California ISO
Your Link to Power

California Independent
System Operator Corporation

October 29, 2008

The Honorable Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, D.C. 20246

**Re: California Independent System Operator Corporation**
**Amendment to the Currently Effective CAISO Tariff and MRTU Tariff to Address References to Reliability Coordinator and Reliability Criteria for Ancillary Services**
**Docket No. ER09-___-000**

**California Independent System Operator Corporation**
**Compliance Filing**
**Docket No. RM05-5-___**

Dear Secretary Bose:

Pursuant to Section 205 of the Federal Power Act,[1] and Section 35.13 of the Commission's regulations,[2] the California Independent System Operator Corporation ("CAISO") respectfully submits for filing an original and five copies of an amendment ("Amendment") to the currently effective CAISO Tariff and to the Market Redesign and Technology Upgrade ("MRTU") Tariff that will take effect upon MRTU implementation.[3] The CAISO requests that the changes to the currently effective CAISO Tariff be made effective as of January 1, 2009, and that the changes to the MRTU Tariff be made effective as of January 31, 2009. The purpose of these Tariff changes is to accomplish the following:

(1) Delete references to the CAISO as the "Reliability Coordinator";

(2) Adopt more generalized references to Reliability Criteria that are applicable to Ancillary Services procurement in order to reflect

---

1 16 U.S.C. § 824d.

2 18 C.F.R. § 35.13.

3 Capitalized terms not otherwise defined herein have the meanings set forth in the Master Definitions Supplement, Appendix A to the currently effective CAISO Tariff, and in the Master Definitions Supplement, Appendix A to the MRTU Tariff.

anticipated and possible future changes to procurement requirements for such services; and

(3) Incorporate North American Energy Standards Board ("NAESB") standards in compliance with Commission Order No. 676-C.[4]

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

## I. Background and Summary

The CAISO proposes to amend its currently effective Tariff and the MRTU Tariff to align them with decisions of the Western Electricity Coordinating Council ("WECC") and to comply with Commission directives. These Tariffs contain provisions reflecting that the CAISO serves as Reliability Coordinator for the California Mexico sub-region of WECC. However, effective January 1, 2009, WECC intends to assume the role of Reliability Coordinator for the Western Interconnection.[5] Accordingly, the instant Amendment includes proposed modifications to the Tariffs to delete references to the CAISO as Reliability Coordinator. The Tariffs also contains provisions reflecting specific Reliability Criteria adopted by WECC and the North American Electric Reliability Corporation ("NERC") for procurement of Ancillary Services. The instant Amendment includes proposed modifications to the Tariffs to require the CAISO to adhere to Applicable Reliability Criteria, which would include Reliability Standards adopted by WECC and NERC and approved by the Commission.[6] Finally, the proposed Tariff modifications implement the requirements of Order No. 676-C that adopted the latest version of the business practice standards implemented by the Wholesale Electric Quadrant ("WEQ") of NAESB.

---

[4] *Standards for Business Practices and Communication Protocols for Public Utilities*, FERC Stats. & Regs., Regs. Preambles ¶ 31,274 (2008) ("Order No. 676-C").

[5] The Western Interconnection is comprised of the interconnected electrical systems that encompass the WECC region.

[6] The term Applicable Reliability Criteria is defined in the currently effective CAISO Tariff as follows: "The reliability standards established by NERC, WECC, and Local Reliability Criteria as amended from time to time, including any requirements of the NRC [Nuclear Regulatory Commission]." The term Applicable Reliability Criteria is defined in the same way in the MRTU Tariff, exception that the definition begins, "The Reliability Standards and reliability criteria established by NERC . . . ."

## II. Proposed Changes to the Currently Effective CAISO Tariff and to MRTU Tariff

### A. Deletion of References to the CAISO as Reliability Coordinator

In this Amendment, the CAISO proposes to delete references in the currently effective CAISO Tariff and in the MRTU Tariff to the CAISO as the Reliability Coordinator. WECC defines "Reliability Coordinator" as "[t]he entity that is the highest level of authority who is responsible for the reliable operation of the Bulk Electric System, has the Wide Area view of the Bulk Electric System, and has the operating tools, processes and procedures, including the authority to prevent or mitigate emergency operating situations in both next-day analysis and real-time operations."[7]

The CAISO currently serves as the Reliability Coordinator for the WECC California Mexico sub-region and has done so since the CAISO's inception. However, effective January 1, 2009, WECC intends to assume the role of Reliability Coordinator for the Western Interconnection. On September 29, 2008, WECC sent the CAISO a notice of termination of the Reliability Coordination Funding Agreement between WECC and the CAISO. A copy of that notice of termination is provided as Attachment E hereto. Therefore, in order to remove any ambiguity concerning which entity is responsible for performing the important function of Reliability Coordinator, the CAISO needs to remove from its Tariff the references indicating that the CAISO performs that function. The majority of the proposed Tariff modifications in this regard simply delete references to the CAISO as Reliability Coordinator.[8]

### B. Adoption of a Generalized Reference to Reliability Criteria with Regard to Procurement of Ancillary Services

The CAISO proposes to amend the currently effective CAISO Tariff and the MRTU Tariff to adopt generalized references to Reliability Criteria for the procurement of Ancillary Services as those criteria may be changed from time to time. The proposed modifications appear in various sections of the Tariffs related to procurement of Ancillary Services that contain references to WECC and NERC Reliability Criteria or Reliability Standards. For example, Section 8.2.3.2 of each Tariff describes the minimum contingency Operating Reserve made up of Spinning Reserves and Non-Spinning Reserves that is to be

---

[7] *See* http://www.wecc.biz/wrap.php?glossary/index.php#R. Note that this WECC definition of the Reliability Coordinator differs from the definitions of that term contained in the currently effective CAISO Tariff and in the MRTU Tariff.

[8] *See. e.g.*, Sections 7.2.1, 7.2.1.1, and 7.2.1.2 of the currently effective CAISO Tariff, and Sections 7.2.1 and 7.2.2 of the MRTU Tariff.

maintained by the CAISO consistent with WECC criteria. WECC has proposed to modify these criteria,[9] and WECC's proposal is subject to review and approval by the Commission.

The CAISO is seeking to amend Section 8.2.3.2 and other sections of its Tariffs to remove references to the specific current WECC and NERC criteria and standards and to refer more generally to the requirement that the CAISO procure Ancillary Services to meet Applicable Reliability Criteria. The purpose of these changes is to align the CAISO's Tariffs with the criteria in effect and to avoid the need for future tariff amendments if and when those criteria change. The proposed Tariff revisions do not alter the requirement that the CAISO comply with Reliability Standards applicable to Ancillary Services.

### C. Revision of NAESB Standards in Compliance with Order No. 676-C

The CAISO proposes to amend the currently effective CAISO Tariff and the MRTU Tariff consistent with Order No. 676-C, in which the Commission revised its regulations to incorporate by reference the latest version (Version 001) of the NAESB WEQ business practice standards.[10] While many of the business practice standards updated or revised existing standards, some of them addressed new business practices. In Order No. 676-C, the Commission directed electric utilities to revise their open access transmission tariffs ("OATTs") to include the Version 001 WEQ standards that the Commission was incorporating by reference. The Commission also stated that if an electric utility requests waiver of a standard, it will not be required to comply with the standard until the Commission acts on its waiver request. Accordingly, if a public utility has obtained a waiver or has a pending request for a waiver, its proposed revisions to its OATT should not include the standard associated with the standard for which it has obtained or seeks a waiver. Instead, the public utility's OATT should specify those standards for which the utility has obtained a waiver or has pending a request for waiver. The Commission stated that once a waiver

---

[9] *See* BAL-002-WECC-1, Contingency Reserve, available at http://www.nerc.com/filez/regional_standards/regional_reliability_standards_under_development.html.

[10] The NAESB WEQ standards (1) revised the Open Access Same-Time Information System ("OASIS") business practice standards (WEQ -001, -002, and -003); (2) revised four business practice standards relating to interchange matters (WEQ -004, -005, -006, and -007); (3) added new standards on transmission loading relief for the Eastern Interconnection (WEQ-008); (4) added new standards regarding Gas/Electric Coordination (WEQ-011); (5) added new standards for Public Key Infrastructure (WEQ-012); and (6) added a new OASIS implementation guide (WEQ-013).

request is denied, the electric utility would then be required to include in its OATT the standard(s) for which waiver was denied.[11]

On September 26, 2008, the CAISO filed in Docket No. ER08-1591-000 a "Petition for Waiver of Certain Business Practice Standards Adopted in FERC Order No. 676-C" ("Petition for Waiver"). Specifically, the CAISO requested a waiver of the OASIS- related business practices standards adopted in Order 676-C (*i.e.*, Standards WEQ -001, -002, -003, and -013), as well as a waiver of the business practice standard pertaining to transmission loading relief (WEQ-008). In addition, the CAISO requested a limited waiver of Standard WEQ-012 – Public Key Infrastructure ("PKI") – to the extent that it applied to OASIS applications. The CAISO explained that these business practice standards do not apply to and are incompatible with the CAISO's operations and transmission service model which differs substantially from the *pro forma* OATT service model. Commission action on the Petition for Waiver is pending.

In the instant filing, the CAISO proposes to modify Section 7.2.2.4 of its currently effective Tariff and Section 7.3.3 of its MRTU Tariff to incorporate by reference the following Version 001 standards adopted in Order No. 676-C: WEQ-004, -005, -006, -007, -011, and -012. In addition, the CAISO proposes to modify Section 7.2.2.4 of its currently effective Tariff and Section 7.3.3 of the MRTU Tariff to indicate that it has applied for a waiver of the following Version 001 standards adopted in Order No. 676-C: WEQ-001, -002, -003, -008, and -013.

As explained above, the CAISO has also filed for a limited waiver of Standard WEQ-011 to the extent that it applies to OASIS applications. However, subsequent to the filing of the CAISO's Petition for Waiver, the Commission issued Order No. 676-D, in which it ruled that the PKI standards do not require that public utilities use PKI for all business transactions over the Internet, and permitted public utilities to conduct business transactions over the Internet that do not involve the use of authorized Certification Authorities.[12] In light of the directives in Order No. 676-D, the CAISO believes it is unnecessary to indicate in its Tariff that it has sought a limited waiver of Standard WEQ-011. In the event the Commission finds it appropriate to grant the CAISO a limited waiver of Standard WEQ-011, the CAISO can reflect that decision in a subsequent compliance filing.

---

[11] Order No. 676-C at P 84.

[12] *Standards for Business Practices and Communication Protocols for Public Utilities*, Order No. 676-D, 124 FERC ¶ 61,317, at P 9 (2008) ("Order No. 676-D").

## III. Stakeholder Process

On October 1, 2008, the CAISO posted on its Website proposed Tariff changes related to the deletion of references to the CAISO as the Reliability Coordinator and the adoption of generalized references to Reliability Criteria that are applicable to procurement of Ancillary Services. On October 8, 2008, the CAISO received written stakeholder comments on its proposal. Written comments were submitted by Pacific Gas and Electric Company, Southern California Edison Company, and the California Department of Water Resources – State Water Project. The CAISO held a conference call on October 9, 2008 to discuss the proposed Tariff changes and issues raised in the stakeholders' written comments. After considering stakeholder input, the CAISO revised the proposed Tariff modifications. On October 29, 2008, the CAISO made a presentation to the CAISO Governing Board, at which time the CAISO Governing Board approved the submission of this Amendment.

## IV. Effective Date and Conditional Request for Waiver

The CAISO requests that the Commission approve the proposed changes in this Amendment to the currently effective CAISO Tariff effective as of January 1, 2009, in order to coincide with the date on which WECC intends to assume the role of Reliability Coordinator for the Western Interconnection.

Consistent with a decision rendered by the CAISO Governing Board on October 29, 2008, the CAISO also requests that the Commission approve the proposed changes in this Amendment to the MRTU Tariff effective as of January 31, 2009, *i.e.*, one day prior to the anticipated implementation date of MRTU, February 1, 2009. However, in the unanticipated event that MRTU is implemented more than 120 days after the submittal of this Amendment, the CAISO requests waiver, pursuant to Section 35.11 of the Commission's regulations (18 C.F.R. § 35.11), of Section 35.3 of the Commission's regulations (18 C.F.R. § 35.3), in order to permit the changes to the MRTU Tariff proposed herein to become effective as of that implementation date. Granting a waiver in this instance would be consistent with the similar waivers of Section 35.3 that the Commission has granted for other MRTU-related filings.

## V. 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:

| | |
|---|---|
| Sidney M. Davies*, Assistant General Counsel | Andrew Ulmer*, Senior Counsel |
| California Independent System Operator Corporation | California Independent System Operator Corporation |
| 151 Blue Ravine Road | 151 Blue Ravine Road |
| Folsom, CA 95630 | Folsom, CA 95630 |
| Phone: (916) 608-7144 | Phone: (916) 608-7209 |
| Fax: (916) 608-7296 | Fax: (916) 608-7222 |
| sdavies@caiso.com | aulmer@caiso.commailto: |

* Individuals designated for service pursuant to Rule 203(b)(3), 18 C.F.R. § 385.203(b)(3).

## VI. Service

The CAISO 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 all parties with effective Scheduling Coordinator Service Agreements under the currently effective CAISO Tariff and the MRTU Tariff. In addition, the CAISO is posting this transmittal letter and all attachments on the CAISO Website.

## VII. Attachments

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

| | |
|---|---|
| Attachment A | Clean sheets under the currently effective CAISO Tariff showing the revisions to that Tariff described in this Amendment |
| Attachment B | Sheets showing, in black-line format, the Tariff changes described in Attachment A hereto |
| Attachment C | Clean sheets under the MRTU Tariff showing the revisions described in this Amendment |

| | |
|---|---|
| Attachment D | Sheets showing, in black-line format, the Tariff changes described in Attachment C hereto |
| Attachment E | September 29, 2008 Notice of Termination of Reliability Coordination Funding Agreement between WECC and the CAISO |

## VIII. Conclusion

For the foregoing reasons, the CAISO respectfully requests that the Commission approve this Amendment as filed. Please do not hesitate to contact the undersigned if you have any questions.

Respectfully submitted,

Andrew Ulmer BRM

Andrew Ulmer
Senior Counsel
Nancy Saracino
General Counsel
Sidney M. Davies
Assistant General Counsel
The California Independent System
Operator Corporation
151 Blue Ravine Road
Folsom, CA 95630
Tel: (916) 608-7209
Fax: (916) 608-7246
E-mail: aulmer@caiso.com

**Attachment A – Clean Sheets**

**WECC Reliability Coordinator Status and Operating Reserve Requirements**

**Currently Effective CAISO Tariff**

**October 29, 2008**

**4.5.4.3 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 Applicable Reliability Criteria, (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 ("ICAOA") or special operating agreement related to the operation of dynamic functionality. See the forms of agreement in Attachment A to Appendix X.

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

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

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

(c) all 230 kV and lower voltage transmission lines and associated station equipment identified in the ISO Register as that portion of the ISO Controlled Grid located in the PG&E PTO Service Territory.

**7.1.5 Backup ISO Control Center.**

The Backup ISO Control Center shall have Operational Control over all 230 kV and lower voltage transmission lines and associated station equipment identified in the ISO Register as that portion of the ISO Controlled Grid located in the SCE and SDGE PTO Service Territories.

**7.2 Operating Reliability Criteria.**

The CAISO shall exercise Operational Control over the CAISO Controlled Grid in compliance with all Applicable Reliability Criteria and Operating Procedures.

**7.2.1** The ISO Governing Board may establish planning guidelines more stringent than those established by NERC and WECC as needed for the secure and reliable operation of the ISO Controlled Grid. The ISO may revise the Local Reliability Criteria subject to and in accordance with section 5 of the TCA.

**[Not Used]**

**7.2.2.** **NAESB Standards.** The following standards of the Wholesale Electric Quadrant (WEQ) of the North American Energy Standards Board (NAESB) are incorporated by reference:

- Coordinate Interchange (WEQ-004, Version 001, October 31, 2007, with minor corrections applied on Nov. 16, 2007) including Purpose, Applicability, and Standards 004-0.1 through 004-17.2, and 004-A through 004-D;
- Area Control Error (ACE) Equation Special Cases Standards (WEQ-005, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Purpose, Applicability, and Standards 005-0.1 through 005-3.1.3, and 005-A;
- Manual Time Error Correction (WEQ-006, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Purpose, Applicability, and Standards 006-0.1 through 006-12;
- Inadvertent Interchange Payback (WEQ-007, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Purpose, Applicability, and Standards 007-0.1 through 007-2, and 007-A;
- Gas/Electric Coordination (WEQ-011, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Standards 011-0.1 through 011-1.6; and
- Public Key Infrastructure (PKI) (WEQ-012, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Recommended Standard, Certification, Scope, Commitment to Open Standards, and Standards 012-0.1 through 012-1.26.5.

The CAISO has applied for a waiver of the following NAESB WEQ standards:

- Business Practices for Open Access Same-Time Information Systems (OASIS), Version 1.4 (WEQ-001, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Standards 001-0.2 through 001-0.8, 001-0.14 through 001-0.20, 001-2.0 through 001-9.6.2, 001-9.8 through 001-12.5.2, and 001-A and 001-B;

- Business Practices for Open Access Same-Time Information Systems (OASIS) Standards & Communication Protocols, Version 1.4 (WEQ-002, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Standards 002-0.1 through 002-5.10;
- Open Access Same-Time Information Systems (OASIS) Data Dictionary, Version 1.4 (WEQ-003, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Standard 003-0;
- Transmission Loading Relief – Eastern Interconnection (WEQ-008, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Purpose, Applicability, and Standards 008-0.1 through 008-3.11.2.8, and 008-A through 008-D; and
- Business Practices for Open Access Same-Time Information Systems (OASIS) Implementation Guide, Version 1.4 (WEQ-013, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Introduction and Standards 013-0.1 through 013-4.2.

**7.2.3 General Standard of Care**. When the ISO is exercising Operational Control of the ISO Controlled Grid, the ISO and Market Participants shall comply with Good Utility Practice.

**7.5.3** In addition to the action taken under 7.5.2, the ISO will, if it considers it necessary to maintain the reliable operation of the ISO Control Area, offer Energy for sale on behalf of Scheduling Coordinators to adjacent Control Area operators at the estimated BEEP Interval Ex Post Price or, if the ISO considers it necessary, at a price established by the ISO on behalf of Scheduling Coordinators, to be paid to adjacent Control Area operators.

**7.5.4** To the extent that the steps described in Sections 7.5.1 through 7.5.3 fail to mitigate Overgeneration, the ISO will instruct Scheduling Coordinators to reduce either Generation, or imports, or both. The amount of the reduction for each Scheduling Coordinator will be calculated pro rata based on the product of the total required reduction in Generation and imports (or increase in exports) and the ratio of its Demand to the total Demand in the ISO Control Area.

**7.5.5** To the extent that the above steps fail to fully mitigate the Overgeneration, the ISO will issue mandatory Dispatch instructions for specific reductions in Generating Unit output and external imports and all relevant Scheduling Coordinators shall be obligated to comply with such Dispatch instructions.

**7.5.6** Any costs incurred by the ISO in implementing Section 7.5.3 shall be reimbursed to the ISO by Scheduling Coordinators based upon the extent to which they supplied Energy, in metered amounts, greater than the Generation and imports scheduled in their Final Schedules and consumed Energy, in metered amounts, less than the Demand scheduled in their Final Schedules, as a proportion of the total amount of such excess or shortfall among all Scheduling Coordinators.

## 8. ANCILLARY SERVICES.

### 8.1 Scope.

The ISO shall be responsible for ensuring that there are sufficient Ancillary Services available to maintain the reliability of the ISO Controlled Grid consistent with Applicable Reliability Criteria. The ISO's Ancillary Services requirements may be self-provided by Scheduling Coordinators. Those Ancillary Services which the ISO requires to be available but which are not being self-provided will be competitively procured by the ISO from Scheduling Coordinators in the Day-Ahead Market, Hour-Ahead Market and in real time or

**8.2 Ancillary Services Standards.**

All Ancillary Services shall meet the ISO's Ancillary Services standards.

**8.2.1 Determination of Ancillary Service Standards.**

The ISO shall set the required standard for each Ancillary Service necessary to maintain the reliable operation of the ISO Controlled Grid. Ancillary Services standards shall meet Applicable Reliability Criteria. The standards developed by the ISO shall be used as a basis for determining the quantity and type of each Ancillary Service which the ISO requires to be available. These requirements and standards apply to all Ancillary Services whether self-provided or procured by the ISO.

**8.2.2 Time-frame For Revising Ancillary Service Standards.**

The ISO Grid Operations Committee and the ISO Technical Advisory Committee shall periodically undertake a review of the ISO Controlled Grid operation to determine any revision to the Ancillary Services standards to be used in the ISO Control Area. At a minimum the ISO Grid Operations Committee and the ISO Technical Advisory Committee shall conduct such reviews to accommodate

revisions to Applicable Reliability Criteria. The ISO may adjust the Ancillary Services standards temporarily to take into account, among other things variations in system conditions, real-time Dispatch constraints, contingencies, and voltage and dynamic stability assessments. Where practicable, the ISO will provide notice, via the ISO Home Page, of any temporary adjustments to Ancillary Service standards by 6:00 p.m. two days ahead of the Trading Day to which the adjustment will apply. Periodic reviews by the ISO Grid Operations Committee or the ISO Technical Advisory Committee may include, but are not limited to: (a) analysis of the deviation between actual and forecast Demand; (b) analysis of patterns of unplanned Generating Unit Outages; (c) analysis of compliance with Applicable Reliability Criteria; (d) analysis of operation during system disturbances; (e) analysis of patterns of shortfalls between Final Day-Ahead Schedules and actual Generation and Demand; and (f) analysis of patterns of unplanned transmission Outages.

**8.2.3 Quantities of Ancillary Services Required.**

For each of the Ancillary Services, the ISO shall determine the quantity and location of the Ancillary Service which is required and which must be under the direct Dispatch control of the ISO on an hourly basis each day. The ISO shall determine the quantities it requires as follows:

**8.2.3.1 Regulation Service.**

The ISO shall maintain sufficient Generating Units immediately responsive to AGC in order to provide sufficient Regulation service to allow the ISO Control Area to meet Applicable Reliability Criteria by continuously balancing Generation to meet deviations between actual and scheduled Demand and to maintain interchange schedules. The quantity of Regulation capacity needed for each Settlement Period of the Day-Ahead Market and the Hour-Ahead Markets shall be determined as a percentage of the aggregate scheduled Demand for that Settlement Period.

(a) Regulation Percentage Determination. The exact percentage required for each Settlement Period of the Day-Ahead Market and the Hour-Ahead Markets shall be determined by the ISO based upon its need to meet Applicable Reliability Criteria.

(b) Publication of Estimated Regulation Percentage for Day-Ahead Market. In accordance with the requirements of Appendix Y, the ISO will publish on WEnet its estimate of the percentage it will use for determining the quantity of Regulation it requires for each Settlement Period of the Day-Ahead Market for that Trading Day.

(c) Publication of Estimated Regulation Percentage for Hour-Ahead Market. The ISO will publish on WEnet its estimate of the percentage it will use to determine the quantity of Regulation it requires for each Hour-Ahead Market.

(d) Additional Regulation Requirement. Additional Regulation capacity may be procured by the ISO for the real-time operating period if needed to meet Applicable Reliability Criteria.

**8.2.3.2 Spinning And Non-Spinning Reserves.**

The ISO shall maintain minimum contingency Operating Reserve made up of Spinning Reserve and Non-Spinning Reserve in accordance with Applicable Reliability Criteria or by reference to such more stringent criteria as the ISO may determine from time to time.

**8.2.3.3 Replacement Reserve.**

The ISO needs sufficient Replacement Reserve to be available to allow restoration of dispatched Operating Reserve to its Set Point within sixty minutes. The ISO shall make its determination of the required quantity of Replacement Reserve based on:

(a) historical analysis of the deviation between actual and Day-Ahead forecast Demand,

(b) historical patterns of unplanned Generating Unit Outages,

(c) historical patterns of shortfalls between Final Day-Ahead Schedules and actual Generation and Demand,

(d) historical patterns of unexpected transmission Outages, and

(e) such other factors affecting the ability of the ISO to maintain System Reliability as the ISO may from time to time determine.

The ISO shall have discretion to determine the quantity of Replacement Reserve it requires in each Zone.

**8.2.3.4 Voltage Support.**

The ISO shall determine on an hourly basis for each day the quantity and location of Voltage Support required to maintain voltage levels and reactive margins within Applicable Reliability Criteria using a power flow study based on the quantity and location of scheduled Demand. The ISO shall issue daily voltage schedules (Dispatch instructions) to Participating Generators, Participating TOs and UDCs, which are required to be maintained for ISO Controlled Grid reliability. All other Generating Units shall comply with the power factor requirements set forth in contractual arrangements in effect on the ISO Operations Date,

**8.3.4** The ISO shall procure on a daily and hourly basis, each day, Regulation, Spinning, Non-Spinning and Replacement Reserves. The ISO shall procure Replacement Reserve on a longer-term basis pursuant to Section 42.1.3 if necessary to meet Applicable Reliability Criteria. The ISO Governing Board must approve all long-term Replacement Reserve contracts. The ISO shall contract for Voltage Support annually (or for such other period as the ISO may determine is economically advantageous) and on a daily or hourly basis as required to maintain System Reliability. The ISO shall contract annually (or for such other period as the ISO may determine is economically advantageous) for Black Start Generation.

## 8.4 Technical Requirements for Providing Ancillary Services.

All Generating Units, System Units, Loads and System Resources providing Ancillary Services shall comply with the technical requirements set out in Sections 8.4.1 to 8.4.6.1 below relating to their operating capabilities, communication capabilities and metering infrastructure. No Scheduling Coordinator shall be permitted to submit a bid to the ISO for the provision of an Ancillary Service from a Generating Unit, System Unit, Load or System Resource, or to submit a Schedule for self-provision of an Ancillary Service from that Generating Unit, System Unit, Load or System Resource, unless the Scheduling Coordinator is in possession of a current certificate issued by the ISO confirming that the Generating Unit, System Unit, Load or System Resource complies with the ISO's technical requirements for providing the Ancillary Service concerned. Scheduling Coordinators can apply for Ancillary Services certificates in accordance with the ISO's Protocols for considering and processing such applications. The ISO shall have the right to inspect Generating Units, Loads or the individual resources comprising System Units and other equipment for the purposes of the issue of a certificate and periodically thereafter to satisfy itself that its technical requirements continue to be met. If at any time the ISO's technical requirements are not being met, the ISO may withdraw the certificate for the Generating Unit, System Unit, Load or System Resource concerned.

**8.4.7.3 Bidding and Self-Provision of Ancillary Services.**

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

**8.4.7.3.1 Content of Ancillary Services Schedules and Bids.**

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. Ancillary Services in the Day-Ahead Market and the Hour-Ahead Market are comprised of the following: Regulation, Spinning Reserve, Non-Spinning Reserve and Replacement Reserve. Each Generating Unit (including Physical Scheduling Plants), System Unit, Curtailable Demand or System Resource for which a Scheduling Coordinator wishes to submit Ancillary Services Schedules and bids must meet the requirements set forth in this ISO Tariff. The same resource capacity may be offered into more than one ISO Ancillary Service auction at the same time (the sequential evaluation of such multiple offers between Ancillary Services markets to eliminate double counting of capacity is described in the Section 8.5.5). In each category of Ancillary Service, the reference to “Revised” types of Schedules indicates a submittal which is part of a Revised Day-Ahead Schedule. Each of the following data sections can be submitted up to seven (7) days in advance. Ramp rates submitted as detailed below will be only used by the ISO for procuring capacity associated with the specific Ancillary Services. The ISO will issue real-time Dispatch Instructions for the Energy associated with the awarded capacity based upon the applicable operational ramp rate submitted with the single Energy Bid curve in accordance with Section 30.4.6. There is no provision for external exports with regard to Ancillary Services bids. The functionality necessary to accept such bids does not exist in the ISO scheduling software.

**8.4.7.3.2** 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 Applicable Reliability 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).

**8.4.7.3.3** 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 Applicable Reliability Criteria by dynamic scheduling; provided that the operator of the Control Area in which the System Resources are located has entered into an agreement with the 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 certified by the ISO as to their ability to dynamically adjust interchange schedules based on control signals issued by the ISO anytime during a Settlement Period at the discretion of the ISO. Such certification shall include a demonstration of their ability to support the dynamic interchange of Regulation service based on ISO control signals received on dedicated communications links (either directly or through EMS computers) for ISO computer control and telemetry to provide this function in accordance with ISO standards and procedures posted on the ISO Home Page.

**8.4.7.3.4** Scheduling Coordinators may utilize transmission service under Existing Contracts to self-provide Regulation (consistent with this ISO Tariff), from resources located outside the ISO Control Area, where technically feasible, consistent with Applicable Reliability Criteria.

**8.4.7.3.5** Scheduling Coordinators' bidding or self-provision of Ancillary Services according to this Section 8.4.7.3 shall be consistent with the ISO Protocols.

**8.4.7.3.6** Due to the design of the ISO's scheduling system, any specific resource can bid to supply a specific Ancillary Service or can self-provide such Ancillary Service but cannot do both in the same Settlement Period.

**8.5 The Bidding Process.**

The ISO shall operate a competitive Day-Ahead and Hour-Ahead Market to procure Ancillary Services. It shall purchase Ancillary Services capacity at least cost to End-Use Customers consistent with maintaining System Reliability. Any Scheduling Coordinator representing Generating Units, System Units, Loads or external imports of System Resources may bid into the ISO's Ancillary Services market provided that it is

(b) If the ISO is required by applicable laws or regulations, or in the course of administrative or judicial proceedings, to disclose information that is otherwise required to be maintained in confidence pursuant to this Section 20, the ISO may disclose such information; provided, however, that as soon as the ISO learns of the disclosure requirement and prior to making such disclosure, the ISO shall notify any affected Market Participant of the requirement and the terms thereof. The Market Participant may, at its sole discretion and own cost, direct any challenge to or defense against the disclosure requirement and the ISO shall cooperate with such affected Market Participant to the maximum extent practicable to minimize the disclosure of the information consistent with applicable law. The ISO shall cooperate with the affected Market Participant to obtain proprietary or confidential treatment of confidential information by the person to whom such information is disclosed prior to any such disclosure.

(c) The ISO may disclose confidential or commercially sensitive information, without notice to an affected Market Participant, in the following circumstances:

(i) If the FERC, or its staff, during the course of an investigation or otherwise, requests information that is confidential or commercially sensitive. In providing the information to FERC or its staff, the ISO shall take action consistent with 18 C.F.R. §§ 1b.20 and 388.112, and request that the information be treated as confidential and non-public by the FERC and its staff and that the information be withheld from public disclosure. The ISO shall provide the requested information to the FERC or its staff within the time provided for in the request for information. The ISO shall notify an affected Market Participant within a reasonable time after the ISO is notified by FERC or its staff that a request for disclosure of, or decision to disclose, the confidential or commercially sensitive information has been received, at which time the ISO and the affected Market Participant may respond before such information would be made public; or

(ii) In order to maintain reliable operation of the ISO Control Area, the ISO may share critical operating information, system models, and planning data with the WECC Reliability Coordinator that has executed the Western Electricity Coordinating Council

Confidentiality Agreement for Electric System Data, or is subject to similar confidentiality requirements; or

(iii) In order to maintain reliable operation of the ISO Control Area, the ISO may share individual Generating Unit Outage information with the operations engineering and/or the outage coordination division(s) of other Control Area operators, Participating TOs, MSS Operators and other transmission system operators engaged in the operation and maintenance of the electric supply system whose system is significantly affected by the Generating Unit and who have executed the Western Electricity Coordinating Council Confidentiality Agreement for Electric System Data.

(d) Information submitted through Resource Adequacy Plans pursuant to Sections 40.2.1 and 40.2.2, Supply Plans pursuant to Section 40.6, and the dispute or discrepancy resolution process pursuant to Section 40.2.3 may be provided to:

(i) the Scheduling Coordinator(s) and/or Market Participant(s) involved in the dispute or discrepancy pursuant to Section 40.2.3, only to the limited extent necessary to identify the disputed transaction and relevant counterparty or counterparties.

(ii) the regulatory entity, whether the CPUC or a Local Regulatory Authority, with jurisdiction over a Load Serving Entity involved, pursuant to Section 40.2.3, in a dispute or discrepancy, or otherwise is identified by the ISO as exhibiting a potential deficiency in demonstrating compliance with Resource Adequacy rules adopted by the CPUC or Local Regulatory Authority, as applicable. The information provided shall be limited to the particular dispute, discrepancy or deficiency.

(e) Notwithstanding the provisions of Section 20.2(f), information submitted through the Transmission Planning Process may be disclosed as follows:

**34.3.0.3 Ancillary Services Dispatch.**

The ISO will base its standards for the Dispatch of Ancillary Services upon Applicable Reliability Criteria and ISO Controlled Grid reliability requirements. The ISO may Dispatch Generating Units, Loads, System Units and System Resources contracted to provide Ancillary Services (either procured through the ISO's competitive market, or self-provided by Scheduling Coordinators) to supply Imbalance Energy. During normal operating conditions, the ISO shall Dispatch the following resources to supply Imbalance Energy: (i) those Generating Units, Loads, System Units and System Resources having offered Supplemental Energy bids, (ii) those Generating Units, Loads, System Units and System Resources contracted to provide Replacement Reserve and (iii) those Generating Units, Loads, System Units and System Resources that have contracted to provide Spinning and Non-Spinning Reserve, except for those resources that have indicated that 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. In the event of an unplanned Outage, a Contingency or a threatened or actual System Emergency, the ISO may also Dispatch all other Generating Units, Loads, System Units and System Resources contracted to provide Spinning Reserve or Non-Spinning Reserve to supply Imbalance Energy. If a Generating Unit, Load, System Unit or System Resource, which is supplying Operating Reserve, is Dispatched to provide Imbalance Energy, the ISO shall replace the Operating Reserve from the same or another resource within the time frame specified by Applicable Reliability Criteria.

**34.3.0.3.1 Dispatch of Competitively Procured and Self-Provided Ancillary Services.**

Generating Units and Loads selected in the ISO competitive auction or self-provided shall be Dispatched based on their Energy Bids as described in Section 34.3.0.1.2, subject to the limitation on the Dispatch of Spinning Reserve and Non-Spinning Reserve set forth in Section 34.3.0.3.

**34.3.0.3.2 Dispatch of Self-Provided Ancillary Services.**

Where a Scheduling Coordinator has chosen to self-provide the whole of the additional Operating Reserve required to cover any Interruptible Imports which it has scheduled and has identified specific Generating Units, Loads, System Units or System Resources as the providers of the additional Operating Reserve concerned, the ISO shall Dispatch only the designated Generating Units, Loads, System Units or

**34.3.6.3 Dispatch Information To Be Supplied by UDCs.**

Each UDC shall keep the ISO informed of any change or potential change in the status of its transmission lines and station equipment at the point of interconnection with the ISO Controlled Grid. Each UDC shall keep the ISO informed as to any event or circumstance in the UDC's service territory that could affect the reliability of the ISO Controlled Grid. This would include adverse weather conditions, fires, bomb threats, etc.

**34.3.6.4 Dispatch Information To Be Supplied by PTOs.**

Each PTO shall report any change or potential change in equipment status of the PTO's transmission assets turned over to the control of the ISO or in equipment that affects transmission assets turned over to the control of the ISO immediately to the ISO (this will include line and station equipment, line protection, Remedial Action Schemes and communication problems, etc.). Each PTO shall also keep the ISO immediately informed as to any change or potential change in the PTO's transmission system that could affect the reliability of the ISO Controlled Grid. This would include adverse weather conditions, fires, bomb threats, etc.

Each PTO shall schedule all Outages of its lines and station equipment which are under the Operational Control of the ISO in accordance with the appropriate procedures in Section 9.3. Each PTO shall coordinate any requests for or responses to Forced Outages on its transmission lines or station equipment which are under the Operational Control of the ISO directly with the appropriate ISO Control Center as defined in Section 7.2.4.1.

**34.3.6.6 Dispatch Information To Be Supplied by Control Area Operators.**

The ISO and each adjacent Control Area Operator shall keep each other informed of any change or potential change in the status of the Interconnection and any changes in the Interconnection's TTC. The ISO and each adjacent Control Area Operator shall keep each other informed of situations such as adverse weather conditions, fires, etc., that could affect the reliability of any Interconnection.

The ISO and each adjacent Control Area Operator shall follow all applicable NERC and WECC scheduling procedures. This will include checking the Interconnection schedules for the next Settlement Period prior to the start of the Energy ramp going into that hour. The ISO and each adjacent Control Area Operator shall check and agree on actual MWh net interchange after the hour for the previous Settlement Period. One Control Area shall change its actual number to reflect that of the other Control Area in accordance with WECC standard procedures.

The ISO and each adjacent Control Area Operator shall exchange MW, MVar, terminal and bus voltage data with each other on a four second update basis. MWh data for the previous hour shall be exchanged once per hour. All MW and MWh data for both the ISO Control Area and the adjacent Control Areas must originate from the same metering equipment. All provisions in Sections 4.6.1.1(i) and 4.6.1.1 (ii) refer to information and data obtained from metering used for Control Area operations and not metering used for billing and settlement.

**34.3.7** All Dispatch Instructions except those for the Dispatch of Regulation (which will be communicated by direct digital control signals to Generating Units and, for System Resources, through dedicated communication links which satisfy the ISO's standards for external imports of Regulation) will be communicated electronically, except that, at the ISO's discretion, Dispatch Instructions may be communicated by telephone, or fax. Except in the case of deteriorating system conditions or emergency, and except for instructions for the Dispatch of Regulation, the ISO will send all Dispatch Instructions to the Scheduling Coordinator for the Generating Unit, System Unit, Load or System Resource, which it wishes to Dispatch. The recipient Scheduling Coordinator shall ensure that the Dispatch Instruction is communicated immediately to the operator of the Generating Unit, System Unit, external import of System Resources or Load concerned. If the ISO considers that there has been a failure at a particular point in time or inadequate response over a particular period of time by the Generating Units to the Dispatch Instruction, the ISO will notify the relevant Scheduling Coordinator. The ISO may, with the prior permission of the Scheduling Coordinator concerned, communicate with and give Dispatch Instructions to the operators of Generating Units, System Units, external imports of System Resources and Loads

option.

**42.1.2** If the forecast shows that the Applicable Reliability Criteria can be met during peak Demand periods, then the ISO shall take no further action.

**42.1.3** If the forecast shows that the Applicable Reliability Criteria cannot be met during peak Demand periods, then the ISO shall facilitate the development of market mechanisms to bring the ISO Controlled Grid during peak periods into compliance with the Applicable Reliability Criteria (or such more stringent criteria as the ISO may impose pursuant to Section 7.2.2.2). The ISO shall solicit bids for Replacement Reserve in the form of Ancillary Services, short-term Generation supply contracts of up to one (1) year with Generators, and Load curtailment contracts giving the ISO the right to reduce the Demands of those parties that win the contracts when there is insufficient Generation capacity to satisfy those Demands in addition to all other Demands. The curtailment contracts shall provide that the ISO's curtailment rights can only be exercised after all available Generation capacity has been fully utilized unless the exercise of such rights would allow the ISO to satisfy the Applicable Reliability Criteria at lower cost, and the curtailment rights shall not be exercised to stabilize or otherwise influence prices for power in the Energy markets.

| | |
|---|---|
| **Network Upgrades** | The additions, modifications, and upgrades to the ISO controlled Grid required at or beyond the Point of Interconnection to accommodate the interconnection of the Generating Facility to the ISO Controlled Grid. Network Upgrades shall consist of Delivery Network Upgrades and Reliability Network Upgrades. Network Upgrades do not include Distribution Upgrades. |
| **New High Voltage Facility** | A High Voltage Transmission Facility of a Participating TO that is placed in service after the beginning of the transition period described in Section 4 of Schedule 3 of Appendix F, or a capital addition made and placed in service after the beginning of the transition period described in Section 4.2 of Schedule 3 of Appendix F to an Existing High Voltage Facility. |
| **New Participating TO** | A Participating TO that is not an Original Participating TO. |
| **Nomogram** | A set of operating or scheduling rules which are used to ensure that simultaneous operating limits are respected, in order to meet Applicable Reliability Criteria. |
| **Non-Generation Solutions** | Solutions proposed by a PTO or an RA Entity that satisfy local area reliability needs of the ISO which serve as an alternative to generation capacity, including equipment upgrades, operating procedures such as switching, manual Load shedding or automatic Load shedding, and other operational strategies or tools. |
| **Non-Load-Serving Participating TO** | A Participating TO that (1) is not a UDC, MSS Operator or Scheduling Coordinator serving End-Use Customers and (2) does not have Gross Load in accordance with Section 9 of Schedule 3 of Appendix F. |
| **Non-Participating Generator** | A Generator that is not a Participating Generator. |
| **Non-Participating TO** | A TO that is not a party to the TCA or for the purposes of Sections 16.1 and 16.2 of the ISO Tariff the holder of transmission service rights under an Existing Contract that is not a Participating TO. |

| | |
|---|---|
| **Non-Spinning Reserve** | The portion of off-line generating capacity that is capable of being synchronized and Ramping to a specified load in ten minutes (or load that is capable of being interrupted in ten minutes) and that is capable of running (or being interrupted) for at least two hours. |
| **NRC** | The Nuclear Regulatory Commission or its successor. |
| **NRC (Standards)** | The reliability standards published by the NRC from time to time. |
| **Off-Peak Deliverability Assessment** | The technical study performed under LGIP Section 6.3.2.2 set forth in Appendix GG. |
| **On-Peak Deliverability Assessment** | The technical study performed under LGIP Section 6.3.2.1 set forth in Appendix GG. |
| **Operating Procedures** | Procedures governing the operation of the ISO Controlled Grid as the ISO may from time to time develop, and/or procedures that Participating TOs currently employ which the ISO adopts for use. |
| **On-Site Self-Supply** | Energy from a Generating Unit that is deemed to have self-supplied all or a portion of its associated Station Power load without use of the ISO Controlled Grid during the Netting Period. |
| **Operating Reserve** | The combination of Spinning and Non-Spinning Reserve required to meet Applicable Reliability Criteria for reliable |

| | |
|---|---|
| **Regulation** | The service provided either by Generating Units certified by the ISO as equipped and capable of responding to the ISO's direct digital control signals, or by System Resources that have been certified by the ISO as capable of delivering such service to the ISO Control Area, in an upward and downward direction to match, on a real-time basis, Demand and resources, consistent with Applicable Reliability Criteria. Regulation is used to control the power output of electric generators within a prescribed area in response to a change in system frequency, tieline loading, or the relation of these to each other so as to maintain the target system frequency and/or the established interchange with other areas within the predetermined limits. Regulation includes both the increase of output by a Generating Unit or System Resource ("Regulation Up") and the decrease in output by a Generating Unit or System Resource ("Regulation Down"). Regulation Up and Regulation Down are distinct capacity products, with separately stated requirements and Market Clearing Prices in each Settlement Period. |
| **Regulation Energy Payment Adjustment** | The additional value of regulating Energy. |
| **Regulatory Must-Run Generation** | Hydro Spill Generation and Generation which is required to run by applicable Federal or California laws, regulations, or other governing jurisdictional authority. Such requirements include but are not limited to hydrological flow requirements, environmental requirements, such as minimum fish releases, fish pulse releases and water quality requirements, irrigation and water supply requirements of solid waste Generation, or other Generation contracts specified or designated by the jurisdictional regulatory authority as it existed on December 20, 1995, or as revised by Federal or California law or Local Regulatory Authority. |
| **Regulatory Must-Take Generation** | Those Generation resources identified by CPUC, or a Local Regulatory Authority, the operation of which is not subject to competition. These resources will be scheduled by the relevant |

**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") and Western Electricity Coordinating Council ("WECC") standards and criteria 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 Glossary of WECC Terms and Acronyms.

**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.

**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: _____

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

**DSP 4.4** Dedicated dual redundant communications links between the Host Control Area EMS and every Intermediary Control Area EMS are required.

**DSP 4.5** The Control Area hosting a dynamically scheduled System Resource must have a mechanism implemented to override the associated dynamic signal.

**DSP 4.6** The dynamic signal must be properly incorporated into all involved Control Areas' ACE equations.

**DSP 4.7** The System Resource must have communications links with the Host Control Area consistent with these standards.

**DSP 5 LIMITS ON DYNAMIC IMPORTS**

**DSP 5.1** 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.

**DSP 5.2** 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 Applicable Reliability Criteria.

**DSP 5.3** 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).

**DSP 6 OPERATING AND SCHEDULING REQUIREMENTS**

**DSP 6.1** 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.

**DSP 6.2** All dynamic schedules associated with newly implemented dynamically scheduled System Resources must be electronically tagged (e-tagged).

**DSP 6.3** 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).

**DSP 6.4** The ISO will treat dynamically scheduled Energy as a resource contingent firm import. The ISO will procure (or allow for self-provision of) Operating Reserves for loads served by dynamically scheduled System Resources as required by Applicable Reliability Criteria.

**Attachment B - Blacklines**

**WECC Reliability Coordinator Status and Operating Reserve Requirements**

**Currently Effective CAISO Tariff**

**October 29, 2008**

* * *

**4.5.4.3 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 Applicable Reliability Criteria~~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 ("ICAOA") or special operating agreement related to the operation of dynamic functionality. See the forms of agreement in Attachment A to Appendix X.

* * *

**7.2 Operating Reliability Criteria.**

~~**7.2.1 Reliability Coordinator.**~~

~~The ISO shall be the WECC reliability coordinator for the ISO Controlled Grid. As Reliability Coordinator, the ISO, in conjunction with the other WECC Reliability Coordinators, will be responsible for the stable and reliable operation of the Western Interconnection in accordance with the WECC Regional Security Plan.~~

~~**7.2.1.1 Reliability Coordinator.**~~

~~As Reliability Coordinator, the ISO may direct activities as appropriate to curtail Schedules, Dispatch Generation or impose transfer limitations as necessary to relieve grid Congestion, mitigate potential overloads or eliminate operation outside of existing Nomogram criteria.~~

~~**7.2.1.2 Authority of WECC Reliability Coordinators.**~~

~~(a) The Reliability Coordinator has the final authority to direct operations before, during and after problems or disturbances that have regional impacts. The WECC Security Monitoring plans include collaboration with sub-regional Reliability Coordinators and Control Area operators to determine actions for anticipated problems. If there is insufficient time, or mutual concurrence is not reached, the Reliability Coordinator is authorized to direct actions and the control area operators must comply.~~

~~(b) In the event of any situation occurring which is outside those problems already identified in the list of known problems, the Reliability Coordinator shall have the responsibility and authority to implement whatever measures are necessary to maintain System Reliability. Those actions include but are not limited to; interchange curtailment, generation Dispatch adjustment (real power, reactive power and voltage), transmission configuration adjustments, special protection activation, load curtailment and any other action deemed necessary to maintain System Reliability.~~

~~(c) The Reliability Coordinator shall also have the responsibility and authority to take action in its sub-region for problems in another sub-region that it may help resolve. This must be accomplished at the request of and in coordination with the Reliability Coordinators of the other sub-regions.~~

~~**7.2.2 [Not used]**~~

~~**7.2.2.1**~~ The CAISO shall exercise Operational Control over the CAISO Controlled Grid in compliance with all Applicable Reliability Criteria and Operating Procedures. ~~The ISO shall exercise Operational Control over the ISO Controlled Grid to meet planning and Operating Reserve criteria no less stringent than those established by WECC and NERC as those standards may be modified from time to time, and Local Reliability Criteria that are in existence on the ISO Operations Date and have been submitted to the ISO by each Participating TO pursuant to Section 2.2.1(v) of the TCA. All Market Participants and the ISO shall comply with the ISO Reliability Criteria, standards, and procedures.~~

* * *

7.2.1~~2.2~~ The ISO Governing Board may establish planning guidelines more stringent than those established by NERC and WECC as needed for the secure and reliable operation of the ISO Controlled

Grid. The ISO may revise the Local Reliability Criteria subject to and in accordance with section 5 of the TCA.

~~**7.2.2.3 Standards to be Observed**.~~

~~The ISO shall exercise Operational Control over the ISO Controlled Grid in compliance with all Applicable Reliability Criteria.~~

* * *

~~**7.2.2.3.1 Applicable Reliability Criteria.**~~

~~Applicable Reliability Criteria are defined as the standards established by NERC, WECC and Local Reliability Criteria and include the requirements of the Nuclear Regulatory Commission (NRC).~~

* * *

~~**7.2.2.3.2 WECC Criteria (Standards).**~~

~~(a) Western Interconnection.~~

~~The WECC set of standards for the Western Interconnection, which are based on the NERC standards.~~

~~The WECC further defines procedures and policies applicable to the Western Interconnection. WECC guidelines include:~~

~~(i) Part 1 – Reliability Criteria for Transmission System Planning~~

~~(ii) Part 2 – Power Supply Design Criteria~~

~~(iii) Part 3 – Minimum Operating Reliability Criteria (MORC)~~

~~(iv) Part 4 – Definitions~~

~~(b) Operating Procedures.~~

~~The WECC Operating Procedures submitted to WECC by individual utilities and the ISO to address specific operating problems in their respective grids that could affect operations of the interconnected grid.~~

~~(c) Dispatcher's Handbook.~~

~~The WECC Dispatcher's Handbook supplied by WECC to all utilities and Control Areas as a reference for dispatchers to use during normal and emergency operations of the grid.~~

~~**7.2.2.3.3 NERC Policies and Standards.**~~

~~(a) National Standards~~

~~The NERC national level standards for all utilities to follow to allow for safe and reliable operation of electric systems.~~

~~(b) Operating Manual~~

~~The NERC Operating Manual supplied by NERC to all utilities and Control Areas as a reference for dispatchers to use during normal and emergency operations of the grid.~~

* * *

**7.2.2.~~4~~ NAESB Standards.** The following standards of the Wholesale Electric Quadrant (WEQ) of the North American Energy Standards Board (NAESB) are incorporated by reference:

- ~~Coordinate Interchange (WEQ-004, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Purpose, Applicability, and Standards 004-0 through 004-13, and 004-A through 004-D;~~
- ~~Area Control Error (ACE) Equation Special Cases Standards (WEQ-005, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Purpose, Applicability, and Standards 005-0 through 005-3.1.3, and 005-A;~~
- ~~Inadvertent Interchange Payback (WEQ-007, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Purpose, Applicability, and Standards 007-0 through 007-2, and 007-A; and~~

- ~~Manual Time Error Correction – Time Error Initiation (WEQ-006-4, Version 000, with minor corrections applied on October 17, 2206).~~
- Coordinate Interchange (WEQ-004, Version 001, October 31, 2007, with minor corrections applied on Nov. 16, 2007) including Purpose, Applicability, and Standards 004-0.1 through 004-17.2, and 004-A through 004-D;
- Area Control Error (ACE) Equation Special Cases Standards (WEQ-005, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Purpose, Applicability, and Standards 005-0.1 through 005-3.1.3, and 005-A;
- Manual Time Error Correction (WEQ-006, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Purpose, Applicability, and Standards 006-0.1 through 006-12;
- Inadvertent Interchange Payback (WEQ-007, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Purpose, Applicability, and Standards 007-0.1 through 007-2, and 007-A;
- Gas/Electric Coordination (WEQ-011, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Standards 011-0.1 through 011-1.6; and
- Public Key Infrastructure (PKI) (WEQ-012, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Recommended Standard, Certification, Scope, Commitment to Open Standards, and Standards 012-0.1 through 012-1.26.5.

~~The CAISO has obtained a waiver of the following NAESB WEQ standards:~~

- ~~Business Practices for Open Access Same-Time Information Systems (OASIS) (WEQ-001, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Standards 001-0.2 through 001-0.8, 001-2.0 through 001-9.6.2, 001-9.8 through 001-10.8.6, and Examples 001-8.3-A, 001-9.2-A, 001-10.2-A, 001-9.3-A, 001-10.3-A, 001-~~

~~9.4.1-A, 001-10.4.1-A, 001-9.4.2-A, 001-10.4.2-A, 001-9.5-A, 001-10.5-A, 001-9.5.1-A, and 001-10.5.1-A;~~

- ~~Business Practices for Open Access Same-Time Information Systems (OASIS) Standards & Communication Protocols (WEQ-002, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Standards 002-1 through 002-5.10; and~~
- ~~Open Access Same-Time Information Systems (OASIS) Data Dictionary (WEQ-003, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Standard 003-0.~~

~~WECC has obtained a waiver of the following NAESB WEQ standard on its own behalf and on behalf of the Balancing Authority Areas in the Western Interconnection, including the CAISO:~~

- ~~Manual Time Error Correction (WEQ-006, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Purpose, Applicability, and Standards 006-0 through 006-12.~~

The CAISO has applied for a waiver of the following NAESB WEQ standards:

- Business Practices for Open Access Same-Time Information Systems (OASIS), Version 1.4 (WEQ-001, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Standards 001-0.2 through 001-0.8, 001-0.14 through 001-0.20, 001-2.0 through 001-9.6.2, 001-9.8 through 001-12.5.2, and 001-A and 001-B;
- Business Practices for Open Access Same-Time Information Systems (OASIS) Standards & Communication Protocols, Version 1.4 (WEQ-002, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Standards 002-0.1 through 002-5.10;
- Open Access Same-Time Information Systems (OASIS) Data Dictionary, Version

1.4 (WEQ-003, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Standard 003-0;

- Transmission Loading Relief – Eastern Interconnection (WEQ-008, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Purpose, Applicability, and Standards 008-0.1 through 008-3.11.2.8, and 008-A through 008-D; and
- Business Practices for Open Access Same-Time Information Systems (OASIS) Implementation Guide, Version 1.4 (WEQ-013, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Introduction and Standards 013-0.1 through 013-4.2.

* * *

**8.1 Scope.**

The ISO shall be responsible for ensuring that there are sufficient Ancillary Services available to maintain the reliability of the ISO Controlled Grid consistent with Applicable Reliability Criteria~~WECC and NERC criteria~~. The ISO's Ancillary Services requirements may be self-provided by Scheduling Coordinators. Those Ancillary Services which the ISO requires to be available but which are not being self-provided will be competitively procured by the ISO from Scheduling Coordinators in the Day-Ahead Market, Hour-Ahead Market and in real time or by longer-term contracts. The ISO will manage both ISO procured and self-provided Ancillary Services as part of the real-time Dispatch. The ISO will calculate payments for Ancillary Services to Scheduling Coordinators and charge the cost to Scheduling Coordinators.

For purposes of this ISO Tariff, Ancillary Services are: (i) Regulation, (ii) Spinning Reserve, (iii) Non-Spinning Reserve, (iv) Replacement Reserve, (v) Voltage Support, and (vi) Black Start capability. Bids for Non-Spinning Reserve and Replacement Reserve may be submitted by the Demand-side as well as by owners of Generation. Bids for Regulation, Spinning Reserve, Non-Spinning Reserve, and Voltage Support may be submitted by a Scheduling Coordinator for other non-generation resources that are capable of providing the specific service and that meet applicable Ancillary Service standards and technical requirements, as set forth in Sections 8.1 through 8.4, and are certified by the ISO to provide

Ancillary Services. The provision of Regulation, Spinning Reserve, Non-Spinning Reserve, and Voltage Support by other non-generation resources is subject to the same requirements applicable to other providers of these Ancillary Services, as set forth in Sections 8.5 through 8.14. Identification of specific services in this ISO Tariff shall not preclude development of additional interconnected operation services over time. The ISO and Market Participants will seek to develop additional categories of these unbundled services over time as the operation of the ISO Controlled Grid matures

* * *

**8.2.1 Determination of Ancillary Service Standards.**

The ISO shall set the required standard for each Ancillary Service necessary to maintain the reliable operation of the ISO Controlled Grid. Ancillary Services standards shall meet~~be based on~~ Applicable Reliability Criteria~~WECC Minimum Operating Reliability Criteria (MORC), NERC and ISO Controlled Grid reliability requirements~~. ~~The ISO Grid Operations Committee, in conjunction with the relevant reliability council (WECC), shall develop these Ancillary Services standards to determine reasonableness, cost effectiveness, and adherence to NERC and WECC standards.~~ The standards developed by the ISO shall be used as a basis for determining the quantity and type of each Ancillary Service which the ISO requires to be available. These requirements and standards apply to all Ancillary Services whether self-provided or procured by the ISO.

*** * ***

**8.2.2 Time-frame For Revising Ancillary Service Standards.**

The ISO Grid Operations Committee and the ISO Technical Advisory Committee shall periodically undertake a review of the ISO Controlled Grid operation to determine any revision to the Ancillary Services standards to be used in the ISO Control Area. At a minimum the ISO Grid Operations Committee and the ISO Technical Advisory Committee shall conduct such reviews to accommodate revisions to Applicable Reliability Criteria ~~WECC and NERC standards~~. The ISO may adjust the Ancillary Services standards temporarily to take into account, among other things variations in system conditions, real-time Dispatch constraints, contingencies, and voltage and dynamic stability assessments. Where practicable, the ISO will provide notice, via the ISO Home Page, of any temporary adjustments to

Ancillary Service standards by 6:00 p.m. two days ahead of the Trading Day to which the adjustment will apply. Periodic reviews by the ISO Grid Operations Committee or the ISO Technical Advisory Committee may include, but are not limited to: (a) analysis of the deviation between actual and forecast Demand; (b) analysis of patterns of unplanned Generating Unit Outages; (c) analysis of compliance with Applicable Reliability Criteria~~NERC and WECC Criteria~~; (d) analysis of operation during system disturbances; (e) analysis of patterns of shortfalls between Final Day-Ahead Schedules and actual Generation and Demand; and (f) analysis of patterns of unplanned transmission Outages.

*** * ***

**8.2.3.1 Regulation Service.**

The ISO shall maintain sufficient Generating Units immediately responsive to AGC in order to provide sufficient Regulation service to allow the ISO Control Area to meet Applicable Reliability Criteria ~~WECC and NERC control performance criteria~~ by continuously balancing Generation to meet deviations between actual and scheduled Demand and to maintain interchange schedules. The quantity of Regulation capacity needed for each Settlement Period of the Day-Ahead Market and the Hour-Ahead Markets shall be determined as a percentage of the aggregate scheduled Demand for that Settlement Period.

(a) Regulation Percentage Determination. The exact percentage required for each Settlement Period of the Day-Ahead Market and the Hour-Ahead Markets shall be determined by the ISO based upon its need to meet Applicable Reliability Criteria~~the WECC and NERC control performance criteria~~.

(b) Publication of Estimated Regulation Percentage for Day-Ahead Market. In accordance with the requirements of Appendix Y, the ISO will publish on WEnet its estimate of the percentage it will use for determining the quantity of Regulation it requires for each Settlement Period of the Day-Ahead Market for that Trading Day.

(c) Publication of Estimated Regulation Percentage for Hour-Ahead Market. The ISO will publish on WEnet its estimate of the percentage it will use to determine the quantity of Regulation it requires for each Hour-Ahead Market.

(d) Additional Regulation Requirement. Additional Regulation capacity may be procured by the ISO for the real-time operating period if needed to meet Applicable Reliability Criteria~~the WECC and NERC control performance criteria~~.

* * *

**8.2.3.2 Spinning And Non-Spinning Reserves.**

The ISO shall maintain minimum contingency Operating Reserve made up of Spinning Reserve and Non-Spinning Reserve in accordance with Applicable Reliability Criteria ~~WECC-MORC criteria equal to (a) 5% of the Demand (except the Demand covered by firm purchases from outside the ISO Control Area) to be met by Generation from hydroelectric resources plus 7% of the Demand (except the Demand covered by firm purchases from outside the ISO Control Area) to be met by Generation from other resources, or (b) the single largest Contingency, if this is greater~~ or ~~(c)~~ by reference to such more stringent criteria as the ISO may determine from time to time. ~~The Spinning Reserve component of Operating Reserve shall be no less than one-half the Operating Reserve required for each Settlement Period of the Day-Ahead Market, the Hour-Ahead Market and the Real Time Market. When the level of Operating Reserve is determined by Demand, the ISO shall not maintain Operating Reserve with respect to Demand covered by firm purchases from outside the ISO Control Area. In addition, the ISO shall maintain Operating Reserve equal to the total amount of: (i) Interruptible Imports scheduled by Scheduling Coordinators for any hour and, (ii) on demand obligations of Scheduling Coordinators (i.e., the demand obligations to other entities or Control Areas that the Scheduling Coordinator is to provide from resources within the ISO Controlled Grid). Such additional Operating Reserve is the responsibility of the Scheduling Coordinator either scheduling interruptible imports or with on demand obligations and such additional Operating Reserve must either be self-provided or purchased from the ISO by Scheduling Coordinators. To the extent such additional Operating Reserve is self-provided by a Scheduling Coordinator, it may consist entirely of Non-Spinning Reserve. To the extent that such additional Operating Reserve is not self-provided by a Scheduling Coordinator, the ISO will procure the necessary amounts of Operating Reserve, but not necessarily entirely from Non-Spinning Reserve.~~

* * *

**8.2.3.4 Voltage Support.**

The ISO shall determine on an hourly basis for each day the quantity and location of Voltage Support required to maintain voltage levels and reactive margins within Applicable Reliability Criteria ~~WECC and NERC criteria~~ using a power flow study based on the quantity and location of scheduled Demand. The ISO shall issue daily voltage schedules (Dispatch instructions) to Participating Generators, Participating TOs and UDCs, which are required to be maintained for ISO Controlled Grid reliability. All other Generating Units shall comply with the power factor requirements set forth in contractual arrangements in effect on the ISO Operations Date, or, if no such contractual arrangements exist and the Generating Unit exists within the system of a Participating TO, the power factor requirements applicable under the Participating TO's TO Tariff or other tariff on file with the FERC.

All Participating Generators shall maintain the ISO specified voltage schedule at the transmission interconnection points to the extent possible while operating within the power factor range specified in their interconnection agreements or, for Regulatory Must-Take Generation, Regulatory Must-Run Generation and Reliability Must-Run Generation consistent with existing obligations. For Generating Units, that do not operate under one of these agreements, the minimum power factor range will be within a band of 0.90 lag (producing VARs) and 0.95 lead (absorbing VARs) power factors. Participating Generators with Generating Units existing at the ISO Operations Date that are unable to meet this operating power factor requirement may apply to the ISO for an exemption. Prior to granting such an exemption, the ISO shall require the Participating TO or UDC to whose system the relevant Generating Units are interconnected to notify it of the existing contractual requirements for Voltage Support established prior to the ISO Operations Date for such Generating Units. Such requirements may be contained in CPUC Electric Rule 21 or the Interconnection Agreement with the Participating TO or UDC. The ISO shall not grant any exemption under this Section from such existing contractual requirements. The ISO shall be entitled to instruct Participating Generators to operate their Generating Units at specified points within their power factor ranges. Participating Generators shall receive no compensation for operating within these specified ranges.

If the ISO requires additional Voltage Support, it shall procure this either through Reliability Must-Run Contracts or, if no other more economic sources are available by instructing a Generating Unit to move its MVar output outside its mandatory range. Only if the Generating Unit must reduce its MW output in order to comply with such an instruction will it be compensated in accordance with Section 8.5.9.

All Loads directly connected to the ISO Controlled Grid shall maintain reactive flow at grid interface points within a specified power factor band of 0.97 lag to 0.99 lead. Loads shall not be compensated for the service of maintaining the power factor at required levels within the bandwidth. A UDC interconnecting with the ISO Controlled Grid at any point other than a Scheduling Point shall be subject to the same power factor requirement.

The power factor for both the Generating Units and Loads shall be measured at the interconnection point with the ISO Controlled Grid. The ISO will develop and will be authorized to levy penalties against Participating Generators, UDCs or Loads whose Voltage Support does not comply with the ISO's requirements. The ISO will establish voltage control standards with UDCs and the operators of other Control Areas and will enter into operational agreements providing for the coordination of actions in the event of a voltage problem occurring.

Wheeling Through and Wheeling Out transactions may also be subject to a reactive charge as developed by the ISO. If the ISO shall determine that a reactive charge should be payable at a future date, it shall, subject to FERC acceptance and approval, publish annually the Voltage Support obligations and applicable charges for Wheeling Through and Wheeling Out transactions at Scheduling Points. The obligations shall be predetermined by the ISO based on the estimated amount of the Wheeling Through and Wheeling Out transactions each year.

* * *

**8.3.4** The ISO shall procure on a daily and hourly basis, each day, Regulation, Spinning, Non-Spinning and Replacement Reserves. The ISO shall procure Replacement Reserve on a longer-term basis pursuant to Section 42.1.3 if necessary to meet Applicable Reliability Criteria~~reliability criteria~~. The ISO Governing Board must approve all long-term Replacement Reserve contracts. The ISO shall contract for Voltage Support annually (or for such other period as the ISO may determine is economically

advantageous) and on a daily or hourly basis as required to maintain System Reliability. The ISO shall contract annually (or for such other period as the ISO may determine is economically advantageous) for Black Start Generation.

* * *

**8.4.7.3.2** 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 Applicable Reliability Criteria~~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).

**8.4.7.3.3** 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 Applicable Reliability Criteria~~WECC criteria~~ by dynamic scheduling; provided that the operator of the Control Area in which the System Resources are located has entered into an agreement with the 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 certified by the ISO as to their ability to dynamically adjust interchange schedules based on control signals issued by the ISO anytime during a Settlement Period at the discretion of the ISO. Such certification shall include a demonstration of their ability to support the dynamic interchange of Regulation service based on ISO control signals received on dedicated communications links (either directly or through EMS computers) for ISO computer control and telemetry to provide this function in accordance with ISO standards and procedures posted on the ISO Home Page.

**8.4.7.3.4** Scheduling Coordinators may utilize transmission service under Existing Contracts to self-provide Regulation (consistent with this ISO Tariff), from resources located outside the ISO Control Area, where technically feasible, consistent with Applicable Reliability Criteria~~WECC standards~~.

* * *

**20.4 Disclosure.**

Notwithstanding anything in this Section 20 to the contrary,

(a) The ISO: (i) shall publish individual bids for Supplemental Energy, individual bids for Ancillary Services, and individual Adjustment Bids, provided that such data are published no sooner than six (6) months after the Trading Day with respect to which the bid or Adjustment Bid was submitted and in a manner that does not reveal the specific resource or the name of the Scheduling Coordinator submitting the bid or Adjustment Bid, but that allows the bidding behavior of individual, unidentified resources and Scheduling Coordinators to be tracked over time; and (ii) may publish data sets analyzed in any public report issued by the ISO or by the Market Surveillance Committee, provided that such data sets shall be published no sooner than six (6) months after the latest Trading Day to which data in the data set apply, and in a manner that does not reveal any specific resource or the name of any Scheduling Coordinator submitting bids or Adjustment Bids included in such data sets.

(b) If the ISO is required by applicable laws or regulations, or in the course of administrative or judicial proceedings, to disclose information that is otherwise required to be maintained in confidence pursuant to this Section 20, the ISO may disclose such information; provided, however, that as soon as the ISO learns of the disclosure requirement and prior to making such disclosure, the ISO shall notify any affected Market Participant of the requirement and the terms thereof. The Market Participant may, at its sole discretion and own cost, direct any challenge to or defense against the disclosure requirement and the ISO shall cooperate with such affected Market Participant to the maximum extent practicable to minimize the disclosure of the information consistent with applicable law. The ISO shall cooperate with the affected Market Participant to obtain proprietary or confidential treatment of confidential information by the person to whom such information is disclosed prior to any such disclosure.

(c) The ISO may disclose confidential or commercially sensitive information, without notice to an affected Market Participant, in the following circumstances:

(i) If the FERC, or its staff, during the course of an investigation or otherwise, requests information that is confidential or commercially sensitive. In providing the information to FERC or its staff, the ISO shall take action consistent with 18 C.F.R. §§ 1b.20 and

388.112, and request that the information be treated as confidential and non-public by the FERC and its staff and that the information be withheld from public disclosure. The ISO shall provide the requested information to the FERC or its staff within the time provided for in the request for information. The ISO shall notify an affected Market Participant within a reasonable time after the ISO is notified by FERC or its staff that a request for disclosure of, or decision to disclose, the confidential or commercially sensitive information has been received, at which time the ISO and the affected Market Participant may respond before such information would be made public; or

(ii) In order to maintain reliable operation of the ISO Control Area, the ISO may share critical operating information, system models, and planning data with ~~other~~ the WECC Reliability Coordinator~~s~~ that ~~, who~~ ha~~sve~~ executed the Western Electricity Coordinating Council Confidentiality Agreement for Electric System Data, or is ~~are~~ subject to similar confidentiality requirements; or

(iii) In order to maintain reliable operation of the ISO Control Area, the ISO may share individual Generating Unit Outage information with the operations engineering and/or the outage coordination division(s) of other Control Area operators, Participating TOs, MSS Operators and other transmission system operators engaged in the operation and maintenance of the electric supply system whose system is significantly affected by the Generating Unit and who have executed the Western Electricity Coordinating Council Confidentiality Agreement for Electric System Data.

(d) Information submitted through Resource Adequacy Plans pursuant to Sections 40.2.1 and 40.2.2, Supply Plans pursuant to Section 40.6, and the dispute or discrepancy resolution process pursuant to Section 40.2.3 may be provided to:

(i) the Scheduling Coordinator(s) and/or Market Participant(s) involved in the dispute or discrepancy pursuant to Section 40.2.3, only to the limited extent necessary to identify the disputed transaction and relevant counterparty or counterparties.

(ii) the regulatory entity, whether the CPUC or a Local Regulatory Authority, with jurisdiction over a Load Serving Entity involved, pursuant to Section 40.2.3, in a dispute or discrepancy, or otherwise is identified by the ISO as exhibiting a potential deficiency in demonstrating compliance with Resource Adequacy rules adopted by the CPUC or Local Regulatory Authority, as applicable. The information provided shall be limited to the particular dispute, discrepancy or deficiency.

(e) Notwithstanding the provisions of Section 20.2(f), information submitted through the Transmission Planning Process may be disclosed as follows:

(i) Critical Energy Infrastructure Information may be provided to a requestor where such person is employed or designated by a Market Participant or electric utility regulatory agency within California to receive CEII, the requestor submits a statement as to the need for the CEII, and the requestor executes and returns to the CAISO the form of the non-disclosure agreement and non-disclosure statement included as part of the Business Practice Manual. The CAISO may, at its sole discretion, reject a request for CEII and upon such rejection, the requestor will be directed to utilize the FERC procedures for access to the requested CEII.

(ii) Information that is confidential under Section 20.2(f)(i) or 20.2.(f)(ii) may be disclosed to any individual designated by a Market Participant, electric utility regulatory agency within California, or other stakeholder that signs and returns to the CAISO the form of the non-disclosure agreement, nondisclosure statement and certification that the individual is or represents a non-Market Participant, which is any person or entity not involved in a marketing, sales, or brokering function as market, sales, or brokering are defined in FERC's Standards of Conduct for Transmission Providers (18 C.F.R. § 358 et seq.), included as part of the Business Practice Manual; and

(iii) Data base and other transmission planning information obtained from the WECC, or its successor, may be disclosed to individuals designated by a Market Participant, electric utility regulatory agency within California, or other stakeholder in accordance with the procedures set forth in the Business Practice Manual.

* * *

**34.3.0.3 Ancillary Services Dispatch.**

The ISO will base its standards for the Dispatch of Ancillary Services upon Applicable Reliability Criteria and ~~WECC, MORC, and~~ ISO Controlled Grid reliability requirements. The ISO may Dispatch Generating Units, Loads, System Units and System Resources contracted to provide Ancillary Services (either procured through the ISO's competitive market, or self-provided by Scheduling Coordinators) to supply Imbalance Energy. During normal operating conditions, the ISO shall Dispatch the following resources to supply Imbalance Energy: (i) those Generating Units, Loads, System Units and System Resources having offered Supplemental Energy bids, (ii) those Generating Units, Loads, System Units and System Resources contracted to provide Replacement Reserve and (iii) those Generating Units, Loads, System Units and System Resources that have contracted to provide Spinning and Non-Spinning Reserve, except for those resources that have indicated that 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. In the event of an unplanned Outage, a Contingency or a threatened or actual System Emergency, the ISO may also Dispatch all other Generating Units, Loads, System Units and System Resources contracted to provide Spinning Reserve or Non-Spinning Reserve to supply Imbalance Energy. If a Generating Unit, Load, System Unit or System Resource, which is supplying Operating Reserve, is Dispatched to provide Imbalance Energy, the ISO shall replace the Operating Reserve from the same or another resource within the time frame specified by Applicable Reliability Criteria~~in the WECC guidelines~~.

* * *

**34.3.6.6 Dispatch Information To Be Supplied by Control Area Operators.**

The ISO and each adjacent Control Area Operator shall keep each other informed of any change or potential change in the status of the Interconnection and any changes in the Interconnection's TTC. The ISO and each adjacent Control Area Operator shall keep each other informed of situations such as adverse weather conditions, fires, etc., that could affect the reliability of any Interconnection. ~~Each Control Area Operator of the Control Areas in the California area, as defined by the WECC Regional~~

~~Security Plan, shall keep the ISO informed of all information required by WECC for use by the Reliability Coordinator.~~

The ISO and each adjacent Control Area Operator shall follow all applicable NERC and WECC scheduling procedures. This will include checking the Interconnection schedules for the next Settlement Period prior to the start of the Energy ramp going into that hour. The ISO and each adjacent Control Area Operator shall check and agree on actual MWh net interchange after the hour for the previous Settlement Period. One Control Area shall change its actual number to reflect that of the other Control Area in accordance with WECC standard procedures.

The ISO and each adjacent Control Area Operator shall exchange MW, MVar, terminal and bus voltage data with each other on a four second update basis. MWh data for the previous hour shall be exchanged once per hour. All MW and MWh data for both the ISO Control Area and the adjacent Control Areas must originate from the same metering equipment. All provisions in Sections 4.6.1.1(i) and 4.6.1.1 (ii) refer to information and data obtained from metering used for Control Area operations and not metering used for billing and settlement.

* * *

**42.1.2** If the forecast shows that the ~~applicable WECC/NERC~~ Applicable Reliability Criteria can be met during peak Demand periods, then the ISO shall take no further action.

**42.1.3** If the forecast shows that the ~~applicable WECC/NERC~~ Applicable Reliability Criteria cannot be met during peak Demand periods, then the ISO shall facilitate the development of market mechanisms to bring the ISO Controlled Grid during peak periods into compliance with the Applicable Reliability Criteria (or such more stringent criteria as the ISO may impose pursuant to Section 7.2.2.2). The ISO shall solicit bids for Replacement Reserve in the form of Ancillary Services, short-term Generation supply contracts of up to one (1) year with Generators, and Load curtailment contracts giving the ISO the right to reduce the Demands of those parties that win the contracts when there is insufficient Generation capacity to satisfy those Demands in addition to all other Demands. The curtailment contracts shall provide that the ISO's curtailment rights can only be exercised after all available

Generation capacity has been fully utilized unless the exercise of such rights would allow the ISO to satisfy the Applicable Reliability Criteria at lower cost, and the curtailment rights shall not be exercised to stabilize or otherwise influence prices for power in the Energy markets.

* * *

| | |
|---|---|
| **Nomogram** | A set of operating or scheduling rules which are used to ensure that simultaneous operating limits are respected, in order to meet ~~NERC and WECC operating criteria~~Applicable Reliability Criteria. |

* * *

| | |
|---|---|
| **Operating Reserve** | The combination of Spinning and Non-Spinning Reserve required to meet ~~WECC and NERC requirements~~ Applicable Reliability Criteria for reliable operation of the ISO Control Area. |

* * *

| | |
|---|---|
| **Regulation** | The service provided either by Generating Units certified by the ISO as equipped and capable of responding to the ISO's direct digital control signals, or by System Resources that have been certified by the ISO as capable of delivering such service to the ISO Control Area, in an upward and downward direction to match, on a real-time basis, Demand and resources, consistent with Applicable Reliability Criteria~~established NERC and WECC operating criteria~~. Regulation is used to control the power output of electric generators within a prescribed area in response to a change in system frequency, tieline loading, or the relation of these to each other so as to maintain the target system frequency and/or the established interchange with other areas within the predetermined limits. Regulation includes both the increase of output by a Generating Unit or System Resource ("Regulation Up") and the decrease in output by a Generating Unit or System Resource ("Regulation Down"). Regulation Up and Regulation Down are distinct capacity products, with separately stated requirements and Market Clearing Prices in each Settlement Period. |

* * *

**ISO TARIFF APPENDIX B.9**

**Dynamic Scheduling Host Control Area Operating Agreement**

*** * ***

**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") and~~policies,~~ Western Electricity Coordinating Council ("WECC") standards and criteria ~~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 Glossary of WECC Terms and Acronyms ~~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, supersede, 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.

**6.2 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.

**6.3 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.

**6.4 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: _____

* * *

**ISO TARIFF APPENDIX X**

**Dynamic Scheduling Protocol (DSP)**

**DSP 5.2** 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 Applicable Reliability Criteria~~WECC Minimum Operating Reliability Criteria ("MORC")~~.

*** * ***

**DSP 6.4** 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 as required by Applicable Reliability Criteria.

* * *

**Attachment C – Clean Sheets**

**WECC Reliability Coordinator Status and Operating Reserve Requirements**

**4th Replacement Tariff (MRTU)**

**October 29, 2008**

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

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

**4.5.4 Operations of a Scheduling Coordinator.**

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

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

**4.5.4.2 [NOT USED]**

**4.5.4.3 Dynamic Scheduling.**

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

**7.2 Operating Reliability Criteria.**

The CAISO shall exercise Operational Control over the CAISO Controlled Grid in compliance with all Applicable Reliability Criteria and Operating Procedures.

**7.3 Transmission Planning Authority.**

**7.3.1** The CAISO shall exercise Operational Control over the CAISO Controlled Grid to meet planning and Operating Reserve criteria no less stringent than those established by WECC and NERC as those standards may be modified from time to time, and Local Reliability Criteria that are in existence on the CAISO Operations Date and have been submitted to the CAISO by each Participating TO pursuant to Section 2.2.1(v) of the TCA. All Market Participants and the CAISO shall comply with the CAISO Reliability Criteria, standards, and procedures.

**7.3.2** The CAISO Governing Board may establish planning guidelines more stringent than those established by NERC and WECC as needed for the secure and reliable operation of the CAISO Controlled Grid. The CAISO may revise the Local Reliability Criteria subject to and in accordance with Section 5 of the TCA.

**7.3.3 NAESB Standards.**

The following standards of the Wholesale Electric Quadrant (WEQ) of the North American Energy Standards Board (NAESB) are incorporated by reference:

- Coordinate Interchange (WEQ-004, Version 001, October 31, 2007, with minor corrections applied on Nov. 16, 2007) including Purpose, Applicability, and Standards 004-0.1 through 004-17.2, and 004-A through 004-D;
- Area Control Error (ACE) Equation Special Cases Standards (WEQ-005, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Purpose, Applicability, and Standards 005-0.1 through 005-3.1.3, and 005-A;
- Manual Time Error Correction (WEQ-006, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Purpose, Applicability, and Standards 006-0.1 through 006-12;
- Inadvertent Interchange Payback (WEQ-007, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Purpose, Applicability, and Standards 007-0.1 through 007-2, and 007-A;
- Gas/Electric Coordination (WEQ-011, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Standards 011-0.1 through 011-1.6; and
- Public Key Infrastructure (PKI) (WEQ-012, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Recommended Standard, Certification, Scope, Commitment to Open Standards, and Standards 012-0.1 through 012-1.26.5.

The CAISO has applied for a waiver of the following NAESB WEQ standards:

- Business Practices for Open Access Same-Time Information Systems (OASIS), Version 1.4 (WEQ-001, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Standards 001-0.2 through 001-0.8, 001-0.14 through 001-0.20, 001-2.0 through 001-9.6.2, 001-9.8 through 001-12.5.2, and 001-A and 001-B;
- Business Practices for Open Access Same-Time Information Systems (OASIS) Standards & Communication Protocols, Version 1.4 (WEQ-002, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Standards 002-0.1 through 002-5.10;
- Open Access Same-Time Information Systems (OASIS) Data Dictionary, Version 1.4 (WEQ-003, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Standard 003-0;
- Transmission Loading Relief – Eastern Interconnection (WEQ-008, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Purpose, Applicability, and Standards 008-0.1 through 008-3.11.2.8, and 008-A through 008-D; and
- Business Practices for Open Access Same-Time Information Systems (OASIS) Implementation Guide, Version 1.4 (WEQ-013, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Introduction and Standards 013-0.1 through 013-4.2.

**7.4 General Standard of Care.**

When the CAISO is exercising Operational Control of the CAISO Controlled Grid, the CAISO and Market Participants shall comply with Good Utility Practice.

**7.5 Routine Operation of the CAISO Controlled Grid.**

The CAISO shall operate the CAISO Controlled Grid in accordance with the standards described in Section 7.2 and within the limit of all applicable Nomograms and established operating limits and procedures.

# 8. ANCILLARY SERVICES.

## 8.1 Scope.

The CAISO shall be responsible for ensuring that there are sufficient Ancillary Services available to maintain the reliability of the CAISO Controlled Grid consistent with Applicable Reliability Criteria. The CAISO's Ancillary Services requirements may be self-provided by Scheduling Coordinators as further provided in the Business Practice Manuals. Those Ancillary Services which the CAISO requires to be available but which are not being self-provided will be competitively procured by the CAISO from Scheduling Coordinators in the Day-Ahead Market, the Hour-Ahead Scheduling Process (the hourly HASP Ancillary Service Awards) and the RTM consistent with Section 8.3. The provision of Ancillary Services from the Interties with interconnected Balancing Authority Areas is limited to Ancillary Services bid into the competitive procurement processes in the IFM, HASP and RTM. The CAISO will not accept Submissions to Self-Provide Ancillary Services that are imports to the CAISO Balancing Authority Area over the Interties with interconnected Balancing Authority Areas, except from Dynamic System Resources certified to provide Ancillary Services or if provided pursuant to ETCs, TORs or Converted Rights. The CAISO will calculate payments for Ancillary Services supplied by Scheduling Coordinators and charge the cost of Ancillary Services to Scheduling Coordinators based on their Ancillary Service Obligations.

## 8.2 Ancillary Services Standards.

All Ancillary Services shall meet the CAISO's Ancillary Services standards.

### 8.2.1 Determination of Ancillary Service Standards.

The CAISO shall set the required standard for each Ancillary Service necessary to maintain the reliable operation of the CAISO Controlled Grid. Ancillary Services standards shall meet Applicable Reliability Criteria. The standards developed by the CAISO shall be used as a basis for determining the quantity and type of each Ancillary Service which the CAISO requires to be available. These requirements and standards apply to all Ancillary Services whether self-provided or procured by the CAISO.

### 8.2.2 Time-frame For Revising Ancillary Service Standards.

The CAISO shall periodically undertake a review of the CAISO Controlled Grid operation to determine any revision to the Ancillary Services standards to be used in the CAISO Balancing Authority Area. At a minimum the CAISO shall conduct such reviews to accommodate revisions to Applicable Reliability Criteria. The CAISO may adjust the Ancillary Services standards temporarily to take into account, among other things variations in system conditions, Real-Time Dispatch constraints, contingencies, and voltage and dynamic stability assessments. Where practicable, the CAISO will provide notice, via the CAISO Website, of any temporary adjustments to Ancillary Service standards by 6:00 p.m. two (2) days ahead of the Operating Day to which the adjustment will apply. Periodic reviews by the CAISO may

include, but are not limited to: (a) analysis of the deviation between actual and forecast Demand; (b) analysis of patterns of unplanned Generating Unit Outages; (c) analysis of compliance with Applicable Reliability Criteria; (d) analysis of operation during system disturbances; (e) analysis of patterns of shortfalls between Day-Ahead Schedules and actual Generation and Demand; and (f) analysis of patterns of unplanned transmission Outages.

**8.2.3 Quantities of Ancillary Services Required and Use of Ancillary Service Regions.**

For each of the Ancillary Services, the CAISO shall determine the quantity and location of the Ancillary Service which is required using Ancillary Service Regions as described in Section 8.3.3. For each of the Ancillary Services, the CAISO shall determine the required locational dispersion in accordance with CAISO Controlled Grid reliability requirements. The Ancillary Services provided must be under the direct Dispatch control of the CAISO on a Real-Time Dispatch Interval basis. The CAISO shall determine the quantities it requires as provided for in Sections 8.2.3.1 to 8.2.3.3.

**8.2.3.1 Regulation Service.**

The CAISO shall maintain sufficient Generating Units immediately responsive to AGC in order to provide sufficient Regulation service to allow the CAISO Balancing Authority Area to meet Applicable Reliability Criteria by continuously balancing Generation to meet deviations between actual and scheduled Demand and to maintain Interchange Schedules. The quantity of Regulation Down and Regulation Up capacity needed for each Settlement Period of the Day-Ahead Market and the HASP, and in each fifteen (15) minute period in Real-Time shall be determined by the CAISO as a percentage of the applicable CAISO Forecast of CAISO Demand for the Day-Ahead, HASP, and Real-Time Markets. The CAISO's determination is based upon its need to meet Applicable Reliability Criteria.

The CAISO will publish on OASIS the estimated quantity, or the percentage used to determine the estimated quantity, of Regulation Reserves required for each hour of the Day-Ahead Market, each hour in the HASP, and in each fifteen (15) minute period in Real-Time for the Trading Day.

**8.2.3.2 Spinning and Non-Spinning Reserves.**

The CAISO shall maintain minimum contingency Operating Reserve made up of Spinning Reserve and Non-Spinning Reserve in accordance with Applicable Reliability Criteria. The CAISO from time to time may determine to use more stringent criteria.

**8.2.3.3 Voltage Support.**

The CAISO shall determine on an hourly basis for each day the quantity and location of Voltage Support required to maintain voltage levels and reactive margins within Applicable Reliability Criteria using a power flow study based on the quantity and location of scheduled Demand. The CAISO shall issue daily voltage schedules (Dispatch Instructions) to Participating Generators, Participating TOs and UDCs, which are required to be maintained for CAISO Controlled Grid reliability. All other Generating Units shall comply with the power factor requirements set forth in contractual arrangements in effect on the CAISO Operations Date, or, if no such contractual arrangements exist and the Generating Unit exists within the system of a Participating TO, the power factor requirements applicable under the Participating TO's TO Tariff or other tariff on file with the FERC.

All Participating Generators shall maintain the CAISO specified voltage schedule at the transmission interconnection points to the extent possible while operating within the power factor range specified in

Balancing Authority Areas). As defined by a Business Practice Manual, the eight identified Ancillary Service Sub-Regions are (1) the South of Path 15 Sub-Region, (2) the Expanded South of Path 15 Sub-Region, (3) the South of Path 26 Sub-Region, (4) the Expanded South of Path 26 Sub-Region, (5) the North of Path 15 Sub-Region, (6) the Expanded North of Path 15 Sub-Region, (7) the North of Path 26 Sub-Region, and (8) the Expanded North of Path 26 Sub-Region. The eight Ancillary Service Sub-Regions are embedded within either the System Region or the Expanded System Region. The CAISO may use Ancillary Service Sub-Regions within the System Region or the Expanded System Region to ensure appropriate distribution of the Ancillary Services procured for the CAISO Balancing Authority Area. The definition of the Expanded System Region, the System Region, and the eight Sub-Regions shall apply collectively to the following Ancillary Services: Regulation Up, Regulation Down, Spinning Reserves and Non-Spinning Reserves.

**8.3.3.1 Use of Ancillary Service Regions and Ancillary Service Regional Limits.**

Within the Expanded System Region, the System Region, and the Sub-Regions, the CAISO may establish limits on the amount of Ancillary Services that can be provided from each region or can be provided within each region. When used, these Ancillary Service Regional Limits identify either a maximum or a minimum (or both a maximum and a minimum) amount of Ancillary Services to be obtained within the region. The minimum Ancillary Service limit in the Expanded System Region shall be the quantities of each Ancillary Service required to meet Applicable Reliability Criteria for the CAISO Balancing Authority Area. The CAISO may establish a restriction on the amount of Ancillary Services to be procured from outside the CAISO Balancing Authority Area by establishing a minimum limit for the System Region.

**8.3.7.1 Requirement for Imports of Spinning or Non-Spinning Reserves.**

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

**8.3.7.2 Requirement for Imports of Regulation.**

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

disclosure. The CAISO shall provide the requested information to the FERC or its staff within the time provided for in the request for information. The CAISO shall notify an affected Market Participant within a reasonable time after the CAISO is notified by FERC or its staff that a request for disclosure of, or decision to disclose, the confidential or commercially sensitive information has been received, at which time the CAISO and the affected Market Participant may respond before such information would be made public; or

(ii) In order to maintain reliable operation of the CAISO Control Area, the CAISO may share critical operating information, system models, and planning data with the WECC Reliability Coordinator that has executed the Western Electricity Coordinating Council Confidentiality Agreement for Electric System Data, or is subject to similar confidentiality requirements; or

(iii) In order to maintain reliable operation of the CAISO Control Area, the CAISO may share individual Generating Unit Outage information with the operations engineering and the outage coordination division(s) of other Balancing Authorities, Participating TOs, MSS Operators and other transmission system operators engaged in the operation and maintenance of the electric supply system whose system is significantly affected by the Generating Unit and who have executed the Western Electricity Coordinating Council Confidentiality Agreement for Electric System Data.

the three five-minute RTD intervals of its target fifteen-minute interval. In the RTUC, all resources certified and capable of providing Operating Reserves that have submitted Real-Time Energy Bids shall also submit applicable Spinning or Non-Spinning Reserves Bids, respectively, depending on whether the resource is online or offline. The CAISO will utilize the RTUC to procure Operating Reserves to restore its Operating Reserve requirements in cases when: (1) Operating Reserves awarded in DAM or HASP have been dispatched to provide Energy, (2) resource(s) awarded to provide Operating Reserves in the DAM or HASP are no longer capable of providing such awarded Operating Reserves, or (3) the Operator determines that additional Operating Reserves are necessary to maintain Operating Reserves within Applicable Reliability Criteria. The CAISO will utilize the RTUC to procure additional Regulation capacity in Real-Time in cases when: (1) resource(s) awarded to provide Regulation in the DAM or HASP are no longer capable of providing such awarded Regulation, or (2) the Operator determines that additional Regulation is necessary to maintain sufficient control consistent with Applicable Reliability Criteria and Good Utility Practice.

**34.3 Real-Time Dispatch.**

The RTD can operate in three modes: RTED, RTCD and RTMD. The RTD (RTED and RTCD mode) uses a Security Constrained Economic Dispatch (SCED) algorithm every five (5) minutes throughout the Trading Hour to determine optimal Dispatch Instructions to balance Supply and Demand and maintain required Ancillary Service quantities for the next binding target interval. The Real-Time Economic Dispatch (RTED) will be used under most circumstances and will optimally dispatch resources based on their Energy Bids, excluding Contingency Only Operating Reserves except when needed to avoid an imminent System Emergency. The Real-Time Contingency Dispatch (RTCD) will be invoked when a transmission or generation contingency occurs and will include all Contingency Only Operating Reserves in the optimization. The Real Time Manual Dispatch (RTMD) will be invoked as a fall-back mechanism only when the RTED or RTCD fails to provide a feasible Dispatch. These three modes of the RTD are described in Sections 34.3.1 to 34.3.3.

a Contingency or an imminent or actual System Emergency. The CAISO may designate any reserve not previously identified as Contingency Only by Scheduling Coordinator as Contingency Only reserves, as necessary to maintain Applicable Reliability Criteria. In the event of an unplanned Outage, a Contingency or a threatened or actual System Emergency, the CAISO may dispatch Contingency Only reserves. If Contingency Only reserves are dispatched through the RTCD, which as described in Section 34.3.2, only Dispatches in the event of a Contingency. Such Dispatch and pricing will be based on the original Energy Bids. If Contingency Only reserves are dispatched in response to a System Emergency that has occurred because the CAISO has run out of Economic Bids when no Contingency event has occurred, the RTED will Dispatch such Contingency Only reserves using maximum Bid prices as provided in Section 39.6.1 as the Energy Bids for such reserves and will set prices accordingly. If a Participating Generator, Participating Load, System Unit or System Resource that is supplying Operating Reserve is dispatched to provide Energy, the CAISO shall replace the Operating Reserve as necessary to maintain Applicable Reliability Criteria. If the CAISO uses Operating Reserve to meet Real-Time Energy requirements, and if the CAISO needs Operating Reserves to satisfy Applicable Reliability Criteria, the CAISO shall restore the Operating Reserves to the extent necessary to meet Applicable Reliability Criteria through either the procurement of additional Operating Reserve in the RTM or the Dispatch of other Energy Bids in SCED to allow the resources that were providing Energy from the Operating Reserve to return to their Dispatch Operating Point. The Energy Bid Curve is not used by the AGC system when Dispatching Energy from Regulation. The upper portion of the resource capacity from its Regulation Limit is allocated to Regulation regardless of its Energy Bid Curve. For a resource providing Regulation Up or Operating Reserves the remaining Energy Bid Curve shall be allocated to any RTM AS Awards in the following order from higher to lower capacity where applicable: (a) Spinning Reserve; and (b) Non-Spinning Reserve. For resources providing Regulation Up, the applicable upper Regulation Limit shall be used as the basis of allocation if it is lower than the upper portion of the Energy Bid Curve. The remaining portion of the Energy Bid Curve, if there is any, shall constitute a Bid for RTM Energy.

**34.17.5 Dispatch Information To Be Supplied by Balancing Authorities.**

The CAISO and each adjacent Balancing Authority shall keep each other informed of any change or potential change in the status of the Interconnection and any changes in the Interconnection's TTC. The CAISO and each adjacent Balancing Authority shall keep each other informed of situations such as adverse weather conditions, fires, etc., that could affect the reliability of any Interconnection.

The CAISO and each adjacent Balancing Authority shall follow all applicable NERC and WECC scheduling procedures. This will include checking the Interconnection schedules for the next Settlement Period prior to the start of the Energy ramp going into that hour. The CAISO and each adjacent Balancing Authority shall check and agree on actual MWh net Interchange after the hour for the previous Settlement Period. One Balancing Authority Area shall change its actual number to reflect that of the other Balancing Authority Area in accordance with WECC standard procedures.

The CAISO and each adjacent Balancing Authority shall exchange MW, MVar, terminal and bus voltage data with each other on a four second update basis. MWh data for the previous hour shall be exchanged once per hour. All MW and MWh data for both the CAISO Balancing Authority Area and the adjacent Balancing Authority Areas must originate from the same metering equipment. All provisions in Sections 4.6.1.1(i) and 4.6.1.1 (ii) refer to information and data obtained from metering used for Balancing Authority Area operations and not metering used for billing and Settlement.

**34.18 [NOT USED]**

**34.19 Pricing Imbalance Energy.**

| | |
|---|---|
| **Minimum Operating Limit ($MOL_{min}$)** | The greater of the Minimum Load or the lower bound of the Regulating Range if the resource offers Regulation service. |
| **Minimum Run Time** | The minimum amount of time that a Generating Unit must stay on-line after being started-up prior to being Shut-Down, due to physical operating constraints. |
| **Mitigation Frequency** | The percent of the Generating Unit's run hours where the unit had one or more Bid segments mitigated under the CAISO Local Market Power Mitigation. |
| **Mitigation Measures** | The CAISO market power mitigation measures under the CAISO Tariff. |
| **MKMV Default Probability** | A calculated result of Moody's KMV CreditEdge or RiskCalc software products. |
| **MNDC** | Maximum Net Dependable Capacity |
| **Modified Reserve Sharing LSE** | A Load Serving Entity whose Scheduling Coordinator has informed the CAISO in accordance with Section 40.1 of its election to be a Modified Reserve Sharing LSE. |
| **$MOL_{max}$** | Maximum Operating Limit |
| **$MOL_{min}$** | Minimum Operating Limit |
| **Monthly Available CRR Capacity** | The upper limit of network capacity that will be used in the monthly CRR Allocation and monthly CRR Auctions calculated by using OTC adjusted for Outages, derates, and Transmission Ownership Rights for the relevant month in accordance with Section 36.4. |
| **Monthly CRR** | A Congestion Revenue Right whose term is one calendar month in length and distributed in the monthly CRR Allocation and monthly CRR Auction. |
| **Monthly CRR Eligible Quantity** | The MW quantity of CRRs a CRR Holder or Candidate CRR Holder is eligible to nominate for the relevant month in a monthly CRR Allocation. |
| **Monthly CRR Load Metric** | The load metric used for determining eligibility for CRR Allocation as provided in Section 36.8.2.2. |

| | |
|---|---|
| **New Participating TO** | A Participating TO that is not an Original Participating TO. |
| **New Responsible Utility** | A Responsible Utility that executes a TCA after April 1, 1998. |
| **Node** | A point in the Full Network Model representing a physical location within the CAISO Balancing Authority Area or the CAISO Controlled Grid, which includes the Load and Generating Unit busses in the CAISO Balancing Authority Area and at the Intertie busses between the CAISO Balancing Authority Area and interconnected Balancing Authority Areas. |
| **Nomogram** | A set of operating or scheduling rules which are used to ensure that simultaneous operating limits are respected, in order to meet Applicable Reliability Criteria. |
| **Non-CPUC Load Serving Entity** | Any entity serving retail Demand in the CAISO Balancing Authority Area not within the jurisdiction of the CPUC, including (i) a local publicly owned electric utility under section 9604 of the California Public Utilities Code and (ii) any federal entities, including but not limited to federal power marketing authorities, that serve retail Load. |
| **Non-Dispatchable Use-Limited Resource** | A Use-Limited Resource that cannot be increased or curtailed at the direction of the CAISO in the Real-Time Dispatch of the CAISO Balancing Authority Area to Supply or consume Energy, such as certain Qualifying Facilities. |
| **Non-Dynamic Resource-Specific System Resource** | A Non-Dynamic System Resource that is a specific generation resource outside the CAISO Balancing Authority Area. |
| **Non-Dynamic System Resource** | A System Resource that is not capable of submitting a Dynamic Schedule, or for which a Dynamic Schedule has not be submitted, which may be a Non-Dynamic Resource-Specific System Resource. |
| **Non-Load-Serving Participating TO** | A Participating TO that (1) is not a UDC, MSS Operator or Scheduling Coordinator serving End-Use Customers and (2) does not have Gross Load in accordance with Section 9 of Schedule 3 of Appendix F. |

| | |
|---|---|
| **OBAALSE** | Out-of-Balancing Authority Area Load Serving Entity |
| **Off** | A unit is Off when it is offline or in the process of starting up or shutting down. |
| **Off-Peak Deliverability Assessment** | The technical study performed under LGIP Section 6.3.2.2 set forth in Appendix Y. |
| **Offsetting CRR** | One of the pair of new equal and opposite CRRs created and allocated by the CAISO to reflect Load Migration between two LSEs pursuant to the provisions in Section 36.8.5, which is allocated to the Load losing LSE and is opposite in direction to the corresponding CRR previously allocated to that LSE and is denominated in a MW quantity that reflects the net amount of Load Migration between the two LSEs. |
| **On** | A unit is On when it is online, synchronized with the grid, and available for Dispatch. |
| **On-Peak Deliverability Assessment** | The technical study performed under LGIP Section 6.3.2.1 set forth in Appendix Y. |
| **On-Site Self-Supply** | Energy from a Generating Unit that is deemed to have self-supplied all or a portion of its associated Station Power Load without use of the CAISO Controlled Grid during the Netting Period. |
| **Open Access Same-Time Information System (OASIS)** | The electronic posting system for transmission access data that the CAISO maintains on the CAISO Website that allows all Market Participants to view the data simultaneously. |
| **Operating Day** | The day when the Real-Time Market runs and Energy is supplied to Load. |
| **Operating Hour** | The hour during the day when the Real-Time Market runs and Energy is supplied to Load. |
| **Operating Procedures** | Procedures governing the operation of the CAISO Controlled Grid as the CAISO may from time to time develop, and/or procedures that Participating TOs currently employ which the CAISO adopts for use. |
| **Operating Reserve** | The combination of Spinning and Non-Spinning Reserve required to meet Applicable Reliability Criteria for reliable operation of the CAISO Balancing Authority Area. |

| | |
|---|---|
| **Registered Data** | Those items of technical data and operating characteristics relating to Generation, transmission or distribution facilities which are identified to the owners of such facilities as being information, supplied in accordance with the CAISO Tariff, to assist the CAISO to maintain reliability of the CAISO Controlled Grid and to carry out its functions. |
| **Regulating Range** | The operating level range within which a generating resource may provide Regulation. |
| **Regulation** | The service provided either by Generating Units certified by the CAISO as equipped and capable of responding to the CAISO's direct digital control (AGC) signals, or by System Resources that have been certified by the CAISO as capable of delivering such service to the CAISO Balancing Authority Area, in an upward and downward direction to match, on a Real-Time basis, Demand and resources, consistent with established Applicable Reliability Criteria. Regulation is used to control the Power output of electric generators within a prescribed area in response to a change in system frequency, tie line loading, or the relation of these to each other so as to maintain the target system frequency and/or the established Interchange with other Balancing Authority Areas within the predetermined Regulation Limits. Regulation includes both the increase of output by a Generating Unit or System Resource (Regulation Up) and the decrease in output by a Generating Unit or System Resource (Regulation Down). Regulation Up and Regulation Down are distinct capacity products, with separately stated requirements and ASMPs in each Settlement Period. |

**SCHEDULE 2**

**OPERATIONAL CONTACT**

**CAISO:**

Transmission Dispatcher

(Folsom):

Transmission Dispatcher

(Alhambra):

Shift Supervisor:

Director of Grid Operations:

City/State/Zip Code

Other CAISO Dispatch Operations Phones:

Generation Dispatcher

(Folsom)

Generation Dispatcher

(Alhambra)

**DYNAMIC SCHEDULING HOST BALANCING AUTHORITY**

**OPERATING AGREEMENT**

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

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

and

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

The Host Balancing Authority and the CAISO are hereinafter referred to as the "Parties".

**Whereas:**

**A.** The Parties named above operate Balancing Authority Areas.

**B.** The Parties wish to coordinate operation of dynamic scheduling functionality to satisfy North American Electric Reliability Corporation ("NERC") and Western Electricity Coordinating Council ("WECC") standards and criteria and Good Utility Practice.

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

**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 Balancing Authority's Balancing Authority Area to the CAISO Balancing Authority Area.

**E.** The CAISO 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:

**SCHEDULE 1**

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

**OPERATIONAL CONTACT**

**CAISO:**

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 Supervisor: _____

Control Room Fax: _____

Outage Coordination: _____
Fax: _____

Director of Grid Operations: _____

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

## SCHEDULE 3

## OPERATIONAL CONTACTS

**CAISO:**

Transmission Dispatcher (Folsom): _____

Transmission Dispatcher (Alhambra): _____

Generator Dispatcher: (Folsom-Primary) _____

Generator Dispatcher: (Alhambra-Backup) _____

Real Time Scheduler: (Folsom) _____

Real Time Scheduler: (Alhambra) _____

Pre Scheduler: _____

Shift Supervisor: _____

Control Room fax: _____

Outage Coordination: _____

Fax: _____

Director of Grid Operations: _____

**SUDC:**

Name of Operations Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email address: _____

Phone: _____

Fax: _____

Name of Alternative Representative: _____

Title: _____

Email address: _____

Phone: _____

Fax: _____

(2) CAISO Financing Costs include:

(a) For any fiscal year, scheduled principal and interest payments, sinking fund payments related to balloon maturities, repayment of commercial paper notes, net payments required pursuant to a payment obligation, or payments due on any CAISO notes. This amount includes the current year accrued principal and interest payments due in the first one hundred twenty (120) days of the following year.

(b) The debt service coverage requirement, which is a percentage of the senior lien debt service, i.e., all debt service that has a first lien on CAISO net operating revenues. The coverage requirement is twenty-five percent (25%), unless otherwise specified by the rate covenants of the official statements for each CAISO bond offering.

(3) CAISO Other Costs and Revenues include:

(a) Interest earnings (USoA 419) on CAISO Operating and Capital Reserves Account balances, excluding interest on bond or note proceeds specifically designated for capital projects or capitalized interest.

(b) Miscellaneous revenues (USoA 421 and 456 subaccounts), including but not limited to Scheduling Coordinator application and training fees, and fines assessed and collected by the CAISO.

(c) Other interest expenses (USoA 431) not provided for elsewhere.

(4) CAISO Operating and Capital Reserves Costs include:

(a) The projected CAISO Operating and Capital Reserves Account balance for December 31 of the prior year less the reserve requirement. If such amount is negative, the amount may be divided by two, so that the reserve is replenished within a two-year period. The reserve requirement is fifteen percent (15%) of annual CAISO Operating Costs, unless otherwise specified by (1) the rate covenants of the official statements for each CAISO bond offering, (2) the CAISO Governing Board or (3) the FERC.

(b) Funding from current year revenues for approved capital and projects initiated in the fiscal year.

A separate revenue requirement shall be established for each component of the Grid Management Charge by developing the revenue requirement for the CAISO as a whole and then assigning such costs to the service categories using the allocation factors provided in Appendix F, Schedule 1, Part E.

**4.2** Dedicated dual redundant communications links between the CAISO's EMS and the Host Balancing Authority Area EMS are required.

**4.3** 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 Balancing Authority Area EMS and the CAISO Balancing Authority Area EMS on separate physical paths and devices.

**4.4** Dedicated dual redundant communications links between the Host Balancing Authority Area EMS and every Intermediary Balancing Authority Area EMS are required.

**4.5** The Balancing Authority Area hosting a Dynamic System Resource must have a mechanism implemented to override the associated dynamic signal.

**4.6** The dynamic signal must be properly incorporated into all involved Balancing Authority Areas' ACE equations.

**4.7** The System Resource must have communications links with the Host Balancing Authority Area consistent with this Appendix X.

## 5 LIMITS ON DYNAMIC IMPORTS

**5.1** The CAISO reserves the right to establish limits applicable to the amount of any Ancillary Services and/or Energy imported into the CAISO Balancing Authority 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 CAISO Balancing Authority Area requirements; a percentage at, or a specific import limit applicable to, a particular Scheduling Point or a Transmission Interface; a percentage of, or a specific import limit applicable to, total requirements in a specific Ancillary Service Region; 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.

**5.2** The CAISO may, at its discretion, either limit or forego procuring Ancillary Services at particular Balancing Authority Area Scheduling Points to ensure that Operating Reserves are adequately dispersed throughout the CAISO Balancing Authority Area as required by Applicable Reliability Criteria.

**5.3** A Dynamic System Resource and its Dynamic Schedules must be permanently associated with a particular CAISO Scheduling Point (the CAISO may, from time to time and at its discretion, allow for a change in such pre-established association of the Dynamic System Resource with a particular CAISO Scheduling Point).

## 6 OPERATING AND SCHEDULING REQUIREMENTS

**6.1** For any Operating Hour for which Energy and/or Ancillary Services (and associated Energy) is scheduled dynamically to the CAISO 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 CAISO Balancing Authority Area.

**6.2** All Dynamic Schedules associated with newly implemented Dynamic System Resources must be electronically tagged (by use of an E-Tag).

**6.3** Formal inter-Balancing Authority Area Dynamic Schedules may be issued only by the Dynamic System Resource's Host Balancing Authority Area and must be routed through the EMSs of all Intermediary Balancing Authority Areas (such schedules would be considered "wheel-through" schedules by Intermediary Balancing Authority Areas).

**6.4** The CAISO will treat dynamically scheduled Energy as a resource contingent firm import. The CAISO will procure (or allow for self-provision of) Operating Reserves for Loads served by Dynamic System Resources as required by Applicable Reliability Criteria.

**6.5** All Energy Interchange Schedules associated with dynamically scheduled imports of Spinning Reserve and Non-Spinning Reserve will be afforded similar treatment (i.e., resource contingent firm).

**6.6** The dynamic signal must be integrated over time by the Host Balancing Authority Area for every Operating Hour.

**6.7** Notwithstanding any Dispatches of the System Resource in accordance with the CAISO Tariff, the CAISO shall have the right to issue operating orders to the System Resource either directly or through the Host Balancing Authority Area for emergency or contingency reasons, or to ensure the CAISO'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 CAISO-accepted Energy and Ancillary Services, Bids for a given Operating Hour (or the applicable "sub-hour" interval).

**6.8** If there is no Dynamic Schedule in the CAISO's Day-Ahead Market, or HASP/RTM the dynamic signal must be at "zero" ("0") except when in response to CAISO's Dispatch Instructions associated with accepted Ancillary Services Bids.

**6.9** The Scheduling Coordinator of the Dynamic System Resource must have the ability to override the associated Dynamic Schedule in order to respond to the operating orders of the CAISO or the Host Balancing Authority.

**6.10** Unless the Dynamic System Resource (1) is implemented as a directly-telemetered Load following functionality, (2) is base-loaded Regulatory Must-Take Generation, or (3) responds to a CAISO 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 CAISO does not provide any special Settlements treatment nor offer any CAISO Tariff exemptions for dynamic Load following functionalities.

**Attachment D - Blacklines**

**WECC Reliability Coordinator Status and Operating Reserve Requirements**

**4th Replacement Tariff (MRTU)**

**October 29, 2008**

* * *

**4.5.4.3 Dynamic Scheduling.**

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

* * *

**7.2 Operating Reliability Criteria.**

The CAISO shall exercise Operational Control over the CAISO Controlled Grid in compliance with all Applicable Reliability Criteria and Operating Procedures. ~~The Applicable Reliability Criteria are the standards established by NERC, WECC and Local Reliability Criteria and include the requirements of the Nuclear Regulatory Commission (NRC) all as modified from time to time.~~

~~**7.2.1 Reliability Coordinator.**~~

~~The CAISO shall be the WECC Reliability Coordinator for the CAISO Controlled Grid. As Reliability Coordinator, the CAISO, in conjunction with the other WECC Reliability Coordinators, will be responsible for the stable and reliable operation of the Western Interconnection in accordance with the WECC Regional Security Plan.~~

~~As Reliability Coordinator, the CAISO may direct activities as appropriate to curtail Schedules, dispatch Generation or impose transfer limitations as necessary to relieve grid Congestion, mitigate potential overloads or eliminate operation outside of existing Nomogram criteria.~~

~~**7.2.2 Authority of the CAISO as a WECC Reliability Coordinator.**~~

~~As a the Reliability Coordinator, the CAISO shall have all the authority prescribed to such entities by the WECC, as amended from time to time, that shall including but not be limited to the following:~~

~~(a) The Reliability Coordinator has the final authority to direct operations before, during and after problems or disturbances that have regional impacts. The WECC Security Monitoring plans include collaboration with sub-regional Reliability Coordinators and Balancing Authorities to determine actions for anticipated problems. If there is insufficient time, or mutual concurrence is not reached, the Reliability Coordinator is authorized to direct actions and the Balancing Authorities must comply.~~

~~(b) In the event of any situation occurring which is outside those problems already identified in the list of known problems, the Reliability Coordinator shall have the responsibility and authority to implement whatever measures are necessary to maintain System Reliability. Those actions include but are not limited to; Interchange curtailment, Generation Dispatch adjustment (real power, reactive power and voltage), transmission configuration adjustments, Special Protection System activation, Load curtailment and any other action deemed necessary to maintain System Reliability.~~

~~(c) The Reliability Coordinator shall also have the responsibility and authority to take action in its WECC sub-region for problems in another sub-region that it may help resolve. This must be accomplished at the request of and in coordination with the Reliability Coordinators of the other WECC sub-regions.~~

* * *

**7.3.3 NAESB Standards.**

The following standards of the Wholesale Electric Quadrant (WEQ) of the North American Energy Standards Board (NAESB) are incorporated by reference:

~~•Coordinate Interchange (WEQ-004, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Purpose, Applicability, and Standards 004-0 through 004-13, and 004-A through 004-D;~~

~~•Area Control Error (ACE) Equation Special Cases Standards (WEQ-005, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Purpose, Applicability, and Standards 005-0 through 005-3.1.3, and 005-A;~~

~~•Inadvertent Interchange Payback (WEQ-007, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Purpose, Applicability, and Standards 007-0 through 007-2, and 007-A; and~~

~~•Manual Time Error Correction – Time Error Initiation (WEQ-006-4, Version 000, with minor corrections applied on October 17, 2206).~~

- Coordinate Interchange (WEQ-004, Version 001, October 31, 2007, with minor corrections applied on Nov. 16, 2007) including Purpose, Applicability, and Standards 004-0.1 through 004-17.2, and 004-A through 004-D;
- Area Control Error (ACE) Equation Special Cases Standards (WEQ-005, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Purpose, Applicability, and Standards 005-0.1 through 005-3.1.3, and 005-A;
- Manual Time Error Correction (WEQ-006, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Purpose, Applicability, and Standards 006-0.1 through 006-12;
- Inadvertent Interchange Payback (WEQ-007, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Purpose, Applicability, and

Standards 007-0.1 through 007-2, and 007-A;

- Gas/Electric Coordination (WEQ-011, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Standards 011-0.1 through 011-1.6; and
- Public Key Infrastructure (PKI) (WEQ-012, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Recommended Standard, Certification, Scope, Commitment to Open Standards, and Standards 012-0.1 through 012-1.26.5.

~~The CAISO has obtained a waiver of the following NAESB WEQ standards:~~

- ~~Business Practices for Open Access Same-Time Information Systems (OASIS) (WEQ-001, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Standards 001-0.2 through 001-0.8, 001-2.0 through 001-9.6.2, 001-9.8 through 001-10.8.6, and Examples 001-8.3-A, 001-9.2-A, 001-10.2-A, 001-9.3-A, 001-10.3-A, 001-9.4.1-A, 001-10.4.1-A, 001-9.4.2-A, 001-10.4.2-A, 001-9.5-A, 001-10.5-A, 001-9.5.1-A, and 001-10.5.1-A;~~
- ~~Business Practices for Open Access Same-Time Information Systems (OASIS) Standards & Communication Protocols (WEQ-002, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Standards 002-1 through 002-5.10; and~~
- ~~Open Access Same-Time Information Systems (OASIS) Data Dictionary (WEQ-003, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Standard 003-0.~~

~~WECC has obtained a waiver of the following NAESB WEQ standard on its own behalf and on behalf of the Balancing Authority Areas in the Western Interconnection, including the CAISO:~~

~~•Manual Time Error Correction (WEQ-006, Version 000, January 15, 2005, with minor corrections applied on March 25, 2005, and additional numbering added October 3, 2005) including Purpose, Applicability, and Standards 006-0 through 006-12.~~

The CAISO has applied for a waiver of the following NAESB WEQ standards:

- Business Practices for Open Access Same-Time Information Systems (OASIS), Version 1.4 (WEQ-001, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Standards 001-0.2 through 001-0.8, 001-0.14 through 001-0.20, 001-2.0 through 001-9.6.2, 001-9.8 through 001-12.5.2, and 001-A and 001-B;
- Business Practices for Open Access Same-Time Information Systems (OASIS) Standards & Communication Protocols, Version 1.4 (WEQ-002, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Standards 002-0.1 through 002-5.10;
- Open Access Same-Time Information Systems (OASIS) Data Dictionary, Version 1.4 (WEQ-003, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Standard 003-0;
- Transmission Loading Relief – Eastern Interconnection (WEQ-008, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Purpose, Applicability, and Standards 008-0.1 through 008-3.11.2.8, and 008-A through 008-D; and
- Business Practices for Open Access Same-Time Information Systems (OASIS) Implementation Guide, Version 1.4 (WEQ-013, Version 001, Oct. 31, 2007, with minor corrections applied on Nov. 16, 2007) including Introduction and Standards 013-0.1 through 013-4.2.

* * *

**8.1 Scope.**

The CAISO shall be responsible for ensuring that there are sufficient Ancillary Services available to maintain the reliability of the CAISO Controlled Grid consistent with Applicable Reliability Criteria~~WECC and NERC Reliability Standards, WECC Reliability Criteria, and other WECC and NERC criteria~~. The CAISO's Ancillary Services requirements may be self-provided by Scheduling Coordinators as further provided in the Business Practice Manuals. Those Ancillary Services which the CAISO requires to be available but which are not being self-provided will be competitively procured by the CAISO from Scheduling Coordinators in the Day-Ahead Market, the Hour-Ahead Scheduling Process (the hourly HASP Ancillary Service Awards) and the RTM consistent with Section 8.3. The provision of Ancillary Services from the Interties with interconnected Balancing Authority Areas is limited to Ancillary Services bid into the competitive procurement processes in the IFM, HASP and RTM. The CAISO will not accept Submissions to Self-Provide Ancillary Services that are imports to the CAISO Balancing Authority Area over the Interties with interconnected Balancing Authority Areas, except from Dynamic System Resources certified to provide Ancillary Services or if provided pursuant to ETCs, TORs or Converted Rights. The CAISO will calculate payments for Ancillary Services supplied by Scheduling Coordinators and charge the cost of Ancillary Services to Scheduling Coordinators based on their Ancillary Service Obligations.

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

These services will be procured as stated in Section 8.3.5. Bids for Non-Spinning Reserve may be submitted by Scheduling Coordinators for Curtailable Demand as well as for Generation. Bids for Regulation, Spinning Reserve, Non-Spinning Reserve, and Voltage Support may be submitted by a Scheduling Coordinator for other non-generation resources that are capable of providing the specific service and that meet applicable Ancillary Service standards and technical requirements, as set forth in Sections 8.1 through 8.4, and are certified by the CAISO to provide Ancillary Services. The provision of Regulation, Spinning Reserve, Non-Spinning Reserve, and Voltage Support by other non-generation resources is subject to the same requirements applicable to other providers of these Ancillary Services, as set forth in Sections 8.5 through 8.11. Identification of specific services in this CAISO Tariff shall not preclude development of additional interconnected operation services over time. The CAISO and Market

Participants will seek to develop additional categories of these unbundled services over time as the operation of the CAISO Controlled Grid matures or as required by regulatory authorities.

* * *

**8.2.1 Determination of Ancillary Service Standards.**

The CAISO shall set the required standard for each Ancillary Service necessary to maintain the reliable operation of the CAISO Controlled Grid. Ancillary Services standards shall meet ~~be based on~~ Applicable Reliability Criteria ~~WECC Minimum Operating Reliability Criteria (MORC), NERC and CAISO Controlled Grid reliability requirements. The CAISO, in conjunction with the relevant reliability council (WECC), shall develop these Ancillary Services standards to determine reasonableness, cost effectiveness, and adherence to NERC and WECC standards.~~ The standards developed by the CAISO shall be used as a basis for determining the quantity and type of each Ancillary Service which the CAISO requires to be available. These requirements and standards apply to all Ancillary Services whether self-provided or procured by the CAISO.

* * *

**8.2.2 Time-frame For Revising Ancillary Service Standards.**

The CAISO shall periodically undertake a review of the CAISO Controlled Grid operation to determine any revision to the Ancillary Services standards to be used in the CAISO Balancing Authority Area. At a minimum the CAISO shall conduct such reviews to accommodate revisions to Applicable Reliability Criteria~~WECC and NERC standards~~. The CAISO may adjust the Ancillary Services standards temporarily to take into account, among other things variations in system conditions, Real-Time Dispatch constraints, contingencies, and voltage and dynamic stability assessments. Where practicable, the CAISO will provide notice, via the CAISO Website, of any temporary adjustments to Ancillary Service standards by 6:00 p.m. two (2) days ahead of the Operating Day to which the adjustment will apply. Periodic reviews by the CAISO may include, but are not limited to: (a) analysis of the deviation between actual and forecast Demand; (b) analysis of patterns of unplanned Generating Unit Outages; (c) analysis of compliance with Applicable Reliability Criteria ~~NERC and WECC criteria and Reliability Standards~~; (d) analysis of operation during system disturbances; (e) analysis of patterns of shortfalls between Day-

Ahead Schedules and actual Generation and Demand; and (f) analysis of patterns of unplanned transmission Outages.

* * *

**8.2.3.1 Regulation Service.**

The CAISO shall maintain sufficient Generating Units immediately responsive to AGC in order to provide sufficient Regulation service to allow the CAISO Balancing Authority Area to meet Applicable Reliability Criteria~~WECC and NERC control performance criteria~~ by continuously balancing Generation to meet deviations between actual and scheduled Demand and to maintain Interchange Schedules. The quantity of Regulation Down and Regulation Up capacity needed for each Settlement Period of the Day-Ahead Market and the HASP, and in each fifteen (15) minute period in Real-Time shall be determined by the CAISO as a percentage of the applicable CAISO Forecast of CAISO Demand for the Day-Ahead, HASP, and Real-Time Markets. The CAISO's determination is based upon its need to meet Applicable Reliability Criteria~~the WECC and NERC control performance criteria~~.

The CAISO will publish on OASIS the estimated quantity, or the percentage used to determine the estimated quantity, of Regulation Reserves required for each hour of the Day-Ahead Market, each hour in the HASP, and in each fifteen (15) minute period in Real-Time for the Trading Day.

**8.2.3.2 Spinning and Non-Spinning Reserves.**

The CAISO shall maintain minimum contingency Operating Reserve made up of Spinning Reserve and Non-Spinning Reserve in accordance with Applicable Reliability Criteria~~WECC MORC criteria equal to (a) five percent (5%) of the Demand to be met by Generation from hydroelectric resources (excluding the Demand covered by firm purchases from outside the CAISO Balancing Authority Area) plus seven percent (7%) of the Demand to be met by Generation from other resources (excluding the Demand covered by firm purchases from outside the CAISO Balancing Authority Area), or (b) the single largest Contingency, if this is greater~~. The CAISO from time to time may determine to use more stringent criteria. ~~In determining the procurement of Operating Reserves, the CAISO will estimate the amount of Operating Reserves associated with firm imports of Energy and will include such estimates in determining the amount of Operating Reserves to be procured in the IFM and HASP and the scheduled imports in~~

~~RTM. The Spinning Reserve component of Operating Reserve shall be no less than one-half the Operating Reserve required for each Settlement Period of the Day-Ahead Market, each hour in the HASP, and in each fifteen (15) minute period in Real-Time. When the level of Operating Reserve is determined by Demand, the CAISO shall not maintain Operating Reserve with respect to Demand covered by firm purchases from outside the CAISO Balancing Authority Area. In determining its Operating Reserve requirements, the CAISO will estimate the amount of Operating Reserves associated with firm imports of Energy and will include such estimates in determining the Operating Reserve requirements in the IFM, HASP, and RTM. In addition, the CAISO shall maintain Operating Reserve equal to the total amount of: (i) Demand covered by Interruptible Imports scheduled by Scheduling Coordinators for any hour and, (ii) on-demand obligations of Scheduling Coordinators (i.e., the demand obligations to other entities or Balancing Authority Areas that the Scheduling Coordinator is to provide from resources within the CAISO Controlled Grid). Such additional Operating Reserve is the responsibility of the Scheduling Coordinator either scheduling Interruptible Imports or with on-demand obligations and such additional Operating Reserve must be self-provided from the CAISO by Scheduling Coordinators from generation capacity that for the Operating Hour in question has not been paid a RUC Availability Payment, has not received an RMR Dispatch, and is not satisfying a Resource Adequacy Capacity obligation to serve CAISO Balancing Authority Area Load. The specific resource self providing the additional Operating Reserve must have sufficient unloaded capacity available based on Energy and Ancillary Service Schedules in HASP. When the on-demand obligation is called upon to deliver Energy, the CAISO will schedule such Energy and also simultaneously Dispatch the identified resource supporting the on-demand obligation for the same quantity of Energy. Operating Reserves includes both Spinning and Non-Spinning Reserves.~~

* * *

**8.2.3.3 Voltage Support.**

The CAISO shall determine on an hourly basis for each day the quantity and location of Voltage Support required to maintain voltage levels and reactive margins within Applicable Reliability Criteria ~~WECC and NERC criteria~~ using a power flow study based on the quantity and location of scheduled Demand. The CAISO shall issue daily voltage schedules (Dispatch Instructions) to Participating Generators,

Participating TOs and UDCs, which are required to be maintained for CAISO Controlled Grid reliability. All other Generating Units shall comply with the power factor requirements set forth in contractual arrangements in effect on the CAISO Operations Date, or, if no such contractual arrangements exist and the Generating Unit exists within the system of a Participating TO, the power factor requirements applicable under the Participating TO's TO Tariff or other tariff on file with the FERC.

All Participating Generators shall maintain the CAISO specified voltage schedule at the transmission interconnection points to the extent possible while operating within the power factor range specified in their interconnection agreements or, for Regulatory Must-Take Generation, Regulatory Must-Run Generation and Reliability Must-Run Generation, consistent with existing obligations. For Generating Units that do not operate under one of these agreements, the minimum power factor range will be within a band of 0.90 lag (producing VARs) and 0.95 lead (absorbing VARs) power factors. Participating Generators with Generating Units existing at the CAISO Operations Date that are unable to meet this operating power factor requirement may apply to the CAISO for an exemption. Prior to granting such an exemption, the CAISO shall require the Participating TO or UDC to whose system the relevant Generating Units are interconnected to notify it of the existing contractual requirements for Voltage Support established prior to the CAISO Operations Date for such Generating Units. Such requirements may be contained in CPUC Electric Rule 21 or the Interconnection Agreement with the Participating TO or UDC. The CAISO shall not grant any exemption under this Section from such existing contractual requirements. The CAISO shall be entitled to instruct Participating Generators to operate their Generating Units at specified points within their power factor ranges. Participating Generators shall receive no compensation for operating within these specified ranges.

If the CAISO requires additional Voltage Support, it shall procure this either through Reliability Must-Run Contracts or, if no other more economic sources are available**,** by instructing a Generating Unit to move its MVar output outside its mandatory range. Only if the Generating Unit must reduce its MW output in order to comply with such an instruction will it be compensated in accordance with Section 8.5.6.2.

All Loads directly connected to the CAISO Controlled Grid shall maintain reactive flow at grid interface points within a specified power factor band of 0.97 lag to 0.99 lead. Loads shall not be compensated for the service of maintaining the power factor at required levels within the bandwidth. A UDC

interconnecting with the CAISO Controlled Grid at any point other than a Scheduling Point shall be subject to the same power factor requirement.

The power factor for both the Generating Units and Loads shall be measured at the interconnection point with the CAISO Controlled Grid. The CAISO will develop and will be authorized to levy penalties against Participating Generators, UDCs or Loads whose Voltage Support does not comply with the CAISO's requirements. The CAISO will establish voltage control standards with UDCs and the operators of other Balancing Authority Areas and will enter into operational agreements providing for the coordination of actions in the event of a voltage problem occurring.

Wheeling Through and Wheeling Out transactions may also be subject to a reactive charge as developed by the CAISO. If the CAISO shall determine that a reactive charge should be payable at a future date, it shall, subject to FERC acceptance and approval, publish annually the Voltage Support obligations and applicable charges for Wheeling Through and Wheeling Out transactions at Scheduling Points. The obligations shall be predetermined by the CAISO based on the estimated amount of the Wheeling Through and Wheeling Out transactions each year.

* * *

**8.3.3.1 Use of Ancillary Service Regions and Ancillary Service Regional Limits.**

Within the Expanded System Region, the System Region, and the Sub-Regions, the CAISO may establish limits on the amount of Ancillary Services that can be provided from each region or can be provided within each region. When used, these Ancillary Service Regional Limits identify either a maximum or a minimum (or both a maximum and a minimum) amount of Ancillary Services to be obtained within the region. The minimum Ancillary Service limit in the Expanded System Region shall be the quantities of each Ancillary Service required to meet Applicable Reliability Criteria~~the WECC and NERC requirements~~ for the CAISO Balancing Authority Area. The CAISO may establish a restriction on the amount of Ancillary Services to be procured from outside the CAISO Balancing Authority Area by establishing a minimum limit for the System Region.

* * *

**8.3.7.1 Requirement for Imports of Spinning or Non-Spinning Reserves.**

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

**8.3.7.2 Requirement for Imports of Regulation.**

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

* * *

**20.4 Disclosure.**

Notwithstanding anything in this Section 20 to the contrary,

(a) The CAISO: (i) shall publish individual Bids, provided that such data are published no sooner than six (6) months after the Trading Day with respect to which the Bid was submitted and in a manner that does not reveal the specific

resource or the name of the Scheduling Coordinator submitting the Bid, but that allows the bidding behavior of individual, unidentified resources and Scheduling Coordinators to be tracked over time; and (ii) may publish data sets analyzed in any public report issued by the CAISO or by the Market Surveillance Committee, provided that such data sets shall be published no sooner than six (6) months after the latest Trading Day to which data in the data set apply, and in a manner that does not reveal any specific resource or the name of any Scheduling Coordinator submitting Bids included in such data sets.

(b) If the CAISO is required by applicable laws or regulations, or in the course of administrative or judicial proceedings, to disclose information that is otherwise required to be maintained in confidence pursuant to this Section 20, the CAISO may disclose such information; provided, however, that as soon as the CAISO learns of the disclosure requirement and prior to making such disclosure, the CAISO shall notify any affected Market Participant of the requirement and the terms thereof. The Market Participant may, at its sole discretion and own cost, direct any challenge to or defense against the disclosure requirement and the CAISO shall cooperate with such affected Market Participant to the maximum extent practicable to minimize the disclosure of the information consistent with applicable law. The CAISO shall cooperate with the affected Market Participant to obtain proprietary or confidential treatment of confidential information by the person to whom such information is disclosed prior to any such disclosure.

(c) The CAISO may disclose confidential or commercially sensitive information, without notice to an affected Market Participant, in the following circumstances:

(i) If the FERC, or its staff, during the course of an investigation or otherwise, requests information that is confidential or commercially sensitive. In providing the information to FERC or its staff, the CAISO shall take action consistent with 18 C.F.R. §§ 1b.20 and 388.112, and request that the information be treated as confidential and non-public by

the FERC and its staff and that the information be withheld from public disclosure. The CAISO shall provide the requested information to the FERC or its staff within the time provided for in the request for information. The CAISO shall notify an affected Market Participant within a reasonable time after the CAISO is notified by FERC or its staff that a request for disclosure of, or decision to disclose, the confidential or commercially sensitive information has been received, at which time the CAISO and the affected Market Participant may respond before such information would be made public; or

(ii) In order to maintain reliable operation of the CAISO Control Area, the CAISO may share critical operating information, system models, and planning data with ~~other~~ the WECC Reliability Coordinator~~s~~ that~~, who~~ ha~~s~~~~ve~~ executed the Western Electricity Coordinating Council Confidentiality Agreement for Electric System Data, or ~~are~~ is subject to similar confidentiality requirements; or

(iii) In order to maintain reliable operation of the CAISO Control Area, the CAISO may share individual Generating Unit Outage information with the operations engineering and the outage coordination division(s) of other Balancing Authorities, Participating TOs, MSS Operators and other transmission system operators engaged in the operation and maintenance of the electric supply system whose system is significantly affected by the Generating Unit and who have executed the Western Electricity Coordinating Council Confidentiality Agreement for Electric System Data.

(d) Notwithstanding the provisions of Section 20.2(e), information submitted through Resource Adequacy Plans and Supply Plans in accordance with Section 40 may be provided to:

(i) the Scheduling Coordinator(s) and/or Market Participant(s) involved in a dispute or discrepancy as to whether a resource is properly identified in a Resource Adequacy Plan or a Supply Plan only to the limited extent necessary to identify the disputed transaction and the relevant counterparty or counterparties.

(ii) the regulatory entity, whether the CPUC, other Local Regulatory Authority, or federal agency, with jurisdiction over a Load Serving Entity involved in a dispute or discrepancy as to whether a resource is properly identified in a Resource Adequacy Plan or the Supply Plan, or otherwise identified by the CAISO as exhibiting a potential deficiency in demonstrating compliance with resource adequacy requirements adopted by the CPUC, other Local Regulatory Authority, or federal agency, as applicable. The information provided shall be limited to the particular dispute, discrepancy, or deficiency.

(iii) the California Energy Commission with respect to Demand Forecast information provided to the CAISO under Sections 40.2.2.3 and 40.2.3.3(b) to the extent the CAISO seeks, and the California Energy Commission grants, confidential treatment of such information pursuant to California Public Resources Code Section 25322 and related regulations.

(e) Notwithstanding the provisions of Section 20.2(f), information submitted through the Transmission Planning Process may be disclosed as follows:

(i) Critical Energy Infrastructure Information may be provided to a requestor where such person is employed or designated by a Market Participant or electric utility regulatory agency within California to receive CEII, the requestor submits a statement as to the need for the CEII, and the requestor executes and returns to the CAISO the form of the non-disclosure agreement and non-disclosure statement included as part of

the Business Practice Manual. The CAISO may, at its sole discretion, reject a request for CEII and upon such rejection, the requestor will be directed to utilize the FERC procedures for access to the requested CEII.

(ii) Information that is confidential under Section 20.2(f)(i) or 20.2.(f)(ii) may be disclosed to any individual designated by a Market Participant, electric utility regulatory agency within California, or other stakeholder that signs and returns to the CAISO the form of the non-disclosure agreement, nondisclosure statement and certification that the individual is or represents a non-Market Participant, which is any person or entity not involved in a marketing, sales, or brokering function as market, sales, or brokering are defined in FERC's Standards of Conduct for Transmission Providers (18 C.F.R. § 358 et seq.), included as part of the Business Practice Manual; and

(iii) Data base and other transmission planning information obtained from the WECC, or its successor, may be disclosed to individuals designated by a Market Participant, electric utility regulatory agency within California, or other stakeholder in accordance with the procedures set forth in the Business Practice Manual.

Nothing in this Section 20 shall limit the ability of the CAISO to aggregate data for public release about the adequacy of supply.

* * *

**34.2.2 Real-Time Ancillary Services Procurement.**

If the CAISO determines that additional Ancillary Services are required, other than those procured in the DAM and the HASP, the RTUC will procure Ancillary Services on a fifteen-minute basis as necessary to meet reliability requirements and will determine Real-Time Ancillary Service interval ASMPs for such AS for the next Commitment Period. All Operating Reserves procured in the RTM are considered Contingency Only Operating Reserves. Any Ancillary Service awarded in RTUC will be taken as fixed for

the three five-minute RTD intervals of its target fifteen-minute interval. In the RTUC, all resources certified and capable of providing Operating Reserves that have submitted Real-Time Energy Bids shall also submit applicable Spinning or Non-Spinning Reserves Bids, respectively, depending on whether the resource is online or offline. The CAISO will utilize the RTUC to procure Operating Reserves to restore its Operating Reserve requirements in cases when: (1) Operating Reserves awarded in DAM or HASP have been dispatched to provide Energy, (2) resource(s) awarded to provide Operating Reserves in the DAM or HASP are no longer capable of providing such awarded Operating Reserves, or (3) the Operator determines that additional Operating Reserves are necessary to maintain Operating Reserves within Applicable Reliability Criteria~~WECC/MORC criteria~~. The CAISO will utilize the RTUC to procure additional Regulation capacity in Real-Time in cases when: (1) resource(s) awarded to provide Regulation in the DAM or HASP are no longer capable of providing such awarded Regulation, or (2) the Operator determines that additional Regulation is necessary to maintain sufficient control consistent with Applicable Reliability Criteria~~NERC/WECC criteria~~ and Good Utility Practice.

* * *

**34.8 Dispatch of Energy From Ancillary Services.**

The CAISO may issue Dispatch Instructions to Participating Generators, Participating Loads, System Units and System Resources contracted to provide Ancillary Services (either procured through the CAISO Markets, Self-Provided by Scheduling Coordinators, or dispatched in accordance with the RMR Contract) for the Supply of Energy. During normal operating conditions, the CAISO shall Dispatch those Participating Generators, Participating Loads, System Units and System Resources that have contracted to provide Spinning and Non-Spinning Reserve, except for those reserves designated as Contingency Only, in conjunction with the normal Dispatch of Energy. Contingency Only reserves are Operating Reserve capacity that have been designated, either by the Scheduling Coordinator or the CAISO, as available to supply Energy in the Real-Time only in the event of the occurrence of an unplanned Outage, a Contingency or an imminent or actual System Emergency. The CAISO may designate any reserve not previously identified as Contingency Only by Scheduling Coordinator as Contingency Only reserves, as necessary to maintain Applicable Reliability Criteria~~WECC MORC requirements~~. In the event of an unplanned Outage, a Contingency or a threatened or actual System Emergency, the CAISO may

dispatch Contingency Only reserves. If Contingency Only reserves are dispatched through the RTCD, which as described in Section 34.3.2, only Dispatches in the event of a Contingency. Such Dispatch and pricing will be based on the original Energy Bids. If Contingency Only reserves are dispatched in response to a System Emergency that has occurred because the CAISO has run out of Economic Bids when no Contingency event has occurred, the RTED will Dispatch such Contingency Only reserves using maximum Bid prices as provided in Section 39.6.1 as the Energy Bids for such reserves and will set prices accordingly. If a Participating Generator, Participating Load, System Unit or System Resource that is supplying Operating Reserve is dispatched to provide Energy, the CAISO shall replace the Operating Reserve as necessary to maintain Applicable Reliability Criteria~~WECC MORC criteria~~. If the CAISO uses Operating Reserve to meet Real-Time Energy requirements, and if the CAISO needs Operating Reserves to satisfy Applicable Reliability Criteria~~MORC requirements~~, the CAISO shall restore the Operating Reserves to the extent necessary to meet Applicable Reliability Criteria~~MORC requirements~~ through either the procurement of additional Operating Reserve in the RTM or the Dispatch of other Energy Bids in SCED to allow the resources that were providing Energy from the Operating Reserve to return to their Dispatch Operating Point. The Energy Bid Curve is not used by the AGC system when Dispatching Energy from Regulation. The upper portion of the resource capacity from its Regulation Limit is allocated to Regulation regardless of its Energy Bid Curve. For a resource providing Regulation Up or Operating Reserves the remaining Energy Bid Curve shall be allocated to any RTM AS Awards in the following order from higher to lower capacity where applicable: (a) Spinning Reserve; and (b) Non-Spinning Reserve. For resources providing Regulation Up, the applicable upper Regulation Limit shall be used as the basis of allocation if it is lower than the upper portion of the Energy Bid Curve. The remaining portion of the Energy Bid Curve, if there is any, shall constitute a Bid for RTM Energy.

* * *

**34.17.5 Dispatch Information To Be Supplied by Balancing Authorities.**

The CAISO and each adjacent Balancing Authority shall keep each other informed of any change or potential change in the status of the Interconnection and any changes in the Interconnection's TTC. The CAISO and each adjacent Balancing Authority shall keep each other informed of situations such as adverse weather conditions, fires, etc., that could affect the reliability of any Interconnection. ~~Each~~

~~Balancing Authority of the Balancing Authority Areas in the California area, as defined by the WECC Regional Security Plan, shall keep the CAISO informed of all information required by WECC for use by the Reliability Coordinator.~~

The CAISO and each adjacent Balancing Authority shall follow all applicable NERC and WECC scheduling procedures. This will include checking the Interconnection schedules for the next Settlement Period prior to the start of the Energy ramp going into that hour. The CAISO and each adjacent Balancing Authority shall check and agree on actual MWh net Interchange after the hour for the previous Settlement Period. One Balancing Authority Area shall change its actual number to reflect that of the other Balancing Authority Area in accordance with WECC standard procedures.

The CAISO and each adjacent Balancing Authority shall exchange MW, MVar, terminal and bus voltage data with each other on a four second update basis. MWh data for the previous hour shall be exchanged once per hour. All MW and MWh data for both the CAISO Balancing Authority Area and the adjacent Balancing Authority Areas must originate from the same metering equipment. All provisions in Sections 4.6.1.1(i) and 4.6.1.1 (ii) refer to information and data obtained from metering used for Balancing Authority Area operations and not metering used for billing and Settlement.

* * *

| | |
|---|---|
| ~~**MORC**~~ | ~~Minimum Operating Reliability Criteria~~ |

* * *

| | |
|---|---|
| **Nomogram** | A set of operating or scheduling rules which are used to ensure that simultaneous operating limits are respected, in order to meet Applicable Reliability Criteria~~NERC and WECC Reliability Standards and operating criteria~~. |

* * *

| | |
|---|---|
| **Operating Reserve** | The combination of Spinning and Non-Spinning Reserve required to meet Applicable Reliability Criteria~~WECC and NERC Reliability Standards and requirements~~ for reliable operation of the CAISO Balancing Authority Area. |

* * *

| | |
|---|---|
| **Regulation** | The service provided either by Generating Units certified by the CAISO as equipped and capable of responding to the CAISO's direct digital |

control (AGC) signals, or by System Resources that have been certified by the CAISO as capable of delivering such service to the CAISO Balancing Authority Area, in an upward and downward direction to match, on a Real-Time basis, Demand and resources, consistent with established Applicable Reliability Criteria~~NERC and WECC Reliability Standards and operating criteria~~. Regulation is used to control the Power output of electric generators within a prescribed area in response to a change in system frequency, tie line loading, or the relation of these to each other so as to maintain the target system frequency and/or the established Interchange with other Balancing Authority Areas within the predetermined Regulation Limits. Regulation includes both the increase of output by a Generating Unit or System Resource (Regulation Up) and the decrease in output by a Generating Unit or System Resource (Regulation Down). Regulation Up and Regulation Down are distinct capacity products, with separately stated requirements and ASMPs in each Settlement Period.

* * *

**CAISO TARIFF APPENDIX B.8**

**Utility Distribution Company Operating Agreement**

**SCHEDULE 2**

**OPERATIONAL CONTACT**

**CAISO:**

Transmission Dispatcher

(Folsom):

Transmission Dispatcher

(Alhambra):

Shift Supervisor:

Director of Grid Operations:

City/State/Zip Code

Other CAISO Dispatch Operations Phones:

Generation Dispatcher

(Folsom)

Generation Dispatcher

(Alhambra)

~~WECC Reliability Coordinator~~

**UDC:**

Name of Primary

Representative: _____

Name of Alternative

Representative: _____

Title: _____

Address: _____

City/State/Zip Code _____

Email address: _____

Phone: _____

Fax: _____

**CONTACTS FOR NOTICES**

**UDC**

Name of Primary
Representative: _____
Title: _____
Address: _____

City/State/Zip Code: _____
Email Address: _____
Phone: _____
Fax No: _____

Name of Alternative
Representative: _____
Title: _____
Address: _____
City/State/Zip Code: _____
Email Address: _____
Phone: _____
Fax No: _____

**CAISO**

Name of Primary
Representative: _____
Title: _____
Address: _____
City/State/Zip Code: _____
Email Address: _____
Phone: _____
Fax No: _____

Name of Alternative
Representative: _____
Title: _____
Address: _____
City/State/Zip Code: _____
Email Address: _____
Phone: _____
Fax No: _____

* * *

**CAISO TARIFF APPENDIX B.9**

**Dynamic Scheduling Host Balancing Authority Operating Agreement**

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR**

AND

**[BALANCING AUTHORITY]**

**DYNAMIC SCHEDULING HOST BALANCING AUTHORITY OPERATING AGREEMENT**

**DYNAMIC SCHEDULING HOST BALANCING AUTHORITY**

**OPERATING AGREEMENT**

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

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

and

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

The Host Balancing Authority and the CAISO are hereinafter referred to as the "Parties".

**Whereas:**

**A.** The Parties named above operate Balancing Authority Areas.

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

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

**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 Balancing Authority's Balancing Authority Area to the CAISO Balancing Authority Area.

**E.** The CAISO 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 termination by a Party, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders. The CAISO shall timely file any required notice of termination with FERC. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the filing of the notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination with FERC within sixty (60) days after issuance of the notice of termination by a Party; or (2) the CAISO files the notice of termination with FERC in accordance with the requirements of FERC Order No. 2001.

**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 Glossary of WECC Terms and Acronyms.

**2.2 Specific Definitions**

**2.2.1 CAISO Dynamic Scheduling Protocol:** The CAISO's Dynamic Scheduling Protocol, which is set forth in Appendix X of the CAISO Tariff.

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

**2.2.3 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.

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

**2.2.5 Scheduling Coordinator:** An entity certified by the CAISO for the purposes of undertaking the functions of: submitting bids or 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 CAISO's charges; and ensuring compliance with CAISO protocols.

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

## 3 General

### 3.1 Purpose

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

### 3.2 NERC/WECC Operating Standards Observed

Nothing in this Agreement is intended to change, supersede, 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 CAISO Dynamic Scheduling Protocol.

### 3.4 Communication

The CAISO and the Host Balancing Authority 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 CAISO and the Host Balancing Authority 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 CAISO and Host Balancing Authority shall establish and maintain real-time, redundant, diversely routed, communications links between the CAISO EMS and the Host Balancing Authority EMS, with the primary link utilizing the standard inter-control center communications protocol ("ICCP") in accordance with the CAISO Dynamic Scheduling Protocol 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, and/or energy associated with any of the non-regulating ancillary services to the CAISO Balancing Authority Area, the Host Balancing Authority shall provide, via the ICCP communication links to the CAISO EMS, the data for each System Resource, as set forth in the CAISO Dynamic Scheduling Protocol.

## 6. Interchange Scheduling Requirements

### 6.1 Dynamic Scheduling

The Host Balancing Authority shall support Scheduling Coordinators' requests to arrange dynamic interchange schedules for the delivery of energy to the CAISO Balancing Authority 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 Balancing Authority shall instantaneously compensate its AGC for the System Resource's energy output that is generated or allocated for establishing the dynamic schedule to the CAISO such that the System Resource energy production or allocation changes have an equal in magnitude and opposite in sign effect on the Host Balancing Authority's ACE.

**6.3 Integration of Dynamic Scheduling**

For each operating hour during which energy was dynamically scheduled for delivery to the CAISO Balancing Authority Area, the Host Balancing Authority 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 Balancing Authority 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 Balancing Authority Responsibilities**

**7.1 Operational Jurisdiction**

The Host Balancing Authority 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 Balancing Authorities.

**7.2 E-Tagging**

The Host Balancing Authority must support associated e-tagging as described in the CAISO Dynamic Scheduling Protocol and deemed to be consistent with NERC and/or WECC requirements.

**7.3 Real-Time Adjustments**

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

**7.4 Coordination with Other Balancing Authorities**

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

**8. Other**

**8.1 Losses**

The CAISO shall not be responsible for transmission losses caused by transmitting energy dynamically within or across the Host Balancing Authority's Balancing Authority Area for delivery to the CAISO.

**8.2 Certification**

Only CAISO-certified System Resource/Host Balancing Authority arrangements will be allowed to bid or self provide ancillary services in the CAISO's ancillary services market through a CAISO-certified Scheduling Coordinator.

**8.3 No Guarantee of Award**

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

**8.4 Performance Assessment**

The CAISO will monitor and measure dynamically imported ancillary services, whether bid or self-provided, against the performance benchmarks described in the CAISO Dynamic Scheduling Protocol.

**8.5 Description of System Resources**

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

**9. Notifications**

The CAISO and the Host Balancing Authority shall jointly develop methods for coordinating the notification of all affected scheduling entities within their respective Balancing Authority 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 Balancing Authority which could not be avoided through the exercise of Good Utility Practice.

Neither the CAISO nor the Host Balancing Authority 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. Neither the CAISO nor the Host Balancing Authority will be considered in default of any obligation under this Agreement to the extent caused by any act, or failure to act, of any intermediary Balancing Authority.

In the event of the occurrence of an Uncontrollable Force, which prevents either the CAISO or the Host Balancing Authority 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 CAISO and the Host

Balancing Authority 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 CAISO or the Host Balancing Authority.

### 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 unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 3 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 CAISO Tariff to the extent that applicable federal laws, regulations, and orders lawfully promulgated thereunder permit it to do so.

(b) If any provision of this 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 CAISO shall submit to the Secretary of Energy or other appropriate Departmental Secretary a report of any circumstances that would, but for this provision, have rendered a federal entity liable to indemnify any person or incur a sanction and may request the Secretary of Energy or other appropriate Departmental Secretary to take such steps as are necessary to give effect to any provisions of this 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. Nothing contained herein shall be construed as affecting in any way the right of the CAISO or the Host Balancing Authority 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; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such

modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.

**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 Balancing Authority]**

By: _____

Name: _____

Title: _____

Date: _____

**SCHEDULE 1**

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

**OPERATIONAL CONTACT**

**CAISO:**

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 Supervisor: _____

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 Balancing Authority:**
Transmission Dispatcher (Primary): _____

Transmission Dispatcher (Backup): _____

Generation Dispatcher (Primary): _____

Generation Dispatcher (Backup): _____

Real-Time Scheduler: _____

Dispatch Supervisor: _____

Outage Coordination: _____

Fax: _____

Chief Dispatcher: _____

Address: _____
_____
_____

* * *

**CAISO TARIFF APPENDIX B.10**

**Small Utility Distribution Company Operating Agreement**

**SCHEDULE 3**

**OPERATIONAL CONTACTS**

**CAISO:**

Transmission Dispatcher (Folsom): _____

Transmission Dispatcher (Alhambra): _____

Generator Dispatcher: (Folsom-Primary) _____

Generator Dispatcher: (Alhambra-Backup) _____

Real Time Scheduler: (Folsom) _____

Real Time Scheduler: (Alhambra) _____

Pre Scheduler: _____

Shift Supervisor: _____

Control Room fax: _____

Outage Coordination: _____

Fax: _____

Director of Grid Operations: _____

~~WECC Reliability Coordinator: _____~~

**SUDC:**

Name of Operations Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email address: _____

Phone: _____

Fax: _____

Name of Alternative Representative: _____

Title: _____

Email address: _____

Phone: _____

Fax: _____

**CONTACTS FOR NOTICES**

**SUDC**

Name of Primary Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

Name of Alternative Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

**CAISO**

Name of Primary Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

Name of Alternative Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

* * *

**CAISO TARIFF APPENDIX F**
**Schedule 1**

**Grid Management Charge**

**Part C – Costs Recovered through the GMC**

As provided in Section 11.22.2 of the CAISO Tariff, the Grid Management Charge includes the following costs, as projected in the CAISO's budget for the year to which the Grid Management Charge applies:

- CAISO Operating Costs;

- CAISO Other Costs and Revenues, including penalties, interest earnings and other revenues;
- CAISO Financing Costs, including debt service on CAISO Start Up and Development Costs and subsequent capital expenditures; and
- CAISO Operating and Capital Reserves Costs.

Such costs, for the CAISO as a whole, are allocated to the service charges that comprise the Grid Management Charge: (1) Core Reliability Services - Demand Charge, (2) Core Reliability Services – Energy Exports Charge, (3) Energy Transmission Services – Net Energy Charge, (4) Energy Transmission Services – Uninstructed Deviations Charge, (5) Core Reliability Services/ Energy Transmission Services – Transmission Ownership Rights Charge, (6) Forward Scheduling Charge, (7) Market Usage Charge, and (8) Settlements, Metering, and Client Relations Charge, according to the factors listed in Part E of this Schedule 1, and

**adjusted annually for:**

- any surplus revenues from the previous year as deposited in the CAISO Operating and Capital Reserves Account, or deficiency of revenues, as recorded in a memorandum account;

**divided by:**

- forecasted annual billing determinant volumes;

**adjusted quarterly for:**

- a change in the volume estimate used to calculate the individual Grid Management Charge components, if, on an annual basis, the change is five percent (5%) or $1 million, whichever is greater, from the estimated revenue collections provided in the annual informational filing.

The Grid Management Charge revenue requirement formula is as follows:

Grid Management Charge revenue requirement =

CAISO Operating Costs + CAISO Financing Costs + CAISO Other Costs and Revenues + CAISO Operating and Capital Reserves Costs,

[The “USoA” reference below is the FERC Uniform System of Accounts, and is intended to include subsequent re-numbering or re-designation of the same accounts or subaccounts.]

Where,

(1) CAISO Operating Costs include:

(a) Transmission expenses (USoA 560-574);

(b) Regional market expenses (USoA 575 subaccounts);

(c) Customer accounting expenses (USoA 901-905);

(d) Customer service and informational expenses (USoA 906-910);

(e) Sales expenses (USoA 911-917);

(f) Administrative & general expenses (USoA 920-935);

(g) Taxes other than income taxes that relate to CAISO operating income (USoA 408.1); and

(h) Miscellaneous, non-operating expenses, penalties and other deductions (USoA 426 subaccounts).

(2) CAISO Financing Costs include:

(a) For any fiscal year, scheduled principal and interest payments, sinking fund payments related to balloon maturities, repayment of commercial paper notes, net payments required pursuant to a payment obligation, or payments due on any CAISO notes. This amount includes the current year accrued principal and interest payments due in the first one hundred twenty (120) days of the following year.

(b) The debt service coverage requirement, which is a percentage of the senior lien debt service, i.e., all debt service that has a first lien on CAISO net operating revenues. The coverage requirement is twenty-five percent (25%), unless otherwise specified by the rate covenants of the official statements for each CAISO bond offering.

(3) CAISO Other Costs and Revenues include:

(a) Interest earnings (USoA 419) on CAISO Operating and Capital Reserves Account balances, excluding interest on bond or note proceeds specifically designated for capital projects or capitalized interest.

(b) Miscellaneous revenues (USoA 421 and 456 subaccounts), including but not limited to Scheduling Coordinator application and training fees, ~~WECC Reliability Coordinator reimbursements,~~ and fines assessed and collected by the CAISO.

(c) Other interest expenses (USoA 431) not provided for elsewhere.

(4) CAISO Operating and Capital Reserves Costs include:

(a) The projected CAISO Operating and Capital Reserves Account balance for December 31 of the prior year less the reserve requirement. If such amount is negative, the amount may be divided by two, so that the reserve is replenished within a two-year period. The reserve requirement is fifteen percent (15%) of annual CAISO Operating Costs, unless otherwise specified by (1) the rate covenants of the official statements for each CAISO bond offering, (2) the CAISO Governing Board or (3) the FERC.

(b) Funding from current year revenues for approved capital and projects initiated in the fiscal year.

A separate revenue requirement shall be established for each component of the Grid Management Charge by developing the revenue requirement for the CAISO as a whole and then assigning such costs to the service categories using the allocation factors provided in Appendix F, Schedule 1, Part E.

* * *

**CAISO TARIFF APPENDIX X**

**Dynamic Scheduling Protocol (DSP)**

**5.2** The CAISO may, at its discretion, either limit or forego procuring Ancillary Services at particular Balancing Authority Area Scheduling Points to ensure that Operating Reserves are adequately dispersed throughout the CAISO Balancing Authority Area as required by Applicable Reliability Criteria~~WECC Minimum Operating Reliability Criteria (MORC)~~.

*** * ***

**6.4** The CAISO will treat dynamically scheduled Energy as a resource contingent firm import. The CAISO will procure (or allow for self-provision of) ~~WECC MORC-required~~ Operating Reserves for Loads served by Dynamic System Resources as required by Applicable Reliability Criteria.

* * *

**Attachment E – September 29, 2008 Notice of Termination**

**WECC Reliability Coordinator Status and Operating Reserve Requirements**

**October 29, 2008**

Western Electricity Coordinating Council

**Louise McCarren**
Chief Executive Officer

801.582.0353
louise@wecc.biz

*Via Overnight Courier*

September 29, 2008

California Independent System Operator
Greg Tillitson
Manager of Reliability Coordination
151 Blue Ravine Rd.
Folsom, CA 95630
Telephone Number: (916) 351-2434
Facsimile Number: (916) 608-5906

**RE: Notice of Termination of the Reliability Coordination Funding Agreement between the Western Electricity Coordinating Council (WECC) and the California Independent System Operator (CAISO)**

Dear Mr. Tillitson:

In December 2007, the WECC Board of Directors approved WECC's Reliability Center Strategic Initiative. As part of that Initiative, the WECC Board approved the development of a West-wide System Model and creation of two new Reliability Coordination Centers. The WECC Board also approved the termination of the Reliability Coordination Funding Agreements with the current Reliability Center hosts, including the CAISO.

This letter provides notice to the CAISO that WECC is electing to terminate the 2004 Reliability Coordination Funding Agreement (Funding Agreement) pursuant to Section 10.1. WECC may, at its option, terminate the Funding Agreement pursuant to Section 10.1(2)(a) if WECC does not approve an annual budget that includes funding to enable the CAISO to carry out the Reliability Plan. WECC's 2009 budget does not include such funding for the CAISO.

The WECC Board recognizes the contribution of the CAISO's staff, their dedication and their role in ensuring the reliability of the Western Interconnection. WECC will comply with its obligations in connection with termination of the Funding Agreement identified in Section 10.4. If you have any questions, please do not hesitate to contact me.

Sincerely,

*Louise McCarren*

Louise McCarren

CC/