed Deviation Penalty will only apply to the pre-Dispatched amount of the Bid that is declined or not delivered, ii) the Uninstructed Deviation Penalty will not apply to a portion of a pre-Dispatched Bid that is subsequently not delivered at the direction of a Balancing Authority, including the CAISO, due to a curtailment of transmission capability or to prevent curtailment of native firm load occurring subsequent to issuing the pre-Dispatch Instruction, (iii) the Uninstructed Deviation Penalty will not apply to Uninstructed Imbalance Energy resulting from declining subsequent intra-hour Dispatch Instructions. Dynamically scheduled Dynamic System Resources, to the extent they deviate from their Day-Ahead Schedule plus any Dispatch Instructions, will be subject to the Uninstructed Deviation Penalty.

(c) The Uninstructed Deviation Penalty will not apply to Load, ~~or~~ Curtailable Demand, or Demand Response Services.

(d) **[NOT USED]**

(e) The Uninstructed Deviation Penalty will not apply to Regulatory Must-Run Generation or Participating Intermittent Resources that meet the scheduling obligations established in the Eligible Intermittent Resources Protocol in Appendix Q. No other applicable charges will be affected by this exemption. The

Uninstructed Deviation Penalty also will not apply to Qualifying Facilities (QFs), including those that are dynamically scheduled, that have not executed and are not required pursuant to this CAISO Tariff to execute a Participating Generator Agreement (PGA) or Qualifying Facility Participating Generator Agreement.

(f) All MSS resources designated as Load-following resources pursuant to Section 4.9.13.2 (regardless of gross or net settlement election) are exempt from Uninstructed Deviation Penalties in this Section 11.23. All MSS resources not designated as Load-following resources pursuant to Section 4.9.13.2 (regardless of gross or net Settlement election) are subject to Uninstructed Deviation Penalties in this Section 11.23.

(g) The Uninstructed Deviation Penalty will apply to Generating Units providing Regulation and dynamically scheduled Dynamic System Resources providing Regulation to the extent that Uninstructed Deviations from such resources exceed each resource's actual Regulation range plus the applicable Tolerance Band. Resources providing Regulation and generating within their relevant Regulating range (or outside their relevant Regulating range as a direct result of CAISO control or instruction) will be deemed to have zero (0) deviations for purposes of the Uninstructed Deviation Penalty.

(h) The Uninstructed Deviation Penalty will be calculated and assessed for each resource individually, except as specified in Appendix R, which specifies when Uninstructed Deviations from individual resources may be aggregated.

(i) The Uninstructed Deviation Penalty shall not apply to any Uninstructed Imbalance Energy resulting from compliance with a directive by the CAISO or the Reliability Coordinator.

(j) **[NOT USED]**

(k) The Uninstructed Deviation Penalty will not apply when the applicable LMP is negative or zero.

(l) The Uninstructed Deviation Penalty for positive Uninstructed Imbalance Energy will be the amount of the Uninstructed Imbalance Energy in excess of the Tolerance Band multiplied by a price equal to one hundred percent (100%) of the corresponding LMP. The relevant LMP will be calculated for each UDP Location as the ten-minute weighted average price of two five-minute Dispatch Interval LMPs and the two five-minute optimal Instructed Imbalance Energy quantities. The net effect of the Uninstructed Deviation Penalty and the Settlement for positive Uninstructed Imbalance Energy beyond the Tolerance Band will be that the CAISO will not pay for such Energy.

(m) The Uninstructed Deviation Penalty for negative Uninstructed Imbalance Energy will be the amount of the Uninstructed Imbalance Energy in excess of the Tolerance Band multiplied by a price equal to fifty percent (50%) of the corresponding Resource-Specific Settlement Interval LMP or, in the case of aggregated resources, the Settlement Interval Penalty Location Real-Time LMP.

(n) The Uninstructed Deviation Penalty will not apply to deviations from Energy delivered as part of a scheduled test so long as the test has been scheduled by the Scheduling Coordinator with the CAISO or the CAISO has initiated the test for the purposes of validating unit performance.

(o) The Uninstructed Deviation Penalty shall not apply to any excess Energy delivered from or any shortfall of Energy not delivered from an Exceptional Dispatch, involving a Generating Unit or a System Unit unless the CAISO and the supplier have agreed upon the time of, duration of, and amount of Energy to be delivered in the out-of-market transaction and the CAISO reflects the out-of-market transaction in its Real-Time Expected Energy calculations. The Uninstructed Deviation Penalty shall apply to Energy outside the Tolerance Band from out-of-market transactions with dynamically scheduled Dynamic System Resources to the extent the agreed-to Energy is not delivered or over-delivered, and to any Energy from Non-Dynamic System Resources to the extent the agreed-to Energy is not delivered if that over-

or under-delivery was due to action taken by or not taken by the System Resource and not the result of action taken by a Balancing Authority due to a curtailment of firm transmission capability or to prevent curtailment of native firm load occurring subsequent to the out-of-market transaction.

(p) The Uninstructed Deviation Penalty shall not apply to Generating Units and dynamically scheduled Dynamic System Resources with Uninstructed Imbalance Energy if the Generating Unit or dynamically scheduled Dynamic System Resource was physically incapable of delivering the expected Energy or if systems malfunctions prevent receipt of Dispatch Instructions, provided that the Generating Unit or dynamically scheduled Dynamic System Resource had notified the CAISO within thirty (30) minutes of the onset of an event that prevents the resource from performing its obligations. A Generating Unit or dynamically scheduled Dynamic System Resource must notify CAISO operations staff of its reasons for failing to deliver the Expected Energy in accordance with Section 9.3.10.6 and must provide information to the CAISO that verifies the reason the resource failed to comply with the Dispatch Instruction within forty-eight (48) hours of the Operating Hour in which the instruction is issued.

(q) Adjustments to any Generating Unit, Curtailable Demand and System Resource Day-Ahead Schedules or HASP Intertie Schedules made in accordance with the terms of TRTC Instructions for Existing Contracts or TORs shall not be subject to Uninstructed Deviation Penalties. Valid changes to ETC Self-Schedules or TOR Self-Schedules submitted after the close of the HASP or the RTM shall not be subject to Uninstructed Deviation Penalties.

(r) Any changes made to Schedules prior to the CAISO issuing HASP Intertie Schedules shall not be subject to Uninstructed Deviation Penalties.

(s) Uninstructed Deviation Penalties shall not be charged to any deviation from a Dispatch Instruction that does not comply with the requirements set forth in this CAISO Tariff.

(t) Amounts collected as Uninstructed Deviation Penalties shall first be assigned to reduce the portion of above-LMP costs that would otherwise be assigned pro rata to all Scheduling Coordinators in that Settlement Interval. Any remaining portion of amounts collected as Uninstructed Deviation Penalties after satisfying these sequential commitments shall be treated in accordance with Section 11.29.9.6.3.

(u) Condition 2 RMR Units shall be exempt from Uninstructed Deviation Penalties.

(v) The Uninstructed Deviation Penalty shall not apply to positive Uninstructed Imbalance Energy attributable to operation below the Generating Unit's Minimum Operating Limit from the time the Generating Unit synchronizes to the grid to the earlier of (1) the Settlement Interval in which the Generating Unit produces a quantity of Energy that represents an average rate of delivery over such Settlement Interval in excess of the Generating Unit's Minimum Operating Limit plus the applicable Tolerance Band, or (2) the first Settlement Interval after the expiration of a period of time that begins at the end of the Settlement Interval in which the Generating Unit synchronizes to the grid and ends after the Generating Unit's maximum Start-Up Time as specified in the Master File. The Uninstructed Deviation Penalty shall not apply to any positive Uninstructed Imbalance Energy attributable to operation below the Generating Unit's Minimum Operating Limit for a duration equal to the minimum of two Settlement Intervals or the time specified in the Master File for the Generating Unit to disconnect from the grid after reaching its Minimum Operating Limit following either (1) the last Settlement Interval of an hour in which the Generating Unit had a non-zero Day-Ahead Schedule or (2) the Settlement Interval in which the Generating Unit is expected to reach its Minimum Operating Limit based on the applicable Ramp Rate when the CAISO instructed the Generating Unit to Shut-Down. The amount of Uninstructed Imbalance Energy exempted from the Uninstructed Deviation Penalty shall not exceed the amount of the Generating Unit's Minimum Operating Limit plus the applicable Tolerance

Band. This exception from the application of the Uninstructed Deviation Penalty does not apply to Dynamic System Resources.

(w) UDP shall not apply to deviations by a Generating Unit that are attributable to any automatic response to a system disturbance, including a response to correct frequency decay, in accordance with Applicable Reliability Criteria for the duration of the system disturbance, and for an additional five (5) minutes when a Generating Unit's deviation is in the same direction as the mitigating frequency response.

(x) The Uninstructed Deviation Penalty shall not apply in the event that a malfunction in a CAISO system application causes an infeasible Dispatch Instruction to be communicated or prevents timely communication of a Dispatch Instruction or a SLIC malfunction prevents a resource from reporting an event that affects the resource's ability to deliver Energy.

(y) The Uninstructed Deviation Penalty shall not apply to a failure to comply with a manual Dispatch Instruction that is not confirmed by a Dispatch Instruction transmitted through the CAISO's Automated Dispatch System.

(z) The Uninstructed Deviation Penalty shall not apply if a Dispatch Instruction is validated after the start time of the instruction from the Settlement Interval in which the Dispatch Instruction was first effective to the earliest Settlement Interval, inclusive, in which the resource is able to respond to the Dispatch Instruction.

* * *

11.24.3 Exemptions from the Interim Scheduling Charge.

The Interim Scheduling Charge shall not apply to the following circumstances:

(a) For any given Trading Day for Scheduling Coordinators in each applicable LAP in which the CAISO's daily Day-Ahead peak CAISO Forecast of CAISO Demand is ninety-five percent (95%) or less than daily actual metered CAISO Demand in the respective northern and southern regions of the CAISO Balancing Authority Area as further described in the Business Practice Manuals.

(b) For any given Trading Hour when a Scheduling Coordinator's metered CAISO Demand is less than or equal to 500 MW in a particular LAP, that Scheduling Coordinator shall not be subject to the Interim Scheduling Charge.

(c) For metered CAISO Demand by Participating Loads and Proxy Demand Resources.

(d) For metered CAISO Demand that is MSS Load following Demand.

(e) For any given Trading Hour when the Hourly Real-Time LAP Price is less than the Day-Ahead LAP Price for the same Trading Hour in the applicable LAP.

(f) For metered CAISO Demand of Station Power Loads.

* * *

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, Demand Response Providers, Balancing Authorities (to the extent the agreement between the Balancing Authority and the CAISO so provides), and MSS Operators within the CAISO Balancing Authority Area and all System Resources must comply fully and promptly with CAISO Dispatch Instructions and operating orders, unless such operation would impair public health or safety. The CAISO will honor the terms of Existing Contracts, provided that in a System Emergency and circumstances in which the CAISO considers that a System Emergency is imminent or threatened, holders of Existing Rights must follow CAISO operating orders even if those operating orders directly conflict with the terms of Existing Contracts, unless such operating orders are inconsistent with the terms of an agreement between the CAISO and a Balancing Authority. In the event of a conflict between the CAISO Tariff and an agreement between the CAISO and a Balancing Authority, the agreement will govern. For this purpose CAISO operating orders to shed Load shall not be considered as an impairment to public health or safety. This section does not prohibit a Scheduling Coordinator from modifying its Bid or re-purchasing Energy in the HASP or Real-Time Market.

* * *

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, Demand Response Providers, Balancing Authorities (to the extent the agreement between the Balancing Authority and the CAISO so provides), and MSS Operators within the CAISO Balancing Authority Area and all System Resources must comply fully and promptly with the CAISO's Dispatch Instructions and operating orders, unless such operation would impair public health or safety. The CAISO will honor the terms of TORs, provided that in a System Emergency and circumstances in which the CAISO considers that a System Emergency is imminent or threatened, to enable the CAISO to exercise its responsibilities as Balancing Authority in accordance with Applicable Reliability Criteria, holders of TORs must follow CAISO operating orders even if those operating orders directly conflict with the terms of applicable Existing Contracts or any other contracts pertaining to the TORs, unless such operating orders are inconsistent with the terms of an agreement between the CAISO and a Balancing Authority. In the event of a conflict between the CAISO Tariff and an agreement between the CAISO and a Balancing Authority, the agreement will govern. For this purpose CAISO operating orders to shed Load shall not be considered as an impairment to public health or safety. This section does not prohibit a Scheduling Coordinator from modifying its Bid or re-purchasing Energy in the HASP or RTM.

* * *

30.5.2.6 Ancillary Services Bids.

There are four distinct Ancillary Services: Regulation Up, Regulation Down, Spinning Reserve and Non-Spinning Reserve. Participating Generators are eligible to provide all Ancillary Services. Dynamic System Resources are eligible to provide Operating Reserves and Regulation. Non-Dynamic System Resources are eligible to provide Operating Reserves only. No System Resource (including Non-Dynamic Resource-Specific System Resources) can be used for self-provision of Ancillary Services, except for Dynamic System Resources which can be used for self-provision of Ancillary Services as specified in Section 8. All System Resources, including Dynamic Resource-Specific System Resources and Non-Dynamic Resource-Specific System Resources, will be charged the Shadow Price as prescribed in Section 11.10. Participating Loads and Demand Response Providers are eligible to provide Non-Spinning Reserve only. A Scheduling Coordinator may submit Ancillary Services Bids for Regulation Up, Regulation Down, Spinning Reserve,

and Non-Spinning Reserve for the same capacity by providing a separate price in $/MW per hour as desired for each Ancillary Service. The Bid for each Ancillary Services is a single Bid segment. Only resources certified by the CAISO as capable of providing Ancillary Services are eligible to provide Ancillary Services. In addition to the common elements listed in Section 30.5.2.1, all Ancillary Services Bid components of a Supply Bid must contain the following: (1) the type of Ancillary Service for which a Bid is being submitted; (2) Ramp Rate (Operating Reserve Ramp Rate and Regulation Ramp Rate, if applicable); and (3) Distribution Curve for Physical Scheduling Plant or System Unit. An Ancillary Services Bid submitted to the Day-Ahead Market when submitted to the Day-Ahead Market may be, but is not required to be, accompanied by an Energy Bid that covers the capacity offered for the Ancillary Service. Submissions to Self-Provide an Ancillary Services submitted to the Day-Ahead Market when submitted to the Day-Ahead Market may be, but are not required to be, accompanied by an Energy Bid that covers the capacity to be self-provided; provided, however, that such an Energy Bid shall be submitted prior to the close of the Real-Time Market for the day immediately following the Day-Ahead Market in which the Ancillary Service Bid was submitted if the Submission to Self-Provide an Ancillary Service is qualified as specified in Section 8.6. Submissions to Self-Provide an Ancillary Services submitted in the Day-Ahead Market must be accompanied by a Self-Schedule to which the Submission to Self-Provide an Ancillary Service is related. Except as provided below, the Self-Schedule need not include a Self-Schedule from the resource that will be self-providing the Ancillary Service. If a Scheduling Coordinator is self-providing an Ancillary Service from a Fast Start Unit, no Self-Schedule for that resource is required. If a Scheduling Coordinator proposes to self-provide Spinning Reserve, the Scheduling Coordinator is obligated to submit a Self-Schedule for particular resource, unless as discussed above the particular resource is a Fast Start Unit. When submitting Ancillary Service Bids in the Real-Time, Scheduling Coordinators for resources that either have been awarded or self-provide Spinning Reserve or Non-Spinning Reserve capacity in the Day-Ahead Market must submit an Energy Bid for at least the awarded or self-provided Spinning Reserve or Non-Spinning Reserve capacity, otherwise the CAISO will apply the Bid validation rules described in Section 30.7.6.1. As provided in Section 30.5.2.6.4, a Submission to Self-Provide an Ancillary Service shall contain all of the requirements of a Bid for Ancillary Services with the exception of Ancillary Service Bid price

information. In addition, Scheduling Coordinators must comply with the Ancillary Services requirements of Section 8.

* * *

30.5.2.6.3 Non-Spinning Reserve Capacity~~.~~

In the case of Non-Spinning Reserve, the Ancillary Service Bid must also contain: (a) the MW capability available within ten (10) minutes; (b) the Bid price of the capacity reservation; (c) time of synchronization following notification (minutes); and (d) an indication whether the capacity reserved would be available to supply Imbalance Energy only in the event of the occurrence of an unplanned Outage, a Contingency or an imminent or actual System Emergency (Contingency Flag). In the case of Non-Spinning Reserve Capacity from System Resources, the Ancillary Services Bid must also contain: (a) Interchange ID code of the selling entity, (b) Schedule ID (NERC ID number); and (c) a Contract Reference Number, if applicable. In the case of Non-Spinning Reserve Capacity from Participating Load within the CAISO Balancing Authority Area, the Ancillary Service Bid must also contain: (a) a Load identification name and Location Code, (b) Demand reduction available within ten (10) minutes, (c) time to interruption following notification (minutes), and (d) maximum allowable curtailment duration (hour). In the case of Aggregated Participating Load, and Proxy Demand Resources, Scheduling Coordinators must submit Bids using a Generating Unit, ~~or~~ Physical Scheduling Plant Resource ID, or Resource ID for the Proxy Demand Resource for the Demand reduction capacity of the Aggregated Participating Load through a Bid to provide Non-Spinning Reserve or a Submission to Self-Provide an Ancillary Service for Non-Spinning Reserve. Ancillary Services Bids and Submissions to Self-Provide an Ancillary Services submitted to the Real-Time Market for Non-Spinning Reserves must also submit an Energy Bid that covers the Ancillary Services capacity being offered into the Real-Time Market.

* * *

30.6 ~~[NOT USED]~~ Bidding and Scheduling of Proxy Demand Resources

Unless otherwise specified in the CAISO Tariff and applicable Business Practice Manuals, the CAISO will treat Bids for Energy and Ancillary Services on behalf of Proxy Demand Resources like Bids for Energy and Ancillary Services on behalf of other types of supply resources. A Scheduling Coordinator for a Demand

Response Provider representing a Proxy Demand Resource may submit (1) Energy Bids only in the Day-Ahead Market and in the Real-Time Market; (2) RUC Availability Bids; and (3) Ancillary Service Bids in the Day-Ahead Market and Real-Time Market for those Ancillary Services for which the Proxy Demand Resource is certified. A Scheduling Coordinator for a Demand Response Provider representing a Proxy Demand Resource may Self-Provide Ancillary Services for which it is certified. Demand Response Services will be bid separately from the underlying demand for Proxy Demand Resources.

* * *

30.7.6.1 Validation of Ancillary Services Bids.

Throughout the validation process described in Section 30.7, the CAISO will verify that each Ancillary Services Bid conforms to the content, format and syntax specified for the relevant Ancillary Service. If the Ancillary Services Bid does not so conform, the CAISO will send a notification to the Scheduling Coordinator notifying the Scheduling Coordinator of the errors in the Bids as described in Section 30.7. When the Bids are submitted, a technical validation will be performed to verify that the bid quantity of Regulation, Spinning Reserve, or Non-Spinning Reserve does not exceed the certified Ancillary Services capacity for Regulation, or Operating Reserves on the Generating Units, System Units, Participating Loads, Proxy Demand Resources, and external imports/exports bid. The Scheduling Coordinator will be notified within a reasonable time of any validation errors. For each error detected, an error message will be generated by the CAISO in the Scheduling Coordinator's notification screen, which will specify the nature of the error. The Scheduling Coordinator can then look at the notification messages to review the detailed list of errors, make changes, and resubmit if it is still within the CAISO's timing requirements. The Scheduling Coordinator is also notified of successful validation. If a resource is awarded or has qualified Self-Provided Ancillary Services in the Day-Ahead Market, if no Energy Bid is submitted to cover the awarded or Self-Provided Ancillary Services by the Market Close of HASP and the RTM, the CAISO will generate or extend an Energy Bid as necessary to cover the awarded or Self-Provided Ancillary Services capacity using the registered values in the Master File and relevant fuel prices as described in the Business Practice Manuals for use in the HASP and IFM. If an AS Bid or Submission to Self-Provide an AS is submitted in the Real-Time for Spinning Reserve or Non-Spinning Reserve without an accompanying Energy Bid at all, the AS Bid or Submission to Self-Provide an Ancillary Service will be erased. If an AS Bid or Submission to Self-

Provide an AS is submitted in the Real-Time Market for Spinning Reserve and Non-Spinning Reserve with only a partial Energy Bid for the AS capacity, the CAISO will generate an Energy Bid for the uncovered portions. For Generating Units with certified Regulation capacity, if there no Bid for Regulation in the Real-Time Market, but there is a Day-Ahead award for Regulation Up or Regulation Down or a submission to self-provide Regulation Up or Regulation Down, respectively, the CAISO will generate a Regulation Up or Regulation Down Bid at the default Ancillary Service Bid price of $0 up to the certified Regulation capacity for the Generating Unit minus any Regulation awarded or self-provided in the Day-Ahead. If there is a Bid for Regulation Up or Regulation Down in the Real-Time Market, the CAISO will increase the respective Bid up to the certified Regulation capacity for the Generating Unit minus any Regulation awarded or self-provided in the Day-Ahead. If a Self-Schedule amount is greater than the Regulation Limit for Regulation Up, the Regulation Up Bid will be erased.

Notwithstanding any of the provisions of Section 30.7.6.1 set forth above, the CAISO will not insert or extend any Bid for a Resource Adequacy Resource that is a Use-Limited Resource.

30.7.6.2 Treatment of Ancillary Services Bids~~.~~

When Scheduling Coordinators bid into the Regulation Up, Regulation Down, Spinning Reserve, and Non-Spinning Reserve markets, they may submit Bids for the same capacity into as many of these markets as desired at the same time by providing the appropriate Bid information to the CAISO. The CAISO optimization will evaluate AS Bids simultaneously with Energy Bids. A Scheduling Coordinator may specify that its Bid applies only the markets it desires. A Scheduling Coordinator shall also have the ability to specify different capacity prices for the Spinning Reserve, Non-Spinning Reserve, and Regulation markets. A Scheduling Coordinator providing one or more Regulation Up, Regulation Down, Spinning Reserve or Non-Spinning Reserve services may not change the identification of the Generating Units or Proxy Demand Resources offered in the Day-Ahead Market or in the Real-Time Market for such services unless specifically approved by the CAISO (except with respect to System Units, if any, in which case Scheduling Coordinators are required to identify and disclose the resource specific information for all Generating Units. ~~and~~ Participating Loads, and Proxy Demand Resources constituting the System Unit for which Bids and Submissions to Self-Provide Ancillary Services are submitted into the CAISO's Day-Ahead Market and Real-Time Market).

The following principles will apply in the treatment of Ancillary Services Bids in the CAISO Markets:

(a) not differentiate between bidders for Ancillary Services and Energy other than through cost, price, effectiveness, and capability to provide the Ancillary Service or Energy, and the required locational mix of Ancillary Services;

(b) select the bidders with most cost effective Bids for Ancillary Service capacity which meet its technical requirements, including location and operating capability to minimize the costs to users of the CAISO Controlled Grid;

(c) evaluate the Day-Ahead Bids over the twenty-four (24) Settlement Periods of the following Trading Day along with Energy, taking into transmission constraints and AS Regional Limits;

(d) evaluate Import Bids along with internal resources;

(e) establish Real-Time Ancillary Service Awards through RTUC from imports and ~~generation~~ resources internal to the CAISO Balancing Authority Area at fifteen (15) minutes intervals to the hour of operation; and

(f) procure sufficient Ancillary Services in the Day-Ahead and Real-Time Markets to meet its forecasted requirements.

* * *

30.7.8 Format and Validation of Start-Up and Shut-Down Times~~.~~

For a Generating Unit or a Resource-Specific System Resource, the submitted Start-Up Time expressed in minutes (min) as a function of down time expressed in minutes (min) must be a staircase function with up to three (3) segments defined by a set of 1 to 4 down time and Start-Up Time pairs. The Start-Up Time is the time required to start the resource if it is offline longer than the corresponding down time. The last segment will represent the time to start the unit from a cold start and will extend to infinity. The submitted Start-Up Time function shall be validated as follows:

(a) The first down time must be zero (0) min.

(b) The down time entries must match exactly (in number, sequence, and value) the corresponding down time breakpoints of the maximum Start-Up Time function, as registered in the Master File for the relevant resource.

(c) The Start-Up Time for each segment must not exceed the Start-Up Time of the corresponding segment of the maximum Start-Up Time function, as registered in the Master File for the relevant resource.

(d) The Start-Up Time function must be strictly monotonically increasing, i.e., the Start-Up Time must increase as down time increases.

For Participating Load and for a Proxy Demand Resource, a single Shut-Down time in minutes is the time required for the resource to Shut-Down after receiving a Dispatch Instruction.

30.7.9 Format and Validation of Start-Up Costs and Shut-Down Costs.

For a Generating Unit or a Resource-Specific System Resource, the submitted Start-Up Cost expressed in dollars ($) as a function of down time expressed in minutes must be a staircase function with up to three (3) segments defined by a set of 1 to 4 down time and Start-Up Cost pairs. The Start-Up Cost is the cost incurred to start the resource if it is offline longer than the corresponding down time. The last segment will represent the cost to start the resource from cold Start-Up and will extend to infinity. The submitted Start-Up Cost function shall be validated as follows:

(a) The first down time must be zero (0) min.

(b) The down time entries must match exactly (in number, sequence, and value) the corresponding down time breakpoints of the Start-Up Cost function, as registered in the Master File for the relevant resource as either the Proxy Cost or Registered Cost.

(c) The Start-Up Cost for each segment must not be negative and must be equal to the Start-Up Cost of the corresponding segment of the Start-Up Cost function, as registered in the Master File for the relevant resource. If a value is submitted in a Bid for the Start-Up Cost, it will be overwritten by the Master File value as either the Proxy Cost or Registered Cost based on the option elected pursuant to Section

30.4. If no value for Start-Up Cost is submitted in a Bid, the CAISO will insert the Master File value, as either the Proxy Cost or Registered Cost based on the option elected pursuant to Section 30.4.

(d) The Start-Up Cost function must be strictly monotonically increasing, i.e., the Start-Up Cost must increase as down time increases.

For Participating Loads and Proxy Demand Resources, a single Shut-Down Cost in dollars ($) is the cost incurred to Shut-Down the resource after receiving a Dispatch Instruction. The submitted Shut-Down Cost must not be negative.

* * *

31 Day-Ahead Market.

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

* * *

31.2 Market Power Mitigation and Reliability Requirement Determination (MPM-RRD).

After the Market Close of the DAM, and after the CAISO has validated the Bids pursuant to Section 30.7, the CAISO will perform the MPM-RRD procedures in a series of processing runs that occur prior to the IFM Market Clearing run. The MPM process determines which Bids need to be mitigated in the IFM. The RRD process is the automated process for determining RMR Generation requirements for RMR Units. The MPM-RRD process optimizes resources using the same optimization used in the IFM, but instead of using Demand Bids as in the IFM the MPM-RRD process optimizes resources to meet one hundred percent of the CAISO Demand Forecast and Export Bids to the extent the Export Bids are selected in the MPM-RRD process, and meet one hundred percent of Ancillary Services requirements based on Supply Bids submitted to the DAM. Bids on behalf of Proxy Demand Resources are not mitigated and are not considered in the MPM-RRD process. The mitigated or unmitigated Bid identified in the MPM-RRD process

for all resources that cleared in the MPM-RRD are then passed to the IFM. The CAISO performs the MPM-RRD for the DAM for the twenty-four (24) hours of the targeted Trading Day.

* * *

31.3.1.4 Eligibility to Set the Day-Ahead LMP.

All Generating Units, Participating Loads, non-Participating Loads, Proxy Demand Resources, System Resources, System Units, or Constrained Output Generators subject to the provisions in Section 27.7, with Bids, including Generated Bids, that are unconstrained due to Ramp Rates, Forbidden Operating Regions, or other temporal constraints are eligible to set the LMP, provided that (a) the Schedule for the Generating Unit or Resource-Specific System Resource is between its Minimum Operating Limit and the highest MW value in its Economic Bid or Generated Bid, or (b) the Schedule for the Participating Load, non-Participating Load, Proxy Demand Resource, non-Resource-Specific System Resource, or System Unit is between zero (0) MW and the highest MW value in its Economic Bid or Generated Bid. If (a) a resource's Schedule is constrained by its Minimum Operating Limit or the highest MW value in its Economic Bid or Generated Bid, (b) the CAISO enforces a resource-specific constraint on the resource due to an RMR or Exceptional Dispatch, (c) the resource is constrained by a boundary of a Forbidden Operating Region or is Ramping through a Forbidden Operating Region, or (d) the resource's full Ramping capability is constraining its inter-hour change in Schedule, the resource cannot be marginal and thus is not eligible to set the LMP. Resources identified as MSS Load following resources are not eligible to set the LMP. A Constrained Output Generator will be eligible to set the hourly LMP if any portion of its Energy is necessary to serve Demand.

* * *

31.5.4 RUC Procurement Constraints.

In addition to the resource Constraints and network Constraints employed by SCUC as discussed in Section 27.4.1, the CAISO shall employ the following three Constraints in RUC:

(a) To ensure that sufficient RUC Capacity is procured to meet the CAISO Forecast of CAISO Demand, the CAISO will enforce the power balance between the total Supply, which includes Day-Ahead Schedules and RUC Capacity, and the total

Demand, which includes the CAISO Forecast of CAISO Demand and IFM export Schedules. The CAISO may adjust the CAISO Forecast of CAISO Demand to increase the RUC procurement target if there is AS Bid insufficiency in the IFM.

(b) To ensure that RUC will neither commit an excessive amount of Minimum Load Energy nor procure an excessive amount of RUC Capacity from Scheduling Points the CAISO will verify that the sum of Day-Ahead Schedules, Schedules of Generation Units, net imports, ~~and~~ Participating Loads, and Proxy Demand Resources plus the Minimum Load Energy committed by RUC is not greater than a configurable percentage of the system CAISO Forecast of CAISO Demand.

(c) The CAISO can limit the amount of RUC Capacity it will procure from resources that could otherwise be started during the Operating Day based on operational factors such as: (1) historical confidence that a Short Start Unit actually starts when needed based on the assessment of the CAISO Operators of the historical performance of Short Start Units; (2) need to conserve the number of run-hours and number of starts per year for critical loading periods; and (3) seasonal Constraints such as Overgeneration. The CAISO will verify that the total Day-Ahead Schedules and RUC Capacity from such resources is not greater than a configurable percentage of the total available capacity of all such resources.

* * *

31.5.7 Rescission of Payments for Undispatchable and Undelivered RUC Capacity~~.~~

If capacity committed in RUC provided from a Generating Unit, Participating Load, Proxy Demand Resource, 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, Proxy Demand Resource, 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, Proxy Demand Resource, 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 (0).

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, Proxy Demand Resource, 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 (or, in the case of Proxy Demand Resources, an estimate of actual output), and Operational Ramp Rate as described in Section 30.10. If the Undispatchable Capacity is capacity committed in RUC and is from a Generating Unit, System Unit or System Resource that is a Resource Adequacy Resource, there is no payment obligation to the CAISO for the Undispatchable Capacity. The CAISO will report the instance of non-compliance by the Resource Adequacy Resource to the appropriate Local Regulatory Authority.

* * *

31.5.7.2 Rescission of Payments for Undelivered RUC Capacity.

For each Settlement Interval in which a Generating Unit, Participating Load, Proxy Demand Resource, 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.

* * *

33.4 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. Bids on

behalf of the Proxy Demand Resources are not mitigated and are not considered in the MPM-RRD process. The MPM-RRD process for the HASP and RTM produces results for each fifteen- (15) minute interval of the Trading Hour and thus may produce up to four mitigated Bids for any given resource for the Trading Hour. A single mitigated Bid for the entire Trading Hour is calculated using the minimum Bid price of the four mitigated Bid curves at each Bid quantity level. The Bids are mitigated only for the Bid quantities that are above the minimum quantity cleared in the CCR across all four fifteen-minute intervals. For a Condition 1 RMR Unit, if the dispatch level produced through the ACR is greater than the dispatch level produced through the CCR, and for a Condition 2 RMR Unit that is dispatched through the ACR, the resource will be flagged as an RMR Dispatch in the RTM and shall constitute a Dispatch notice pursuant to the RMR Contract.

* * *

34. REAL-TIME MARKET.

The RTM is the market conducted by the CAISO during any given Operating Day in which Scheduling Coordinators may provide Real-Time Imbalance Energy and Ancillary Services. The Real-Time Market consists of the Real-Time Unit Commitment (RTUC), the Short-Term Unit Commitment (STUC) and the Real-Time Dispatch (RTD) processes. The Short-Term Unit Commitment (STUC) runs once per hour near the top of the hour and utilizes the SCUC optimization to commit Medium Start, Short Start and Fast Start Units to meet the CAISO Demand Forecast. The CAISO shall dispatch all resources, including Participating Load and Proxy Demand Resources, pursuant to submitted Bids or pursuant to the provisions below on Exceptional Dispatch. In Real-Time, resources are required to follow Real-Time Dispatch Instructions. The Time Horizon of the STUC starts with the third fifteen-minute interval of the current Trading Hour and extending for the next four Trading Hours. The RTUC runs every fifteen (15) minutes and utilizes the SCUC optimization to commit Fast Start and some Short Start resources and to procure any needed AS on a fifteen-minute basis. Any given run of the RTUC will have a Time Horizon of approximately sixty (60) to 105 minutes (four to seven fifteen-minute intervals) depending on when during the hour the run occurs. Not all resources committed in a given STUC or RTUC run will necessarily receive CAISO commitment instructions immediately, because during the Trading Day the CAISO may issue a commitment instruction to a resource only at the latest possible time that allows the resource to be ready to

provide Energy when it is expected to be needed. The RTD uses a Security Constrained Economic Dispatch (SCED) algorithm every five minutes throughout the Trading Hour to determine optimal Dispatch Instructions to balance Supply and Demand. Updates to the FNM used in the RTM optimization include current estimates of real-time unscheduled flow at the Interties. The RTD optimization utilizes up to a sixty-five- (65) minute Time Horizon (thirteen (13) five- (5) minute intervals), but the CAISO issues Dispatch Instructions only for the next target five- (5) minute Interval. The RTUC, STUC and RTD processes of the RTM use the same FNM used in the DAM and the HASP, subject to any necessary updates of the FNM pursuant to changes in grid conditions after the DAM has run.

* * *

34.5 General Dispatch Principles.

The CAISO shall conduct all Dispatch activities consistent with the following principles:

(1) The CAISO shall issue AGC instructions electronically as often as every four (4) seconds from its Energy Management System (EMS) to resources providing Regulation and on Automatic Generation Control to meet NERC and WECC performance requirements;

(2) In each run of the RTED or RTCD the objective will be to meet the projected Energy requirements over the Time Horizon of that run, subject to transmission and resource operational Constraints, taking into account the short term CAISO Forecast of CAISO Demand adjusted as necessary by the CAISO Operator to reflect scheduled changes to Interchange and non-dispatchable resources in subsequent Dispatch Intervals;

(3) Dispatch Instructions will be based on Energy Bids for those resources that are capable of intra-hour adjustments and will be determined through the use of SCED except when the CAISO must utilize the RTMD;

(4) When dispatching Energy from awarded Ancillary Service capacity the CAISO will not differentiate between Ancillary Services procured by the CAISO and Submissions to Self-Provide an Ancillary Service;

(5) The Dispatch Instructions of a resource for a subsequent Dispatch Interval shall take as a point of reference the actual output obtained from either the State Estimator solution or the last valid telemetry measurement and the resource's operational ramping capability;

(6) In determining the Dispatch Instructions for a target Dispatch Interval while at the same time achieving the objective to minimize Dispatch costs to meet the forecasted conditions of the entire Time Horizon, the Dispatch for the target Dispatch Interval will be affected by: (a) Dispatch Instructions in prior intervals, (b) actual output of the resource, (c) forecasted conditions in subsequent intervals within the Time Horizon of the optimization, and (d) operational Constraints of the resource, such that a resource may be dispatched in a direction for the immediate target Dispatch Interval that is different than the direction of change in Energy needs from the current Dispatch Interval to the next immediate Dispatch Interval;

(7) Through Start-Up Instructions the CAISO may instruct resources to start up or shut down, or may reduce Load for Participating Loads and Proxy Demand Resources, over the Time Horizon for the RTM based on submitted Bids, Start-Up Costs and Minimum Load Costs, Pumping Costs and Pump Shut-Down Costs, as appropriate for the resource, consistent with operating characteristics of the resources that the SCED is able to enforce. In making Start-Up or Shut-Down decisions in the RTM, the CAISO may factor in limitations on number of run hours or Start-Ups of a resource to avoid exhausting its maximum number of run hours or Start-Ups during periods other than peak loading conditions;

(8) The CAISO shall only start up resources that can start within the Time Horizon used by the RTM optimization methodology;

(9) The RTM optimization may result in resources being shut down consistent with their Bids and operating characteristics provided that: (1) the resource does not need to be on-line to provide Energy, (2) the resource is able to start up within the RTM optimization Time Horizon, (3) the Generating Unit is not providing Regulation

or Spinning Reserve, and (4) Generating Units online providing Non-Spinning Reserve may be shut down if they can be brought up within ten (10) minutes as such resources are needed to be online to provide Non-Spinning Reserves; and

(10) For resources that are both providing Regulation and have submitted Energy Bids for the RTM, Dispatch Instructions will be based on the Regulation Ramp Rate of the resource rather than the Operational Ramp Rate if the Dispatch Operating Point remains within the Regulating Range. The Regulating Range will limit the Ramping of Dispatch Instructions issued to resources that are providing Regulation.

34.6 Dispatch of Dispatch to Units~~Instructions for Generating Units and~~, Participating Loads, and PDR~~.~~

The CAISO may issue Dispatch Instructions covering:

(a) Ancillary Services;

(b) Energy, which may be used for:

(i) Congestion relief;

(ii) provision of Imbalance Energy; or

(iii) replacement of an Ancillary Service;

(c) agency operation of Generating Units, Participating Loads, Proxy Demand Resources, or Interconnection schedules, for example:

(i) output or Demand that can be Dispatched to meet Applicable Reliability Criteria;

(ii) Generating Units that can be Dispatched for Black Start;

(iii) Generating Units that can be Dispatched to maintain governor control regardless of their Energy schedules;

(d) the operation of voltage control equipment applied on Generating Units as described in this CAISO Tariff;

(e) MSS Load following instructions provided to the CAISO, which the CAISO incorporates to create their Dispatch Instructions; or

(f) necessary to respond to a System Emergency or imminent emergency.

* * *

34.8 Dispatch of Energy From Ancillary Services.

The CAISO may issue Dispatch Instructions to Participating Generators, Participating Loads, Proxy Demand Resources, (via communication with the Scheduling Coordinators of Demand Response Providers) System Units and System Resources contracted to provide Ancillary Services (either procured through the CAISO Markets, Self-Provided by Scheduling Coordinators, or dispatched in accordance with the RMR Contract) for the Supply of Energy. During normal operating conditions, the CAISO shall Dispatch those Participating Generators, Participating Loads, Proxy Demand Resources, System Units and System Resources that have contracted to provide Spinning and Non-Spinning Reserve, except for those reserves designated as Contingency Only, in conjunction with the normal Dispatch of Energy. Contingency Only reserves are Operating Reserve capacity that have been designated, either by the Scheduling Coordinator or the CAISO, as available to supply Energy in the Real-Time only in the event of the occurrence of an unplanned Outage, a Contingency or an imminent or actual System Emergency. The CAISO may designate any reserve not previously identified as Contingency Only by Scheduling Coordinator as Contingency Only reserves, as necessary to maintain NERC and WECC reliability standards, including any requirements of the NRC. In the event of an unplanned Outage, a Contingency or a threatened or actual System Emergency, the CAISO may dispatch Contingency Only reserves. If Contingency Only reserves are dispatched through the RTCD, which as described in Section 34.3.2, only Dispatches in the event of a Contingency. Such Dispatch and pricing will be based on the original Energy Bids. If Contingency Only reserves are dispatched in response to a System Emergency that has occurred because the CAISO has run out of Economic Bids when no Contingency event has occurred, the RTED will Dispatch such Contingency Only reserves using maximum Bid prices as provided in Section 39.6.1 as the Energy Bids for such reserves and will set prices accordingly. If a Participating Generator, Participating Load, System Unit or System Resource that is supplying Operating Reserve is dispatched to provide Energy, the CAISO shall replace the Operating Reserve as necessary to maintain NERC and WECC reliability standards, including

any requirements of the NRC. If the CAISO uses Operating Reserve to meet Real-Time Energy requirements, and if the CAISO needs Operating Reserves to satisfy NERC and WECC reliability standards, including any requirements of the NRC, the CAISO shall restore the Operating Reserves to the extent necessary to meet NERC and WECC reliability standards, including any requirements of the NRC through either the procurement of additional Operating Reserve in the RTM or the Dispatch of other Energy Bids in SCED to allow the resources that were providing Energy from the Operating Reserve to return to their Dispatch Operating Point. The Energy Bid Curve is not used by the AGC system when Dispatching Energy from Regulation. For Regulation Up capacity, the upper portion of the resource capacity from its Regulation Limit is allocated to Regulation regardless of its Energy Bid Curve. For a resource providing Regulation Up or Operating Reserves the remaining Energy Bid Curve shall be allocated to any RTM AS Awards in the following order from higher to lower capacity where applicable: (a) Spinning Reserve; and (b) Non-Spinning Reserve. For resources providing Regulation Up, the applicable upper Regulation Limit shall be used as the basis of allocation if it is lower than the upper portion of the Energy Bid Curve. The remaining portion of the Energy Bid Curve, if there is any, shall constitute a Bid for RTM Energy. For Regulation Down capacity, the lower portion of the resource capacity from its applicable Regulation Limit is allocated to Regulation regardless of its Energy Bid Curve.

* * *

34.9.1 System Reliability Exceptional Dispatches.

The CAISO may issue a manual Exceptional Dispatch for Generation Units, System Units, Participating Loads, Proxy Demand Resources, Dynamic System Resources, and Condition 2 RMR Units pursuant to Section 41.9, in addition to or instead of resources with a Day-Ahead Schedule dispatched by RTM optimization software during a System Emergency, or to prevent an imminent System Emergency or a situation that threatens System Reliability and cannot be addressed by the RTM optimization and system modeling. To the extent possible, the CAISO shall utilize available and effective Bids from resources before dispatching resources without Bids. To deal with any threats to System Reliability, the CAISO may also issue a manual Exceptional Dispatch in the Real-Time for Non-Dynamic System Resources that have not been or would not be selected by the RTM for Dispatch, but for which the relevant Scheduling Coordinator has submitted a Bid into the HASP.

* * *

34.19.1 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, and Proxy Demand Resources 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.

*** * ***

34.19.2.2 Computation.

For each Dispatch Interval, the CAISO will compute updated Imbalance Energy needs and will Dispatch Generating Units, System Units, Dynamic System Resources, and Participating Load, and Proxy Demand Resources 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, Proxy Demand Resources, Dynamic System Resources, System Units, or COGs subject to the provisions in Section 27.7, with Bids, including Generated Bids, that are unconstrained due to Ramp Rates or other temporal constraints are eligible to set the LMP, provided that (a) a Generating Unit or a Dynamic Resource-Specific System Resource is Dispatched between its Minimum Operating Limit and the highest MW value in its Economic Bid or Generated Bid, or (b) a Participating Load, a Proxy Demand Resource, a Dynamic System Resource that is not a Resource-Specific System Resource, or a System Unit is Dispatched between zero (0) MW and the highest MW value within its submitted Economic Bid range or Generated Bid. If a resource is Dispatched below its Minimum

Operating Limit or above the highest MW value in its Economic Bid range or Generated Bid, or the CAISO enforces a resource-specific constraint on the resource due to an RMR or Exceptional Dispatch, the resource will not be eligible to set the LMP. Resources identified as MSS Load following resources are not eligible to set the LMP. A resource constrained at an upper or lower operating limit or dispatched for a quantity of Energy such that its full Ramping capability is constraining the ability of the resource to be dispatched for additional Energy in target interval, cannot be marginal (i.e., it is constrained by the Ramping capability) and thus is not eligible to set the Dispatch Interval LMP. Non-Dynamic System Resources are not eligible to set the Dispatch Interval LMP. Dynamic System Resources are eligible to set the Dispatch Interval LMP. A Constrained Output Generator that has the ability to be committed or shut off within the Time Horizon of the RTM will be eligible to set the Dispatch Interval LMP if any portion of its Energy is necessary to serve Demand. Dispatches of Regulation resources by EMS in response to AGC will not set the RTM LMP. Dispatches of Regulation resources to a Dispatch Operating Point by RTM SCED will be eligible to set the RTM LMP.

*** * ***

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, except that a Proxy Demand Resource cannot be a nominated CRR Source in a CRR Allocation process. An LSE or a Qualified OBAALSE may nominate up to one hundred percent (100%) of its Adjusted Verified CRR Source Quantities for Seasonal or Monthly CRRs in the combined tiers of the annual and monthly CRR Allocation processes as provided in this Section. For tiers 1 and 2 of the annual CRR Allocation in CRR Year One, an LSE may nominate CRRs from each of its verified CRR Sources in a quantity no greater than seventy-five percent (75%) of the Adjusted Verified CRR Source Quantity corresponding to each verified CRR Source. The LSE may then use tier 1 of the monthly CRR Allocations in CRR Year One to nominate up to the full one hundred percent (100%) of the Adjusted Verified CRR Source Quantity corresponding to each verified CRR Source. In tiers 1, 2 and 3 of the annual CRR Allocation in each year in which it participates, a Qualified OBAALSE may nominate CRRs from each of its verified CRR Sources in a quantity no greater than seventy-five percent (75%) of the Adjusted Verified CRR Source Quantity corresponding to each CRR

Source. The Qualified OBAALSE may then use tiers 1 and 2 of the monthly CRR Allocations in the same year to nominate up to the full one hundred percent (100%) of the Adjusted Verified CRR Source Quantity corresponding to each verified CRR Source.

* * *

37.8.4 Notice.

The CAISO shall provide notice of the investigation in sufficient detail to allow for a meaningful response to the Scheduling Coordinator and, as limited below, to all Market Participants the Scheduling Coordinator represents that are the subject(s) of the investigation. The CAISO shall contact the Market Participant(s) that may be involved, so long as the CAISO has sufficient objective information to identify and verify the role of the Market Participant(s) in the potential Rules of Conduct violation. Such Market Participant(s) will likely have an existing contractual relationship with the CAISO (e.g., UDC, MSS, CAISO Metered Entity, Participating Transmission Owner, Participating Generator, ~~or~~ Participating Load, or Demand Response Provider).

* * *

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 or Proxy Demand Resources 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.

* * *

40.6.4.1 Registration of Use-Limited Resources.

Hydroelectric Generating Units, Proxy Demand Resources, and Participating Load, including Pumping Load, are deemed to be Use-Limited Resources for purposes of this Section 40 and are not required to submit the application described in this Section 40.6.4.1. Scheduling Coordinators for other Use-Limited Resources, 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.

* * *

40.6.12 Participating Loads and Proxy Demand Resources.

Participating Loads or Proxy Demand Resources that are included in a Resource Adequacy Plan and Supply Plan, if the Scheduling Coordinator for the Participating Loads or Proxy Demand Resources is not the same as that for the Load Serving Entity, will be administered dispatched by the CAISO in accordance with the terms and conditions established by the CPUC or the Local Regulatory Authority.

* * *

40.8.1.13 Proxy Demand Resources

The Qualifying Capacity of a Proxy Demand Resource, for each month, will be based on the resource's average monthly historic demand reduction performance during that same month during the Availability Assessment Hours, as described in Section 40.9.3, using a three-year rolling average. For a Proxy Demand Resource with fewer than three years of performance history, for all months for which there is no historic data, the CAISO will utilize a monthly megawatt value as certified and reported to the CAISO by the Demand Response Provider; otherwise, where available, the CAISO will use the average of historic demand reduction performance data available, by month, for a Proxy Demand Resource. Proxy Demand

Resources must be available at least four (4) hours per month in which they are eligible to provide RA Capacity and must be dispatchable for a minimum of thirty (30) minutes per event within each of those months.

* * *

CAISO Tariff Appendix A

Master Definitions Supplement

*** * ***

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 or Proxy Demand Resource.

* * *

Ancillary Service Provider	A Participating Generator, System Resource operator, ~~or~~ Participating Load, or Proxy Demand Response that is certified to provide an Ancillary Service.

* * *

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, and Proxy Demand Resources.

* * *

Customer Baseline	A value or values determined by the CAISO based on historical Load meter data to measure the delivery of Demand Response Services.

* * *

Demand Response Provider	An entity that is responsible for delivering Demand Response Services from a Proxy Demand Resource providing Demand Response Services, which has undertaken in writing by execution of the applicable agreement to comply with all applicable provisions of the CAISO Tariff.
Demand Response Services	Demand from a Proxy Demand Resource that can be bid into the Day-Ahead Market and Real-Time Market and dispatched at the direction of the CAISO.
Demand Response System	A collective name for a set of functions of a CAISO application used to collect, approve, and report on information and measurement data for Proxy Demand Resources.
Electric Facility	An electric resource, including a Generating Unit, System Unit, ~~or a~~ Participating Load, or Proxy Demand Resource.

* * *

Expected Energy	The total Energy that is expected to be generated or consumed by a resource, based on the Dispatch of that resource, as calculated by the Real-Time Market (RTM), and as finally modified by any applicable Dispatch Operating Point corrections. Expected Energy includes the Energy scheduled in the IFM, and it is calculated the applicable Trading Day. Expected Energy is calculated for Generating Units, System Resources, Resource-Specific System Resources, ~~and~~ Participating Loads, and Proxy Demand Resources. The calculation is based on the Day-Ahead Schedule and the Dispatch Operating Point trajectory for the three-hour period around the target Trading Hour (including the previous and following hours), the applicable Real-Time LMP for each Dispatch Interval of the target Trading Hour, and any Exceptional Dispatch Instructions. Energy from Non-Dynamic System Resources is converted into HASP Intertie Schedules. Expected Energy is used as the basis for Settlements.

* * *

Local Capacity Area Resources

Resource Adequacy Capacity from a Generating Unit listed in the technical study or Participating Load or Proxy Demand Resource that is located within a Local Capacity Area capable of contributing toward the amount of capacity required in a particular Local Capacity Area.

* * *

Metered Subsystem (MSS)

A geographically contiguous system located within a single zone which has been operating as an electric utility for a number of years prior to the CAISO Operations Date as a municipal utility, water district, irrigation district, state agency or federal power marketing authority subsumed within the CAISO Balancing Authority Area and encompassed by CAISO certified revenue quality meters at each interface point with the CAISO Controlled Grid and CAISO certified revenue quality meters on all Generating Units or, if aggregated, each individual resource, ~~and~~ Participating Load, and Proxy Demand Resource internal to the system, which is operated in accordance with a MSS Agreement described in Section 4.9.1.

* * *

Minimum Load

For a Generating Unit, the minimum sustained operating level at which it can operate at a continuous sustained level. For a Participating Load, the Operating Level at reduced consumption pursuant to a Dispatch Instruction. For a Proxy Demand Resource, the smallest discrete load reduction possible for the Proxy Demand Resource.

Minimum Load Bid

The Bid component that indicates the Minimum Load Cost for the Generating Unit, ~~or~~ Participating Load, or Proxy Demand Resource 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, or Proxy Demand Resource incurs operating at Minimum Load, which in the case of Participating Load or Proxy Demand Resource may not be negative.

* * *

PDR	Proxy Demand Resource

* * *

PDRA	Proxy Demand Resource Agreement

* * *

PDR Energy Measurement	The Energy quantity calculated by comparing the Customer Baseline of a Proxy Demand Resource against its actual underlying Load for a Demand response event.

* * *

Proxy Demand Resource (PDR)	A Load or aggregation of Loads capable of measurably and verifiably providing Demand Response Services pursuant to a Proxy Demand Resource Agreement.
Proxy Demand Resource Agreement (PDRA)	An agreement between the CAISO and a Demand Response Provider, a *pro forma* version of which is set forth in Appendix B.14.

* * *

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 and Proxy Demand Resources, for which the Scheduling Coordinator is submitting Energy Bids or Ancillary Services Bids.

* * *

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, and Proxy Demand Resources are committed to meet the CAISO Forecast of CAISO Demand.

* * *

Resource ID	Identification characters assigned by the CAISO to Generating Units, Loads, Participating Loads, Proxy Demand Resources, System Units, System Resources, and Physical Scheduling Plants.
Resource Location	The Resource ID for a Generating Unit, Participating Load, Proxy Demand Resource, or System Resource.

* * *

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, or Proxy Demand Resource has agreed to sell capacity for a specified interval of time to the CAISO to meet the Residual Unit Commitment requirement.

* * *

Scheduling Coordinator Metered Entity	A Generator, Eligible Customer, ~~or~~ End-User, or Proxy Demand Resource that is not a CAISO Metered Entity.

* * *

Supply	The Energy delivered from a Generating Unit, System Unit, Physical Scheduling Plant, System Resource, ~~or~~ the Curtailable Demand provided by a Participating Load, or the Demand Response Services provided by a Proxy Demand Resource.

CAISO TARIFF APPENDIX B

Pro Forma Agreements

*** * ***

CAISO TARIFF APPENDIX B.14

Proxy Demand Resource Agreement

CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

AND

[DEMAND RESPONSE PROVIDER]

PROXY DEMAND RESOURCE AGREEMENT

PROXY DEMAND RESOURCE AGREEMENT (PDRA)

THIS AGREEMENT is dated this _____ day of _____, _____ and is entered into, by and between:

(1) **[Full legal name],** having its registered and principal place of business located at [legal address] (the "Demand Response Provider");

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 Demand Response Provider and the CAISO are hereinafter referred to as the "Parties".

Whereas:

A. The CAISO Tariff provides that the CAISO shall only accept Bids for a Proxy Demand Resource from a Scheduling Coordinator.

B. The CAISO Tariff further provides that Demand Response Services may be provided by Demand Response Providers.

C. The Demand Response Provider desires to provide Demand Response Services from Proxy Demand Resources through a Scheduling Coordinator and represents to the CAISO that it will comply with the applicable provisions of the CAISO Tariff.

D. The Parties are entering into this Agreement in order to establish the terms and conditions on which the CAISO and the Demand Response Provider 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 DEMAND RESPONSE PROVIDER AND CAISO

2.1 CAISO Responsibility. The Parties acknowledge that the CAISO is responsible for the efficient use and reliable operation of the CAISO Controlled Grid consistent with achievement of planning and Operating Reserve criteria no less stringent than those established by the Western Electricity Coordinating Council and the North American Electric Reliability Corporation and further acknowledge that the CAISO may not be able to satisfy fully these responsibilities if the Demand Response Provider fails to fully comply with all of its obligations under this Agreement and the CAISO Tariff.

2.2 Scope of Application to Parties. The Demand Response Provider and CAISO acknowledge that to submit Bids for Proxy Demand Resources to the CAISO through a Scheduling Coordinator, the Demand Response Provider must register its Proxy Demand Resources in the CAISO's Demand Response System. The Demand Response Provider warrants that it owns, operates, or has sufficient contractual entitlement to provide Demand Response Services from the Proxy Demand Resources it represents in accordance with the CAISO Tariff.

ARTICLE III

TERM AND TERMINATION

3.1 Effective Date. This Agreement shall be effective as of the later of the date it is executed by the Parties or the date accepted for filing and made effective by FERC, if such FERC filing is required, and shall remain in full force and effect until terminated pursuant to Section 3.2 of this Agreement.

3.2 Termination

3.2.1 Termination by CAISO. Subject to Section 5.2, the CAISO may terminate this Agreement by giving written notice of termination in the event that the Demand Response Provider commits any material default under this Agreement and/or the CAISO Tariff which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given, to the Demand Response Provider, written notice of the default, unless excused by reason of Uncontrollable Forces in accordance with Article X of this Agreement; provided, however, that any outstanding financial right or obligation or any other obligation under the CAISO Tariff of the Demand Response Provider that has arisen while the Demand Response Provider was submitting Bids for Proxy Demand Resources, and any provision of this Agreement necessary to give effect to such right or obligation, shall survive until satisfied. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement was filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the filing of the notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within sixty (60) days after issuance of the notice of default; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if filed with FERC, or thirty (30) days after the date of the CAISO's notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

3.2.2 Termination by Demand Response Provider. In the event that the Demand Response Provider no longer wishes to submit Bids or transmit Energy over the CAISO Controlled Grid, it may terminate this Agreement, on giving the CAISO not less than ninety (90) days written notice, provided, however, that in accordance with Section 4.5, the Demand Response Provider may eliminate from the Demand Response System Proxy Demand Resources which it no longer provides for and such modification shall be effective upon receipt of notice by the CAISO; and provided further that any outstanding financial right or obligation or any other obligation under the CAISO Tariff of the Demand Response Provider that has arisen while the Demand Response Provider was submitting Bids for Proxy Demand Resources, and any provision of this Agreement necessary to give effect to such right or obligation, shall survive until satisfied. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the request to file a notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within thirty (30) days of receipt of such request; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if such notice is required to be filed with FERC, or upon ninety (90) days after the CAISO's receipt of the Demand Response Provider's notice of termination, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

ARTICLE IV

GENERAL TERMS AND CONDITIONS

4.1 Technical Characteristics. As required by Sections 8.3.4 and 8.4 of the CAISO Tariff, the Demand Response Provider shall provide the CAISO with all technical and operational information required for each Proxy Demand Resource that it owns, operates, or to which it has a contractual entitlement. For those Proxy Demand Resources designated by the Demand Response Provider as providing Demand Response Services, the Demand Response Provider shall indicate whether the Proxy Demand Resource can submit Bids as qualifying Ancillary Services. Pursuant to Sections 8.9 and 8.10 of the CAISO Tariff, the CAISO may verify, inspect and test the capacity and operating characteristics provided for Proxy Demand Resources. The CAISO will maintain the required technical and operational information, which has been verified by the appropriate Load Serving Entity and Utility Distribution Company, as appropriate.

4.2 Metering and Communication. Metering requirements for the submittal of Settlement Quality Meter Data for Scheduling Coordinator Metered Entities will be in accordance with Section 10.3 of the CAISO Tariff. Pursuant to Sections 8.4.5 and 8.4.6 of the CAISO Tariff, Demand Response Services that are scheduled or bid as qualifying Ancillary Services are required to comply with the CAISO's communication and metering requirements.

4.3 Demand Response Provider Requirements. The Demand Response Provider must register with the CAISO through the Demand Response System and comply with all terms of the CAISO Tariff and certify to the CAISO that its participation is authorized by the Local Regulatory Authority applicable to Demand Response Providers, and that it has satisfied all applicable rules and regulations of the Local Regulatory Authority. The Demand Response Provider must certify to the CAISO that any required bilateral agreements between the Demand Response Provider and the Load Servicing Entities or other agreements required by the Local Regulatory Authority are fully executed.

4.4 Notification of Changes. The Demand Response Provider shall notify the CAISO of any proposed change(s) to registration to technical information. The CAISO will update the Master File

in accordance with Section 30.7.3.2 of the CAISO Tariff. Pursuant to Sections 8.9 and 8.10 of the CAISO Tariff, the CAISO may verify, inspect and test the capacity and operating characteristics of the revised information provided. Unless the Proxy Demand Resource fails to test at the values in the proposed change(s), the Demand Response Provider's proposed change(s) will become effective upon the effective date for the next scheduled update of the Master File, provided that the Demand Response Provider submits the changed information by the applicable deadline and is tested by the deadline. Subject to such notification, this Agreement shall not apply to any Proxy Demand Resources which the Demand Response Provider no longer owns, operates or to which it no longer has a contractual entitlement.

4.5 Agreement Subject to CAISO Tariff. The Parties will comply with all applicable provisions of the CAISO Tariff. This Agreement shall be subject to the CAISO Tariff, which shall be deemed to be incorporated herein.

4.6 Obligations Relating to Ancillary Services

4.6.1 Submission of Bids and Self-provided Schedules. When the Scheduling Coordinator on behalf of the Demand Response Provider submits a Bid, the Demand Response Provider will, by the operation of this Section 4.6.1, warrant to the CAISO that it has the capability to provide that service in accordance with the CAISO Tariff and that it will comply with CAISO Dispatch Instructions for the provision of the service in accordance with the CAISO Tariff.

4.6.2 Ancillary Service Certification. The Demand Response Provider shall not use a Scheduling Coordinator to submit a Bid for the provision of an Ancillary Service or submit a Submission to Self-Provide an Ancillary Service unless the Scheduling Coordinator serving that Demand Response Provider is in possession of a current Ancillary Service certificate pursuant to Sections 8.3.4 and 8.4 of the CAISO Tariff.

4.7 Obligations relating to Major Incidents. The Demand Response Provider shall promptly provide such information as the CAISO may reasonably require in relation to the CAISO's investigations of operating situations or events, or for the CAISO's reporting to the authorities such as the FERC, California Public Utilities Commission, Western Electricity Coordinating Council, or North American Electric Reliability Corporation.

ARTICLE V

PENALTIES AND SANCTIONS

5.1 Penalties. If the Demand Response Provider fails to comply with any provisions of this Agreement, the CAISO shall be entitled to impose penalties and sanctions on the Demand Response Provider, including the penalties set forth in Sections 8.9.7 and 8.10.7 of the CAISO Tariff. No penalties or sanctions may be imposed under this Agreement unless a Schedule or CAISO Tariff provision providing for such penalties or sanctions has first been filed with and made effective by FERC. Nothing in this Agreement, with the exception of the provisions relating to the CAISO ADR Procedures, shall be construed as waiving the rights of the Demand Response Provider to oppose or protest any penalty proposed by the CAISO to the FERC or the specific imposition by the CAISO of any FERC-approved penalty on the Demand Response Provider.

5.2 Corrective Measures. If the Demand Response Provider fails to meet or maintain the requirements set forth in this Agreement and/or the CAISO Tariff, the CAISO shall be permitted to take any of the measures, contained or referenced in the CAISO Tariff, which the CAISO deems to be necessary to correct the situation.

ARTICLE VI

COSTS

6.1 Operating and Maintenance Costs. The Demand Response Provider shall be responsible for all its costs incurred in meeting its obligations under this Agreement for the Proxy Demand Resources identified in the Demand Response System.

ARTICLE VII

DISPUTE RESOLUTION

7.1 Dispute Resolution. The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that any reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to the Demand Response Provider and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE VIII

REPRESENTATIONS AND WARRANTIES

8.1 Authorization to Enter Into Agreement. Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.

8.2 Necessary Approvals as to Proxy Demand Resources. The Demand Response Provider represents that all necessary leases, approvals, permits, licenses, easements, rights of way or access to install, own and/or operate the Proxy Demand Resources for which it will Bid or otherwise act under this Agreement have been obtained by the Demand Response Provider prior to submitting technical information.

8.3 Local Regulatory Authority. The Demand Response Provider represents and warrants that, with respect to any and all Proxy Demand Resources for which it shall submit Bids or otherwise act under this Agreement, the applicable Local Regulatory Authority which regulates the Proxy Demand Resources does not prohibit the participation by the Proxy Demand Resource as contemplated in this Agreement or in the CAISO Tariff.

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 Demand Response Provider 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 Demand Response Provider and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE XI

MISCELLANEOUS

11.1 Assignments. Either Party may assign or transfer any or all of its rights and/or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff. Such consent shall not be unreasonably withheld. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest was an original Party to this Agreement.

11.2 Notices. Any notice, demand, or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff, provided that all references in Section 22.4 of the CAISO Tariff to Market Participants shall be read as a reference to the Demand Response Provider and references to the CAISO Tariff shall be read as references to this Agreement, and unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 2. A Party must update the information in Schedule 2 of this Agreement as information changes. Such changes shall not constitute an amendment to this Agreement.

11.3 Waivers. Any waiver at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.

11.4 Governing Law and Forum. This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in accordance with, the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement to which the CAISO ADR Procedures do not apply, shall be brought in any of the following forums, as appropriate: any court of the State of California, any federal court of the United States of America located in the State of California, or, where subject to its jurisdiction, before the Federal Energy Regulatory Commission.

11.5 Consistency with Federal Laws and Regulations. This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.

11.6 Merger. This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.

11.7 Severability. If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is

determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.

11.8 Amendments. This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. Nothing herein shall be construed as affecting in any way the right of the CAISO to make unilateral application to FERC for a change in the rates, terms and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder, and the Demand Response Provider shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to Section 206 or any other applicable provision of the FPA and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein. The standard of review FERC 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 FERC shall apply when acting upon proposed modifications to this Agreement by FERC'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 FERC review.

11.9 Counterparts. This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date hereinabove written.

California Independent System Operator Corporation

By: _____

Name: _____

Title: _____

Date: _____

Demand Response Provider

By: _____

Name: _____

Title: _____

Date: _____

SCHEDULE 1

CAISO IMPOSED PENALTIES AND SANCTIONS

[Section 5.1]

TO BE INSERTED UPON FERC APPROVAL

SCHEDULE 2

NOTICES

(Section 11.2)

Demand Response Provider

Name of Primary Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

Name of Alternative Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

CAISO

Name of Primary Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

Name of Alternative Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

* * *

CAISO TARIFF APPENDIX K

Ancillary Service Requirements Protocol (ASRP)

*** * ***

PART C

CERTIFICATION FOR NON-SPINNING RESERVE

* * *

C 2 An Ancillary Service Provider wishing to provide Non-Spinning Reserve as an Ancillary Service from Curtailable Demand or Demand Response Services whether pursuant to a CAISO award or as part of a self-provision arrangement must meet the following requirements in order to be certified by the CAISO to provide Non-Spinning Reserve service:

C 2.1 the operator must be able to completely disconnect the required Load or provide the adjustment requested by the CAISO through the Proxy Demand Resource pursuant to a Dispatch Instruction within ten minutes after issue of the instruction;

C 2.2 the minimum change in the electrical consumption of the Load must be at least 1 MW (for a Generating Unit or a Proxy Demand Resource); and

C 2.3 the Load or Proxy Demand Resource must be capable of being interrupted for at least two hours.

*** * ***

C 3.1 the operator of the Generating Unit, System Resource, ~~or~~ the Curtailable Demand, or the Demand Response Services must have a means of receiving a Dispatch Instruction to initiate an increase in real power output or a reduction in Demand (MW) within one minute of the CAISO Control Center's determination that Non-Spinning Reserve capacity must be dispatched; and

C 3.2 the communication system and the Generating Unit, System Resource, ~~or~~ Load, or Proxy Demand Resource must pass a qualification test to demonstrate the overall ability to meet the performance requirements of the ASRP for Non-Spinning Reserve.

C 4 An Ancillary Service Provider wishing to be considered for certification for Non-Spinning Reserve service must make a written request to the CAISO, giving details of the technical capability of the Generating Unit, System Resource, ~~or~~ Load, or Proxy Demand Resource concerned and identifying the Scheduling Coordinator through whom the Ancillary Service Provider intends to offer Non-Spinning Reserve. The Ancillary Service Provider shall at the same time send a copy of the request to that Scheduling Coordinator. Technical review request forms will be available from the CAISO.

*** * ***

C 14.3 confirmation of the Generating Unit, System Resource, ~~or~~ Load, or Proxy Demand Resource control performance; and

C 14.4 confirmation of the range of Generating Unit, ~~or~~ System Resource, or Proxy Demand Resource control to include changing the output over the range of Non-Spinning Reserve proposed.

C 15 Upon successful completion of the test, the CAISO shall certify the Generating Unit, System Resource, ~~or~~ Load, or Proxy Demand Resource as being permitted to provide Non-Spinning Reserve as an Ancillary Service and shall provide a copy of the certificate to the Scheduling Coordinator at the same time. The CAISO shall change its data base to reflect the permission for the Generating Unit, ~~or~~Participating Load, or Proxy Demand Resource to provide Non-Spinning Reserve service.

C 16 The Scheduling Coordinator may bid Non-Spinning Reserve service from the certified Generating Unit, ~~or~~ Participating Load, or Proxy Demand Resource into the CAISO Markets starting with the Day-Ahead Market for the hour ending 0100 on the second Trading Day after the CAISO issues the certificate.

* * *

ATTACHMENT C

Listing of Modifications to Existing ISO Tariff Provisions to Accommodate the Implementation of the Proxy Demand Resource Program

As referenced in the transmittal letter for the instant tariff amendment, in addition to making the tariff changes discussed in the transmittal letter, the ISO proposes to modify the following tariff sections to add proxy demand resources to the types of resources that are already subject to various tariff provisions:

- Section 4.9.8.1, regarding the types of resources from which a scheduling coordinator representing a metered subsystem operator may provide a submission to self-provide an ancillary service or bid in the metered subsystem;

- Sections 4.9.12.1, 4.9.12.2.1, and 4.9.12.3, regarding aggregation of resources as a system unit;

- Section 4.9.13, regarding metered subsystem elections and participation in the ISO markets;

- Sections 8.1 and 8.3.1, regarding the ISO's procurement of ancillary services;

- Section 8.3.4, regarding certification and testing requirements;

- Section 8.3.7, regarding bidding requirements to provide ancillary services;

- Section 8.4, regarding technical requirements for providing ancillary services;

- Section 8.4.1, regarding operating characteristics required to provide ancillary services;

- Section 8.4.5, regarding communication equipment required for providers of ancillary services;

- Section 8.4.6, regarding metering infrastructure required for providers of ancillary services;

- Sections 8.9, 8.9.3.1, and 8.9.3.2, regarding verification, compliance testing, and audits of ancillary services;

- Section 8.9.7.1, regarding notification of ancillary services compliance testing results;

- Section 8.9.11, regarding performance audits for non-spinning reserve;

- Section 8.9.14, regarding performance audits for RUC capacity;

- Sections 8.10, 8.10.3, and 8.10.6, regarding periodic testing of units providing ancillary services and RUC capacity;

- Section 8.10.7, regarding penalties for units that fail availability tests to provide ancillary services and RUC capacity;

- Sections 8.10.8, 8.10.8.1, 8.10.8.2, and 8.10.8.3, regarding rescission of payments for undispatchable, unavailable, and undelivered ancillary service capacity;

- Section 11.2.1.1, regarding integrated forward market ("IFM") payments for the supply of energy;

- Section 11.2.2.2.1 and 11.2.2.2.2, regarding rescission of payments for undispatchable and undeliverable RUC capacity;

- Section 11.5.4.1, regarding the application and calculation of dispatch interval LMPs;

- Section 11.8, regarding settlement of unrecovered bid cost recovery uplift payments;

- Sections 11.10.9.1, 11.10.9.2, and 11.10.9.3, regarding rescission of payments for undispatchable, unavailable, and undelivered ancillary service capacity;

- Section 11.16.1, regarding order of payment rescission for resources with more than one capacity obligation in a settlement interval;

- Section 11.24.3, regarding exemptions from the interim scheduling charge;

- Section 30.5.2.6.3, regarding non-spinning reserve capacity;

- Section 30.7.6.1, regarding validation of ancillary services bids;

- Section 30.7.6.2, regarding treatment of ancillary services bids;

- Sections 30.7.8 and 30.7.9, regarding format and validation of start-up and shut-down times and of start-up and shut-down costs;

- Section 31, regarding the sequential functions of the day-ahead market;

- Section 31.3.1.4, regarding eligibility to set the day-ahead LMP;

- Section 31.5.4(b), regarding RUC procurement constraints;

- Sections 31.5.7, 31.5.7.1, and 31.5.7.2, regarding rescission of payments for undispatchable and undelivered RUC capacity;

- Section 34, regarding the real-time market;

- Section 34.5(7), regarding general dispatch principles;

- Section 34.6, regarding dispatch instructions;

- Section 34.8, regarding dispatch of energy from ancillary services;

- Section 34.9.1, regarding the issuance of exceptional dispatches for system reliability purposes;

- Sections 34.19.1, 34.19.2.2, and 34.19.2.3, regarding the pricing of imbalance energy;

- Section 40.4.4, regarding reductions of qualifying capacity;

- Section 40.6.4.1, regarding registration of use-limited resources;

- Appendix A, definition of Ancillary service bid (AS bid);

- Appendix A, definition of bid cost recovery eligible resources (BCR eligible resources);

- Appendix A, definition of electric facility;

- Appendix A, definition of expected energy;

- Appendix A, definition of local capacity area resources;

- Appendix A, definition of metered subsystem (MSS);

- Appendix A, definition of minimum load;

- Appendix A, definition of minimum load bid;
- Appendix A, definition of minimum load costs;
- Appendix A, definition of ramp rate;
- Appendix A, definition of residual unit commitment (RUC);
- Appendix A, definition of resource ID;
- Appendix A, definition of resource location;
- Appendix A, definition of RUC availability bid;
- Appendix A, definition of scheduling coordinator metered entity;
- Appendix A, definition of supply; and
- Sections C 2, 2.1, C 2.2, C 2.3, C 3.1, C 3.2, C.4, C 14.3, C 14.4, C 15, and C 16 of Appendix K to the ISO tariff, regarding the requirements that must be satisfied in order to be certified by the ISO to provide non-spinning reserve service

Similarly, the ISO proposes to modify the following tariff sections to add demand response providers to the types of market participants that are already subject to various tariff provisions:

- Section 4.2.1, regarding market participant compliance with ISO dispatch instructions and operating orders;
- Sections 6.3 and 6.3.1, regarding communication of dispatch instructions;
- Section 7.1.3, regarding the ISO's authority to direct the operation of the facilities specified in Sections 7.1.1 and 7.1.2;
- Section 8.1, regarding the scope of ancillary services that can be submitted by scheduling coordinators;
- Section 8.3.4, regarding ancillary services certification and testing requirements;
- Section 8.9, regarding compliance testing and audit of ancillary services;
- Section 11.8.6.5.3, regarding allocation of RUC compensation costs;

- Section 11.23(c), regarding the applicability of the uninstructed deviation penalty;

- Sections 16.5.1 and 17.2.1, regarding system emergency exceptions for holders of existing rights and holders of transmission ownership rights;

- Section 30.5.2.6, regarding the provision of ancillary services;

- Section 34.8, regarding dispatch of energy from ancillary services;

- Section 37.8.4, regarding notice of an investigation pursuant to the ISO's Rules of Conduct; and

- Appendix A, definition of ancillary service provider.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

California Independent System Operator Corporation	**)**	**Docket No. ER10-____-000**

DECLARATION OF MARGARET MILLER ON BEHALF OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

I. Introduction

Q. Please state your name and business address.

A. My name is Margaret Miller. My business address is 151 Blue Ravine Road, Folsom, California 95630.

Q. By whom and in what capacity are you employed?

A. I am employed as Manager, Market Design and Regulatory Policy for the California Independent System Operator Corporation ("ISO"). In that position, I am responsible for the development of regulatory policies and new market initiatives related to wholesale market design.

Q. Please describe your professional and educational background.

A. I have worked in the electric power industry for over ten years. Between 1997 and 1999, I was a Client Relations Representative for the ISO. From 1999 to 2000, I served as a Portfolio Analyst for PG&E Energy Services. I was a Product Consultant for Silicon Energy Software from 2000 to 2002. In 2003, I returned to the ISO as Lead Engineering Specialist, in which position I served as a Subject

Matter Expert for the ISO's Market Redesign & Technology Upgrade project. I began in my current position in 2007. I received a Bachelor of Arts degree from the University of California, Santa Barbara in 1990 and a Master of Business Administration degree from the University of San Francisco in 2002.

Q. Please describe your involvement in the process that has led to the preparation and submission of the tariff amendment in this proceeding.

A. I have taken a lead role in the development of the ISO's proxy demand resource ("PDR") product since early 2009. The proxy demand resource product was developed as part of the ISO's overall effort to identify and develop market enhancements that would enable greater participation of demand response in the ISO's wholesale market. Over a period of ten (10) months I worked with the ISO's internal market products development team on this effort and also obtained input from the ISO's Department of Market Monitoring and the ISO's Market Surveillance Committee.

I have spoken via telephone and e-mail communications with representatives of other independent system operators and regional transmission organizations that have implemented demand response market features similar to the proxy demand resource product and identified challenges in the implementation of such products. The primary focus of these discussions was to better understand the settlement methodologies employed by the other independent system operators for their demand response products as well as to understand their processes for

monitoring demand response resources to ensure compliance with dispatch instructions.

In addition, the ISO contracted with Utility Integration Solutions, Inc. ("UISOL") to provide consulting services to help the ISO determine the appropriate baseline methodology to apply in order to settle proxy demand resources and to perform additional benchmarking and analysis regarding how other independent system operators and regional transmission organizations have implemented products similar to the proxy demand resource. UISOL has had extensive experience with the development of implementation software used in the establishment by PJM Interconnection, L.L.C. ("PJM") of direct bidding of demand response products in its wholesale market.

Q. Please describe your involvement in the stakeholder process related to the development of the proxy demand resource product.

A. The ISO obtained input from stakeholders on the proxy demand response product both through written comments and verbal questions at numerous stakeholder meetings and smaller working group sessions where I was a lead presenter. A summary of the ISO stakeholder process leading to the development of the proxy demand resource product is provided as Attachment E to this filing. Several focused working group meetings were spent discussing baseline methodologies and reviewing related studies written by Christensen Associates Energy Consulting, LLC ("Christensen Associates"), Lawrence

Berkeley National Laboratory, DTE Energy, and documents from ISO New England, Inc. ("ISO New England") and PJM. Discussions were also held with stakeholders concerning issues such as market manipulation by market participants of the baseline methodology used to settle proxy demand resources in the ISO market.

Q. What is the purpose of your declaration in this proceeding?

A. I will discuss the methodology that the ISO is initially employing for calculating the customer baseline for proxy demand resources. I will also discuss some of the challenges faced by other independent system operators and regional transmission organizations in establishing customer baselines for demand response products available to retail customer aggregators and why those challenges suggest that the ISO is likely to need to refine its methodology for calculating the customer baseline for proxy demand resources. Because of this need to refine that methodology, particularly in the early years of implementing this market product, the ISO has determined that this methodology should be included in the ISO's Business Practice Manuals ("BPMs") rather than the ISO tariff. I will also explain why the challenges in establishing reliable customer baselines as well as other factors create a need for the ISO to have the authority to temporarily suspend market participation by proxy demand resources in certain specified circumstances.

II. The Methodology for Calculating the Customer Baseline and the Challenges in Establishing This Methodology

Q. What is the customer baseline?

A. The customer baseline is an important component of the ISO's proxy demand resource proposal, as it forms the basis from which curtailment is measured to determine performance of the resource. The customer baseline is a curve that is built from historical meter data. It establishes what a proxy demand resource's load would have been but for adjustments to demand made in response to market signals. The difference between the baseline value and the resource's actual load meter data value over a demand response event establishes what the energy reduction was, if any, for a proxy demand resource. The ISO's defined term for this measured energy reduction is "PDR energy measurement." The financial settlement of a proxy demand resource is based on the resulting PDR energy measurement. Thus, the customer baseline is essential to determining the quantity of energy delivered, in the form of a load curtailment, from a proxy demand resource.

Q. Are customer baselines employed by other independent system operators and regional transmission organizations that have demand response programs comparable to the ISO's proxy demand resource program?

A. Yes. PJM, ISO New England, and the New York Independent System Operator, Inc. ("NYISO") all have demand response programs comparable (but not identical) to the ISO's proxy demand resource program, and all employ their own

customer baselines to determine the performance and settlement of demand response resources operating in their markets.

Q. What lessons has the ISO learned from the experience of other independent system operators and regional transmission organizations in establishing customer baselines?

A. The ISO has learned that there is no single customer baseline methodology that meets every need and/or load type, and evidence shows that morning-adjusted and/or temperature-adjusted baselines tend to produce better results than unadjusted baselines. For instance, the Christensen Associates study, which the ISO discussed with stakeholders, showed that certain baseline methodologies predict the adjusted load reasonably well, and specifically, an adjusted average "10 out of 10" baseline (*i.e.*, a baseline, as discussed further below, that is established based on adjusted average data for each of the last ten (10) non-event days preceding the event day under review) produced the most accurate and least biased results as compared with the alternative "3 in 10" and "5 in 10" baseline methodologies.

Other independent system operators and regional transmission organizations have had to make numerous refinements and enhancements to their methodologies for calculating customer baselines. As customer participation has grown in their demand response product offerings, they have added additional baseline methodologies and/or adjustment factors to meet customer needs. For

example, PJM currently uses five different baseline methodologies to meet the needs of different load types, and those different methodologies involve multiple day types, variable look-back windows, load thresholds, prior-event exclusion rules, and weather and load point adjustments.

Q. Based on these lessons learned, has the ISO established any basic principles in its own approach to establishing the customer baseline methodology for proxy demand resources?

A. Yes. Recognizing that it is not possible to identify the optimal methodology for establishing customer baselines without actual market experience, the ISO has chosen to implement a simple core methodology for establishing customer baselines that will be periodically re-examined and refined once the proxy demand resource product is implemented and the ISO can gain experience with this new product. The ISO has selected a baseline that uses the average of the last 10 days, a 45-day look-back window, and a bi-directional morning adjustment. This methodology has been studied extensively in California and, as mentioned above, studies have shown that this baseline methodology has shown a reasonable degree of accuracy over other methodologies that have been surveyed, studied, and discussed in the ISO's stakeholder process. This methodology is also consistent with the approach adopted in the California Public Utility Commission's ("CPUC") decision released in August 2009 approving the investor-owned utility programs and budgets for the demand response program cycle 2009 to 2011. As such, the ISO's methodology is consistent with how the

California investor-owned utilities will evaluate the performance of their own retail demand response programs.

Q. How will the ISO calculate the customer baseline when the proxy demand resource program initially goes into effect?

A. When the ISO implements the proxy demand resource product it will calculate the customer baseline of each proxy demand resource using the average load values of the underlying customers that make up that proxy demand resource over the last ten (10) non-event days. Specifically, the ISO will use the following methodology:

- The ISO will collect meter data for the proxy demand resource for calendar days preceding the trading day for which the customer baseline for the proxy demand resource is being calculated.

- To determine the calendar days for which the meter data will be collected, the ISO will work sequentially backwards from the trading day under examination up to a maximum of 45 calendar days prior to the trading day, including only business days if the trading day is a business day, including only non-business days if the trading day is a non-business day, and excluding calendar days on which the proxy demand resource was subject to an outage or previously provided demand response services, except as discussed below.

- The ISO will stop collecting meter data for this purpose if it is able to collect meter data for its target number of calendar days, which is ten calendar days if the trading day is a business day or four calendar days if the trading day is a non-business day.

- If the ISO is unable to collect meter data for its target number of calendar days, it will attempt to collect meter data for a minimum of five (5) calendar days if the trading day is a business day or a minimum of four (4) calendar days if the trading day is a non-business day. If the ISO is unable to collect meter data for the minimum number of calendar days, it will collect meter data for the calendar days on which the proxy demand resource previously provided demand response services and for which the amount of total load was highest during the hours when the demand response services were provided.

- The ISO will calculate the simple hourly average of the collected meter data to determine a baseline amount of energy provided. Unless otherwise requested by the demand response provider and approved by the ISO, the ISO will multiply the baseline amount of energy provided by a percentage equal to the ratio of (i) the average load of the proxy demand resource during the second, third, and fourth hours preceding the hour of the trading day in which the proxy demand resource provided the demand response services to (ii) the average load of the proxy demand resource during the same second, third, and fourth hours of the calendar days for which the ISO has collected meter data for the proxy demand resource. This percentage can have a maximum value of 120 percent and a minimum value of 80 percent.

- The end result of these calculations will be the customer baseline for the proxy demand resource.

Q. How did the ISO determine that it should initially adopt this particular methodology for calculating the customer baseline?

A. The ISO and the participants in the stakeholder process for the proxy demand resource developed this initial methodology based on an evaluation of the design features appropriate to the ISO market and features of the customer baseline methodologies employed by PJM, the NYISO, and ISO New England, and the relevant studies performed by Christensen Associates and others mentioned above related to baseline methodologies applied to demand response programs in California. The ISO and stakeholders agreed that starting with one baseline methodology was a reasonable starting point, with the intention being that the ISO would add additional options and variations of baselines in the future, based on customer input and the ISO's own evaluation.

Q. Is the ISO's methodology for calculating the customer baseline available in writing in a document readily accessible to all interested parties?

A. Yes. The ISO will publish the initial methodology for calculating the customer baseline, and any subsequent additions or modifications to that methodology, in the applicable Business Practice Manual.

Q. Why is it appropriate to publish the methodology for calculating the customer baseline in the Business Practice Manuals rather than in the ISO tariff?

A. The ISO requires the flexibility to refine the customer baseline methodology, or tune the methodology for particular types of demand response providers, based on the experience the ISO gains from implementing its proxy demand resource product. Before the ISO has obtained that direct experience, it is not possible to predict if its customer baseline methodology would need to be modified. For example, in the future, the ISO may find a need to add a customer baseline that incorporates a weather/temperature adjustment. Given the level of uncertainty concerning what future adjustments or additions are needed to customer baseline methodologies, it is appropriate for the ISO to have the flexibility to make any appropriate and reasonable modifications through its Business Practice Manuals. Using the Business Practice Manuals as the vehicle for making baseline adjustments or additions appropriately provides the ISO with greater flexibility and responsiveness to changing market conditions and stakeholders needs relative to the tariff amendment process.

Q. Will including the customer baseline methodology in the Business Practice Manuals give market participants receive sufficient assurance that the methodology will be not changed without their knowledge and input?

A. Yes. All revisions to the Business Practice Manuals, other than revisions that the ISO makes on an expedited basis in emergency conditions, are made only after the proposed change is made available on the ISO website for public review and comment. As set forth in the Business Practice Manual for BPM Change Management, proposed revisions to the Business Practice Manuals must be initiated by submittal of a BPM Proposed Revision Request and are subject to formal rounds of market participant review and comment before they can be put into effect. Information on BPM changes is also presented to the ISO Board of Governors.

Q. Is the Business Process Manual change management process more expeditious than a tariff amendment?

A. Yes. The ISO's practice is to present all tariff changes for ISO Board approval after a stakeholder process. These tariff changes are then filed for approval of the Federal Energy Regulatory Commission ("Commission"), with additional opportunities for public comment before the tariff change can be approved by the Commission. Including the customer baseline methodology in the ISO tariff could result in a period of many months until needed changes to customer baselines could be implemented.

Q. Is the inclusion of the ISO's customer baseline methodology in the Business Practice Manuals consistent with the practices of any other independent system operators or regional transmission organizations?

A. Yes. The NYISO includes its customer baseline calculation in its Day-Ahead Demand Response Program Manual, and ISO New England includes substantive details regarding the calculation of customer baselines in the ISO New England Manuals.

III. The Need for ISO Authority to Temporarily Suspend Market Participation by Proxy Demand Resources in Certain Specified Circumstances

Q. Does the ISO's tariff amendment include proposed measures to address the potential for overpayment for demand response services not actually provided to the market?

A. Yes. During the development of the proxy demand resource product, one significant concern discussed by the ISO and stakeholders, as well as by the Department of Market Monitoring and the Market Surveillance Committee, was whether demand response providers could be paid for demand response services not actually provided to the market. For example, an end-user might not reduce its actual consumption of electricity any more than the end-user would have in the absence of a demand response market or the reduction in the use of electricity might be overstated, resulting in an overpayment to the demand response provider. Such overpayment could occur where there is intentional gaming or manipulation of customer baselines. Overpayments could also occur even if there is no overt intentional act by a market participant, but rather merely a flaw in the way an

individual customer's baseline is determined. The ISO's tariff amendment would provide the ISO with the authority to address these situations.

Q. What measures does the ISO plan to take to identify situations in which demand response providers are paid for demand response services not actually provided to the market?

A. The ISO has included in its proxy demand resource software requirements the ability to monitor certain metrics once the proxy demand resource program goes into effect. These metrics will include, but are not limited to, statistically high adjustment factors, statistically high revenues, statistically low bids, and statistically poor baseline model fits. Should a proxy demand resource repeatedly fall outside of identified ranges, or fail multiple metrics, the ISO will perform a study to determine if there is a likelihood that the proxy demand resource has been compensated for demand response that was not really provided to the market.

Q. What actions will the ISO take if it finds that a proxy demand resource has likely been compensated for demand response not actually provided to the market?

A. The ISO proposes two related tariff provisions to address that type of overpayment situation. First, in new Section 11.6.2 of the tariff, the ISO proposes language to make it clear that all bids for energy from proxy demand resources must represent actual adjustments of proxy demand resources taken in response to a dispatch instruction. If requested by the ISO, the demand response provider for a proxy

demand resource dispatched by the ISO must provide to the ISO data to support proof of performance of the proxy demand resource. In the event that the ISO determines through evaluation of the proof of performance or its own analysis that a bid for energy from a proxy demand resource: (i) does not represent an actual adjustment of the proxy demand resource taken in response to a dispatch instruction and (ii) has resulted or will result in a payment for demand response services not actually provided by the proxy demand resource, the ISO may rescind such payment. This provision implements the principle that the ISO only pays resources for services actually provided to the ISO's market.

Q. Does the ISO believe that the authority to rescind payments for demand response services not actually provided will be sufficient to address all circumstances where a flaw in the customer baseline methodology for a proxy demand resource leads to inaccurate market results?

A. No. Although the requested rescission authority will allow the ISO to prevent overpayments in some individual circumstances, this authority may not address circumstances where the customer baseline for a proxy demand resource could lead to ongoing inaccuracies in the market services provided by that resource. Where the ISO has identified an ongoing flaw in the way the services provide by a proxy demand resource is measured, whether that inaccuracy is due to an overt act by the market participant or simply an issue in the way the ISO's methodology is applied to a specific proxy demand resource, the ISO believes the best approach is to

temporarily suspend market participation by that proxy demand resource until the flaw can be corrected.

Q. What authority, beyond rescission authority, does the ISO propose to address these circumstances?

A. The ISO proposes to add Section 4.13.4 to the tariff as the second of the two related tariff provisions to address overpayment. Under this provision, in the event that the ISO determines through evaluation of the proof of performance described in Section 11.6.2 or its own analysis that a bid for energy from a proxy demand resource: (i) does not represent an actual adjustment of the proxy demand resource taken in response to a dispatch instruction and (ii) has resulted or will result in a payment for demand response services not actually provided by the proxy demand resource, the ISO may immediately suspend the ability of the proxy demand resource to provide demand response services by sending written notification of the suspension to the scheduling coordinator for the demand response provider representing the proxy demand resource.

Q. Is the ISO's proposal to suspend the ability of proxy demand resources to provide demand response services consistent with comparable provisions in the tariff of any other independent system operator or regional transmission organization?

A. Yes. Pursuant to Section 3.3A.6 of Attachment K – Appendix of its open access transmission tariff, PJM disallows payments to so-called economic load response

participants (which provide demand response in PJM) that are not the result of demand reductions executed in response to the locational marginal price in the day-ahead energy market and/or the real-time energy market, and PJM may suspend market activity by economic load response participants if they continue to submit settlements for such demand reductions.

Q. Does the ISO propose to include in its suspension authority provisions procedural protections for demand response providers that are subject to suspension of market activity?

A. Yes. Section 4.13.4 states that, within two business days of the notice of suspension, the ISO will provide the affected scheduling coordinator and demand response provider with the information justifying the ISO's decision to suspend. The ISO and the affected scheduling coordinator and demand response provider will confer and exchange information in an effort to resolve any dispute as to whether suspension is warranted. The ISO will submit to the Commission supporting documentation, including any information provided by the scheduling coordinator and the affected demand response provider, within ten business days after any suspension unless the ISO concludes that suspension is not warranted. The ISO will provide the affected scheduling coordinator and the demand response provider with a copy of any documentation submitted to the Commission. The suspension will remain in effect for ninety days after the ISO submits its initial filing of supporting documentation, unless the Commission directs otherwise or the ISO determines that the suspension should continue for fewer than ninety days. After the ninety-day

period expires, the suspension will remain in effect only if the Commission requires it to remain in effect.

Q. Does the ISO believe these procedural protections are sufficient?

A. Yes. The ISO's proposed tariff language provides a sufficient opportunity for the affected scheduling coordinator and demand response provider to confer with the ISO as to whether suspension is warranted, and the ISO will timely provide all documentation supporting any suspension with the Commission. As a result, the Commission will be made aware on a timely basis of each suspension and, if it so chooses, can take any action it deems appropriate regarding the suspension. Each suspension will be limited to a maximum of ninety days after the ISO submits its initial filing of supporting documentation unless the Commission finds that extending the suspension is appropriate. The time frames proposed by the ISO will also provide sufficient time to identify and correct any flaws in the customer baseline for the affected proxy demand resource, including any changes to the Business Practice Manuals to reflect this change in baseline methodology.

Q. Does the ISO have similar suspension authority for other types of resources?

A. No. Proxy demand resources are different in critical respects from other types of resources. The output of a generating resource can be metered precisely, providing the ISO with an accurate measure of the services provided by that resource. The ISO also has more accurate data on the output of participating loads because these types of demand response resources must be bid,

scheduled, and settled in their entirety at a custom load aggregation point, which allows the ISO to accurately track the extent to which such loads adjust their output in response to ISO dispatch instructions. In an effort to allow for greater levels of demand response in the ISO's market, using a proxy demand resource, the ISO will allow a demand response provider to submit curtailment bids for a portion of the load of a load-serving entity ("LSE") while the rest of the load for that LSE will be scheduled at the default load aggregation point. This creates the need for the ISO to employ a baseline methodology to estimate the amount of energy this portion of curtailable load would have consumed absent a request to reduce. While the ISO believes using a baseline to determine performance is a reasonable trade-off in the effort to expand demand response participation in the ISO's market, the ISO also believes it must have the tools to ensure that the entities representing proxy demand resources are being paid for services actually provided to customers, and to ensure that it can address gaming of the baseline calculation.

Q. Please explain further the ISO's gaming concerns regarding the customer baseline calculation.

A. As mentioned previously, there is no perfect baseline calculation and baselines are by their nature somewhat subjective. This increases the chance that a proxy demand resource could be compensated without curtailing load. Gaming concerns related to baseline manipulation have been experienced in other independent system operator markets. These concerns include but are not

limited to artificially inflating historical usage in order to inflate a baseline, selective bidding based on high-quality load forecast information, morning adjustment manipulation, and double-counting of customers. Unique to the California ISO market, there is also the concern over arbitrage between custom load aggregation points and default load aggregation points. This concern exists because the load serving entity in the ISO market will continue to schedule its load at the default load aggregation point and the curtailable portion of the load which would be the proxy demand resource is bid and paid at a custom aggregation of nodes.

The bottom line is that proxy-demand resources, and demand response products in general, are susceptible to gaming. The reason for this is primarily because proxy demand resource settlements are unique in wholesale electric market design. The financial outcomes for proxy demand resource settlements are based, in part, on historical data applied to performance during a demand response event. Further, demand reduction can only ever be estimated, never measured. Therefore, it is appropriate for the ISO to take additional measures to ensure that problematic behavior, once identified, can be stopped while the ISO works towards resolution with the market participant that may have engaged in gaming. That resolution may include developing a new baseline methodology that better fits the load type to help improve performance.

Q. Does the Department of Market Monitoring support the ISO's proposed suspension and payment rescission authority?

A. Yes. In light of the challenges in establishing accurate customer baselines and measuring the actual services provided by proxy demand resources, as described above, the Department of Market Monitoring believes both elements of the ISO's proposal are appropriate. The Department of Market Monitoring noted that, absent clear evidence of fraudulent behavior, behavior that may be considered gaming may not be effectively mitigated by a referral under the Commission's anti-manipulation rules. Instead, the Department of Market Monitoring recommended that the ISO establish its own authority to take action if there are concerns with how customer baselines are established.

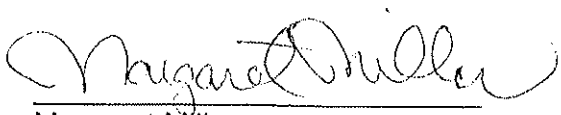
Q. Was this suspension and payment rescission authority discussed with stakeholders?

A. Yes, both elements of the ISO's proposal were included in the ISO's "Draft Final Proposal for the Design of Proxy Demand Resource (PDR)" dated August 28, 2009, and were discussed in subsequent stakeholder meetings. These elements of the ISO's proposal were supported by many stakeholders and were not opposed by any stakeholder.

Q. Does this conclude your declaration?

A. Yes, it does.

I affirm under penalty of perjury that the foregoing statements are true and correct to the best of my knowledge, information, and belief.



Margaret Miller

Executed at Folsom, California this 16th day of February, 2010.

ATTACHMENT E

List of Key Dates in Proxy Demand Resource Stakeholder Process

Date	Event/Due Date
November 5, 2008	ISO hosts meeting of demand response working group that includes discussion of proxy demand resource design issues
December 22, 2008	ISO issues paper entitled "Direct Participation of Demand Response Resources in CAISO Electricity Markets"
January 5, 2009	ISO hosts stakeholder conference call that includes ISO presentation entitled "Direct Participation of Demand Response Resources in CAISO Electricity Markets"
January 12, 2009	Due date for written stakeholder comments on ISO paper issued on December 22, 2008
January 15, 2009	ISO hosts stakeholder meeting that includes ISO presentations entitled "Direct Participation of Demand Response Resources in ISO Electricity Markets" and "Direct Participation Issue Resolution" and presentations by stakeholders
February 27, 2009	ISO hosts stakeholder conference call that includes ISO presentation entitled "Update on Options for the Design of Proxy Demand Resource"
March 5, 2009	ISO issues paper entitled "Straw Proposal for the Design of Proxy Demand Resource and Impacts of Direct Participation"
March 12, 2009	ISO hosts joint Market Surveillance Committee/stakeholder meeting that includes ISO presentation entitled "Proposal for Design of Proxy Demand Resource" and presentations by stakeholder
March 20, 2009	ISO hosts stakeholder conference call to discuss proxy demand resource design issues
March 26, 2009	Due date for written stakeholder comments on ISO paper issued on March 5, 2009
April 14, 2009	ISO issues paper entitled "Straw Proposal for Direct Participation of Proxy Demand Resource"
April 22, 2009	ISO hosts stakeholder conference call that includes ISO presentation entitled "Draft Final Proposal for Design of Proxy Demand Resource"
April 24, 2009	Due date for written stakeholder comments on ISO paper issued on April 14, 2009
April 26, 2009	ISO issues paper entitled "Draft Final Proposal for the Design of Proxy Demand Resource"

Date	Event/Due Date
April 30, 2009	ISO hosts stakeholder meeting that includes ISO presentations entitled “Draft Final Proposal for Design of Proxy Demand Resource” and “Direct Participation High Impact Areas”
May 12, 2009	ISO hosts meeting of proxy demand resource working group
May 14, 2009	Due date for written stakeholder comments on ISO paper issued on April 26, 2009
May 26, 2009	Pacific Gas and Electric Company (“PG&E”) hosts meeting of proxy demand resource working group that includes ISO presentation entitled “Customer Baseline Load Review and Recommendation” and presentations by stakeholders
June 9, 2009	ISO hosts meeting of proxy demand resource working group that includes ISO presentation entitled “Allowing a PDR Comprised of Multiple LSE Customers”
June 23, 2009	PG&E hosts meeting of proxy demand resource working group
July 20, 2009	California Public Utilities Commission hosts meeting of proxy demand resource working group
July 21, 2009	ISO issues revised paper entitled “Draft Final Proposal for the Design of Proxy Demand Resource”
July 28, 2009	ISO hosts stakeholder meeting that includes ISO presentation entitled “Draft Final Proposal for Design of Proxy Demand Resource”
August 5, 2009	ISO issues revised paper entitled “Draft Final Proposal for the Design of Proxy Demand Resource”
August 17, 2009	Due date for written stakeholder comments on ISO paper issued on August 5, 2009
August 28, 2009	ISO issues further revised paper entitled “Draft Final Proposal for the Design of Proxy Demand Resource”
September 10, 2009	ISO Governing Board approves final proxy demand resource proposal
November 19, 2009	ISO issues draft tariff language to implement proxy demand resource program
November 25, 2009	ISO issues updated draft tariff language to implement proxy demand resource program
December 1, 2009	ISO issues papers entitled “Draft Implementation Plan for the Proxy Demand Resource” and “Technical Interface Specification for DRS Exchange Services”; Department of Market Monitoring issues paper entitled “Potential Impact of Proxy Demand Response on Local Market Power Mitigation”; due date for written stakeholder comments on draft tariff language issued on November 25, 2009
December 4, 2009	ISO hosts conference call with stakeholders to discuss

Date	Event/Due Date
	draft tariff language issued on November 25, 2009
December 8, 2009	ISO hosts conference call of proxy demand resource working group
December 15, 2009	ISO hosts proxy demand resource implementation workshop that includes Department of Market Monitoring presentation entitled “Potential Impact of PDR on Local Market Power Mitigation”
December 23, 2009	ISO issues document entitled “Business Requirements Specification: Demand Response – Proxy Demand Resource, Version 1.8”
January 4, 2010	ISO issues paper entitled “Demand Response – Frequently Asked Questions”
January 5, 2010	Due date for written stakeholder comments on ISO paper issued on December 1, 2009; ISO hosts workshop for stakeholders on proxy demand resource and Spring 2010 release project implementation
January 19, 2010	ISO issues revised draft tariff language to implement proxy demand resource program; ISO issues revised paper entitled “Technical Interface Specification for DRS Exchange Services”
January 26, 2010	Due date for written stakeholder comments on revised draft tariff language issued on January 19, 2009
January 29, 2010	ISO hosts stakeholder conference call to discuss revised draft tariff language issued on January 19, 2009
February 9, 2010	ISO issues draft final tariff language to implement proxy demand resource program
February 11, 2010	ISO Governing Board approves the exclusion of proxy demand resource bids from the pre-market process for LMPM