CALIFORNIA ISO

California Independent
System Operator

April 30, 2004

The Honorable Magalie Roman Salas
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

**Re: California Independent System Operator Corporation**
**Docket No. ER04-____-000**
**Amendment No. 59 to the ISO Tariff**

Dear Secretary Salas:

Pursuant to Section 205 of the Federal Power Act ("FPA"), 16 U.S.C. § 824d, and Sections 35.11 and 35.13 of the regulations of the Federal Energy Regulatory Commission ("Commission"), 18 C.F.R. §§ 35.11, 35.13, the California Independent System Operator Corporation ("ISO")[1] respectfully submits for filing an original and six copies of an amendment to the ISO Tariff ("Amendment No. 59"). Amendment No. 59 modifies the ISO Tariff to add provisions regarding the standards that will apply to the dynamic scheduling of imports of Energy and Ancillary Services from System Resources into the ISO Control Area. The principles of Amendment No. 59 have been approved by the ISO Governing Board.

## I. EXECUTIVE SUMMARY

As the Commission has explained, "[d]ynamic scheduling electronically moves a generation resource or load from the control area in which it is physically located to a new control area."[2] In the instant filing, the ISO seeks to: (1) establish clear technical, operational, and business standards that will apply to the dynamic scheduling of imports and (2) identify the contractual

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[1] Capitalized terms not otherwise defined herein are defined in the Master Definitions Supplement, Appendix A to the ISO Tariff, as filed August 15, 1997, and subsequently revised.

[2] Order No. 888-A, FERC Stats. & Regs. ¶ 31,048, at 30,235 (1997).

arrangements that must be in place in order for a System Resource to be dynamically scheduled into the ISO Control Area

The proposed dynamic scheduling framework will allow imports of Energy and Ancillary Services from System Resources (which, by definition, are located outside of the ISO Control Area) to respond to ISO Dispatch instructions within an operating hour, thereby facilitating the participation of imports in the ISO's 10-minute markets. This should increase the volume of bids in the ISO's Supplemental Energy market, and promote the development and maintenance of a competitive market. As such, the ISO respectfully requests that the Commission approve these proposed modifications and allow them to be put into effect on June 29, 2004, 60 days after the date of this filing.

## II. BACKGROUND

The ISO has had a variety of experiences with dynamic transfers into the ISO Control Area from System Resources. The ISO "inherited" a number of dynamic scheduling arrangements in existence at the time of the ISO Operations Date. Several years ago, the ISO also implemented the ISO's Standards for Imports of Regulation (posted on the ISO Home Page at http://www.caiso.com/docs/2000/05/09/ 20000509165702192.pdf), to formalize the process for delivering Regulation imports into the ISO Control Area from System Resources. In addition, on January 9, 2004, the ISO filed three letter agreements with the Commission in Docket No. ER04-389-000 that set forth certain basic requirements for dynamic scheduling from System Resources on an interim pilot program basis. These were accepted by the Commission's order issued March 9, 2004.[3]

Other than the ISO's Standards for Imports of Regulation, the ISO does not currently have formal generally applicable standards regarding the implementation and operation of dynamic transfers into the ISO Control Area from System Resources. As Market Participant interest in dynamic scheduling has recently increased, the need for formalization of ISO policies and practices concerning such transfers has become apparent.

## III. DEVELOPMENT OF A DYNAMIC TRANSFERS POLICY FOR SYSTEM RESOURCES

In response to the significant interest expressed by Market Participants, the ISO initiated an effort to develop a comprehensive policy framework for implementation, operation, and settlement of Energy and

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[3] *California Independent System Operator Corporation,* 106 FERC ¶ 61,245.("March 9 Order").

Ancillary Services to be delivered dynamically from resources external to the ISO Control Area. One of the early steps in the process of developing a dynamic transfers policy for System Resources was the ISO's filing of the three interim dynamic scheduling letter agreements in Docket No. ER04-389-000.[4] In the March 9 Order, the Commission directed the ISO to develop by May 1, 2004 generally-applicable ISO Tariff language for a dynamic scheduling policy to be included in the ISO Tariff.[5] The Commission also directed the ISO to provide for a stakeholder process for Market Participants to provide input regarding the ISO's proposed dynamic scheduling proposal.[6]

On March 1, 2004, the ISO circulated to stakeholders a white paper entitled *Proposed Framework For The Development Of Dynamic Scheduling Policy*. The white paper set forth the ISO's proposed schedule and process for the development of a comprehensive policy regarding dynamic scheduling, as well as a proposed "straw" dynamic scheduling policy. A stakeholder conference was held on March 11, 2004 to discuss the proposal. At the meeting, the ISO received many useful comments from stakeholders. There was general support for the ISO's dynamic transfers "straw" proposal. Taking into consideration the comments the ISO received from stakeholders, on April 8, 2004, the ISO circulated the following draft documents to stakeholders for their comments: (1) *Standards for Dynamic Imports of Energy, Supplemental Energy, and Energy Associated with Non-Regulation Ancillary Services* (to be posted on the ISO Home Page once the Commission approves the dynamic scheduling ISO Tariff revisions proposed herein); (2) a draft Dynamic Scheduling Agreement for Scheduling Coordinators (to be entered into by the Scheduling Coordinator for the dynamically scheduled System Resource); (3) a draft Interconnected Control Area Operating Agreement ("ICAOA") Service Schedule 17 (Inter-Control Area Requirements for Scheduling and Dynamic Delivery of Energy, Supplemental Energy, and Energy Associated with Non-Regulation Ancillary Services to the ISO); and (4) a Dynamic Scheduling Host Control Area Operator Agreement (for Control Areas participating in the submittal of dynamic schedules to the ISO but which are not signatories to an ICAOA with the ISO).

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[4] In its filing, the ISO advised the Commission of its ongoing efforts to develop a uniform, generally applicable dynamic transfers policy that would standardize the ISO's requirements for implementation and operation of dynamic scheduling functionality. *See* Filing of Dynamic Scheduling Letter Agreements, Docket No. ER04-389-000 (filed Jan. 9, 2004), at 4.

[5] March 9 Order at P 17.

[6] *Id.*

The ISO received comments on these documents from several entities. This filing reflects the ISO's consideration of these comments and additional revisions to the draft documents based on the ISO's internal review. A description as to how the draft documents have been revised is provided as Attachment I to the present filing. In addition, the ISO will be posting on its website a description of the comments it received and the ISO's response to the comments.

In developing the proposed policy framework for dynamic scheduling of imports from System Resources,[7] the ISO has relied on its collective

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[7] The instant proposal only establishes a dynamic transfers policy for System Resources importing Energy and Ancillary Services into the ISO Control Area. The ISO has expedited the development of formal standards for the dynamic scheduling of imports so that it can promptly place all System Resources that desire dynamic scheduling functionality on an equal footing with Bonneville Power Administration ("BPA"), Reliant Energy Services ("Reliant"), and Sempra Energy Resources ("Sempra"), with whom the ISO executed interim Letter Agreements for dynamic scheduling functionality. In response to a protest filed by Powerex Corp. ("Powerex") in Docket No. ER04-389 alleging that the ISO was discriminating against other System Resources by allowing interim dynamic scheduling functionality for BPA, Reliant, and Sempra, the ISO made a commitment to the Commission that it would develop a generally applicable policy framework for the dynamic scheduling of System Resources as soon as possible to address the concerns raised by Powerex. *See* Motion for Leave to File Answer and Answer of the California Independent System Operator Corporation to Protests and Comments, Docket No. ER04-389-000 (filed Feb. 17, 2004), 3-6. The Commission recognized the ISO's commitment, and its acceptance of the three Letter Agreements was conditioned on the ISO making a Section 205 filing by May 1, 2004. March 9 Order at P 16.

The ISO notes that there have been some informal inquiries from Market Participants regarding the development of a formal dynamic scheduling program for exports from the ISO Control Area to other Control Areas. The instant filing does not attempt to establish a broader dynamic scheduling policy that would apply to exports because, given the truncated timeframe in which the ISO had to make this filing, the ISO focused its efforts on developing a comprehensive policy for imports. The ISO has not had sufficient time or adequate opportunity to study all of the issues associated with developing a formal policy regarding the dynamic scheduling of exports. A dynamic scheduling policy for exports would require different standards than those required for dynamically scheduled imports due to the different operational and business relationship of the ISO to resources within the ISO Control Area in contrast to imports from other Control Areas. Moreover, unlike the dynamic imports, the ISO has far more limited experience with the dynamic scheduling of exports, which experience would be instrumental in assessing potential future success of such a program. Accordingly, the ISO offered to meet with parties who are interested in the dynamic scheduling of exports to discuss possible implementation of dynamic scheduling functionality for exports on an exploratory (or pilot) basis. To that end, the ISO has set up a meeting with a party that has professed interest in implementing such a functionality to discuss the dynamic scheduling of certain generating resources that the party desires to transfer out of the ISO Control Area. The ISO believes that it is reasonable and prudent to consider implementing an exploratory or pilot program for dynamically scheduled exports so that the ISO can gain necessary experience that could serve as the basis for developing more formal standards for dynamic exports in the future. (Such approach would not be unlike that which the ISO took in

experience gained from, among other things, (1) operating pre-ISO dynamic scheduling functionalities, (2) the Regulation dynamic scheduling functionalities implemented in accordance with the ISO Tariff and the Standards for Import of Regulation which were approved as part of Tariff Amendment No. 25, (3) operating non-Regulation dynamic scheduling functionalities with the three entities with whom the ISO has executed letter agreements, and (4) the feedback it has received from the stakeholder process.

## IV. THE DYNAMIC SCHEDULING FRAMEWORK

The ISO proposes to permit dynamic imports of Energy from any System Resource external to the ISO Control Area provided that: (1) implementation is consistent with all applicable NERC/WECC policies, (2) all ISO operating, technical, and business requirements for the dynamic functionality are satisfied, and (3) operating agreements applicable to each System Resource, as well as the System Resource's host Control Area and any intermediary Control Areas, are duly executed.[8] The ISO will implement its dynamic scheduling program on an integrated basis using three mechanisms: (1) ISO Tariff modifications, (2) technical, operational, and business standards that will be specified on the ISO Home Page, and (3) agreements between the ISO and the Scheduling Coordinator for the System Resource that will be dynamically scheduled, and agreements between the ISO and the host Control Area (and all intermediary Control Areas). The specific standards and requirements are discussed below.

### A. Proposed Tariff Changes

#### 1. New Tariff Provisions

Certain requirements for dynamic scheduling will be specified in the ISO Tariff in a new Section 2.2.7.6. These requirements include the following: (1) dynamically scheduling of the System Resource must be technically feasible and consistent with all applicable NERC and WECC

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implementing the standards for dynamic imports, where the combined experience from operating three pilots filed with the Commission on January 9, 2004 and experience from operating the pre-existing dynamic functionalities gave rise to enough operational confidence that this filing of standards for dynamic imports became possible.) In any event, the ISO needs to undertake a reliability assessment regarding the dynamic scheduling of exports before developing formal standards for the dynamic scheduling of exports.

[8] In this filing the ISO has provided a *pro forma* agreement for host Control Areas. The ISO would except to execute similar agreements with any intermediary Control Areas. However, as such agreements should be infrequent and may need to address specific factual issues, the ISO has not proposed a *pro forma* agreement for intermediary Control Areas at this time.

policies, standards, requirements, and reference documents; (2) the dynamically scheduled System Resource must comply with all technical, operational, and business standards and procedures posted on the ISO Home Page; (3) the Scheduling Coordinator for the dynamically scheduled System Resource must execute an agreement with the ISO for the operation of the dynamic scheduling functionality; and (4) the System Resource's host and all intermediary Control Areas must each enter into operating agreements with the ISO that will provide for dynamic scheduling.

The proposed ISO Tariff requirements for the dynamic scheduling of Energy and Ancillary Services are very similar to the existing, Commission-approved ISO Tariff requirements applicable to the dynamic scheduling of Regulation by System Resources. *See* Section 2.5.7.4.3 of the ISO Tariff. For the same reasons the Commission approved the provisions of Section 2.5.7.4.3, the Commission should approve the ISO Tariff provisions in proposed Section 2.2.7.6.

It is imperative that any dynamic transfers policy be consistent with all applicable NERC and WECC policies, standards, and requirements. Currently, these requirements have been consolidated in the NERC Dynamic Transfer White Paper, which paper was approved by the NERC Operating Committee on March 25, 2004 as a reference document. The reference in the proposed ISO Tariff language to meet NERC/WECC requirements reaffirms that point. In particular, scheduling and operation of dynamic scheduling functionalities must comply with all applicable NERC and WECC policies and requirements regarding inter-Control Area scheduling.

In addition, a number of changes to various sections of the ISO Tariff and Protocols are required to facilitate the implementation of dynamic scheduling of imports as proposed in this amendment. These changes are as follows:

- Changes to ISO Tariff Sections 2.3.1.1.2 and 2.3.1.1.3 to recognize that System Resources as well as Generating Units are subject to the provisions of those sections.

- Changes to ISO Tariff Section 2.5.6.2 to provide that operators of System Resources from which dynamic schedules or bids are submitted to the ISO will provide communications links meeting ISO standards for dynamic imports from System Resources, and to clarify several of the existing provisions in the section.

- Changes to ISO Tariff Section 2.5.7.4.2 to provide that Scheduling Coordinators that desire to submit dynamic bids or self-provide dynamic imports of Spinning Reserve, Non-Spinning Reserve, or

Replacement Reserve from System Resources may only do so when technically feasible and in accordance with WECC criteria.

- Changes to ISO Tariff Sections 2.5.15, 2.5.16, and 2.5.17, and to Section SBP 6.1.3 of the Schedules and Bids Protocol, to update the information that each Scheduling Coordinator must specify for the external import of a System Resource.

- Changes to ISO Tariff Section 2.5.27 to provide that all dynamic schedules for Ancillary Services provided to the ISO from System Resources will be deemed delivered to the ISO.

- Changes to ISO Tariff Section 2.5.30.1 to provide that Scheduling Coordinators that wish to submit dynamic schedules or bids for Ancillary Services to the ISO must also comply with the requirements of Tariff Sections 2.2.7.6, 2.5.6.2, and 2.5.7.4.2.

- Changes to the definition of System Resource to make clear that a System Resource can be a single resource or a portion of a resource located outside of the ISO Control Area, or an allocated portion of a Control Area's portfolio of generating resources that are directly responsive to that Control Area's AGC capable of providing Energy and/or Ancillary Services to the ISO Control Area.

- Changes to the definition of Tolerance Band to provide for a "Pmax-like" value that is to be established for every dynamically scheduled System Resource to be used as the basis for the calculation of Uninstructed Deviation Penalties ("UDP") when UDP is implemented in Phase 1B of the ISO's comprehensive market redesign ("MD02").

- Changes to Section DP 9.2.1 of the Dispatch Protocol to specify that all participants within the ISO Control Area and all dynamically scheduled System Resources must comply with the ISO's Dispatch Instructions unless such operation would impair public health or safety.

### 2. Tariff Revisions Proposed In Prior ISO Filings

In Amendment No. 58 to the ISO Tariff (submitted in Docket No. ER04-609-000), the ISO proposed, among other things, to modify the definition of Tolerance Band so that the Tolerance Band explicitly applies to imports from dynamically scheduled System Resources. *See* Definition of Tolerance Band, Second Revised Sheet No. 352 and First Revised Sheet No. 352A. In addition, in Amendment No. 58, the ISO proposed to modify Section 2.6.1 of Appendix A of the Settlement and Billing Protocol ("SABP"), in relevant part,

to specify that non-dynamically scheduled System Resources do not have a Tolerance Band. *See* First Revised Sheet No. 694E.

The ISO requested that the ISO Tariff revisions proposed the Amendment No. 54 Compliance Filing and Amendment No. 58 be approved effective on the date that the ISO places into service the Phase 1B modifications proposed in MD02. At the time the ISO made these filings, the ISO anticipated that Phase 1B would be implemented prior to the Summer of 2004, i.e., prior to the effective date of formal dynamic scheduling framework proposed herein. However, subsequent to making these filings, the ISO announced that the Phase 1B modifications are not expected to become effective until the Fall of 2004 – after the ISO's dynamic transfers policy is proposed to be implemented.

As noted above, the ISO is proposing to make further clarification to the definition of Tolerance Band as applied to System Resources. Specifically, the ISO proposes that:

> The maximum output (Pmax) of a dynamically scheduled System Resource will be established by agreement between the ISO and the Scheduling Coordinator representing the System Resource on an individual case basis, taking into account the number and size of the generating resources, or allocated portions of generating resources, that comprise the System Resource.

While the ISO proposes that the remainder of the dynamic scheduling program be implemented 60 days after this filing, the ISO recognizes that the proposed revision to the definition of Tolerance Band would only become effective upon implementation of UDP in accordance with prior direction from the Commission and implementation of the necessary software.[9]

### B. Technical, Operational, and Business Standards

Certain technical, operational, and business standards applicable to dynamically scheduled System Resources will be set forth in a document

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[9] It is appropriate for UDP to apply to dynamically scheduled imports because dynamic schedules have a similar effect as ISO intra-Control Area Generating Units on real-time system controls.

The ISO notes that some of the changes proposed in the present filing incorporate "clean-up" changes contained in the ISO's March 11, 2004 Amendment No. 54 compliance filing. To the extent the Commission determines that the clean-up changes are not appropriate, the ISO will submit a further filing to remove them from the proposed changes contained herein.

entitled *Standards for Dynamic Scheduling of Energy, Supplemental Energy, and Energy Associated with Non-Regulation Ancillary Services* ("*Dynamic Scheduling* Standards") that will be posted on the ISO Home Page. For informational purposes, a copy of the *Dynamic Scheduling Standards* that the ISO intends to post on the ISO Home Page is provided as Attachment E to the present filing. This document sets forth in detail the specific technical and operational standards that will apply to the implementation of dynamic scheduling functionality, as well as noting the applicability of certain requirements with regard to losses, financial settlement and compliance. It should be noted that the ISO has relied on its experience with pre-existing dynamic scheduling functionalities in developing the proposed requirements and standards. The ISO intends that the *Dynamic Scheduling Standards* will serve as a "guidebook" for parties interested in dynamically scheduling imports of Energy and Ancillary Services. In addition to setting forth technical and operational standards for dynamic schedules, the *Dynamic Scheduling Standards* also identify applicable requirements that are specified in the ISO Tariff and agreements that must be executed. In addition, the *Dynamic Scheduling Standards* clarify how certain existing market, scheduling, and settlements rules apply to dynamic schedules. To the extent there is any inconsistency between the ISO Tariff and the *Dynamic Scheduling Standards*, the ISO Tariff governs.

The approach that the ISO is proposing is similar to that approved by the Commission in Amendment No. 25 with respect to the dynamic scheduling of System Resources for purposes of providing Regulation. In that regard, the ISO filed a brief ISO Tariff provision setting forth certain basic requirements for the dynamic scheduling of Regulation[10] and provided for the specification of technical standards and procedures in a document posted on the ISO Home Page. The ISO is taking a similar approach here. The Commission agreed with the ISO's approach in ISO Tariff Amendment No. 25 that technical standards need not be included in the Tariff. *See California Independent System Operator Corporation,* 90 FERC ¶ 61,316 at 62,046 (2000). Consistent with its decision on Tariff Amendment No. 25, the Commission should approve the bifurcated approach of including general requirements in the filed tariff and more detailed specifications in a posted technical paper proposed by the ISO herein.[11]

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[10] Similar to the Tariff language proposed here, the ISO Tariff language filed in Amendment No. 25 provided that the operator of the Control Area in which the System Resource is located must enter into an agreement with the ISO for interconnected Control Area operations.

[11] The ISO also notes that the Commission previously found that PJM was not required to set forth detailed implementation procedures for dynamic scheduling in its Tariff. *See PJM Interconnection LLC,* 93 FERC ¶ 61,291 (2000). The Commission rejected requests that PJM's tariff contain a greater level of specificity with respect to dynamic scheduling

The ISO notes that many of the operating requirements are taken from pertinent NERC and WECC policies, standards, requirements, and reference documents (WECC Minimum Operating Reliability Criteria ("MORC"), NERC Operating Policies (especially Policy 3 – Scheduling); and NERC Dynamic Transfer White Paper). The technical requirements generally are control system implementation details that comport to prevailing industry standards. The ISO's proposed dynamic scheduling policy requires that the Scheduling Coordinator make arrangements for firm, or non-interruptible for the operating hour, transmission service from the host Control Area and through all intermediary Control Areas, if applicable, to the ISO. NERC and the WECC require that all Ancillary Services be delivered over firm or non-interruptible transmission. Consequently, any Spinning Reserve or Non-Spinning Reserve service as well as the associated Energy must be scheduled over firm or non-interruptible transmission for the operating hour. With regard to dynamic deliveries of Energy or Supplemental Energy from System Resources, the ISO treats such delivered Energy as resource contingent (firm) Energy, meaning that, for the purpose of determining of the ISO load responsibility and calculation of the ISO Control Area Operating Reserve requirement, such dynamically imported System Resources are treated the same as ISO Control Area internal Generating Units. Some of the other key points to note are that: (1) the dynamic schedule signal be properly incorporated into all Control Areas' Area Control Error ("ACE") calculation, (2) the dynamic schedule cannot exceed in real time the associated transmission reservation, and (3) operators of dynamically scheduled System Resources, as well as their host Control Areas, must be able to manually override the dynamic signal (e.g., for emergency or contingency reasons, or to ensure the ISO's compliance with operating requirements based on WECC MORC or NERC policies). Any telemetry and communication requirements are based on prevailing industry applications and are no more stringent than those accepted by the Commission with respect to dynamically scheduled Regulation imports.

The requirements concerning losses, settlements, and compliance, were based on the existing ISO requirements applicable to the currently implemented dynamic scheduling agreements.

### C. Necessary Operating Agreements

Finally, in order to implement dynamic scheduling functionality for a particular resource, the ISO will need to execute certain agreements. Specifically, the ISO will require a dynamic scheduling agreement between the ISO and the Scheduling Coordinator for the dynamically scheduled System Resource, and a separate operating agreement between the ISO and

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requirements. The Commission appropriately recognized that its has the discretion not to require the filing of practices that have an insignificant effect on rates or services. The ISO's approach herein is consistent with the Commission's prior decisions.

the host and each intermediary Control Area. The ISO considers it critical to the implementation of the dynamic scheduling import functionality that both Scheduling Coordinators and other Control Area undertake a contractual commitment to abide by the ISO's standards and requirements for such dynamic scheduling. The ISO also considers it important to be able to include variances from the ISO's standards and requirements to accommodate the special circumstances of particular entities that may wish to engage in or facilitate dynamic scheduling of imports.

The ISO is providing as Attachments F, G, and H to the present filing the following *pro forma* agreements: (1) a Dynamic Scheduling Agreement for Scheduling Coordinators (to be entered into by the Scheduling Coordinator for the dynamically scheduled System Resource); (2) an Interconnected Control Area Operating Agreement ("ICAOA") Service Schedule 17 (Inter-Control Area Requirements for Scheduling and Dynamic Delivery of Energy, Supplemental Energy, and Energy Associated with Non-Regulation Ancillary Services to the ISO) and (3) a Dynamic Scheduling Host Control Area Operator Agreement (for Control Areas participating in the submittal of dynamic schedules to the ISO but which are not signatories to an ICAOA with the ISO).[12]

Consistent with the ISO's historic practice, the ISO is filing these agreements for Commission approval as *pro forma* service agreements. *See, e.g., California Independent System Operator Corporation*, 88 FERC ¶ 61,182, 61,591 (1999). Consistent with Commission policy, the ISO will file with the Commission any executed agreements that materially deviate from the *pro forma* agreements. *See Revised Public Utility Filing Requirements*, Order No. 2001, FERC Stats. & Regs. ¶ 31,127, at P 196 (2002).

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[12] Because a dynamic schedule is a schedule, the Control Areas that host, transmit, and receive dynamic schedules are ultimately responsible for the proper implementation and operation of the dynamic functionality. Consequently, the ISO must have appropriate contractual mechanisms in place with all involved Control Areas that will allow for the coordination that is required both during normal and emergency conditions. The ISO proposes to (1) add an appropriate service schedule to the already implemented ICAOAs and (2) enter into "special purpose" operating agreements with Control Areas that either refuse to enter into ICAOA with the ISO or are not directly interconnected to the ISO.

## V. EFFECTIVE DATE

The ISO respectfully requests that the provisions of Amendment No. 59 be put into effect 60 days from the date of this filing, i.e., on June 29, 2004, with the exception of the proposed revision to the definition of Tolerance Band which will be made effective in accordance the orders on MD02 Phase 1B.

## VI. COMMUNICATIONS

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

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## VII. SERVICE

The ISO has served copies of this transmittal letter, and all attachments, on the California Public Utilities Commission, the California Energy Commission, the California Electricity Oversight Board, and on 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 Home Page.

## VIII. ATTACHMENTS

The following documents, in addition to this transmittal letter, support this filing:

Attachment A — Revised ISO Tariff sheets (pre-implementation of Amendment No. 54)[13]

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[13] As Amendment No. 54 has been accepted by the Commission but not yet made effective, the ISO is providing clean sheets and blacklines to illustrate how Amendment No. 59 would affect the ISO Tariff as currently in effect and how it will work with Amendment No. 54 when implemented in the future.

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| Attachment B | Revised ISO Tariff sheets (post-implementation of Amendment No. 54) |
| Attachment C | Black-lined ISO Tariff provisions (pre-implementation of Amendment No. 54) |
| Attachment D | Black-lined ISO Tariff provisions (post-implementation of Amendment No. 54) |
| Attachment E | *Standards for Dynamic Imports of Energy, Supplemental Energy, and Energy Associated with Non-Regulation Ancillary Services* (provided for informational purposes only) |
| Attachment F | *Pro forma* Dynamic Scheduling Agreement for Scheduling Coordinators |
| Attachment G | *Pro forma* Interconnected Control Area Operator Service Schedule 17 (Inter-Control Area Requirements for Scheduling and Dynamic Delivery of Energy, Supplemental Energy, and Energy Associated with Non-Regulation Ancillary Services to the ISO) |
| Attachment H | *Pro forma* Dynamic Scheduling Host Control Area Operator Agreement |
| Attachment I | Summary of changes to the drafts of documents posted on the ISO Home Page |
| Attachment J | Notice of this filing, suitable for publication in the Federal Register (also provided in electronic format) |

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. Please feel free to contact the undersigned if you have any questions concerning this matter.

Respectfully submitted,

Anthony J. Ivancovich BAM

Anthony J. Ivancovich
Counsel for The California Independent
System Operator Corporation

Enclosures

# ATTACHMENT A

# CLEAN SHEETS
# PRE-AMENDMENT NO. 54

excessive by comparison with the likely cost of the amount of Energy scheduled by the Scheduling Coordinator.

**2.2.7.6 Dynamic Scheduling.** Scheduling Coordinators may dynamically schedule imports of Energy, Supplemental Energy, and Ancillary Services (other than Regulation) for which associated Energy is delivered dynamically from System Resources located outside of the ISO Control Area, provided that (a) such dynamic scheduling is technically feasible and consistent with all applicable NERC and WECC criteria and policies, (b) all operating, technical, and business requirements for dynamic scheduling functionality, as posted in standards on the ISO Home Page, are satisfied, (c) the Scheduling Coordinator for the dynamically scheduled System Resource executes an agreement with the ISO for the operation of dynamic scheduling functionality, and (d) all affected host and intermediary Control Areas each execute with the ISO an Interconnected Control Area Operating Agreement or special operating agreement related to the operation of dynamic functionality.

**2.2.8 The Scheduling Process.**

The ISO scheduling process is described for information purposes only in tabular form in Appendix C. The scheduling process by nature will need constant review and amendment as the market develops and matures and, therefore, is subject to change. The description in Appendix C aids understanding of the implementation and operation of the various markets administered by the ISO and is filed for information purposes only.

**2.2.8.1 Preferred Schedule.** A Preferred Schedule shall be submitted by each Scheduling Coordinator on a daily and/or hourly basis to the ISO. Scheduling Coordinators may also submit to the ISO, Ancillary Services bids in accordance with Section 2.5.10 and, where they elect to self-provide Ancillary Services pursuant to Section 2.5.20.1, an Ancillary Service schedule meeting the requirements set forth in Section 2.5.20.6. The Preferred Schedule shall also include an indication of which resources (Generation or Load) if any may be adjusted by the ISO to eliminate Congestion. On receipt of the Preferred Schedule in the Day-Ahead scheduling process, the ISO shall notify the Scheduling Coordinator of any specific Reliability Must-Run Units which have not been included in the Preferred

Schedule but which the ISO requires to run in the next Trading Day. The ISO will also notify the Scheduling Coordinator of any Ancillary Services it requires from specific Reliability Must-Run Units under their Reliability Must-Run Contracts in the next Trading Day. If the ISO identifies mismatches in the scheduled quantity or location for any Inter-Scheduling Coordinator Energy Trade, it will notify the Scheduling Coordinators concerned and give them until a specified time, which will allow

**2.3.1.1.2 Establish Back-up Control Facility.** The ISO shall establish back-up control facilities remote from the ISO Control Center sufficient to enable the ISO to continue to direct the operation of the ISO Controlled Grid, Reliability Must-Run Units, System Resources and Generating Units providing Ancillary Services in the event of the ISO Control Center becoming inoperable.

**2.3.1.1.3 ISO Control Center Authorities.** The ISO shall have full authority, subject to Section 2.3.1.2, to direct the operation of the facilities referred to in Section 2.3.1.1.2 including (without limitation), to:

(a) direct the physical operation by the Participating TOs of transmission facilities under the Operational Control of the ISO, including (without limitation) circuit

breakers, switches, voltage control equipment, protective relays, metering, and Load Shedding equipment;

(b) commit and dispatch Reliability Must-Run Units;

(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 and System Resources that are selected to provide Ancillary Services and Imbalance Energy;

(f) dispatch Loads through direct Load control or other means at the ISO's discretion that are curtailable as an Ancillary Service; and

(g) procure Supplemental Energy.

**2.3.1.1.4 Coordination and Approval for Outages.** The ISO shall have authority to coordinate and approve Outages and returns to service of all facilities comprised in the ISO Controlled Grid and Reliability Must-Run Units in accordance with Section 2.3.3.

**2.3.1.1.5 Responsibility for Authorized Work on Facilities.** The ISO shall have authority to approve requests by Participating TOs to work on all energized transmission equipment under the Operational Control of the ISO.

**2.3.1.1.6** The ISO shall be the WECC reliability coordinator for the ISO Controlled Grid.

ISO 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 ISO shall make the final determination as to the additional communication methods. Participating Generators, owners or operators of Loads and operators of System Units or System Resources whose resources are scheduled, bid in or under contract, shall ensure that there is a 24 hour personal point of contact with the ISO for the Generating Unit, System Unit, Load or System Resource. Operators of System Resources from which dynamic schedules or bids are submitted to the ISO shall provide communications links meeting ISO standards for dynamic imports from System Resources. Participating Generators and operators of System Units providing Regulation shall also provide communication links meeting ISO standards for direct digital control. Operators of System Resources providing Regulation shall provide communications links meeting ISO standards for external imports of Regulation. If any communication system becomes unavailable, the relevant Participating Generators, operators of System Units, Loads and System Resources and the ISO shall take immediate action to identify the cause of the interruption and to restore the ccmmunication system. A Scheduling Coordinator, which has scheduled or bid in or contracted for Ancillary Services shall ensure that the Generating Unit, System Unit, Load or System Resource concerned is able to receive and implement Dispatch instructions.

**2.5.6.3 Metering Infrastructure.** All Participating Generators, owners or operators of Loads and operators of System Units or System Resources which a Scheduling Coordinator wishes to schedule or bid to provide Ancillary Services shall have the metering infrastructure for the Generating Units, System Units, Loads or System Resources concerned which complies with requirements to be established by the ISO relating to:

(a) meter type;

(b) meter location;

(c) meter reading responsibility;

other entities may use market-based rates not subject to any restrictions apart from those found in this ISO 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.

**2.5.7.4 Bidding and Self-Provision of Ancillary Services**

The ISO will procure Ancillary Services in accordance with this ISO Tariff, and the applicable ISO Protocols.

**2.5.7.4.1** Scheduling Coordinators may bid or self-provide Ancillary Services or specify Inter-Scheduling Coordinator Ancillary Service Trades from resources located within the ISO Control Area.

**2.5.7.4.2** Scheduling Coordinators may bid or self-provide external imports of Spinning Reserve, Non-Spinning Reserve or Replacement Reserve from System Resources located outside the ISO Control Area, including dynamically scheduled System Resources, where technically feasible and consistent with WECC criteria; and provided that such Scheduling Coordinators have certified to the ISO their ability to deliver the service to the point of interchange with the ISO Control Area (including with respect to their ability to make changes, or cause such changes to be made, to interchange schedules during any interval of a Settlement Period at the discretion of the ISO).

**2.5.7.4.3** Scheduling Coordinators may bid or self-provide external imports of Regulation from System Resources located outside the ISO Control Area, where technically feasible and consistent with WECC criteria; provided that the operator of the Control Area in which the System Resources are located has entered into an agreement with the ISO for interconnected Control Area operations; and provided that such Scheduling Coordinator and the operator of the Control Area in which the resources are located have been

(a) bidder name/Identification Code;

(b) the date for which the bid applies;

(c) ramp rate if applicable (MW/Min);

(d) MW additional capability synchronized to the system, immediately responsive to system frequency and available at the point of interchange with the ISO Control Area, within 10 minutes ($Cap_{ijt}max$) of the ISO calling for the external import of System Resource i, from Scheduling Coordinator j, for Settlement Period t;

(e) bid price of capacity reserved ($CapRes_{ijt}$ ($/MW));

(f) bid price of Energy output from reserved capacity ($EnBid_{ijt}$ ($/MWh));

(g) 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; and, for a dynamic import of a System Resource, the following additional information:

(h) type of market (Day-Ahead or Hour-Ahead) and Trading Day;

(i) Scheduling Point;

(j) interchange ID code;

(k) external Control Area ID;

(l) Schedule ID (NERC ID number) and complete WECC tag;

(m) preferred bid flag, a "YES" indicates a bid and a "NO" indicates a self-provided schedule; and

(n) the contract reference number, if applicable.

**Bid Evaluation**. Based on the quantity and location of the system requirements, the ISO shall select the Generating Units, System Units and external imports of System Resources with the bids which minimize the sum of the total bids of the Generating Units, System Units and external imports of System Resources selected subject to two constraints:

(a) the sum of the selected bid capacities must be greater than or equal to the required Spinning Reserve capacity; and

(b) each Generating Unit's, System Unit's or external import's bid capacity must be less than or equal to that Generating Unit's, System Unit's or external import's ramp rate times 10 minutes.

The total bid for each Generating Unit, System Unit or external import of a System Resource is calculated by multiplying the capacity reservation bid price by the bid capacity. Thus, subject to any locational requirements, the ISO will select the winning Spinning Reserve bids in accordance with the following criteria:

If the bid is for the provision of Non-Spinning Reserve from an external import of a System Resource, each Scheduling Coordinator j must submit the following information for each external import of a System Resource i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) the date for which the bid applies;

(c) ramp rate if applicable (MW/Min);

(d) the MW capability available at the point of interchange with the ISO Control Area, within 10 minutes ($Cap_{ijt}max$) of the ISO calling for the external import of System Resource I, from Scheduling Coordinator j, for Settlement Period t;

(e) the bid price of the capacity reserved ($CapRes_{ijt}$($/MW));

(f) the bid price of Energy output from reserved capacity ($EnBid_{ijt}$($/MWh));

(g) 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; and, for a dynamic import of a System Resource, the following additional information:

(h) type of market (Day-Ahead or Hour-Ahead) and Trading Day;

(i) Scheduling Point;

(j) interchange ID code;

(k) external Control Area ID;

(l) Schedule ID (NERC ID number) and complete WECC tag;

(m) preferred bid flag, a "YES" indicates a bid and a "NO" indicates a self-provided schedule; and

(n) the contract reference number, if applicable.

If the bid is for the provision of Non-Spinning Reserve from a Load located within the ISO Control Area, each Scheduling Coordinator j must submit the following information for each Load i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) Load identification name and Location Code;

(c) the date for which the bid applies;

(d) Demand reduction available within 10 minutes ($Cap_{iji}max$);

(e) to interruption following notification (min);

(f) maximum allowable curtailment duration (hr);

for each Generating Unit or System Unit i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) Generating Unit or System Unit identification (name and Location Code);

(c) the date for which the bid applies;

(d) maximum operating level (MW);

(e) minimum operating level (MW);

(f) ramp rate (MW/Min);

(g) the MW capacity available within 60 minutes ($Cap_{ijt}max$);

(h) the bid price of the capacity reserved ($CapRes_{ijt}$ *($/MW)*); and

(i) time to synchronize following notification (min); and

(j) the bid price of the Energy output from the reserved capacity ($EnBid_{ijt}$ ($/MWh)).

If the bid is for the provision of Replacement Reserve from an external import of a System Resource, each Scheduling Coordinator j must submit the following information for each external import of a System Resource i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) the date for which the bid applies;

(c) ramp rate applicable (MW/Min);

(d) the MW capability available at the point of interchange with the ISO Control Area, within 60 minutes ($Cap_{ijt}max$) of the ISO calling for the external import of System Resource i, from Scheduling Coordinator j, for Settlement Period t;

(e) bid price of capacity reserved ($CapRes_{ijt}$;($/MW));

(f) bid price of Energy output from reserved capacity ($EnBid_{ijt}$ ($/MWh)); and, for a dynamic import of a System Resource, the following additional information:

(g) type of market (Day-Ahead or Hour-Ahead) and Trading Day;

(h) Scheduling Point;

(i) interchange ID code;

(j) external Control Area ID;

(k) Schedule ID (NERC ID number) and complete WECC tag;

(l) preferred bid flag, a "YES" indicates a bid and a "NO" indicates a self-provided schedule; and

(m) the contract reference number, if applicable.

If the bid is for the provision of Replacement Reserve from a Load located within the ISO Control Area, each Scheduling Coordinator j must submit the following information for each Load i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) Load identification (name and Location Code);

(c) the date for which the bid applies;

(d) the Demand reduction available within 60 minutes ($Cap_{ijt}$ (MW));

(e) time to interruption following notification (min);

(f) maximum allowable curtailment duration (hr); and

(g) the bid price of the capacity reserved ($CapRes_{ijt}$ ($/MW));

(h) the bid price of the Demand reduction from the reserved capacity ($EnBid_{ijt}$ ($/MWh)).

**Bid Evaluation**. Based on the quantity and location of the system requirements, the ISO shall select the Generating Units, System Units, Loads or external imports of System Resources with the bids which minimize the sum of the total bids of the Generating Units, System Units, Loads or external imports of System Resources selected subject to two constraints:

(a) the sum of the selected bid capacities must be greater than or equal to the required Replacement Reserve capacity; and

**2.5.27 Settlements For Contracted Ancillary Services.**

Based on the prices and quantities determined in accordance with this Section, the ISO shall operate a daily Settlement function for Ancillary Services it contracts for with Scheduling Coordinators.

The ISO shall calculate imbalances between scheduled, instructed and actual quantities of Energy provided based upon Meter Data obtained pursuant to Section 10. Schedules between Control Areas shall be deemed as being delivered in accordance with Good Utility Practice. Dynamic schedules shall be integrated over time through the operating hour and the MWh quantity obtained by such integration shall be deemed to be the associated scheduled interchange for that operating hour. The difference between actual and scheduled interchange shall then be addressed in accordance with the WECC and NERC inadvertent interchange practices and procedures. Following this practice, all dynamic schedules for Ancillary Services provided to the ISO from System Resources in other Control Areas shall be deemed delivered to the ISO. The difference between the Energy requested by the ISO and that actually delivered by the other Control Area shall then be accounted for and addressed through the WECC and NERC inadvertent interchange practices and procedures.

Separate payments shall be calculated for each Settlement Period t for each Generating Unit, System Unit, System Resource and Curtailable Demand. The ISO shall then calculate a total daily payment for each Scheduling Coordinator for all the Generating Units, System Units, System Resources and Curtailable Demands that it represents for each Settlement Period t.

The settlements for the Hour-Ahead Markets shall be calculated by substituting Hour-Ahead prices in the relevant formulae and deducting any amounts due to the ISO from Scheduling Coordinators who buy back in the Hour-Ahead Market Regulation, Spinning Reserve, Non-Spinning Reserve or Replacement Reserve capacity they sold to the ISO in the Day-Ahead Market.

| Ancillary Service | Quantity Units | Period | Clearing Prices |
|---|---|---|---|
| Regulation/AGC | MW | Hourly | $/MW |
| Spinning Reserve | MW | Hourly | $/MW |
| Non-Spinning Reserve | MW | Hourly | $/MW |
| Replacement Reserve | MW | Hourly | $/MW |
| Black Start | MW | Annual | $/MW |

**2.5.30 Communication Protocols.**

Communications between the ISO and Scheduling Coordinators shall be as described below:

**2.5.30.1 Information Transfer from Scheduling Coordinator to ISO.** Unless otherwise agreed by the ISO, Scheduling Coordinators who wish to schedule or bid Ancillary Services to the ISO must submit the information by direct computer link. Scheduling Coordinators that wish to submit dynamic schedules or bids for Ancillary Services to the ISO must also comply with the applicable requirements of Sections 2.2.7.6, 2.5.6.2 and 2.5.7.4.2.

**2.5.30.2 Submitting Information By Direct Computer Link.** For Scheduling Coordinators submitting information by direct computer link, each such Scheduling Coordinator shall establish a network connection with the ISO through the WEnet network. This shall be a permanent link with the ISO. Link initialization procedures shall be necessary to establish the connection for the first time, and to re-establish the connection each time the connection is restored after a system or communication failure. In order to log in, each Scheduling Coordinator shall furnish the ISO with user ID and password.

**System Emergency** Conditions beyond the normal control of the ISO that affect the ability of the ISO Control Area to function normally including any abnormal system condition which requires immediate manual or automatic action to prevent loss of Load, equipment damage, or tripping of system elements which might result in cascading Outages or to restore system operation to meet the minimum operating reliability criteria.

**System Impact Study** An engineering study conducted to determine whether a New Facility Operator's request for interconnection to the ISO Controlled Grid would require new transmission additions, upgrades or other mitigation measures.

**System Planning Studies** Reports summarizing studies performed to assess the adequacy of the ISO Controlled Grid as regards conformance to Reliability Criteria.

**System Reliability** A measure of an electric system's ability to deliver uninterrupted service at the proper voltage and frequency.

**System Resource** A group of resources, single resource, or a portion of a resource located outside of the ISO Control Area, or an allocated portion of a Control Area's portfolio of generating resources that are directly responsive to that Control Area's Automatic Generation Control (AGC) capable of providing Energy and/or Ancillary Services to the ISO Controlled Grid.

**System Unit** One or more individual Generating Units and/or Loads within a Metered Subsystem controlled so as to simulate a single resource with specified performance characteristics, as mutually determined and agreed to by the MSS Operator and the ISO. The Generating Units and/or Loads making up a System Unit must be in close physical proximity to each other such that the operation of the resources comprising the System Unit does not result in significant differences in flows on the ISO Controlled Grid.

(c) order a change in operating status of voltage control equipment;

(d) take required action to prevent against uncontrolled losses of load or Generation;

(e) control the output of Generating Units and Interconnection schedules scheduled to provide Ancillary Services or offering Supplemental Energy;

(f) dispatch Curtailable Demand which has been scheduled to provide Non-Spinning Reserve or Replacement Reserve; and

(g) require the operation of resources which are at the ISO's disposal in a System Emergency, as described in DP 10.

**DP 9.1.2 Exercise of the ISO's Authority**

The ISO will exercise its authority under DP 9.1.1 by issuing Dispatch Instructions to the relevant Participants using the relevant communications method described in DP 4.

**DP 9.2 Participant Responsibilities**

**DP 9.2.1 Compliance with Dispatch Instructions**

All Participants within the ISO Control Area and all dynamically scheduled System Resources shall comply fully and promptly with the ISO's Dispatch Instructions unless such operation would impair public health or safety. Shedding Load for a System Emergency does not constitute impairment to public health or safety.

**DP 9.2.2 Notification of Non-Compliance with a Dispatch Instruction**

In the event that, in carrying out the Dispatch Instruction, an unforeseen problem arises (relating to plant operations or equipment, personnel or the public safety), the recipient of the Dispatch Instruction must notify the ISO or, in the case of a Generator, the relevant SC immediately. The relevant SC shall notify the ISO of the problem immediately.

**DP 9.3 Dispatch Instructions for Generating Units and Curtailable Demand**

The ISO may issue Dispatch Instructions covering:

(a) Ancillary Services;

(b) Supplemental Energy, which may be used for:

(i) Congestion Management;

(ii) replacement of an Ancillary Service;

(c) agency operation of Generating Units, Curtailable Demands 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;

(e) A Physical Scheduling Plant shall be treated as a single Generating Unit for Supplemental Energy bid purposes.

**SBP 6.1.2 Demand Section of Energy Bid Data**

Each SC offering Spinning, Non-Spinning, or Replacement Reserve, or Supplemental Energy to the ISO will submit the following information for each Demand for each Settlement Period:

(a) SC's ID code;

(b) name of Demand;

(c) the MW and $/MWh values for each Demand for which a Supplemental Energy bid is being submitted consistent with this SBP 6.

**SBP 6.1.3 External Import Section of Energy Bid Data**

Each SC offering Spinning, Non-Spinning, or Replacement Reserve, or Supplemental Energy to the ISO will submit the following information for each external import for each Settlement Period;

(a) SC's ID code;
(b) name of Scheduling Point;
(c) interchange ID (the name of the selling entity, the buying entity, and a numeric identifier);
(d) external Control Area ID;
(e) Schedule ID (NERC ID number);
(f) complete WECC tag;
(g) ramp rate (MW/minute);
(h) the MW and $/MWh values for each external import for which a Supplemental Energy bid is being submitted consistent with this SBP 6;
(i) minimum block of hours that bid must be dispatched;
(j) Flag indicating the bid must is capable available for intra-hour Redispatch. If this flag is set to no then the bid is indicating that the bid must be pre-dispatched and not re-dispatched during the real-time operating hour;
(k) interchange ID code;
(l) external Control Area ID;
(m) Schedule ID (NERC ID number) and complete WECC tag;
(n) preferred bid flag, a "YES" indicates a bid and a "NO" indicates a self-provided schedule; and
(o) the contract reference number, if applicable.

**SBP 6.2 Format of Energy Bids**

The SC's preferred operating point for each resource must be within the range of the Energy Bids. The minimum MW output level specified for a resource, which may be zero MW (or negative for pumped storage resources), and the maximum MW output level specified for a resource

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excessive by comparison with the likely cost of the amount of Energy scheduled by the Scheduling Coordinator.

**2.2.7.6 Dynamic Scheduling.** Scheduling Coordinators may dynamically schedule imports of Energy, Supplemental Energy, and Ancillary Services (other than Regulation). If for which associated Energy is delivered dynamically from System Resources located outside of the ISO Control Area, provided that (a) such dynamic scheduling is technically feasible and consistent with all applicable NERC and WECC criteria and policies, (b) all operating, technical, and business requirements for dynamic scheduling functionality, as posted in Standards on the ISO Home Page, are satisfied, (c) the Scheduling Coordinator for the dynamically scheduled System Resource executes an agreement with the ISO for the operation of dynamic scheduling functionality, (d) all affected host and intermediary Control Areas execute with the ISO an Interconnected Control Area Operating Agreement or special operating agreement related to the operation of dynamic functionality. Should the Scheduling Coordinator representing a dynamically scheduled System Resource desire for that System Resource to participate in the ISO's Ancillary Services markets, such Scheduling Coordinator and the operator of the Control Area in which the System Resource is located must be certified by the ISO as to their ability to dynamically adjust interchange schedules based on operating orders issued by the ISO at any time during the Settlement Period.

**2.2.8 The Scheduling Process.**

The ISO scheduling process is described for information purposes only in tabular form in Appendix C. The scheduling process by nature will need constant review and amendment as the market develops and matures and, therefore, is subject to change. The description in Appendix C aids understanding of the implementation and operation of the various markets administered by the ISO and is filed for information purposes only.

**2.2.8.1 Preferred Schedule.** A Preferred Schedule shall be submitted by each Scheduling Coordinator on a daily and/or hourly basis to the ISO. Scheduling Coordinators may also submit to the ISO, Ancillary Services bids in accordance with Section 2.5.10 and, where they elect to self-provide

Ancillary Services pursuant to Section 2.5.20.1, an Ancillary Service schedule meeting the requirements set forth in Section 2.5.20.6. The Preferred Schedule shall also include an indication of which resources (Generation or Load) if any may be adjusted by the ISO to eliminate Congestion. On receipt of the Preferred Schedule in the Day-Ahead scheduling process, the ISO shall notify the Scheduling Coordinator of any specific Reliability Must-Run Units which have not been included in the Preferred Schedule but which the ISO requires to run in the next Trading Day. The ISO will also notify the Scheduling Coordinator of any Ancillary Services it requires from specific Reliability Must-Run Units under their Reliability Must-Run Contracts in the next Trading Day. If the ISO identifies mismatches in the scheduled quantity or location for any Inter-Scheduling Coordinator Energy Trade, it will notify the Scheduling Coordinators concerned and give them until a specified time, which will allow

**2.3.1.1.2 Establish Back-up Control Facility.** The ISO shall establish back-up control facilities remote from the ISO Control Center sufficient to enable the ISO to continue to direct the operation of the ISO Controlled Grid, Reliability Must-Run Units, System Resources, and Generating Units providing Ancillary Services in the event of the ISO Control Center becoming inoperable.

**2.3.1.1.3 ISO Control Center Authorities.** The ISO shall have full authority, subject to Section 2.3.1.2, to direct the operation of the facilities referred to in Section 2.3.1.1.2 including (without limitation), to:

(a) direct the physical operation by the Participating TOs of transmission facilities under the Operational Control of the ISO, including (without limitation) circuit

breakers, switches, voltage control equipment, protective relays, metering, and Load Shedding equipment;

(b) commit and dispatch Reliability Must-Run Units;

(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 and System Resources that are selected to provide Ancillary Services and Imbalance Energy;

(f) dispatch Loads through direct Load control or other means at the ISO's discretion that are curtailable as an Ancillary Service; and

(g) procure Supplemental Energy.

**2.3.1.1.4 Coordination and Approval for Outages.** The ISO shall have authority to coordinate and approve Outages and returns to service of all facilities comprised in the ISO Controlled Grid and Reliability Must-Run Units in accordance with Section 2.3.3.

**2.3.1.1.5 Responsibility for Authorized Work on Facilities.** The ISO shall have authority to approve requests by Participating TOs to work on all energized transmission equipment under the Operational Control of the ISO.

**2.3.1.1.6** The ISO shall be the WECC reliability coordinator for the ISO Controlled Grid.

ISO 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 ISO shall make the final determination as to the additional communication methods. Participating Generators, owners or operators of Loads and operators of System Units or System Resources whose resources are scheduled, bid in or under contract, shall ensure that there is a 24 hour personal point of contact with the ISO for the Generating Unit, System Unit, Load or System Resource. Operators of System Resources from which dynamic schedules or bids are submitted to the ISO shall provide communications links meeting ISO standards for dynamic imports from System Resources. Participating Generators and operators of System Units providing Regulation shall also provide communication links meeting ISO standards for direct digital control. Operators of System Resources providing Regulation shall provide communications links meeting ISO standards for external imports of Regulation. If any communication system becomes unavailable, the relevant Participating Generators, operators of System Units, Loads and System Resources and the ISO shall take immediate action to identify the cause of the interruption and to restore the communication system. A Scheduling Coordinator, that has scheduled or bid in or contracted for Ancillary Services shall ensure that the Generating Unit, System Unit, Load or System Resource concerned is able to receive and implement Dispatch instructions.

**2.5.6.3 Metering Infrastructure.** All Participating Generators, owners or operators of Loads and operators of System Units or System Resources which a Scheduling Coordinator wishes to schedule or bid to provide Ancillary Services shall have the metering infrastructure for the Generating Units, System Units, Loads or System Resources concerned which complies with requirements to be established by the ISO relating to:

(a) meter type;

(b) meter location;

(a) meter type;

(b) meter location;

(c) meter reading responsibility;

other entities may use market-based rates not subject to any restrictions apart from those found in this ISO 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.

**2.5.7.4 Bidding and Self-Provision of Ancillary Services**

The ISO will procure Ancillary Services in accordance with this ISO Tariff, and the applicable ISO Protocols.

**2.5.7.4.1** Scheduling Coordinators may bid or self-provide Ancillary Services or specify Inter-Scheduling Coordinator Ancillary Service Trades from resources located within the ISO Control Area.

**2.5.7.4.2** Scheduling Coordinators may bid or self-provide external imports of Spinning Reserve, Non-Spinning Reserve or Replacement Reserve from System Resources located outside the ISO Control Area, including dynamically scheduled System Resources, where technically feasible and consistent with WECC criteria; and provided that such Scheduling Coordinators have certified to the ISO their ability to deliver the service to the point of interchange with the ISO Control Area (including with respect to their ability to make changes, or cause such changes to be made, to interchange schedules during any interval of a Settlement Period at the discretion of the ISO).

**2.5.7.4.3** Scheduling Coordinators may bid or self-provide external imports of Regulation from System Resources located outside the ISO Control Area, where technically feasible and consistent with WECC criteria; provided that the operator of the Control Area in which the System Resources are located has entered into an agreement with the ISO for interconnected Control Area operations; and provided that such Scheduling Coordinator and the operator of the Control Area in which the resources are located have been

(a) bidder name/Identification Code;

(b) the date for which the bid applies;

(c) ramp rate if applicable (MW/Min);

(d) MW additional capability synchronized to the system, immediately responsive to system frequency and available at the point of interchange with the ISO Control Area, within 10 minutes ($Cap_{ijt}max$) of the ISO calling for the external import of System Resource i, from Scheduling Coordinator j, for Settlement Period t;

(e) bid price of capacity reserved ($CapRes_{ijt}$ ($/MW));

(f) 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; and, for a dynamic import of a System Resource, the following additional information:

(g) type of market (Day-Ahead or Hour-Ahead) and Trading Day;

(h) Scheduling Point;

(i) interchange ID code;

(j) external Control Area ID;

(k) Schedule ID (NERC ID number) and complete WECC tag;

(l) preferred bid flag, a "YES" indicates a bid and a "NO" indicates a self-provided schedule; and

(m) the contract reference number, if applicable.

**Bid Evaluation**. Based on the quantity and location of the system requirements, the ISO shall select the Generating Units, System Units and external imports of System Resources with the

bids which minimize the sum of the total bids of the Generating Units, System Units and external imports of System Resources selected subject to two constraints:

(a) the sum of the selected bid capacities must be greater than or equal to the required Spinning Reserve capacity; and

(b) each Generating Unit's, System Unit's or external import's bid capacity must be less than or equal to that Generating Unit's, System Unit's or external import's ramp rate times 10 minutes.

The total bid for each Generating Unit, System Unit or external import of a System Resource is calculated by multiplying the capacity reservation bid price by the bid capacity. Thus, subject to any locational requirements, the ISO will select the winning Spinning Reserve bids in accordance with the following criteria:

If the bid is for the provision of Non-Spinning Reserve from an external import of a System Resource, each Scheduling Coordinator j must submit the following information for each external import of a System Resource i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) the date for which the bid applies;

(c) ramp rate if applicable (MW/Min);

(d) the MW capability available at the point of interchange with the ISO Control Area, within 10 minutes ($Cap_{ijt}max$) of the ISO calling for the external import of System Resource I, from Scheduling Coordinator j, for Settlement Period t;

(e) the bid price of the capacity reserved ($CapRes_{ijt}$($/MW));

(f) 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; and, for a dynamic import of a System Resource, the following additional information:

(g) type of market (Day-Ahead or Hour-Ahead) and Trading Day;

(h) Scheduling Point;

(i) interchange ID code;

(j) external Control Area ID;

(k) Schedule ID (NERC ID number) and complete WECC tag;

(l) preferred bid flag, a "YES" indicates a bid and a "NO" indicates a self-provided schedule; and

(m) the contract reference number, if applicable.

If the bid is for the provision of Non-Spinning Reserve from a Load located within the ISO Control Area, each Scheduling Coordinator j must submit the following information for each Load i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) Load identification name and Location Code;

(c) the date for which the bid applies;

(d) Demand reduction available within 10 minutes ($Cap_{ijt}max$);

(e) to interruption following notification (min);

(f) maximum allowable curtailment duration (hr);

for each Generating Unit or System Unit i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) Generating Unit or System Unit identification (name and Location Code);

(c) the date for which the bid applies;

(d) maximum operating level (MW);

(e) minimum operating level (MW);

(f) ramp rate (MW/Min);

(g) the MW capacity available within 60 minutes ($Cap_{ijt}max$);

(h) the bid price of the capacity reserved ($CapRes_{ijt}$ *($/MW)*); and

(i) time to synchronize following notification (min).

If the bid is for the provision of Replacement Reserve from an external import of a System Resource, each Scheduling Coordinator j must submit the following information for each external import of a System Resource i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) the date for which the bid applies;

(c) ramp rate applicable (MW/Min);

(d) the MW capability available at the point of interchange with the ISO Control Area, within 60 minutes ($Cap_{ijt}max$) of the ISO calling for the external import of System Resource i, from Scheduling Coordinator j, for Settlement Period t;

(e) bid price of capacity reserved ($CapRes_{ijt}$;($/MW)); and, for a dynamic import of a System Resource, the following additional information:

(h) type of market (Day-Ahead or Hour-Ahead) and Trading Day;

(i) Scheduling Point;

(j) interchange ID code;

(k) external Control Area ID;

(l) Schedule ID (NERC ID number) and complete WECC tag;

(m) preferred bid flag, a "YES" indicates a bid and a "NO" indicates a self-provided schedule; and

(n) the contract reference number, if applicable.

If the bid is for the provision of Replacement Reserve from a Load located within the ISO Control Area, each Scheduling Coordinator j must submit the following information for each Load i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) Load identification (name and Location Code);

(c) the date for which the bid applies;

(d) the Demand reduction available within 60 minutes ($Cap_{ijt}$ (MW));

(e) time to interruption following notification (min);

(f) maximum allowable curtailment duration (hr); and

(g) the bid price of the capacity reserved ($CapRes_{ijt}$ ($/MW)).

**Bid Evaluation**. Based on the quantity and location of the system requirements, the ISO shall select the Generating Units, System Units, Loads or external imports of System Resources with

the bids which minimize the sum of the total bids of the Generating Units, System Units, Loads or external imports of System Resources selected subject to two constraints:

(a) the sum of the selected bid capacities must be greater than or equal to the required Replacement Reserve capacity; and

| Ancillary Service | Quantity Units | Period | Clearing Prices |
|---|---|---|---|
| Regulation/AGC | MW | Hourly | $/MW |
| Spinning Reserve | MW | Hourly | $/MW |
| Non-Spinning Reserve | MW | Hourly | $/MW |
| Replacement Reserve | MW | Hourly | $/MW |
| Black Start | MW | Annual | $/MW |

**2.5.30 Communication Protocols.**

Communications between the ISO and Scheduling Coordinators shall be as described below:

**2.5.30.1 Information Transfer from Scheduling Coordinator to ISO.** Unless otherwise agreed by the ISO, Scheduling Coordinators who wish to schedule or bid Ancillary Services to the ISO must submit the information by direct computer link. Scheduling Coordinators that wish to submit dynamic schedules or bids for Ancillary Services to the ISO must also comply with the applicable requirements of Sections 2.2.7.6, 2.5.6.2 and 2.5.7.4.2.

**2.5.30.2 Submitting Information By Direct Computer Link.** For Scheduling Coordinators submitting information by direct computer link, each such Scheduling Coordinator shall establish a network connection with the ISO through the WEnet network. This shall be a permanent link with the ISO. Link initialization procedures shall be necessary to establish the connection for the first time, and to re-establish the connection each time the connection is restored after a system or communication failure. In order to log in, each Scheduling Coordinator shall furnish the ISO with user ID and password.

**System Emergency** Conditions beyond the normal control of the ISO that affect the ability of the ISO Control Area to function normally including any abnormal system condition which requires immediate manual or automatic action to prevent loss of Load, equipment damage, or tripping of system elements which might result in cascading Outages or to restore system operation to meet the minimum operating reliability criteria.

**System Impact Study** An engineering study conducted to determine whether a New Facility Operator's request for interconnection to the ISO Controlled Grid would require new transmission additions, upgrades or other mitigation measures.

**System Planning Studies** Reports summarizing studies performed to assess the adequacy of the ISO Controlled Grid as regards conformance to Reliability Criteria.

**System Reliability** A measure of an electric system's ability to deliver uninterrupted service at the proper voltage and frequency.

**System Resource** A group of resources, single resource, or a portion of a resource located outside of the ISO Control Area, or an allocated portion of a Control Area's portfolio of generating resources that are directly responsive to that Control Area's Automatic Generation Control (AGC) capable of providing Energy and/or Ancillary Services to the ISO Controlled Grid.

**System Unit** One or more individual Generating Units and/or Loads within a Metered Subsystem controlled so as to simulate a single resource with specified performance characteristics, as mutually determined and agreed to by the MSS Operator and the ISO. The Generating Units and/or Loads making up a System Unit must be in close physical proximity to each other such that the operation of the resources comprising the System Unit does not result in significant differences in flows on the ISO Controlled Grid.

(3%) of the relevant Generating Unit's or System Unit's maximum output (Pmax), as registered in the Master File, divided by number of Settlement Intervals per Settlement Period. The maximum output (Pmax) of a dynamically scheduled System Resource will be established by agreement between the ISO and the Scheduling Coordinator representing the System Resource on an individual case basis, taking into account the number and size of the generating resources, or allocated portions of generating resources, that comprise the System Resource.

The tolerance band expressed in terms of Energy (MWh) for the performance requirement for Participating Loads for each Settlement Interval will equal the greater of the absolute value of: 1) 5 MW divided by number of Settlement Intervals per Settlement Period or 2) three percent (3%) of the applicable Final Hour-Ahead Schedule or ISO Dispatch amount divided by number of Settlement Intervals per Settlement Period.

The Tolerance Band shall not be applied to System Resources.

**Trading Day** The twenty-four hour period beginning at the start of the hour ending 0100 and ending at the end of the hour ending 2400 daily, except where there is a change to and from daylight savings time.

(c) order a change in operating status of voltage control equipment;

(d) take required action to prevent against uncontrolled losses of load or Generation;

(e) control the output of Generating Units and Interconnection schedules scheduled to provide Ancillary Services or offering Supplemental Energy;

(f) Dispatch Curtailable Demand which has been scheduled to provide Non-Spinning Reserve or Replacement Reserve; and

(g) require the operation of resources which are at the ISO's disposal in a System Emergency, as described in DP 10.

**DP 9.1.2 Exercise of the ISO's Authority**

The ISO will exercise its authority under DP 9.1.1 by issuing Dispatch Instructions to the relevant Participants using the relevant communications method described in DP 4.

**DP 9.2 Participant Responsibilities**

**DP 9.2.1 Compliance with Dispatch Instructions**

All Participants within the ISO Control Area and all dynamically scheduled System Resources shall comply fully and promptly with the ISO's Dispatch Instructions unless such operation would impair public health or safety. Shedding Load for a System Emergency does not constitute impairment to public health or safety.

**DP 9.2.2 Notification of Non-Compliance with a Dispatch Instruction**

In the event that, in carrying out the Dispatch Instruction, an unforeseen problem arises (relating to plant operations or equipment, personnel or the public safety), the recipient of the Dispatch Instruction must notify the ISO or, in the case of a Generator, the relevant SC immediately. The relevant SC shall notify the ISO of the problem immediately.

**DP 9.3 Dispatch Instructions for Generating Units and Curtailable Demand**

The ISO may issue Dispatch Instructions covering:

(a) Ancillary Services;

(b) Supplemental Energy, which may be used for:

(i) Congestion Management;

(ii) provision of Imbalance Energy; or

(h) the MW and $/MWh values for each Generating Unit for which a Supplemental Energy bid is being submitted consistent with this SBP 6.

A Physical Scheduling Plant shall be treated as a single Generating Unit for Supplemental Energy bid purposes.

**SBP 6.1.2 Demand Section of Energy Bid Data**

Each SC offering Spinning, Non-Spinning, or Replacement Reserve, or Supplemental Energy to the ISO will submit the following information for each Demand for each Settlement Period:

(a) SC's ID code;

(b) name of Demand;

(c) Demand shutdown time in minutes;

(d) Demand shutdown cost in $/start;

(e) Demand minimum curtailed load cost in $/hr; and

(f) the MW and $/MWh values for each Demand for which a Supplemental Energy bid is being submitted consistent with this SBP 6.

**SBP 6.1.3 External Import Section of Energy Bid Data**

Each SC offering Spinning, Non-Spinning, or Replacement Reserve, or Supplemental Energy to the ISO will submit the following information for each external import for each Settlement Period;

(a) SC's ID code;
(b) name of Scheduling Point;
(c) interchange ID (the name of the selling entity, the buying entity, and a numeric identifier);
(d) external Control Area ID;
(e) Schedule ID (NERC ID number);
(f) complete WECC tag;
(g) operational ramp rate (MW/minute);
(h) the MW and $/MWh values for each external import for which a Supplemental Energy bid is being submitted consistent with this SBP 6;
(i) minimum block of hours that bid must be dispatched;
(j) Flag indicating the bid must is capable available for intra-hour Redispatch. If this flag is set to no then the bid is indicating that the bid must be pre-dispatched and not re-dispatched during the real-time operating hour.
(k) interchange ID code;
(l) external Control Area ID;
(m) Schedule ID (NERC ID number) and complete WECC tag;
(n) preferred bid flag, a "YES" indicates a bid and a "NO" indicates a self-provided schedule; and
(o) the contract reference number, if applicable

**SBP 6.2 Format of Energy Bids**

The SC's Final Hour-Ahead Schedule for each resource must be within the range of the Energy Bids. The minimum MW output level specified for a resource, which may be zero MW (or negative for pumped storage resources), and the maximum MW output level specified for a resource must be physically achievable by the resource. All submitted Energy Bids must be in the form of a monotonically increasing staircase function for Demands. These staircase functions will be composed of up to eleven (11) ordered pairs (i.e., ten (10) steps or price bands) of quantity/price information, with an operational ramp rate associated with the

# ATTACHMENT C

# BLACKLINES
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**2.2.7.6 Dynamic Scheduling.** Scheduling Coordinators may dynamically schedule imports of Energy, Supplemental Energy, and Ancillary Services (other than Regulation) for which associated Energy is delivered dynamically from System Resources located outside of the ISO Control Area, provided that (a) such dynamic scheduling is technically feasible and consistent with all applicable NERC and WECC criteria and policies, (b) all operating, technical, and business requirements for dynamic scheduling functionality, as posted in standards on the ISO Home Page, are satisfied, (c) the Scheduling Coordinator for the dynamically scheduled System Resource executes an agreement with the ISO for the operation of dynamic scheduling functionality, and (d) all affected host and intermediary Control Areas each execute with the ISO an Interconnected Control Area Operating Agreement or special operating agreement related to the operation of dynamic functionality.

* * *

**2.3.1.1.2 Establish Back-up Control Facility.** The ISO shall establish back-up control facilities remote from the ISO Control Center sufficient to enable the ISO to continue to direct the operation of the ISO Controlled Grid, Reliability Must-Run Units, System Resources and Generating Units providing Ancillary Services in the event of the ISO Control Center becoming inoperable.

**2.3.1.1.3 ISO Control Center Authorities.** The ISO shall have full authority, subject to Section 2.3.1.2, to direct the operation of the facilities referred to in Section 2.3.1.1.2 including (without limitation), to:

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

(b) commit and dispatch Reliability Must-Run Units;

(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 and System Resources that are selected to provide Ancillary Services and Imbalance Energy;

(f) dispatch Loads through direct Load control or other means at the ISO's discretion that are curtailable as an Ancillary Service; and

(g) procure Supplemental Energy.

* * *

**2.5.6.2 Communication Equipment.** Unless otherwise authorized by the ISO, all Scheduling Coordinators wishing to submit an Ancillary Service schedule or bid must have the capability to submit and receive information by direct computer link. In addition, they must be capable of receiving Dispatch instructions electronically and they must provide the ISO with a telephone number, or fax number through which Dispatch instructions for each Generating Unit, System Unit, Load and System Resource may be given if necessary. The ISO will determine which method of communication is appropriate; provided that the ISO 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 ISO shall make the final determination as to the additional communication methods. Participating Generators, owners or operators of Loads and operators of System Units or System Resources whose resources are scheduled, bid in or under contract, shall ensure that there is a 24 hour personal point of contact with the ISO for the Generating Unit, System Unit, Load or System Resource. Operators of System Resources from which dynamic schedules or bids are submitted to the ISO shall provide communications links meeting ISO standards for dynamic imports from System Resources. Participating Generators and operators of System Units providing Regulation shall also provide communication links meeting ISO standards for direct digital control. Operators of System Resources providing Regulation shall provide communications links meeting ISO standards for external imports of Regulation. If any communication system becomes unavailable, the relevant Participating Generators, operators of System Units, Loads and System Resources and the ISO shall take immediate action to identify the cause of the interruption and to restore the communication system. A Scheduling Coordinator, ~~which~~that has scheduled or bid in or contracted for Ancillary Services shall ensure that the Generating Unit, System Unit, Load or System Resource concerned is able to receive and implement Dispatch iInstructions.

* * *

**2.5.7.4.2** Scheduling Coordinators may bid or self-provide external imports of Spinning Reserve, Non-Spinning Reserve or Replacement Reserve from System ~~r~~Resources located outside the ISO Control Area, including dynamically scheduled System Resources, where technically feasible and consistent with WECC criteria; and provided that such Scheduling Coordinators have certified to the ISO their ability to deliver the service to the point of interchange with the ISO Control Area (including with respect to their ability to make changes, or cause such changes to be made, to interchange schedules during any interval of a Settlement Period at the discretion of the ISO).

* * *

**2.5.15 The Spinning Reserve Auction.**

**Bid Information**. If the bid is for the provision of Spinning Reserve from a Generating Unit or System Unit, each Scheduling Coordinator j must submit the following information for each Generating Unit or System Unit i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) resource identification (name and Location Code);

(c) the date for which the bid applies;

(d) maximum operating level (MW);

(e) minimum operating level (MW);

(f) ramp rate (MW/min);

(g) MW additional capability synchronized to the system, immediately responsive to system frequency, and available within 10 minutes ($Cap_{ijt}max$) for Generating Unit i, or System Unit I, from Scheduling Coordinator j, for Settlement Period t.

(h) bid price of capacity reserved ($CapRes_{ijt}$ ($/MW));and

(i) bid price of Energy output from reserved capacity ($EnBid_{ijt}$ ($/MWh)); and

(j) 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.

If the bid is for the provision of Spinning Reserve from an external import of a System Resource, each Scheduling Coordinator j must submit the following information for each external import of a System Resource i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) the date for which the bid applies;

(c) ramp rate if applicable (MW/Min);

(d) MW additional capability synchronized to the system, immediately responsive to system frequency and available at the point of interchange with the ISO Control Area, within 10 minutes ($Cap_{ijt}max$) of the ISO calling for the external import of System Resource i, from Scheduling Coordinator j, for Settlement Period t;

(e) bid price of capacity reserved ($CapRes_{ijt}$ ($/MW));~~and~~

(f) bid price of Energy output from reserved capacity ($EnBid_{ijt}$ ($/MWh)); ~~and~~

(g) 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; and, for a dynamic import of a System Resource, the following additional information:

(h) type of market (Day-Ahead or Hour-Ahead) and Trading Day;

(i) Scheduling Point;

(j) interchange ID code;

(k) external Control Area ID;

(l) Schedule ID (NERC ID number) and complete WECC tag;

(m) preferred bid flag, a "YES" indicates a bid and a "NO" indicates a self-provided schedule; and

(n) the contract reference number, if applicable.

**Bid Evaluation**. Based on the quantity and location of the system requirements, the ISO shall select the Generating Units, System Units and external imports of System Resources with the bids which minimize

the sum of the total bids of the Generating Units, System Units and external imports of System Resources selected subject to two constraints:

(a) the sum of the selected bid capacities must be greater than or equal to the required Spinning Reserve capacity; and

(b) each Generating Unit's, System Unit's or external import's bid capacity must be less than or equal to that Generating Unit's, System Unit's or external import's ramp rate times 10 minutes.

The total bid for each Generating Unit, System Unit or external import of a System Resource is calculated by multiplying the capacity reservation bid price by the bid capacity. Thus, subject to any locational requirements, the ISO will select the winning Spinning Reserve bids in accordance with the following criteria:

$$Min \sum_{i,j} Totalbid_{ijt}$$

(a) Subject to

$$\sum_{i,j} Cap_{ijt} \geq Requirement_t$$

(b) $and\ Cap_{ijt} \leq Cap_{ijt}max$

Where

$TotalBid_{ijt} = Cap_{ijt} * CapRes_{ijt}$

$Requirement_t$ = the amount of Spinning Reserve capacity required

**Price Determination**. The price payable to Scheduling Coordinators for Spinning Reserve Capacity made available in accordance with the ISO's Final Day-Ahead Schedules shall, for each Generating Unit or external import of a System Resource concerned be the Zonal Market Clearing Price for Spinning Reserve calculated as follows:

$Psp_{xt} = MCP_{xt}$

Where the Zonal Market Clearing Price ($MCP_{xt}$) for Spinning Reserve is the highest priced winning Spinning Reserve capacity bid in Zone X based on the capacity reservation bid price, i.e.:

$MCP_{xt} = Max(CapRes_{ijt})$ in Zone *x* for Settlement Period t

The ISO's auction does not compensate a Scheduling Coordinator for the minimum Energy output of Generating Units, System Units or System Resources bidding to provide Spinning Reserve. Therefore, any minimum Energy output associated with Spinning Reserve selected in the ISO's auction is the responsibility of the Scheduling Coordinator selling the Spinning Reserve.

The price payable to Scheduling Coordinators for Spinning Reserve Capacity not included in the ISO's Final Day-Ahead Schedules but made available in accordance with amended Ancillary Services supplier schedules issued in accordance with Section 2.5.21 shall be the bid price of the Spinning Reserve capacity reserved ($CapRes_{ijt}$($/MW)).

**2.5.16 The Non-Spinning Reserve Auction.**

**Bid information**. If the bid is for the provision of Non-Spinning Reserve from a Generating Unit or System Unit, each Scheduling Coordinator j must submit the following information for each Generating Unit or System Unit i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) Generating Unit or System Unit identification (name and Location Code);

(c) the date for which the bid applies;

(d) maximum operating level (MW);

(e) minimum operating level (MW);

(f) ramp rate (MW/Min);

(g) the MW capability available within 10 minutes ($Cap_{ijt}max$);

(h) the bid price of the capacity reserved ($CapRes_{ijt}$($/MW));

(i) time to synchronization following notification (min);

(j) the bid price of the Energy output from the reserved capacity ($EnBid_{ijt}$($/MWh)); and

(k) 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.

If the bid is for the provision of Non-Spinning Reserve from an external import of a System Resource, each Scheduling Coordinator j must submit the following information for each external import of a System Resource i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) the date for which the bid applies;

(c) ramp rate if applicable (MW/Min);

(d) the MW capability available at the point of interchange with the ISO Control Area, within 10 minutes ($Cap_{ijt}max$) of the ISO calling for the external import of System Resource I, from Scheduling Coordinator j, for Settlement Period t;

(e) the bid price of the capacity reserved ($CapRes_{ijt}$($/MW));

(f) the bid price of Energy output from reserved capacity ($EnBid_{ijt}$($/MWh)); ~~and~~

(g) 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~~.~~; and, for a dynamic import of a System Resource, the following additional information:

(h) type of market (Day-Ahead or Hour-Ahead) and Trading Day;

(i) Scheduling Point;

(j) interchange ID code;

(k) external Control Area ID;

(l) Schedule ID (NERC ID number) and complete WECC tag;

(m) preferred bid flag, a "YES" indicates a bid and a "NO" indicates a self-provided schedule; and

(n) the contract reference number, if applicable.

If the bid is for the provision of Non-Spinning Reserve from a Load located within the ISO Control Area, each Scheduling Coordinator j must submit the following information for each Load i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) Load identification name and Location Code;

(c) the date for which the bid applies;

(d) Demand reduction available within 10 minutes ($Cap_{ijt}max$);

(e) to interruption following notification (min);

(f) maximum allowable curtailment duration (hr);

(g) the bid price of the capacity reserved ($CapRes_{ijt}$($/MW)); and

(h) the bid price for Demand reduction from the reserved capacity ($EnBid_{ijt}$($/MWh)); and

(i) an indication whether the capacity reserved would be available for Demand reduction only in the event of the occurrence of an unplanned Outage, a Contingency or an imminent or actual System Emergency

**Bid Evaluation**. Based on the quantity and location of the system requirements, the ISO shall select the Generating Units, System Units, Loads or external imports of System Resources with the bids which minimize the sum of the total bids of the Generating Units, System Units, Loads or external imports of System Resources selected subject to two constraints:

(a) the sum of the selected bid capacities must be greater than or equal to the required Non-Spinning Reserve capacity; and

(b) each Generating Unit's, System Unit's, Load's or external import's bid capacity must be less than or equal to that Generating Unit's, System Unit's, Load's or external import's ramp rate (or time to interruption in the case of a Load offering Demand reduction) times the difference between 10 minutes and the time to synchronize in the case of a Generating Unit or System Unit or to interruption in the case of a Load. The total bid for each Generating Unit, System Unit, Load or external import of a System Resource is calculated by multiplying the capacity reservation bid by the bid capacity.

Thus subject to any locational requirements, the ISO will accept the winning Non-Spinning Reserve bids in accordance with the following criteria:

$$Min \sum_{i,j} Totalbid_{ijt}$$

(c) Subject to

$$\sum_{i,j} Cap_{ijt} \geq Requirement_t$$

$$Cap_{ijt} \leq Cap_{ijt}max$$

Where

$TotalBid_{ijt} = Cap_{ijt} * CapRes_{ijt}$

$Requirement_t$ = the amount of Non-Spinning Reserve capacity required

**Price Determination**. The price payable to Scheduling Coordinators for Non-Spinning Reserve Capacity made available in accordance with the ISO's Final Day-Ahead Schedules shall for each Generating Unit, System Unit, Load or external import of a System Resource concerned be the Zonal Market Clearing Price for Non-Spinning Reserve calculated as follows:

$Pnonsp_{xt} = MCP_{xt}$

Where the Zonal Market Clearing Price ($MCP_{xt}$) for Non-Spinning Reserve is the highest priced winning Non-Spinning Reserve bid in Zone X based on the capacity reservation bid price, i.e.:

$MCP_{xt} = Max(CapRes_{ijt})$ in Zone *x* for Settlement Period t.

The price payable to Scheduling Coordinators for Non-Spinning Reserve Capacity not included in the ISO's Final Day-Ahead Schedules but made available in accordance with amended Ancillary Services supplier schedules issued in accordance with Section 2.5.21 shall be the bid price of the Non-Spinning Capacity reserved ($CapRes_{ijt}$(*$/MW*)).

**2.5.17 The Replacement Reserve Auction.**

**Bid Information**. If the bid is for the provision of Replacement Reserve from a Generating Unit or System Unit each Scheduling Coordinator j must submit the following information for each Generating Unit or System Unit i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) Generating Unit or System Unit identification (name and Location Code);

(c) the date for which the bid applies;

(d) maximum operating level (MW);

(e) minimum operating level (MW);

(f) ramp rate (MW/Min);

(g) the MW capacity available within 60 minutes ($Cap_{ijt}max$);

(h) the bid price of the capacity reserved ($CapRes_{ijt}$ *($/MW)*); and

(i) time to synchronize following notification (min); and

(j) the bid price of the Energy output from the reserved capacity ($EnBid_{ijt}$ ($/MWh)).

If the bid is for the provision of Replacement Reserve from an external import of a System Resource, each Scheduling Coordinator j must submit the following information for each external import of a System Resource i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) the date for which the bid applies;

(c) ramp rate applicable (MW/Min);

(d) the MW capability available at the point of interchange with the ISO Control Area, within 60 minutes ($Cap_{ijt}max$) of the ISO calling for the external import of System Resource i, from Scheduling Coordinator j, for Settlement Period t;

(e) bid price of capacity reserved ($CapRes_{ijt}$;($/MW)); and

(f) bid price of Energy output from reserved capacity ($EnBid_{ijt}$ ($/MWh));~~.~~ and, for a dynamic import of a System Resource, the following additional information:

(g) type of market (Day-Ahead or Hour-Ahead) and Trading Day;

(h) Scheduling Point;

(i) interchange ID code;

(j) external Control Area ID;

(k) Schedule ID (NERC ID number) and complete WECC tag;

(l) preferred bid flag, a "YES" indicates a bid and a "NO" indicates a self-provided schedule; and

(m) the contract reference number, if applicable.

If the bid is for the provision of Replacement Reserve from a Load located within the ISO Control Area, each Scheduling Coordinator j must submit the following information for each Load i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) Load identification (name and Location Code);

(c) the date for which the bid applies;

(d) the Demand reduction available within 60 minutes ($Cap_{ijt}$ (MW));

(e) time to interruption following notification (min);

(f) maximum allowable curtailment duration (hr); and

(g) the bid price of the capacity reserved ($CapRes_{ijt}$ ($/MW));

(h) the bid price of the Demand reduction from the reserved capacity ($EnBid_{ijt}$ ($/MWh)).

**Bid Evaluation**. Based on the quantity and location of the system requirements, the ISO shall select the Generating Units, System Units, Loads or external imports of System Resources with the bids which minimize the sum of the total bids of the Generating Units, System Units, Loads or external imports of System Resources selected subject to two constraints:

(a) the sum of the selected bid capacities must be greater than or equal to the required Replacement Reserve capacity; and

(b) each Generating Unit's, System Unit's, Load's or external import's bid capacity must be less than or equal to that Generating Unit's, System Unit's, Load's or external import's ramp rate (or time to interruption in the case of a Load offering Demand reduction) times the difference between 60 minutes and the time to synchronize in the case of Generating Unit or System Unit, or to interruption in the case of Load.

The total bid for each Generating Unit, System Unit, Load or external import of System Resource is calculated by multiplying the capacity reservation bid price by the bid capacity.

Thus, subject to any locational requirements, the ISO will select the winning Replacement Reserve bids in accordance with the following criteria:

(d)

$$Min \sum_{i,j} Totalbid_{ijt}$$

Subject to

$$\sum_{i,j} Cap_{ijt} \geq Requirement_t$$

$$Cap_{ijt} \leq Cap_{ijt}max$$

Where

$TotalBid_{ijt} = Cap_{ijt} * CapRes_{ijt}$

$Requirement_t$ = the amount of Replacement Reserve capacity

**Price Determination.** The price payable to Scheduling Coordinators for Replacement Reserve Capacity made available in accordance with the ISO's Final Day-Ahead Schedules shall, for each Generating Unit, System Unit, Load or external import of a System Resource, be the Zonal Market Clearing Price for Replacement Reserve calculated as follows:

$PRepRes_{xt} = MCP_{xt}$

Where the Zonal Market Clearing Price ($MCP_{xt}$) for Replacement Reserve is the highest priced winning Replacement Reserve bid in Zone X based on the capacity reservation bid price, i.e.:

$MCP_{xt} = Max(CapRes_{ijt})$ in Zone *x* for Settlement Period t.

The price payable to Scheduling Coordinators for Replacement Reserve Capacity not included in the ISO's Final Day-Ahead Schedules but made available in accordance with amended Ancillary Services schedules issued in accordance with Section 2.5.21 shall be the bid price of the Replacement Reserve capacity reserved ($CapRes_{ijt}(\$/MW)$).

* * *

### 2.5.27 Settlements For Contracted Ancillary Services.

Based on the prices and quantities determined in accordance with this Section, the ISO shall operate a daily Settlement function for Ancillary Services it contracts for with Scheduling Coordinators.

The ISO shall calculate imbalances between scheduled, instructed and actual quantities of Energy provided based upon Meter Data obtained pursuant to Section 10. Schedules between Control Areas shall be deemed as being delivered in accordance with Good Utility Practice. Dynamic schedules shall be integrated over time through the operating hour and the MWh quantity obtained by such integration shall be deemed to be the associated scheduled interchange for that operating hour. The difference between actual and scheduled interchange shall then be addressed in accordance with the WECC and NERC inadvertent interchange practices and procedures. Following this practice, all dynamic schedules for Ancillary Services provided to the ISO ~~by~~from System Resources in other Control Areas shall be deemed delivered to the ISO. The difference between the Energy requested by the ISO and that actually delivered by the other Control Area shall then be accounted for and addressed through the WECC and NERC inadvertent interchange practices and procedures.

Separate payments shall be calculated for each Settlement Period t for each Generating Unit, System Unit, System Resource and Curtailable Demand. The ISO shall then calculate a total daily payment for each Scheduling Coordinator for all the Generating Units, System Units, System Resources and Curtailable Demands that it represents for each Settlement Period t.

The settlements for the Hour-Ahead Markets shall be calculated by substituting Hour-Ahead prices in the relevant formulae and deducting any amounts due to the ISO from Scheduling Coordinators who buy back in the Hour-Ahead Market Regulation, Spinning Reserve, Non-Spinning Reserve or Replacement Reserve capacity they sold to the ISO in the Day-Ahead Market.

* * *

**2.5.30.1 Information Transfer from Scheduling Coordinator to ISO**. Unless otherwise agreed by the ISO, Scheduling Coordinators who wish to schedule or bid Ancillary Services to the ISO must submit the information by direct computer link. Scheduling Coordinators that wish to submit dynamic schedules or bids for Ancillary Services to the ISO must also comply with the applicable requirements of Sections 2.2.7.6, 2.5.6.2 and 2.5.7.4.2.

* * *

**System Resource** A group of resources, single resource, or a portion of a

resource located outside of the ISO Control Area, or an allocated portion of a Control Area's portfolio of generating resources that are directly responsive to that Control Area's Automatic Generation Control (AGC) capable of providing Energy and/or Ancillary Services to the ISO Controlled Grid.

* * *

**DP 9.2.1 Compliance with Dispatch Instructions**

All Participants within the ISO Control Area and all dynamically scheduled System Resources shall comply fully and promptly with the ISO's Dispatch Instructions unless such operation would impair public health or safety. Shedding Load for a System Emergency does not constitute impairment to public health or safety.

* * *

**SBP 6.1.3 External Import Section of Energy Bid Data**

Each SC offering Spinning, Non-Spinning, or Replacement Reserve, or Supplemental Energy to the ISO will submit the following information for each external import for each Settlement Period;

(a) SC's ID code;
(b) name of Scheduling Point;
(c) interchange ID (the name of the selling entity, the buying entity, and a numeric identifier);
(d) external Control Area ID;
(e) Schedule ID (NERC ID number);
(f) complete WECC tag;
(g) ramp rate (MW/minute); ~~and~~
(h) the MW and $/MWh values for each external import for which a Supplemental Energy bid is being submitted consistent with this SBP 6; ~~and~~
(i) minimum block of hours that bid must be dispatched; ~~and~~
(j) Flag indicating the bid must is capable available for intra-hour Redispatch. If this flag is set to no then the bid is indicating that the bid must be pre-dispatched and not re-dispatched during the real-time operating hour~~.~~;
(k) interchange ID code;
(l) external Control Area ID;
(m) Schedule ID (NERC ID number) and complete WECC tag;
(n) preferred bid flag, a "YES" indicates a bid and a "NO" indicates a self-provided schedule; and
(o) the contract reference number, if applicable.

**ATTACHMENT D**

**BLACKLINES**
**POST-AMENDMENT NO. 54**

**2.2.7.6 Dynamic Scheduling.** Scheduling Coordinators may dynamically schedule imports of Energy, Supplemental Energy, and Ancillary Services (other than Regulation) for which associated Energy is delivered dynamically from System Resources located outside of the ISO Control Area, provided that (a) such dynamic scheduling is technically feasible and consistent with all applicable NERC and WECC criteria and policies, (b) all operating, technical, and business requirements for dynamic scheduling functionality, as posted in standards on the ISO Home Page, are satisfied, (c) the Scheduling Coordinator for the dynamically scheduled System Resource executes an agreement with the ISO for the operation of dynamic scheduling functionality, and (d) all affected host and intermediary Control Areas each execute with the ISO an Interconnected Control Area Operating Agreement or special operating agreement related to the operation of dynamic functionality.

* * *

**2.3.1.1.2 Establish Back-up Control Facility.** The ISO shall establish back-up control facilities remote from the ISO Control Center sufficient to enable the ISO to continue to direct the operation of the ISO Controlled Grid, Reliability Must-Run Units, System Resources, and Generating Units providing Ancillary Services in the event of the ISO Control Center becoming inoperable.

**2.3.1.1.3 ISO Control Center Authorities.** The ISO shall have full authority, subject to Section 2.3.1.2, to direct the operation of the facilities referred to in Section 2.3.1.1.2 including (without limitation), to:

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

(b) commit and dispatch Reliability Must-Run Units;

(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 and System Resources that are selected to provide Ancillary Services and Imbalance Energy;

(f) dispatch Loads through direct Load control or other means at the ISO's discretion that are curtailable as an Ancillary Service; and

(g) procure Supplemental Energy.

* * *

**2.5.6.2 Communication Equipment.** Unless otherwise authorized by the ISO, all Scheduling Coordinators wishing to submit an Ancillary Service schedule or bid must have the capability to submit and receive information by direct computer link. In addition, they must be capable of receiving Dispatch instructions electronically and they must provide the ISO with a telephone number, or fax number through which Dispatch instructions for each Generating Unit, System Unit, Load and System Resource may be given if necessary. The ISO will determine which method of communication is appropriate; provided that the ISO 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 ISO shall make the final determination as to the additional communication methods. Participating Generators, owners or operators of Loads and operators of System Units or System Resources whose resources are scheduled, bid in or under contract, shall ensure that there is a 24 hour personal point of contact with the ISO for the Generating Unit, System Unit, Load or System Resource. Operators of System Resources from which dynamic schedules or bids are submitted to the ISO shall provide communications links meeting ISO standards for dynamic imports from System Resources. Participating Generators and operators of System Units providing Regulation shall also provide communication links meeting ISO standards for direct digital control. Operators of System Resources providing Regulation shall provide communications links meeting ISO standards for external imports of Regulation. If any communication system becomes unavailable, the relevant Participating Generators, operators of System Units, Loads and System Resources and the ISO shall take immediate action to identify the cause of the interruption and to restore the communication system. A Scheduling Coordinator, ~~which~~that has scheduled or bid in or contracted for Ancillary Services shall ensure that the Generating Unit, System Unit, Load or System Resource concerned is able to receive and implement Dispatch iInstructions.

* * *

**2.5.7.4.2** Scheduling Coordinators may bid or self-provide external imports of Spinning Reserve, Non-Spinning Reserve or Replacement Reserve from System ~~r~~Resources located outside the ISO Control Area, including dynamically scheduled System Resources, where technically feasible and consistent with WECC criteria; and provided that such Scheduling Coordinators have certified to the ISO their ability to deliver the service to the point of interchange with the ISO Control Area (including with respect to their ability to make changes, or cause such changes to be made, to interchange schedules during any interval of a Settlement Period at the discretion of the ISO).

* * *

**2.5.15 The Spinning Reserve Auction.**

**Bid Information**. If the bid is for the provision of Spinning Reserve from a Generating Unit or System Unit, each Scheduling Coordinator j must submit the following information for each Generating Unit or System Unit i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) resource identification (name and Location Code);

(c) the date for which the bid applies;

(d) maximum operating level (MW);

(e) minimum operating level (MW);

(f) ramp rate (MW/min);

(g) MW additional capability synchronized to the system, immediately responsive to system frequency, and available within 10 minutes ($Cap_{ijt}max$) for Generating Unit i, or System Unit I, from Scheduling Coordinator j, for Settlement Period t.

(h) bid price of capacity reserved ($CapRes_{ijt}$ ($/MW));

and

(i) 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.

If the bid is for the provision of Spinning Reserve from an external import of a System Resource, each Scheduling Coordinator j must submit the following information for each external import of a System Resource i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) the date for which the bid applies;

(c) ramp rate if applicable (MW/Min);

(d) MW additional capability synchronized to the system, immediately responsive to system frequency and available at the point of interchange with the ISO Control Area, within 10 minutes ($Cap_{ijt}max$) of the ISO calling for the external import of System Resource i, from Scheduling Coordinator j, for Settlement Period t;

(e) bid price of capacity reserved ($CapRes_{ijt}$ ($/MW));

~~and~~

(f) 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; and, for a dynamic import of a System Resource, the following additional information:

(g) type of market (Day-Ahead or Hour-Ahead) and Trading Day;

(h) Scheduling Point;

(i) interchange ID code;

(j) external Control Area ID;

(k) Schedule ID (NERC ID number) and complete WECC tag;

(l) preferred bid flag, a "YES" indicates a bid and a "NO" indicates a self-provided schedule; and

(m) the contract reference number, if applicable.

**Bid Evaluation**. Based on the quantity and location of the system requirements, the ISO shall select the Generating Units, System Units and external imports of System Resources with the bids which minimize the sum of the total bids of the Generating Units, System Units and external imports of System Resources selected subject to two constraints:

(a) the sum of the selected bid capacities must be greater than or equal to the required Spinning Reserve capacity; and

(b) each Generating Unit's, System Unit's or external import's bid capacity must be less than or equal to that Generating Unit's, System Unit's or external import's ramp rate times 10 minutes.

The total bid for each Generating Unit, System Unit or external import of a System Resource is calculated by multiplying the capacity reservation bid price by the bid capacity. Thus, subject to any locational requirements, the ISO will select the winning Spinning Reserve bids in accordance with the following criteria:

$$Min \sum_{i,j} Totalbid_{ijt}$$

Subject to

$$\sum_{i,j} Cap_{ijt} \geq Requirement_t$$

$$and\ Cap_{ijt} \leq Cap_{ijt}max$$

Where

$$TotalBid_{ijt} = Cap_{ijt} * CapRes_{ijt}$$

$Requirement_t$ = the amount of Spinning Reserve capacity required

**Price Determination.** The price payable to Scheduling Coordinators for Spinning Reserve Capacity made available in accordance with the ISO's Final Day-Ahead Schedules shall, for each Generating Unit or external import of a System Resource concerned be the zonal market clearing price for Spinning Reserve calculated as follows:

$Psp_{xt} = MCP_{xt}$

Where the zonal market clearing price ($MCP_{xt}$) for Spinning Reserve is the highest priced winning Spinning Reserve capacity bid in Zone X based on the capacity reservation bid price, i.e.:

$MCP_{xt} = Max(CapRes_{ijt})$ in zone *x* for Settlement Period t.

The ISO's auction does not compensate a Scheduling Coordinator for the minimum Energy output of Generating Units, System Units or System resources bidding to provide Spinning Reserve. Therefore, any minimum Energy output associated with Spinning Reserve selected in the ISO's auction is the responsibility of the Scheduling Coordinator selling the Spinning Reserve.

The price payable to Scheduling Coordinators for Spinning Reserve Capacity not included in the ISO's Final Day-Ahead Schedules but made available in accordance with amended Ancillary Services supplier schedules issued in accordance with Section 2.5.21 shall be the bid price of the Spinning reserve capacity reserved ($CapRes_{ijt}$($/MW)).

**2.5.16 The Non-Spinning Reserve Auction.**

**Bid information**. If the bid is for the provision of Non-Spinning Reserve from a Generating Unit or System Unit, each Scheduling Coordinator j must submit the following information for each Generating Unit or System Unit i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) Generating Unit or System Unit identification (name and Location Code);

(c) the date for which the bid applies;

(d) maximum operating level (MW);

(e) minimum operating level (MW);

(f) ramp rate (MW/Min);

(g) the MW capability available within 10 minutes ($Cap_{ijt}max$);

(h) the bid price of the capacity reserved ($CapRes_{ijt}$($/MW));

(i) time to synchronization following notification (min);

and

(j) 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.

If the bid is for the provision of Non-Spinning Reserve from an external import of a System Resource, each Scheduling Coordinator j must submit the following information for each external import of a System Resource i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) the date for which the bid applies;

(c) ramp rate if applicable (MW/Min);

(d) the MW capability available at the point of interchange with the ISO Control Area, within 10 minutes ($Cap_{ijt}max$) of the ISO calling for the external import of System Resource I, from Scheduling Coordinator j, for Settlement Period t;

(e) the bid price of the capacity reserved ($CapRes_{ijt}$($/MW)); ~~and~~

(f) 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~~.~~; and, for a dynamic import of a System Resource, the following additional information:

(g) type of market (Day-Ahead or Hour-Ahead) and Trading Day;

(h) Scheduling Point;

(i) interchange ID code;

(j) external Control Area ID;

(k) Schedule ID (NERC ID number) and complete WECC tag;

(l) preferred bid flag, a "YES" indicates a bid and a "NO" indicates a self-provided schedule; and

(m) the contract reference number, if applicable.

If the bid is for the provision of Non-Spinning Reserve from a Load located within the ISO Control Area, each Scheduling Coordinator j must submit the following information for each Load i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) Load identification name and Location Code;

(c) the date for which the bid applies;

(d) Demand reduction available within 10 minutes ($Cap_{ijt}max$);

(e) to interruption following notification (min);

(f) maximum allowable curtailment duration (hr);

(g) the bid price of the capacity reserved ($CapRes_{ijt}$($/MW)); and

(h) an indication whether the capacity reserved would be available for Demand reduction only in the event of the occurrence of an unplanned Outage, a Contingency or an imminent or actual System Emergency

**Bid Evaluation**. Based on the quantity and location of the system requirements, the ISO shall select the Generating Units, System Units, Loads or external imports of System Resources with the

bids which minimize the sum of the total bids of the Generating Units, System Units, Loads or external imports of System Resources selected subject to two constraints:

(a) the sum of the selected bid capacities must be greater than or equal to the required Non-Spinning Reserve capacity; and

(b) each Generating Unit's, System Unit's, Load's or external import's bid capacity must be less than or equal to that Generating Unit's, System Unit's, Load's or external import's ramp rate (or time to interruption in the case of a Load offering Demand reduction) times the difference between 10 minutes and the time to synchronize in the case of a Generating Unit or System Unit or to interruption in the case of a Load. The total bid for each Generating Unit, System Unit, Load or external import of a System Resource is calculated by multiplying the capacity reservation bid by the bid capacity.

Thus subject to any locational requirements, the ISO will accept the winning Non-Spinning Reserve bids in accordance with the following criteria:

$$Min \sum_{i,j} Totalbid_{ijt}$$

Subject to

$$\sum_{i,j} Cap_{ijt} \geq Requirement_t$$

$$Cap_{ijt} \leq Cap_{ijt}max$$

Where

$TotalBid_{ijt} = Cap_{ijt} * CapRes_{ijt}$

$Requirement_t$ = the amount of Non-Spinning Reserve capacity required

**Price Determination**. The price payable to Scheduling Coordinators for Non-Spinning Reserve Capacity made available in accordance with the ISO's Final Day-Ahead Schedules shall for each Generating Unit, System Unit, Load or external import of a System Resource concerned be the zonal market clearing price for Non-Spinning Reserve calculated as follows:

$Pnonsp_{xt} = MCP_{xt}$

Where the zonal market clearing price ($MCP_{xt}$) for Non-Spinning Reserve is the highest priced winning Non-Spinning Reserve bid in Zone X based on the capacity reservation bid price, i.e.: $MCP_{xt} = Max(CapRes_{ijt})$ in zone *x* for Settlement Period t.

The price payable to Scheduling Coordinators for Non-Spinning Reserve Capacity not included in the ISO's Final Day-Ahead Schedules but made available in accordance with amended Ancillary Services supplier schedules issued in accordance with Section 2.5.21 shall be the bid price of the Non-Spinning Capacity reserved ($CapRes_{ijt}$*($/MW)*).

**2.5.17 The Replacement Reserve Auction.**

**Bid Information**. If the bid is for the provision of Replacement Reserve from a Generating Unit or System Unit each Scheduling Coordinator j must submit the following information for each Generating Unit or System Unit i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) Generating Unit or System Unit identification (name and Location Code);

(c) the date for which the bid applies;

(d) maximum operating level (MW);

(e) minimum operating level (MW);

(f) ramp rate (MW/Min);

(g) the MW capacity available within 60 minutes ($Cap_{ijt}max$);

(h) the bid price of the capacity reserved ($CapRes_{ijt}$ *($/MW))*; and

(i) time to synchronize following notification (min).

If the bid is for the provision of Replacement Reserve from an external import of a System Resource, each Scheduling Coordinator j must submit the following information for each external import of a System Resource i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) the date for which the bid applies;

(c) ramp rate applicable (MW/Min);

(d) the MW capability available at the point of interchange with the ISO Control Area, within 60 minutes ($Cap_{ijt}max$) of the ISO calling for the external import of System Resource i, from Scheduling Coordinator j, for Settlement Period t; ~~and~~

(e) bid price of capacity reserved ($CapRes_{ijt}$;($/MW)).; and, for a dynamic import of a System Resource, the following additional information:

(h) type of market (Day-Ahead or Hour-Ahead) and Trading Day;

(i) Scheduling Point;

(j) interchange ID code;

(k) external Control Area ID;

(l) Schedule ID (NERC ID number) and complete WECC tag;

(m) preferred bid flag, a "YES" indicates a bid and a "NO" indicates a self-provided schedule; and

(n) the contract reference number, if applicable.

If the bid is for the provision of Replacement Reserve from a Load located within the ISO Control Area, each Scheduling Coordinator j must submit the following information for each Load i for each Settlement Period t of the following Trading Day:

(a) bidder name/Identification Code;

(b) Load identification (name and Location Code);

(c) the date for which the bid applies;

(d) the Demand reduction available within 60 minutes ($Cap_{ijt}$ (MW));

(e) time to interruption following notification (min);

(f) maximum allowable curtailment duration (hr); and

(g) the bid price of the capacity reserved ($CapRes_{ijt}$ ($/MW)).

**Bid Evaluation**. Based on the quantity and location of the system requirements, the ISO shall select the Generating Units, System Units, Loads or external imports of System Resources with the bids which minimize the sum of the total bids of the Generating Units, System Units, Loads or external imports of System Resources selected subject to two constraints:

(a) the sum of the selected bid capacities must be greater than or equal to the required Replacement Reserve capacity; and

(b) each Generating Unit's, System Unit's, Load's or external import's bid capacity must be less than or equal to that Generating Unit's, System Unit's, Load's or external import's ramp rate (or time to interruption in the case of a Load offering Demand reduction) times the difference between 60 minutes and the time to synchronize in the case of Generating Unit or System Unit, or to interruption in the case of Load.

The total bid for each Generating Unit, System Unit, Load or external import of System Resource is calculated by multiplying the capacity reservation bid price by the bid capacity.

Thus, subject to any locational requirements, the ISO will select the winning Replacement Reserve bids in accordance with the following criteria:

$$Min \sum_{i,j} Totalbid_{ijt}$$

Subject to

$$\sum_{i,j} Cap_{ijt} \geq Requirement_t$$

$$Cap_{ijt} \leq Cap_{ijt}max$$

Where

$$TotalBid_{ijt} = Cap_{ijt} * CapRes_{ijt}$$

$Requirement_t$ = the amount of Replacement Reserve capacity

**Price Determination.** The price payable to Scheduling Coordinators for Replacement Reserve Capacity made available in accordance with the ISO's Final Day-Ahead Schedules shall, for each Generating Unit, System Unit, Load or external import of a System Resource, be the zonal market clearing price for Replacement Reserve calculated as follows:

$PRepRes_{xt} = MCP_{xt}$

Where the zonal market clearing price ($MCP_{xt}$) for Replacement Reserve is the highest priced winning Replacement Reserve bid in Zone X based on the capacity reservation bid price, i.e.:

$MCP_{xt} = Max(CapRes_{ijt})$ in zone *x* for Settlement Period t.

The price payable to Scheduling Coordinators for Replacement Reserve Capacity not included in the ISO's Final Day-Ahead Schedules but made available in accordance with amended Ancillary Services schedules issued in accordance with section 2.5.21 shall be the bid price of the Replacement Reserve capacity reserved ($CapRes_{ijt}(\$/MW)$).

* * *

**2.5.27 Settlements For Contracted Ancillary Services.**

Based on the prices and quantities determined in accordance with this Section, the ISO shall operate a daily Settlement function for Ancillary Services it contracts for with Scheduling Coordinators.

The ISO shall calculate imbalances between scheduled, instructed and actual quantities of Energy provided based upon Meter Data obtained pursuant to Section 10. Schedules between Control Areas shall be deemed as being delivered in accordance with Good Utility Practice. Dynamic schedules shall be integrated over time through the operating hour and the MWh quantity obtained by such integration shall be deemed to be the associated scheduled interchange for that operating hour. The difference between actual and scheduled interchange shall then be addressed in accordance with the WECC and NERC inadvertent interchange practices and procedures. Following this practice, all dynamic schedules for Ancillary Services provided to the ISO ~~by~~from

System Resources in other Control Areas shall be deemed delivered to the ISO. The difference between the Energy requested by the ISO and that actually delivered by the other Control Area shall then be accounted for and addressed through the WECC and NERC inadvertent interchange practices and procedures.

Separate payments shall be calculated for each Settlement Period t for each Generating Unit, System Unit, System Resource and Curtailable Demand. The ISO shall then calculate a total daily payment for each Scheduling Coordinator for all the Generating Units, System Units, System Resources and Curtailable Demands that it represents for each Settlement Period t.

The settlements for the Hour-Ahead Markets shall be calculated by substituting Hour-Ahead prices in the relevant formulae and deducting any amounts due to the ISO from Scheduling Coordinators who buy back in the Hour-Ahead Market Regulation, Spinning Reserve, Non-Spinning Reserve or Replacement Reserve capacity they sold to the ISO in the Day-Ahead Market.

* * *

**2.5.30.1 Information Transfer from Scheduling Coordinator to ISO**. Unless otherwise agreed by the ISO, Scheduling Coordinators who wish to schedule or bid Ancillary Services to the ISO must submit the information by direct computer link. Scheduling Coordinators that wish to submit dynamic schedules or bids for Ancillary Services to the ISO must also comply with the applicable requirements of Sections 2.2.7.6, 2.5.6.2 and 2.5.7.4.2.

* * *

| | |
|---|---|
| **System Resource** | A group of resources, single resource, or a portion of a resource located outside of the ISO Control Area, or an allocated portion of a Control Area's portfolio of generating resources that are directly responsive to that Control Area's Automatic Generation Control (AGC) capable of providing Energy and/or Ancillary Services to the ISO Controlled Grid. |

* * *

**Tolerance Band**

The tolerance band expressed in terms of Energy (MWh) for the performance requirement for Generating Units, System Units and imports from dynamically scheduled System Resources for each Settlement Interval will equal the greater of the absolute value of: 1) 5 MW divided by number of Settlement Intervals per Settlement Period or 2) three percent (3%) of the relevant Generating Unit's, dynamically scheduled System Resource's or System Unit's maximum output (Pmax), as registered in the Master File, divided by number of Settlement Intervals per Settlement Period. The maximum output (Pmax) of a dynamically scheduled System Resource will be established by agreement between the ISO and the Scheduling Coordinator representing the System Resource on an individual case basis, taking into account the number and size of the generating resources, or allocated portions of generating resources, that comprise the System Resource.

The tolerance band expressed in terms of Energy (MWh) for the performance requirement for Participating Loads for each Settlement Interval will equal the greater of the absolute value of: 1) 5 MW divided by number of Settlement Intervals per Settlement Period or 2) three percent (3%) of the applicable Final Hour-Ahead Schedule or ISO Dispatch amount divided by number of Settlement Intervals per Settlement Period.

The Tolerance Band shall not be applied to non-dynamically scheduled System Resources.

* * *

**DP 9.2.1 Compliance with Dispatch Instructions**

All Participants within the ISO Control Area and all dynamically scheduled System Resources shall comply fully and promptly with the ISO's Dispatch Instructions unless such operation would impair public health or safety. Shedding Load for a System Emergency does not constitute impairment to public health or safety.

* * *

**SBP 6.1.3 External Import Section of Energy Bid Data**

Each SC offering Spinning, Non-Spinning, or Replacement Reserve, or Supplemental Energy to the ISO will submit the following information for each external import for each Settlement Period;

(a) SC's ID code;
(b) name of Scheduling Point;
(c) interchange ID (the name of the selling entity, the buying entity, and a numeric identifier);
(d) external Control Area ID;
(e) Schedule ID (NERC ID number);
(f) complete WECC tag;
(g) operational ramp rate (MW/minute); ~~and~~
(h) the MW and $/MWh values for each external import for which a Supplemental Energy bid is being submitted consistent with this SBP 6; ~~and~~
(i) minimum block of hours that bid must be dispatched; ~~and~~
(j) Flag indicating the bid must is capable available for intra-hour Redispatch. If this flag is set to no then the bid is indicating that the bid must be pre-dispatched and not re-dispatched during the real-time operating hour~~.~~;
(k) interchange ID code;
(l) external Control Area ID;
(m) Schedule ID (NERC ID number) and complete WECC tag;
(n) preferred bid flag, a "YES" indicates a bid and a "NO" indicates a self-provided schedule; and
(o) the contract reference number, if applicable.

**ATTACHMENT E**

# Standards for Dynamic Imports of Energy, Supplemental Energy, and Energy Associated with Non-Regulation Ancillary Services

*Standards Applicable to Scheduling Coordinators, Host Control Areas, intermediary Control Areas, and the ISO*

These standards have been developed to implement the California Independent System Operator's ("ISO") Tariff provisions relating to dynamic imports of Energy, Supplemental Energy, and Energy associated with non-Regulation Ancillary Services (Spinning Reserve and Non-Spinning Reserve) by Scheduling Coordinators ("SC") from System Resources (i.e., resources located outside the ISO Control Area).

Consistent with the provisions of Amendment No. 59 to the ISO Tariff (as effective June 29, 2004), SCs may dynamically schedule and deliver Energy, Supplemental Energy, and/or Energy associated with non-Regulation Ancillary Services from System Resources, where technically feasible and consistent with all applicable WECC and NERC requirements; provided that the SC and the operator of such Control Area (referred to herein as the "Host Control Area"), and any intermediary Control Areas, each has entered into an applicable agreement with the ISO committing to comply with these standards.

A Host Control Area is the Control Area in which the System Resource is connected to the electric grid. The Host Control Area may, or may not, be directly interconnected with the ISO Control Area. "System Resource" is defined in the ISO Tariff and, as defined, may include a single resource or generating plant, or a portion thereof, located within the Host Control Area, or an allocated portion of resources subject to the Host Control Area's Energy Management System ("EMS")/Automatic Generation Control.

SCs and Host Control Areas that are already certified under the ISO's Standards for Imports of Regulation will be deemed to have fulfilled the requirements of the standards herein (all presently implemented Regulation import functionalities may be subject to review to ensure consistency between such functionalities and the standards herein). SCs and Host Control Areas that wish to be certified for imports of Regulation shall be subject to certification under the Standards for Imports of Regulation, subject to verification of consistency with the standards herein.

These standards shall be interpreted in the context of the ISO Tariff and the applicable agreements. These standards are not intended to alter or change the meaning of any material provision thereof. Unless the context otherwise indicates, any word or expression defined in the Appendix A, Master Definitions Supplement to the ISO Tariff and capitalized herein shall have the same meaning where used in these standards.

## 1. Consistency with NERC/WECC Policies and Requirements

1.1 Scheduling and operation of dynamic scheduling functionalities must comply with all applicable NERC and WECC policies and requirements regarding

inter-Control Area scheduling, in accordance with Section 2.2.7.6 of the ISO Tariff.

1.2 Scheduling and operation of dynamic scheduling functionalities must be consistent with the NERC Dynamic Transfer White Paper and all NERC standards or policies.

1.3 All new dynamic functionality implementations may be subject to NERC-specified peer review.

## 2. Contractual Relationships

2.1 The Host Control Area and all intermediary Control Areas must each execute an Interconnected Control Area Operating Agreement ("ICAOA") with the ISO, with accompanying service schedule, or a special agreement particular to the operation of the functionality supporting dynamic imports of Energy, Supplemental Energy, and/or Energy associated with non-regulating Ancillary Services to the ISO Control Area. (See the form of ICAOA service schedule and alternative special agreement for Host Control Areas attached to these standards.)

2.2 The SC for the System Resource must execute a special agreement with the ISO governing the operation of the dynamic scheduling functionality, which agreement will include a provision for its termination based on failure to comply with these standards. (See the form of agreement attached to these standards.)

2.3 The SC for the System Resource must have the necessary operational and contractual arrangements in place with the Host Control Area (*see* Section 5 below). Such arrangements must include the Host Control Area operator's ability to receive telemetry from the System Resource and to issue a dynamic schedule signal pertinent to that System Resource to the ISO. Proof of such arrangements must be provided to the ISO.

## 3. Communications, Telemetry, and Other Technical Requirements

3.1 The communication and telemetry requirements set forth in the ISO's Standards for Imports of Regulation will apply to all dynamic schedules, except for (a) those dynamic functionalities established prior to the ISO Operations Date, (b) the requirements that are specific solely to Regulation, and (c) the requirements set forth below.

3.2 Dedicated dual redundant communications links between the ISO's EMS and the Host Control Area EMS are required.

3.3 The primary circuit will be T1-class, or equivalent, utilizing the inter-control center communications protocol ("ICCP"). The backup circuit will be diversely routed between the Host Control Area EMS and the ISO Control Area EMS on separate physical paths and devices.

3.4 Dedicated dual redundant communications links between the Host Control Area EMS and every intermediary Control Area EMS are required.

3.5 The Control Area hosting a dynamically scheduled System Resource must have a mechanism implemented to override the associated dynamic signal.

3.6 The dynamic signal must be properly incorporated into all involved Control Areas' ACE equations.

3.7 The System Resource must have communications links with the Host Control Area consistent with these standards.

## 4. Limits on Dynamic Imports

4.1 The ISO reserves the right to establish limits applicable to the amount of any Ancillary Services and/or Supplemental Energy imported into the ISO Control Area, whether delivered dynamically or statically. Such limits may be established based on any one, or a combination, of the following considerations: a percentage of, or a specific import limit applicable to, total ISO Control Area requirements; a percentage at, or a specific import limit applicable to, a particular Scheduling Point or a branch group; a percentage of, or a specific import limit applicable to, total requirements in a specific Congestion Zone; or operating factors which may include, but are not limited to, operating nomograms, Remedial Action Schemes, protection schemes, scheduling and curtailment procedures, or any potential single points of failure associated with the actual delivery process.

4.2 The ISO may, at its discretion, either limit or forego procuring Ancillary Services at particular Control Area interties to ensure that Operating Reserves are adequately dispersed throughout the ISO Control Area as required by WECC Minimum Operating Reliability Criteria ("MORC").

4.3 A dynamically scheduled System Resource and its schedules must be permanently associated with a particular ISO intertie (the ISO may, from time to time and at its discretion, allow for a change in such pre-established association of the dynamically scheduled System Resource with a particular ISO intertie).

## 5. Operating and Scheduling Requirements

5.1 For any operating hour for which Energy, Supplemental Energy, and/or Ancillary Services (and associated Energy) is scheduled dynamically to the ISO from the System Resource, a firm (or non-interruptible for that hour) matching transmission service must be reserved across the entire dynamic schedule transmission path external to the ISO Control Area.

5.2 All dynamic schedules associated with newly implemented dynamically scheduled System Resources must be electronically tagged (e-tagged). Every change in the magnitude of the dynamic schedule by 25% or more, or

25 MW, whichever is less, shall require a conforming change in the associated e-tag.

5.3 Formal inter-Control Area dynamic schedules may be issued only by the dynamically scheduled System Resource's Host Control Area and must be routed through the EMSs of all intermediary Control Areas (such schedules would be considered "wheel-through" schedules by intermediary Control Areas).

5.4 The ISO will treat dynamically scheduled Energy as a resource contingent firm import. The ISO will procure (or allow for self-provision of) WECC MORC-required Operating Reserves for loads served by dynamically scheduled System Resources.

5.5 All Energy schedules associated with dynamically scheduled imports of Spinning Reserve and Non-Spinning Reserve will be afforded similar treatment (i.e. resource contingent firm).

5.6 The dynamic signal must be integrated over time by the Host Control Area for every operating hour.

5.7 Notwithstanding any dispatches of the System Resource in accordance with the ISO Tariff, the ISO shall have the right to issue operating orders to the System Resource either directly or through the Host Control Area for emergency or contingency reasons, or to ensure the ISO's compliance with operating requirements based on WECC or NERC requirements and policies (e.g., WECC's Unscheduled Flow Reduction Procedure). However, such operating orders may be issued only within the range of the ISO-accepted Energy, Ancillary Services, and/or or Supplemental Energy Schedules and bids for a given operating hour (or the applicable "sub-hour" interval).

5.8 If there is no dynamic schedule in the ISO's Day-Ahead, Hour-Ahead, or Supplemental Energy markets, the dynamic signal must be at "zero" ("0") except when in response to ISO's Dispatch Instructions associated with accepted Ancillary Services and/or Supplemental Energy bids.

5.9 The SC of the dynamically scheduled System Resource must have the ability to override the associated dynamic schedule in order to respond to the operating orders of the ISO or the Host Control Area.

5.10 Unless the dynamically scheduled System Resource (1) is implemented as a directly-telemetered load-following functionality, (2) is base-loaded Regulatory Must Take Generation, or (3) responds to an ISO intra-hour Dispatch Instruction, the dynamic schedule representing such resource must follow WECC-approved practice of 20-minute ramps centered at the top of

the hour. The ISO does not provide any special settlements treatment nor offer any ISO Tariff exemptions for dynamic load following functionalities.

5.11 In real time the dynamic schedule may not exceed the maximum value established by the sum of the Day-Ahead and Hour-Ahead accepted Energy and Ancillary Services Schedules plus any accepted Supplemental Energy bids plus any response to the ISO's real-time Dispatch Instructions. The composite value of the dynamic Schedule derived from the Day-Ahead and Hour-Ahead accepted schedules plus any Supplemental Energy bids and Dispatch Instruction response represents not only the estimated dynamically scheduled System Resource's Energy but also the transmission reservation on the associated ISO intertie.

5.12 Only one dynamically scheduled System Resource may be associated with any one physical generating resource.

5.13 If the SC for the dynamically scheduled System Resource desires to participate in ISO's Regulation market, all provisions of the ISO's Standards for Imports of Regulation shall apply.

## 6. Certification, Testing, and Performance Monitoring of Dynamic Imports of Ancillary Services

6.1 The SC and Host Control Area operator must jointly request the certification of a System Resource to provide Ancillary Services for the ISO Control Area and cooperate in the testing of such System Resource (see the "Scheduling Coordinator & Host Control Area Operator Request for Certification of Dynamic Imports of Ancillary Services" certification form attached to these standards).

6.2 Only ISO tested and certified System Resources will be allowed to bid and/or self-provide Ancillary Services into the ISO Control Area.

6.3 Dynamic Ancillary Services imports will be certified through testing, in accordance with the relevant sections of the ISO's Operating Procedure G-213. All requests for certification of dynamic Ancillary Services imports will be reviewed and approved by the ISO with respect to any technical limitations imposed by existing operational considerations, such as Remedial Action Schemes, operating nomograms, and scheduling procedures. These reviews may impose certain Ancillary Services import limits in addition to those outlined in Section 4.1. Therefore, interested parties are advised and encouraged to contact the ISO before they begin the process of the necessary systems design, preparation, and implementation for import of Ancillary Services to the ISO Control Area.

6.4 The ISO will measure the performance of the dynamic Energy schedule associated with accepted Ancillary Services bids against (1) the awarded range of Ancillary Service capacity; (2) the certified limits; and (3) the bid ramp rate, which shall be validated by the ISO against the certified ramp rate.

6.5 The SC for the System Resource and the Host Control Area must notify the ISO should any changes, modifications, or upgrades affecting control and/or performance of the System Resource be made. Upon such notification, the ISO, at its discretion, may require that the System Resource and Host Control Area be re-certified to import Ancillary Services into the ISO Control Area.

## 7. Compliance, Losses, and Financial Settlements

7.1 Energy delivered in association with dynamically scheduled System Resources will be subject to all provisions of the ISO's Imbalance Energy markets, including Uninstructed Deviation Penalties ("UDP") (just as is the case with ISO intra-Control Area Generating Units of Participating Generators).

7.2 Dynamically scheduled and delivered Ancillary Services will be subject to the ISO's compliance monitoring and remedies, just as any ISO intra-Control Area Generating Units of Participating Generators.

7.3 All Day-Ahead and Hour-Ahead submitted dynamic schedules shall be subject to ISO Congestion mitigation and as such may not exceed their transmission reservations in real time (with the exception of intra-hour Dispatch Instructions of the Energy associated with accepted Ancillary Services or Supplemental Energy bids).

7.4 All dynamically scheduled and delivered Energy shall be subject to the standard ISO transmission loss calculation associated with the particular intertie (TMMs or ISO market redesign alternative).

7.5 Any transmission losses attributed to the dynamic schedule on transmission system(s) external to the ISO Control Area will be the responsibility of the owner(s)/operator(s) of the dynamically scheduled System Resource.

7.6 A predetermined, mutually agreed, and achievable "Pmax-like" fixed MW value will be established for every dynamically scheduled System Resource to be used as the basis for the UDP calculation. Responsible SCs will be able to report de-rates affecting the dynamically scheduled System Resource via the ISO's "SLIC" outage reporting system.

7.7 Should there be any need or requirement, whether operational or procedural, for the ISO to make real time adjustments to the ISO's inter-Control Area schedules (to include curtailments), dynamic schedules shall be treated in the same manner as similarly situated and/or effective static ISO schedules.

## Scheduling Coordinator & Host Control Area Operator

## Request for Certification of

## Imports of Spinning and Non-Spinning Reserves for which the associated Energy is delivered dynamically from a System Resource

In accordance with the ISO Tariff, Protocols and Operating Procedures, and the ISO's *"Standards for Dynamic Imports of Energy, Supplemental Energy, and Energy Associated with Non-Regulation Ancillary Services"* posted on the ISO's internet web site (www.caiso.com), as may be modified from time to time ("Standards"), _____, as Scheduling Coordinator, and _____, as Host Control Area operator (as such term is referred to in the Standards, collectively referred to as "Parties," or individually as "Party," hereby request the certification of the Parties and the System Resource(s) identified in the table below as a provider of ancillary services and associated energy to the ISO Control Area subject to the Standards. Further, the Parties acknowledge that their ability to import ancillary services and associated energy will be tested for certification in accordance with ISO Operating Procedure G-213.

With this request for certification, the Parties recognize that the ISO Tariff, Protocols, applicable agreements, and the Standards require the Host Control Area operator to issue dynamic energy schedules to the ISO based on the Scheduling Coordinator's self-provided or bid external imports of non-regulation ancillary services from the System Resource(s) at any time during the operating hour.

With this request for certification, the Host Control Area operator represents and warrants that it has in place the required communications links with the ISO Control Area in order to facilitate the delivery of ancillary services and associated energy from the System Resource.

With this request for certification, the Scheduling Coordinator represents and warrants that it has made the appropriate arrangements for and has put in place the equipment and services necessary for the delivery of ancillary services and associated energy from the System Resource to the point of interchange ("Scheduling Point") with the ISO Control Area in accordance with the Standards.

The Scheduling Coordinator further certifies that any and all dynamic imports of energy associated with self-provided or bid imports of non-regulation ancillary services will be deliverable over non-interruptible, non-recallable transmission rights, from the source of the associated energy to the Scheduling Point with the ISO Control Area.

| System Resource | External Host Control Area in which System Resource is Located | Scheduling Point (ISO interchange ID) | Maximum Amount of Ancillary Services Capacity to be Certified (MW) | Maximum Ramp Rate to be Certified (MW/minute) |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |

Subsequent to the initial filing of this request for certification with the ISO, any prospective changes jointly made by the Parties may be filed with the Scheduling Coordinator's ISO Client Relations representative, who will acknowledge the receipt of such requested changes and indicate the date on which such changes may be tested and become effective if ISO testing proves successful. Such changes will be made by the ISO as soon as practicable, with reasonable efforts made to implement them within sixty (60) days of receipt of the requested changes.

This document _____ (does) _____ (does not) contain requested changes to previously effective certification.

Certification Requested By:

_____, as the Scheduling Coordinator

Name:_____

Title: _____

Date: _____

_____, as the Host Control Area Operator

Name:_____

Title: _____

Date: _____

CERTIFICATION REQUEST ACKNOWLEDGED by:

_____

California Independent System Operator Corporation

Name:_____

Title: _____

Date: _____

**ATTACHMENT F**

# CALIFORNIA INDEPENDENT SYSTEM OPERATOR

# AND

# [SCHEDULING COORDINATOR]

# DYNAMIC SCHEDULING AGREEMENT FOR SCHEDULING COORDINATORS

# DYNAMIC SCHEDULING AGREEMENT FOR SCHEDULING COORDINATORS

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

(1) **[Full Legal Name]** having its registered and principal place of business located at **[Address]** (the "Scheduling Coordinator");

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 ISO Governing Board may from time to time designate, initially 151 Blue Ravine Road, Folsom, California 95630 (the "ISO").

The Scheduling Coordinator and the ISO are hereinafter referred to as the "Parties".

**Whereas:**

**A.** The ISO Tariff provides that a Scheduling Coordinator may submit dynamic schedules to the ISO from System Resources.

**B.** The Scheduling Coordinator is currently Scheduling Coordinator for a System Resource associated with a power plant(s) interconnected in a Control Area other than the ISO Control Area (the "Host Control Area").

**C.** The Scheduling Coordinator wishes to implement and operate a dynamic functionality that allows scheduling of Energy, Supplemental Energy, and Energy associated with Spinning Reserve and Non-Spinning Reserve dynamically from a System Resource into the ISO Control Area from the Host Control Area and, therefore, wishes to undertake to the ISO that it will comply with the applicable provisions of the ISO Tariff.

**D.** The Parties are entering into this Agreement in order to establish the terms and conditions on which the ISO and the Scheduling Coordinator will discharge their respective duties and responsibilities under the ISO 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 to the ISO 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 ISO Tariff, the ISO 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 SCHEDULING COORDINATOR AND ISO

**2.1 ISO Responsibility.** The Parties acknowledge that the ISO is responsible for the efficient use and reliable operation of the ISO 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 Council and further acknowledges that the ISO may not be able to satisfy fully these responsibilities if the Scheduling Coordinator fails to fully comply with all of its obligations under this Agreement and the ISO Tariff.

## ARTICLE III
## TERM AND TERMINATION

**3.1 Effective Date.** This Agreement shall be effective as of the date set forth above, unless accepted for filing and made effective by FERC on some other date, if 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 ISO.** Subject to Section 3.2.2, the ISO may terminate this Agreement by giving written notice of termination in the event that the ISO's agreement with the Host Control Area has terminated or the Scheduling Coordinator commits any material default under this Agreement and/or the ISO Tariff which, if capable of being remedied, is not remedied within thirty (30) days after the ISO has given, to the Scheduling Coordinator, written notice of the default, unless excused by reason of Uncontrollable Forces in accordance with Article X of this Agreement. With respect to any notice of termination given pursuant to this Section, the ISO must file a timely notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the ISO will be considered timely if: (1) the filing of the notice of termination is made after the preconditions for termination have been met, and (2) the ISO files the notice of termination within sixty (60) days after issuance of the notice of default. 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 ISO's notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

**3.2.2 Limitation on ISO Termination.** Notwithstanding the provisions of Section 3.2.1, in the event of noncompliance with the provisions of the ISO's Standards, the ISO shall have the right to terminate this Agreement after three (3) instances of noncompliance. In the event that the ISO determines that the Scheduling Coordinator has failed to comply with the ISO's Standards, the ISO will provide written notice to that effect to the Scheduling Coordinator, and the Scheduling Coordinator shall have seven (7) days to correct the non-compliant condition(s). If the ISO determines that Scheduling Coordinator has not corrected the non-compliant condition(s) within seven (7) days after the third notice of

noncompliance, the ISO may, by further written notice to the Scheduling Coordinator, terminate this Agreement and the existing functionality and arrangements described herein pursuant to Section 3.2.1, but without providing for the additional thirty (30)-day cure period otherwise provided in Section 3.2.1.

**3.2.3 Termination by Scheduling Coordinator.** In the event that the Scheduling Coordinator no longer wishes to submit dynamic schedules to the ISO, it may terminate this Agreement, on giving the ISO ninety (90) days written notice. With respect to any notice of termination given pursuant to this Section, the ISO must file a timely notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the ISO will be considered timely if: (1) the request to file a notice of termination is made after the preconditions for termination have been met, and (2) the ISO files the notice of termination within thirty (30) days of receipt of such request. 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 ISO's receipt of the Scheduling Coordinator's notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

## ARTICLE IV
## GENERAL TERMS AND CONDITIONS

### 4.1 Dynamic Scheduling Requirements and Obligations

**4.1.1** The dynamic functionality established under this Agreement shall be implemented and operated in accordance with ISO Tariff Section 2.2.7.6, other applicable provisions of the ISO Tariff, all applicable NERC and WECC policies, requirements, and provisions, and the ISO's "*Standards for Dynamic Imports of Energy, Supplemental Energy, and Energy Associated with Non-Regulation Ancillary Services*" ("Standards") posted on the ISO Home Page: "www.caiso.com".

**4.1.2** The maximum allowable dynamic power transfer (in MW) from the Scheduling Coordinator's System Resource(s) shall be as set forth in Schedule 1 and will be referred to as "Pmax" in all ISO scheduling and control systems.

**4.1.3** The Scheduling Coordinator warrants that the power plant(s) listed in Schedule 1 is interconnected within the Host Control Area specified in Schedule 1, placing both the plant(s) as well as the associated System Resource under the operational jurisdiction of the Host Control Area.

**4.1.4** The ISO intertie associated with the System Resource(s) is set forth in Schedule 1. The Scheduling Coordinator may request, and the ISO may agree, at its sole

discretion, to change the foregoing ISO intertie association, subject to any limitations set forth in the Standards.

**4.1.5** Unless explicitly agreed otherwise, dynamic functionalities implemented between the ISO and the Scheduling Coordinator may provide only for imports from the System Resource(s) listed in Schedule 1 to the ISO.

**4.1.6 Identification of System Resources.** The Scheduling Coordinator has identified the System Resources that it represents in Schedule 1.

**4.1.7 Notification of Changes.** Sixty (60) days prior to changing any technical information in Schedule 1, the Scheduling Coordinator shall notify the ISO of the proposed changes. Pursuant to Section 2.5.25 of the ISO Tariff, the ISO may verify, inspect and test the capacity and operating characteristics provided in the revised Schedule 1. Unless the Scheduling Coordinator fails to test at the values in the proposed change(s), the change will become effective upon the effective date for the next scheduled update of the ISO's Master File, provided the Scheduling Coordinator submits the changed information by the applicable deadline and is tested by the deadline.

**4.2 Agreement Subject to ISO Tariff.** The Parties will comply with all applicable provisions of the ISO Tariff, including Sections 2.2.7.6 and 2.5.6.2. This Agreement shall be subject to the ISO Tariff, which shall be deemed to be incorporated herein.

**4.3 Obligations Relating to Ancillary Services**

**4.3.1 Submission of Bids.** When the Scheduling Coordinator submits a bid for Ancillary Services, the Scheduling Coordinator will, by the operation of this Section 4.3.1, warrant to the ISO that it has the capability to provide that service in accordance with the ISO Tariff and that it will comply with ISO Dispatch Instructions for the provision of the service in accordance with the ISO Tariff.

## ARTICLE V
## PENALTIES AND SANCTIONS

**5.1 Uninstructed Deviations.** Except for operating emergency situations, real time Energy transfers may not vary from the Final Hour Ahead Schedule as adjusted by any Dispatch Instructions by more than the greater of five (5) MW or three percent (3%) of the net dependable capacity (Pmax) of the System Resource, integrated across a ten-minute interval. If such defined performance band is exceeded by any amount in more than five percent (5%) of the ten-minute intervals on three successive days, then such deviations shall constitute one event of non-compliance with the ISO's Standards pursuant to Section 3.2.2. Deviations from dynamic Energy schedules will also be subject to Uninstructed

Deviation Penalties pursuant to Section 11.2.4.1.2 and related provisions of the ISO Tariff.

**5.2 General.** The Scheduling Coordinator shall be subject to all penalties made applicable to dynamic imports from System Resources set forth in the ISO Tariff.

## ARTICLE VI
## COSTS

**6.1 Operating and Maintenance Costs.** The Scheduling Coordinator shall be responsible for all its costs incurred in connection with dynamic scheduling and compliance by the System Resources identified in Schedule 1 for the purpose of meeting its obligations under this Agreement.

## ARTICLE VII
## DISPUTE RESOLUTION

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

## ARTICLE VIII
## REPRESENTATIONS AND WARRANTIES

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

## ARTICLE IX
## LIABILITY

**9.1 Liability.** The provisions of Section 14 of the ISO Tariff will apply to liability arising under this Agreement, except that all references in Section 14 of the ISO Tariff to Market Participants shall be read as references to the Scheduling Coordinator and references to the ISO Tariff shall be read as references to this Agreement.

## ARTICLE X
## UNCONTROLLABLE FORCES

**10.1 Uncontrollable Forces Tariff Provisions.** Section 15 of the ISO Tariff shall be incorporated by reference into this Agreement except that all references in Section 15 of the ISO Tariff to Market Participants shall be read as a reference to the Scheduling Coordinator and references to the ISO 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 17 of the ISO 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 20.1 of the ISO Tariff. 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 waivers at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.

**11.4 Governing Law and Forum.** This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in

accordance with, the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consents that any legal action or proceeding arising under or relating to this Agreement to which the ISO ADR Procedures do not apply, shall be brought in any of the following forums, as appropriate: 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 20.8 of the ISO Tariff as if the references to the ISO Tariff were referring to this Agreement.

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

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

**11.8 Section Headings.** Section headings provided in this Agreement are for ease of reading and are not meant to interpret the text in each Section.

**11.9 Amendments.** This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. If the amendment does not require FERC approval, the amendment will be filed with FERC for information. Nothing contained herein shall be construed as affecting in any way the right of the ISO to unilaterally make 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.

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

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

**California Independent System Operator Corporation**

By: _____

Name: _____

Title: _____

Date: _____

**[NAME OF SCHEDULING COORDINATOR]**

By: _____

Name: _____

Title: _____

Date: _____

## SCHEDULE 1

## SYSTEM RESOURCES AND CONTROL AREA INFORMATION
## [Sections 4.1.2, 4.1.3, 4.1.5]

**Description of System Resource(s), including Associated Power Plants and Pmax Values:**

**ISO Intertie:**

**Host Control Area:**

**Intermediate Control Areas:**

**SCHEDULE 2**

**NOTICES**
**[Section 11.2]**

**Scheduling Coordinator**

Name of Primary Representative: _____

Title: _____

Company: _____

Address: _____

City/State/Zip Code _____

Email Address: _____

Phone: _____

Fax No: _____

Name of Alternative Representative: _____

Title: _____

Company: _____

Address: _____

City/State/Zip Code _____

Email Address: _____

Phone: _____

Fax No: _____

**ISO**

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: _____

**ATTACHMENT G**

# SERVICE SCHEDULE 17

## INTER-CONTROL AREA REQUIREMENTS FOR SCHEDULING AND DYNAMIC DELIVERY OF ENERGY, SUPPLEMENTAL ENERGY, AND ENERGY ASSOCIATED WITH NON-REGULATION ANCILLARY SERVICES TO THE ISO

## 1. General

1.1 Purpose. This Service Schedule 17 sets forth the requirements that must be satisfied by **[Control Area X]** (referred to herein as the "Host Control Area") should it elect to support Scheduling Coordinators' requests for implementation of a dynamic scheduling functionality and delivery of energy, supplemental energy, and energy associated with ancillary services (except regulation service) into the ISO Control Area. The requirements encompass technical (energy management system ("EMS")/automatic generation control ("AGC") and communications), interchange scheduling, telemetry, and aspects of interconnected Control Area operations.

1.2 NERC/WECC Operating Standards Observed. Nothing in this Service Schedule 17 is intended to change, supercede, or alter either Party's obligations to abide by NERC standards and policies and WECC criteria.

1.3 Applicable Standards. This Service Schedule 17 incorporates, by reference, the ISO's *"Standards for Dynamic Imports of Energy, Supplemental Energy, and Energy Associated with Non-Regulation Ancillary Services"* ("Standards") posted on the ISO internet home page: "www.caiso.com".

1.4 Meaning of "System Resource". "System Resource" is defined in the ISO Tariff and, in the context of this Service Schedule 17, may include combinations of resources as described in the Standards.

## 2. Telecommunications Requirements

The ISO and Host Control Area shall establish and maintain real time, redundant, diversely routed, communications links between the ISO EMS and the Host Control Area EMS, with the primary link utilizing the standard inter-control center communications protocol ("ICCP") in accordance with the Standards.

## 3. Telemetry

For each operating hour for which a System Resource is scheduled to deliver energy, supplemental energy, and/or energy associated with any of the non-regulating ancillary services to the ISO Control Area, the Host Control Area shall provide, via the ICCP communication links to the ISO EMS, the data for each System Resource as set forth in the Standards.

## 4. Interchange Scheduling Requirements

4.1 Dynamic Scheduling. The Host Control Area shall support Scheduling Coordinators' requests to arrange dynamic interchange schedules for the delivery of energy to the ISO Control Area, reflecting the System Resource's instantaneous energy production or allocation level and taking into account available transmission capacity.

4.2 Treatment of Area Control Error ("ACE"). The Host Control Area shall instantaneously compensate its AGC for the System Resource's energy output that is generated or allocated for establishing the dynamic schedule to the ISO such that the System Resource energy production or allocation changes have an equal in magnitude and opposite in sign effect on the Host Control Area's ACE.

4.3 Integration of Dynamic Scheduling. For each operating hour during which energy was dynamically scheduled for delivery to the ISO Control Area, the Host Control Area shall compute an integrated amount of interchange based on the System Resource's integrated energy production, by integrating the instantaneous System Resource production levels. Such integrated MWH value shall be agreed to hourly by the real time schedulers.

4.4 Delivery of Megawatts ("MW"). The Host Control Area shall not be obligated to make up any difference between the dynamic energy schedule and the MW being generated or allocated by the System Resource.

4.5 Access to Information. The Parties agree to exchange information related to telemetry sent and received with respect to the delivery of energy (i) at the request of the other Party for purposes of after-the-fact interchange accounting or (ii) on demand for any other purpose.

## 5. Other Host Control Area Responsibilities

5.1 Operational Jurisdiction. The Host Control Area will have, at a minimum, the level of operational jurisdiction over the System Resource and the

associated dynamic schedule that NERC and WECC vest in Host Control Areas.

5.2 E-Tagging. The Host Control Area must support associated e-tagging as described in the Standards and deemed to be consistent with NERC and/or WECC requirements.

5.3 Real-Time Adjustments. The Host Control Area must have a means to manually override and/or otherwise adjust the dynamic signal in real time, if needed.

5.4 Coordination with Other Control Areas. The Host Control Area must provide in real time the instantaneous value of each dynamic schedule to every intermediary Control Area through whose systems such dynamic schedule may be implemented to the ISO.

## 6. Other

6.1 Losses. The ISO shall not be responsible for transmission losses caused by transmitting energy dynamically within or across the Host Control Area for delivery to the ISO.

6.2 Certification. Only ISO-certified System Resource/Host Control Area arrangements will be allowed to bid or self provide ancillary services in the ISO's ancillary services market through an ISO-certified Scheduling Coordinator.

6.3 No Guarantee of Award. Certification of a System Resource/Host Control Area arrangement allows for bidding of supplemental energy and/or certain ancillary services into the ISO market; it does not, however, guarantee selection of such bid.

6.4 Performance Assessment. The ISO will monitor and measure dynamically imported ancillary services, whether bid or self-provided, against the performance benchmarks described in the Standards.

## 7. LIST OF IMPLEMENTED DYNAMIC SYSTEM RESOURCES

Each dynamically scheduled System Resource permitted pursuant to this Service Schedule 17 is described below.

**ATTACHMENT H**

# CALIFORNIA INDEPENDENT SYSTEM OPERATOR

AND

# [CONTROL AREA]

# DYNAMIC SCHEDULING HOST CONTROL AREA OPERATING AGREEMENT

# DYNAMIC SCHEDULING HOST CONTROL AREA OPERATING AGREEMENT

THIS DYNAMIC SCHEDULING HOST CONTROL AREA OPERATING AGREEMENT ("AGREEMENT") is established this ____ day of _____, ____ and is accepted by and between:

**[Full legal name]** ("Host Control Area"), having its registered and principal executive office at [address],

and

**California Independent System Operator Corporation** ("ISO"), a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the ISO Governing Board may from time to time designate, initially 151 Blue Ravine Road, Folsom, California 95630.

The Host Control Area and the ISO are hereinafter referred to as the "Parties".

**Whereas:**

**A.** The Parties named above operate Control Areas.

**B.** The Parties wish to coordinate operation of dynamic scheduling functionality to satisfy North American Electric Reliability Council ("NERC") policies, Western Electricity Coordinating Council ("WECC") Minimum Operating Reliability Criteria ("MORC"), and Good Utility Practice.

**C.** The Host Control Area does not have an Interconnected Control Area Operating Agreement ("ICAOA") with the ISO and desires to implement an agreement to facilitate dynamic scheduling from System Resources in its Control Area to the ISO Control Area without an ICAOA.

**D.** The Parties wish to enter into this Agreement to establish the terms and conditions for the operation of the dynamic scheduling functionality from Host Control Area's Control Area to the ISO Control Area.

**E.** The ISO has certain statutory obligations under California law to maintain power system reliability.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, **THE PARTIES AGREE** as follows:

## 1. Term and Termination

### 1.1 Effective Date

This Agreement shall be effective as of the date set forth above, unless this Agreement is accepted for filing and made effective by the Federal Energy

Regulatory Commission ("FERC") on some other date, if FERC filing is required, and shall continue in effect until terminated.

### 1.2 Termination

This Agreement may be terminated by either Party upon thirty (30) days written notice to the other Party or upon mutual consent of both Parties. For entities subject to FERC jurisdiction, termination will be effective upon acceptance by FERC of notice of termination, if this Agreement has been filed with FERC, or thirty (30) days after the date of the notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders. The ISO shall timely file any required notice of termination with FERC. The filing of the notice of termination by the ISO will be considered timely if: (1) the request to file a notice of termination is made after the preconditions for termination have been met, and (2) the ISO files the notice of termination within sixty (60) days after issuance of the notice of default.

## 2. Definitions

### 2.1 WECC Definitions

Except as defined below, terms and expressions used in this Agreement shall have the same meanings as those contained in the WECC MORC Definitions.

### 2.2 Specific Definitions

**2.2.1 Good Utility Practice:** Any of the practices, methods, and acts engaged in or approved by a significant portion of the electric utility industry in the WECC region during the relevant time period, or any of the practices, methods, and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety, and expedition. Good Utility Practice is not intended to be any one of a number of the optimum practices, methods, or acts to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region.

**2.2.2 ISO Tariff:** ISO Operating Agreement, Protocols, and Tariff as amended from time to time, together with any appendices or attachments thereto.

**2.2.3 Point of Contact:** A person or entity having the authority to receive and act upon scheduling or dispatch communications from the other Control Area operator and available through a communications device mutually agreed upon on a 24-hour, 7-day basis.

**2.2.4 Scheduling Coordinator:** An entity certified by the ISO for the purposes of undertaking the functions of: submitting schedules for energy, generation, transmission losses, and ancillary services; coordinating generation; tracking, billing, and settling trades with other Scheduling Coordinators; submitting forecast information; paying the ISO's charges; and ensuring compliance with ISO protocols.

**2.2.5 Standards:** The ISO's *"Standards for Dynamic Imports of Energy, Supplemental Energy, and Energy Associated with Non-Regulation Ancillary Services,"* which document is posted on the ISO internet home page (www.caiso.com).

**2.2.6 System Resource:** "System Resource" is defined in the ISO Tariff and, in the context of this Agreement, may include combinations of resources as described in the Standards.

## 3. General

### 3.1 Purpose

This Agreement sets forth the requirements that must be satisfied by the Host Control Area should it elect to support Scheduling Coordinators' requests for implementation of a dynamic scheduling functionality and delivery of energy, supplemental energy, and energy associated with ancillary services (except regulation service) into the ISO Control Area. The requirements encompass technical (energy management system ("EMS")/ automatic generation control ("AGC") and communications), interchange scheduling, telemetry, and aspects of Control Area operations.

### 3.2 NERC/WECC Operating Standards Observed

Nothing in this Agreement is intended to change, supercede, or alter either Party's obligations to abide by NERC standards and policies and WECC criteria.

### 3.3 Applicable Standards

This Agreement incorporates, by reference, the ISO's Standards.

### 3.4 Communication

The ISO and the Host Control Area shall each operate and maintain a 24-hour, 7-day control center with real time scheduling and control functions. Appropriate control center staff will be provided by each Party who shall be responsible for operational communications and who shall have sufficient authority to commit and bind that Party. The ISO and the Host Control Area shall jointly develop communication procedures necessary to support scheduling and dispatch functions. The Points of Contact and the procedures for insuring reliable communication are identified in Schedule 1.

## 4. Telecommunications Requirements

The ISO and Host Control Area shall establish and maintain real time, redundant, diversely routed, communications links between the ISO EMS and the Host Control Area EMS, with the primary link utilizing the standard inter-control center communications protocol ("ICCP") in accordance with the Standards for the dynamically scheduled System Resources listed in Schedule 2.

## 5. Telemetry

For each operating hour for which a System Resource is scheduled to deliver energy, supplemental energy, and/or energy associated with any of the non-regulating ancillary services to the ISO Control Area, the Host Control Area shall provide, via the ICCP communication links to the ISO EMS, the data for each System Resource, as set forth in the Standards.

## 6. Interchange Scheduling Requirements

### 6.1 Dynamic Scheduling

The Host Control Area shall support Scheduling Coordinators' requests to arrange dynamic interchange schedules for the delivery of energy to the ISO Control Area, reflecting the System Resource's instantaneous energy production or allocation level and taking into account available transmission capacity.

### 6.2 Treatment of Area Control Error ("ACE")

The Host Control Area shall instantaneously compensate its AGC for the System Resource's energy output that is generated or allocated for establishing the dynamic schedule to the ISO such that the System Resource energy production or allocation changes have an equal in magnitude and opposite in sign effect on the Host Control Area's ACE.

### 6.3 Integration of Dynamic Scheduling

For each operating hour during which energy was dynamically scheduled for delivery to the ISO Control Area, the Host Control Area shall compute an integrated amount of interchange based on the System Resource's integrated energy production, by integrating the instantaneous System Resource production levels. Such integrated MWH value shall be agreed to hourly by the real time schedulers.

### 6.4 Delivery of Megawatts ("MW")

The Host Control Area shall not be obligated to make up any difference between the dynamic energy schedule and the MW being generated or allocated by the System Resource.

### 6.5 Access to Information

The Parties agree to exchange information related to telemetry sent and received with respect to the delivery of energy (i) at the request of the other Party for purposes of after-the-fact interchange accounting or (ii) on demand for any other purpose.

## 7. Other Host Control Area Responsibilities

### 7.1 Operational Jurisdiction

The Host Control Area will have, at a minimum, the level of operational jurisdiction over the System Resource and the associated dynamic schedule that NERC and WECC vest in Host Control Areas.

### 7.2 E-Tagging

The Host Control Area must support associated e-tagging as described in the Standards and deemed to be consistent with NERC and/or WECC requirements.

### 7.3 Real-Time Adjustments

The Host Control Area must have a means to manually override and/or otherwise adjust the dynamic signal in real time, if needed.

### 7.4 Coordination with Other Control Areas

The Host Control Area must provide in real time the instantaneous value of each dynamic schedule to every intermediary Control Area through whose systems such dynamic schedule may be implemented to the ISO.

## 8. Other

### 8.1 Losses

The ISO shall not be responsible for transmission losses caused by transmitting energy dynamically within or across the Host Control Area for delivery to the ISO.

## 8.2 Certification

Only ISO-certified System Resource/Host Control Area arrangements will be allowed to bid or self provide ancillary services in the ISO's ancillary services market through an ISO-certified Scheduling Coordinator.

## 8.3 No Guarantee of Award

Certification of a System Resource/Host Control Area arrangement allows for bidding of supplemental energy and/or certain ancillary services into the ISO market; it does not, however, guarantee selection of such bid.

## 8.4 Performance Assessment

The ISO will monitor and measure dynamically imported ancillary services, whether bid or self-provided, against the performance benchmarks described in the Standards.

## 8.5 Description of System Resources

Each dynamically scheduled System Resource permitted pursuant to this Agreement is described in Schedule 2.

# 9. Notifications

The ISO and the Host Control Area shall jointly develop methods for coordinating the notification of all affected scheduling entities within their respective Control Areas regarding schedule changes in emergency or curtailment conditions.

# 10. LIABILITY

## 10.1 Uncontrollable Forces

An Uncontrollable Force means any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm, flood, earthquake, explosion, any curtailment, order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities, or any other cause beyond the reasonable control of a control area operator which could not be avoided through the exercise of Good Utility Practice.

Neither the ISO nor the Host Control Area will be considered in default of any obligation under this Agreement or liable to the other for direct, indirect, and consequential damages if prevented from fulfilling that obligation due to the occurrence of an Uncontrollable Force.

In the event of the occurrence of an Uncontrollable Force, which prevents either the ISO or the Host Control Area from performing any obligations under this

Agreement, the affected entity shall not be entitled to suspend performance of its obligations in any greater scope or for any longer duration than is required by the Uncontrollable Force. The ISO and the Host Control Area shall each use its best efforts to mitigate the effects of such Uncontrollable Force, remedy its inability to perform, and resume full performance of its obligations hereunder.

### 10.2 Liability To Third Parties

Except as otherwise expressly provided herein, nothing in this Agreement shall be construed or deemed to confer any right or benefit on, or to create any duty to, or standard of care with reference to any third party, or any liability or obligation, contractual or otherwise, on the part of ISO or the Host Control Area.

### 10.3 Liability Between the Parties

The Parties' duties and standard of care with respect to each other, and the benefits and rights conferred on each other, shall be no greater than as explicitly stated herein. Neither Party, its directors, officers, employees, or agents, shall be liable to the other Party for any loss, damage, claim, cost, charge, or expense, whether direct, indirect, or consequential, arising from the Party's performance or nonperformance under this Agreement, except for a Party's gross negligence, or willful misconduct.

## 11. MISCELLANEOUS

### 11.1 Assignments

Either Party to this Agreement may assign its obligations under this Agreement, with the other Party's prior written consent. Such consent shall not be unreasonably withheld.

Obligations and liabilities under this Agreement shall be binding on the successors and assigns of the Parties. No assignment of this Agreement shall relieve the assigning Party from any obligation or liability under this Agreement arising or accruing prior to the date of assignment.

### 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 writing and shall be deemed properly served, given, or made: (a) upon delivery if delivered in person, (b) five (5) days after deposit in the mail if sent by first class United States mail, postage prepaid, (c) upon receipt of confirmation by return facsimile if sent by facsimile, or (d) upon delivery if delivered by prepaid commercial courier service. A Party must update the information in Schedule 3 relating to its address as that 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 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

Subject to ICAA 11.5, 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. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement shall be brought in any of the following forums, as appropriate: a court of the State of California or 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. No provision of this Agreement shall be deemed to waive the right of any Party to protest, or challenge in any manner, whether this Agreement, or any action or proceeding arising under or relating to this Agreement, is subject to the jurisdiction of the Federal Energy Regulatory Commission.

### 11.5 Consistency with Federal Laws and Regulations

(a) Nothing in this Agreement shall compel any person or federal entity to: (1) violate federal statutes or regulations; or (2) in the case of a federal agency, to exceed its statutory authority, as defined by any applicable federal statutes, regulations, or orders lawfully promulgated thereunder. If any provision of this Agreement is inconsistent with any obligation imposed on any person or federal entity by federal law or regulation to that extent, it shall be inapplicable to that person or federal entity. No person or federal entity shall incur any liability by failing to comply with any provision of this Agreement that is inapplicable to it by reason of being inconsistent with any federal statutes, regulations, or orders lawfully promulgated thereunder; provided, however, that such person or federal entity shall use its best efforts to comply with the ISO Tariff to the extent that applicable federal laws, regulations, and orders lawfully promulgated thereunder permit it to do so.

(b) If any provision of this Agreement requiring any person or federal entity to give an indemnity or impose a sanction on any person is unenforceable against a federal entity, the ISO shall submit to the Secretary of Energy or other appropriate Departmental Secretary a report of any circumstances that would, but for this provision, have rendered a federal entity liable to indemnify any person or incur a sanction and may request the Secretary of Energy or other appropriate Departmental Secretary to take such steps as are necessary to give effect to any provisions of this Agreement that are not enforceable against the federal entity.

### 11.6 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.

### 11.7 Section Headings

Section headings provided in this Agreement are for ease of reading and are not meant to interpret the text in each Section.

### 11.8 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 are subject to FERC approval shall not take effect until FERC has accepted such amendments for filing and has made them effective. If the amendment does not require FERC approval, the amendment will be filed with FERC for information. Nothing contained herein shall be construed as affecting in any way the right of the ISO or the Host Control Area to unilaterally make 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.

### 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 first written above.

**California Independent System Operator Corporation**

By: _____

Name: _____

Title: _____

Date: _____

**[Full legal name of Host Control Area]**

By: _____

Name: _____

Title: _____

Date: _____

## SCHEDULE 1

## POINTS OF CONTACT
**[Section 3.4]**

## OPERATIONAL CONTACT

**ISO:**

Transmission Dispatcher (Folsom-Primary): _____

Transmission Dispatcher (Alhambra-Backup): _____

Generation Dispatcher (Folsom-Primary): _____

Generation Dispatcher (Alhambra-Backup): _____

Real Time Scheduler (Folsom): _____

Real Time Scheduler (Alhambra): _____

Pre Scheduler: _____

Shift Manager: _____

Control Room Fax: _____

Outage Coordination: _____
Fax: _____

Director of Grid Operations: _____

WECC Reliability Coordinator: _____

Address: California ISO
151 Blue Ravine Road
P.O. Box 639014
Folsom, CA 95763-9014

## OPERATIONAL CONTACT

**Host Control Area:**

Transmission Dispatcher (Primary): _____

Transmission Dispatcher (Backup): _____

Generation Dispatcher (Primary): _____

Generation Dispatcher (Backup): _____

Real Time Scheduler: _____

Dispatch Supervisor: _____

Outage Coordination: _____

Fax: _____

Chief Dispatcher: _____

Address: _____

_____

_____

## SCHEDULE 2

## DESCRIPTION OF DYNAMICALLY SCHEDULED SYSTEM RESOURCES
## [Section 4]

## SCHEDULE 3

## NOTICES
## [Section 11.2]

**Host Control Area**

Name of Primary Representative: _____

Title: _____

Company: _____

Address: _____

City/State/Zip Code _____

Email Address: _____

Phone: _____

Fax No: _____

Name of Alternative Representative: _____

Title: _____

Company: _____

Address: _____

City/State/Zip Code _____

Email Address: _____

Phone: _____

Fax No: _____

**ISO**

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: _____

**ATTACHMENT I**

**SUMMARY OF SUBSTANTIVE CHANGES MADE BY THE ISO TO THE STAKEHOLDER REVIEW DRAFTS OF DOCUMENTS INCLUDED IN THE PRESENT FILING**

As referenced on pages 3 and 4 of the transmittal letter for the present filing, the documents provided in the present filing include the following substantive changes, among others, from the drafts of those documents that the ISO provided for stakeholder review. As the ISO explained, it made these changes based in large part on the input the ISO received from stakeholders.

**ISO Tariff Amendments**

The ISO circulated for stakeholder review a draft version of ISO Tariff Section 2.2.7.6 but not the other proposed changes to the ISO Tariff contained in the present filing. The ISO considers those other changes to be simply adjuncts implementing, in other portions of the Tariff, the dynamic scheduling language in Section 2.2.7.6 and has explained those revisions in the filing letter. The ISO made substantive changes to Section 2.2.7.6 to remove the requirements of (1) the reservation of firm transmission service and (2) the specific certification of System Resources and host Control Areas for the delivery of Ancillary Services, leaving them as requirements of the ISO's standards for dynamic imports from System Resources in order to preserve flexibility in the implementation of the dynamic scheduling functionality.

**Standards for Dynamic Imports of Energy, Supplemental Energy, and Energy Associated with Non-Regulation Ancillary Services**

- Modification of the requirements for telemetry to provide more flexibility.

- Clarification of the requirement that firm, or non-interruptible for the operating hour, transmission service must be reserved across the entire transmission path external to the ISO Control Area.

- Modification of the provision specifying the extent of the ISO's dispatch authority over a System Resource to clarify the limitations on that dispatch authority.

- Modification of the requirement that the operator of the System Resource have the authority to override the dynamic signal to specify that it is the Scheduling Coordinator that must have that override authority, as the ISO's contractual relationship is only with the Scheduling Coordinator.

- Clarification of the provision specifying the maximum value of a dynamic schedule in real time.

**Dynamic Scheduling Agreement for Scheduling Coordinators**

- Revision of the effective date and termination provisions to be consistent with the FERC Order No. 2001 requirements for *pro forma* service agreements.

- Revision of the references to contract-specific information to place all such information into a Schedule to the agreement.

- Deletion of almost all of the substantive provisions addressing dynamic scheduling requirements and obligations to minimize duplication of proposed provisions to be included in the ISO Tariff and the Standards.

- Modification of the noncompliance, termination, and penalty provisions of the agreement to provide more detail regarding the ISO's proposed approach to instances of noncompliance and termination and to make them more clear in their application and effect.

- Modification to permit the ISO a unilateral right to propose amendments, as reserving the unilateral right to amend the agreement is consistent with other more recent ISO *pro forma* agreements such as the Participating Load Agreement and is necessary due to the newness of the dynamic scheduling service.

**Dynamic Scheduling Host Control Area Operating Agreement (with conforming revisions to proposed ICAOA Service Schedule 17 where applicable)**

- Incorporation of additional references to the "Host Control Area" (including in the title) to make clear that the form of agreement is intended to be executed only by the "Host Control Area," as the ISO anticipates that agreements with any intermediary Control Areas to facilitate the dynamic scheduling functionality will need to be negotiated on an individual basis due to the potential variations in the obligations of the intermediary Control Areas depending on the specifics of the subject dynamic scheduling functionality.

- Revision of the effective date and termination provisions to be consistent with the FERC Order No. 2001 requirements for *pro forma* service agreements.

- Deletion of the unused term "Forced Outage."

- Deletion of the reference to the NERC Dynamic Transfers White Paper.

- Addition of a requirement that the Host Control Area maintain a 24-hour "Point of Contact" for purposes of operations coordination regarding the dynamic scheduling functionality.

- Clarification of the telemetry requirements to provide more flexibility.

- Deletion of the provision specifying liability for electric disturbances and interruptions, based on its inapplicability in an agreement addressing only dynamic scheduling from the Host Control Area to the ISO.

- Clarification of the provisions regarding governing law to specify that California law will apply in all cases, since the provisions for dynamic scheduling of imports to the ISO is a matter relating primarily to transactions that occur in California.

- Modification to permit either the ISO or the Host Control Area the right to propose amendments, as reserving the right to amend the agreement is necessary due to the newness of the dynamic scheduling service.

# ATTACHMENT J

**NOTICE OF FILING SUITABLE FOR PUBLICATION IN THE FEDERAL REGISTER**

**UNITED STATES OF AMERICA**
**BEFORE THE**
**FEDERAL ENERGY REGULATORY COMMISSION**

| | | |
|---|---|---|
| **California Independent System Operator Corporation** | ) | **Docket No. ER04-____-000** |

**Notice of Filing**

[ ]

Take notice that on April 30, 2004, the California Independent System Operator Corporation (ISO) tendered for filing a proposed amendment (Amendment No. 59) to the ISO Tariff. Amendment No. 59 provides standards for dynamic scheduling of imports of Energy and Ancillary Services.

The ISO states that this filing has been served on the Public Utilities Commission of California, the California Energy Commission, the California Electricity Oversight Board, and on all parties with effective Scheduling Coordinator Service Agreements under the ISO Tariff.

Any person desiring to intervene or to protest this filing should file with the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 C.F.R. §§ 385.211 and 385.214). Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceedings. Any person wishing to become a party must file a motion to intervene. All such motions or protests should be filed on or before the comment date, and, to the extent applicable, must be served on the applicant and on any other person designated on the official service list. This filing is available for review at http://www.ferc.gov, using the eLibrary (FERRIS) link. Enter the docket number excluding the last three digits in the docket number field to access the document. For assistance, please contact FERC Online Support at FERCOnlineSupport@ferc.gov or toll-free at (866) 208-3676, or for TTY, contact (202) 502-8659. Protests and interventions may be filed electronically via the Internet in lieu of paper; see 18 C.F.R. § 385.2001(a)(1)(iii) and the instructions on the Commission's web site under the "e-Filing" link. The Commission strongly encourages electronic filings.

Comment Date: _____