



**CITY OF LODI  
COUNCIL COMMUNICATION**

**AGENDA TITLE:** Adopt Resolution Approving the Third Amended and Restated Northern California Power Agency Metered Subsystem Aggregator Agreement and Authorizing Execution by the City Manager with Administration by the Electric Utility Director

**MEETING DATE:** November 2, 2011

**PREPARED BY:** Electric Utility Director

**RECOMMENDED ACTION:** Adopt a resolution approving the Third Amended and Restated Northern California Power Agency Metered Subsystem Aggregator Agreement and authorizing execution by the City Manager, with administration by the Electric Utility Director.

**BACKGROUND INFORMATION:** This resolution updates an agreement that originated in 2002 and has been amended from time to time with Council approval to reflect changing market conditions. Like previous amendments, this one is in required for Lodi to continue participating in the California Independent System Operator (CAISO) markets. This third amendment:

- Updates various administrative details, including changes to contract representatives and business addresses
- To the extent Lodi chooses to schedule resource specific system resources in the future, the agreement will now act as the Resource Specific System Resource Agreement between Lodi, NCPA and CAISO
- NCPA will now be able to act on behalf of Lodi, in its role as MSS aggregator, to execute any amendments to the schedules of the Amended MSSA Agreement
- Revises the process used by NCPA and CAISO to exchange operational contact information to ensure the confidentiality and security of such information
- Adjusts various settlement provisions in the Agreement to reflect structural changes to CAISO's grid management charges which will become effective on January 1, 2012
- Adds language to the Amended MSSA Agreement to clarify the classification of hour ahead settlement period self-scheduled energy from load following resources and associated operational adjustments as load following energy
- Updates various schedules in the Amended MSSA Agreement to be consistent with the CAISO's current business practices
- Adds a new resource to Schedule 14 of the agreement (High Sierra Cogeneration Aggregate)
- Adds new Schedule 14(a) which lists each of the system resources that will be recognized as load following resources
- Updates the MSSA load following deviation energy formula to include the new real time CAISO sale/purchase settlement determinate

APPROVED: \_\_\_\_\_

Konradt Bartlam, City Manager

The Metered Subsystem Aggregator Agreement, or its predecessor agreements, took the place of and acted as various agreements including, but not limited to, the Utility Distribution Company Agreement (UDC), the Participating Generator Agreement (PGA), and the Meter Service Agreement (MSA). The MSSA Agreement also contained many terms and conditions under which Lodi, through NCPA, operated, scheduled and settled transactions in the CAISO markets. NCPA acts as the metered subsystem aggregator and scheduling coordinator on behalf of Lodi and ten other NCPA Members; and therefore the MSSA Agreement also acted as the Metered Subsystem Aggregator Agreement for NCPA.

CAISO market rules are dynamic and change over time; therefore the MSSA Agreement must be updated and/or revised to remain consistent with current market rules and business practices. These rules and business practices consist of literally thousands of pages. The main document, the CAISO Tariff (California Independent System Operator Corporation Fifth Replacement Federal Energy Regulatory Commission Electric Tariff) can be found at <http://www.aiso.com/Documents/Conformed%20fifth%20replacement%20CAISO%20tariff%20as%20of%20September%209,%202011>. The CAISO business practice manuals can be found at <http://www.aiso.com/rules/Pages/BusinessPracticeManuals/Default.aspx>. Lodi, NCPA, the other NCPA members and CAISO staff have developed this Third Amended and Restated NCPA MSS Aggregator Agreement (Amended MSSA Agreement) to enhance certain settlement provisions contained in the MSSA Agreement, and to amend various sections of the MSSA Agreement to be consistent with the current market rules and business requirements.

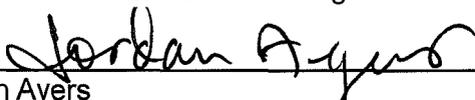
The changes included in the Amended MSSA Agreement will benefit Lodi by further enhancing Lodi's ability to perform load following, streamline the process for updating the agreement in the future, and ensure the agreement remains consistent with current market rules and business practices.

The Amended MSSA Agreement has been attached to this council communication for your reference.

A more detailed summary of the changes made in the Amended MSSA Agreement is attached for your reference.

**FISCAL IMPACT:** No significant financial impact is expected from the execution of the Third Amended and Restated NCPA Metered Subsystem Aggregator Agreement.

**FUNDING AVAILABLE:** Included in the FY 2011/12 Budget Account No. 160642.8201.

  
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Jordan Ayers  
Deputy City Manager/Internal Services Director

  
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Elizabeth A. Kirkley  
Electric Utility Director

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EAK/MF/lst

## **Third Amended and Restated NCPA MSS Aggregator Agreement**

### **Summary of Revisions**

#### Scope

The purpose of this document is to summarize revisions encompassed in the Third Amended and Restated NCPA MSS Aggregator Agreement (Agreement). The following describes changes applied to the Agreement by Section.

#### General Revisions

The following revisions are applied throughout the Agreement:

- Updated formatting, Section numbering and Section references throughout the Agreement
- Revised title of Agreement
  - o Original title – Second Amended and Restated NCPA MSS Aggregator Agreement
  - o Revised title – Third Amended and Restated NCPA MSS Aggregator Agreement
- Updated business addresses and contact information

#### Article III

The following revisions are applied in Article 3 of the Agreement:

- Section **3.3.5** (Resource Specific System Resources) – Added this new Section which will enable the Agreement to act as Lodi's Resource Specific System Resource Agreement if City elects to schedule Resource Specific System Resources in the CAISO markets at some point in the future
- Section **3.4.1** (Amendments) – Revised this Section to enable Northern California Power Agency (NCPA) to act on behalf of Lodi, to execute any amendments to the Agreement that only modify one or more schedules to the Agreement

#### Article V

The following revisions are applied in Article 5 of the Agreement:

- Section **5.4** (Single Point of Contact) – Revised this Section to clarify the process used by the Parties to exchange operational contact information

Article XII

The following revisions are applied in Article 12 of the Agreement:

- Section 12.8 (Allocation of Net RTM Bid Cost Uplift) – Revised this Section to incorporate HASP Self-scheduled Energy from load following resources and Operational Adjustments, so that such type of energy is recognized as Load Following Energy
- Section 12.9 (Grid Management Charges Based on Uninstructed Imbalance Energy) – Deleted this Section due to changes in the CAISO market rules; no longer applicable
- Section 12.10 (Grid Management Charges Based on Instructed Imbalance Energy) – Deleted this Section due to changes in the CAISO market rules; no longer applicable
- New Section 12.9 (Grid Management Charges Based on Market Services) – Added this new Section to reflect changes in Grid Management Charge rules; City exempted from Market Service Charges associated with MSS Load Following Energy and HASP Self-scheduled Energy from load following resources
- Section 12.11 (Load Following Deviation Band Compliance) – Revised this Section to incorporate HASP Self-scheduled Energy from load following resources and Operational Adjustments, so that such type of energy is recognized as Load Following Energy
- Section 12.15 (MSS Net Negative Uninstructed Deviation) – Revised this Section to incorporate HASP Self-scheduled Energy from load following resources and Operational Adjustments, so that such type of energy is recognized as Load Following Energy
- Section 12.17.3 (Emissions Costs) – Revised this Section to incorporate HASP Self-scheduled Energy from load following resources and Operational Adjustments, so that such type of energy is recognized as Load Following Energy

Schedule 1 – NCPA's System Facilities

The following revisions are applied in Schedule 1 of the Agreement:

- Points of MSS Interconnection – Updated data to reflect 2010 Normal Delivery Capability (MW), 2010 Coincident Peak Load (MW) and 2010 Non-Coincident Peak Load (MW)

Schedule 6 – Operational Contact

Schedule 6 was deleted and reserved for future use.

Schedule 11 – Emergency Action Plan

The following revisions are applied in Schedule 11 of the Agreement:

- References – Updated and deleted various operating procedure references
- Updated language throughout the Schedule to be consistent with current business practices
- Attachment A (Off-Nominal Frequency Relay Plan) – Deleted reference to the NCPA Load Tripping Plan
- Attachment C (Relocation of Dispatch Operations) – Revised Attachment C to reflect new location of the NCPA Disaster Recovery Center

Schedule 13 – Existing Contracts, Encumbrances and Transmission Ownership Rights

The following revisions are applied in Schedule 13 of the Agreement:

- South of Tesla Principles – Revised MW entitlement quantities to reflect layoffs
- COTP Terminus – Updated reference to the BANC-CAISO Adjacent Balancing Authority Operating Agreement

Schedule 14 – Generating Units and Market-Participating Loads

The following revisions are applied in Schedule 14 of the Agreement:

- Section 1 (Technical Characteristics of Generating Units) – Added a new resource; High Sierra Cogeneration Aggregate (Resource ID: PLMSSR\_6\_HISIER)
- Section 2 (Limitations) – Updated geothermal generating facility limitations based on current geothermal operating plan

Schedule 14(a) – Load Following System Resource Description

Added Schedule 14(a) to list System Resources and Resource Specific System Resources (as applicable)

Schedule 19 – MSSA Load Following Deviation Energy Formula

The following revisions are applied in Schedule 19 of the Agreement:

- MSS Load Following Deviation Energy Formula (DOPD) – Revised the calculation of RT NCPA MSS Trade; added new billing determinate RT CAISO Sale (+)/Purchase (-) to enable City to procure/sell energy from/to the CAISO real-time market if City's generation is lost due to forced outage, and in doing so remain compliant with City's load following requirements
- Revised MSS Load Following Deviation Energy Formula (DOPD) to incorporate HASP Self-Scheduled Energy from load following resources and Operational Adjustments, so that such type of energy is recognized as Load Following Energy

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**CALIFORNIA INDEPENDENT SYSTEM  
OPERATOR CORPORATION**

**AND**

**NORTHERN CALIFORNIA POWER AGENCY  
AND  
NORTHERN CALIFORNIA POWER AGENCY  
METERED SUBSYSTEM AGGREGATOR  
AGREEMENT MEMBERS**

**THIRD AMENDED AND RESTATED  
NCPA MSS AGGREGATOR AGREEMENT**

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**CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION  
AND  
NORTHERN CALIFORNIA POWER AGENCY  
AND  
NORTHERN CALIFORNIA POWER AGENCY METERED SUBSYSTEM  
AGGREGATOR AGREEMENT MEMBERS**

**THIRD AMENDED AND RESTATED  
NCPA MSS AGGREGATOR AGREEMENT**

**THIS AGREEMENT** is dated this \_\_\_\_\_ day of \_\_\_\_\_, 2011, and is entered into, by, and among:

- (1) **Northern California Power Agency**, a joint powers agency organized under the laws of the State of California, having its registered and principal place of business located at 651 Commerce Drive, Roseville, California 95678 (“NCPA”);  
  
and
- (2) **California Independent System Operator Corporation**, a California non-profit public benefit corporation having its principal place of business located in such place in the State of California as the CAISO Governing Board may from time to time designate, 250 Outcropping Way, Folsom California 95630 (the “CAISO”).  
  
and
- (3) **NCPA MSSAA Members**, the subset of NCPA MSS Members that are listed in Schedule 18.

NCPA, the CAISO and the MSSAA Members are hereinafter referred to individually as “Party” or collectively as the “Parties.”

The City of Santa Clara, California, a duly chartered city under the laws of the State of California, which does business as Silicon Valley Power (“SVP”), is a member of NCPA, but has a separate MSS Agreement with the CAISO. NCPA currently serves as Scheduling Coordinator for SVP, and some of NCPA’s functions in that capacity are addressed in this Agreement. However, SVP is not a signatory to this Agreement.

**Whereas:**

- A. NCPA and the MSS Members are engaged in, among other things, generating and transmitting electric power in Northern California, and distributing electric power in the Service Areas of the MSS Members comprising NCPA’s System,

with NCPA serving as the MSS Aggregator for the Metered Subsystem of each MSS Member;

- B.** The CAISO, a North American Electric Reliability Corporation (“NERC”) certified Balancing Authority, or a Balancing Authority certified by NERC’s successor, is engaged in, among other things, exercising Operational Control over certain electric transmission facilities forming the CAISO Controlled Grid, scheduling transactions that utilize those transmission facilities and, operating certain markets, including markets for Energy and Ancillary Services, pursuant to the terms of the CAISO Tariff, as modified from time-to-time and as accepted by the Federal Energy Regulatory Commission (“FERC”) and has certain statutory obligations under California law to maintain the reliability of the CAISO Controlled Grid, as well as certain responsibilities mandated by NERC and Western Electricity Coordinating Council (“WECC”), or their successors, to ensure the reliable operation of the entire electric grid within the CAISO Balancing Authority Area;
- C.** NCPAs System is within the CAISO Balancing Authority Area and is interconnected to the CAISO Controlled Grid;
- D.** NCPA, the MSSAA Members and SVP desire to continue to operate the generation, transmission and distribution resources of NCPAs System in an integrated manner to reliably serve the Loads of each MSSAA Member and SVP and also desire, as or through a Scheduling Coordinator, to schedule transactions using the CAISO Controlled Grid and participate in the CAISO Markets as a buyer and a seller;
- E.** The Parties are entering into this Agreement in order to establish the terms and conditions on which (1) NCPA will operate NCPAs System electric resources within the CAISO Balancing Authority Area; **(2)** NCPA will, as or through a Scheduling Coordinator, schedule transactions using the CAISO Controlled Grid and participate in the CAISO Markets; and (3) the Parties will meet their obligations under the CAISO Tariff, as such obligations may be modified by this Agreement, in connection therewith;
- F.** NCPA intends to continue to utilize NCPAs System resources, System Resources and Resource Specific System Resources to follow the Load of MSSAA Members and SVP, and to make economic resource decisions, and the intent of the Parties is that any CAISO charges will be charged to NCPAs Scheduling Coordinator based on the principle of cost causation, with due regard for historic considerations, timing and transition issues, and other relevant factors;
- G.** In order to maintain the reliability of the interconnected electric systems encompassed by the WECC, the Parties are required to comply with the NERC and WECC Reliability Standards, and the WECC RMS Agreement to the extent it

remains in effect, applicable to the functional entity types for which the Parties are registered with NERC and WECC. Should any Party fail to meet its respective obligations, such Party shall be responsible for payment of any monetary sanctions assessed against it in accordance with Section 10.4;

- H. NCPA is a specially organized agency under the Constitution of the State of California and utilizes tax-exempt financing for one or more of its projects that restricts the amount of private use of such projects; and
- I. NCPA and the MSSAA Members represent that they have a responsibility to serve their customer Loads pursuant to California Public Utilities Code Section 10005.

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

## ARTICLE I

### DEFINITIONS AND INTERPRETATION

- L1 Master Definitions Supplement.** Unless defined in the introduction or Section 1.2 of this Agreement, all terms used in this Agreement with initial capitalization shall have the same meaning as those contained in the Master Definitions Supplement to the CAISO Tariff.
- L2 Special Definitions for this Agreement.** In this Agreement, the following terms shall have the meanings set opposite them:
- “NCPA Joint Powers Agreement”** means the agreement dated July 19, 1968, as amended, entered pursuant to Chapter 5, Division 7, Title 1 of the California Government Code commencing with Section 6500 in which two or more public agencies may by this agreement jointly exercise any power common to the contracting parties.
- “NCPA’s System”** means all transmission and distribution facilities owned or controlled by NCPA and the MSS Members for whom NCPA is Scheduling Coordinator, and all Generating Units within the CAISO Balancing Authority Area owned or controlled by NCPA and the MSS Members for whom NCPA is Scheduling Coordinator. A description of the Generating Units and Points of MSS Interconnection comprising NCPA’s System is set forth in Schedule 1 and Schedule 14 of this Agreement and the SVP MSS Agreement.
- “MSS Members”** means those NCPA members who are signatories to a Metered Subsystem Agreement or to this Agreement. MSS Members are listed in Schedule 18 of this Agreement.
- “MSSAA Members”** means a specific subset of MSS Members who are signatories to this Metered Subsystem Aggregator Agreement and who have not additionally signed a separate Metered Subsystem Agreement. MSSAA Members are listed in Schedule 18 of this Agreement.
- “Point of MSS Interconnection”** means any point at which the Generating Units and Service Areas of NCPA and the MSS Members that are part of NCPA’s System are directly interconnected with the CAISO Controlled Grid or with any other portion of the interconnected electric grid in the CAISO Balancing Authority Area. The initial Points of MSS Interconnection are described in Section 4.1.
- “PG&E IA”** means the Interconnection Agreement between NCPA and Pacific Gas and Electric Company (“PG&E”) designated as First Revised Service Agreement No. 17 under PG&E FERC Electric Tariff, Sixth Revised Volume No. 5, as it may be amended from time to time.

“**Settlement Agreement**” means the Settlement Agreement among Pacific Gas and Electric Company, Northern California Power Agency, Silicon Valley Power of Santa Clara, California, the City of Roseville, California and the California Independent System Operator Corporation in FERC Dockets ER01-2998-000, ER02-358-000, and EL02-64-000, as accepted by FERC.

“**SVP**” means Silicon Valley Power, which has signed an individual MSS agreement with the CAISO, but for which NCPA acts as Scheduling Coordinator, including implementation of such individual MSS Agreement executed by SVP, pursuant to the Scheduling Coordination Program Agreement between NCPA and SVP.

**1.3 Rules of Interpretation.** The following rules of interpretation and conventions shall apply to this Agreement:

- (a) the singular shall include the plural and vice versa;
- (b) the masculine shall include the feminine and neutral and vice versa;
- (c) “includes” or “including” shall mean “includes (or including) without limitation”;
- (d) references to a Section, Article or Schedule shall mean a Section, Article or a Schedule of this Agreement, as the case may be, unless the context otherwise requires;
- (e) any reference to the CAISO Tariff or any provision of the CAISO Tariff will mean a reference to the CAISO Tariff or provision then in effect as modified during the term of this Agreement, unless otherwise specifically provided;
- (f) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced or restated from time to time;
- (g) unless the context otherwise requires, any reference to a “person” includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization or other entity, in each case whether or not having separate legal personality;
- (h) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;
- (i) any reference to a day, week, month or year is to a calendar day, week, month or year;

- (j) the captions and headings in this Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Agreement;
- (k) all references to "NCPA herein shall be deemed to refer to the joint powers agency organized under the laws of the state of California as created by the NCPA Joint Powers Agreement unless otherwise indicated.

## ARTICLE II

### TERM AND TERMINATION

**2.1 Effective Date.** This Agreement shall be effective as of the later of: (1) the date this Agreement is accepted for filing and made effective by FERC, or (2) the date the version of the CAISO Tariff implementing the CAISO's Market Redesign and Technology Upgrade ("MRTU") market design becomes effective, and shall remain in full force and effect until terminated pursuant to Section 2.2, or upon such other date as the Parties shall mutually agree. If the CAISO Tariff implementing MRTU has become effective but this Agreement has not yet been made effective by FERC, the Parties will use the terms of this Agreement to interpret and implement the CAISO Tariff under MRTU and the terms of the existing Metered Subsystem Aggregator Agreement, to effectuate the intention of the Parties until such time as this Agreement is made effective by FERC. Upon the effective date of this Agreement, all prior versions will be superseded, provided that if this Agreement has become effective, but the CAISO exercises its rights under Section 44 of the CAISO Tariff and returns its operations and settlements to the pre-MRTU ISO Tariff, the Parties will use the terms of the version of the Metered Subsystem Aggregator Agreement in existence prior to this Agreement during such period that the CAISO returns to the previously effective ISO Tariff to interpret and implement the pre-MRTU ISO Tariff, except that the updated version of Schedules 1, 6, 11, 13, 14, 15.1 and 17, attached to this Agreement will remain in effect.

#### **2.2 Termination and Changes in NCPA Membership**

**2.2.1 Termination by Default.** NCPA or the CAISO (the terminating Party) may terminate this Agreement by giving written notice of termination in the event that the other Party (the defaulting Party) commits any default under this Agreement or the applicable provisions of the CAISO Tariff which, if capable of being remedied, is not remedied within 30 days after the terminating Party has given the defaulting Party written notice of the default, unless excused by reason of Uncontrollable Forces under Article XVII.

**2.2.2 Termination on Notice.** NCPA or the CAISO (the terminating Party) shall have the right to terminate this Agreement in accordance with this Section 2.2.2, subject to the procedural requirements set forth in Section 2.2.3. NCPA

or the CAISO may terminate this Agreement by giving the other Party written notice at least twelve (12) months in advance of the intended effective date of termination.

- 2.2.3 Filing.** With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC. The filing of the notice of termination by the CAISO will be considered timely if: (1) the request to file a notice of termination is made after the preconditions for termination have been met, and (2) the CAISO files the notice of termination within 30 days of receipt of such request from NCPA or issuance of its own notice of termination. This Agreement shall terminate upon the date on which the notice of termination is permitted by FERC to become effective.
- 2.2.4 MSS Withdrawal.** If any MSSAA Member or SVP elects to terminate its MSS relationship with the CAISO or its Scheduling Coordinator agreement with NCPA, NCPA will provide notice of such change to the CAISO within five Business Days of its receipt of the notice of such election. As of the date of such notice to the CAISO, NCPA will develop in a timely manner and propose to the CAISO amendments to this Agreement that would permit continued operation without the MSSAA Member or SVP that has given notice to NCPA, or will provide a notice of termination of this Agreement. Such termination will be effective on a date that is mutually agreed upon by the Parties, but in the event that the Parties cannot agree, such termination will be effective no sooner than twelve (12) months after NCPA's provision of such notice of termination.
- 2.2.5 MSS Entry.** In the event that NCPA wishes to add a new member to this Agreement, or if a new member executes a separate MSS Agreement with the CAISO and wishes NCPA to act as its Scheduling Coordinator for the purposes of an MSS Aggregation consistent with this Agreement, NCPA shall promptly notify the CAISO and provide CAISO with proposed amendments to this Agreement and the Schedules of this Agreement that would be necessary to implement such a change. Within thirty days of the provision of such documents, NCPA and CAISO will meet to discuss the proposed changes. The CAISO's consent to the addition of new MSSAA or MSS Members shall not be unreasonably withheld.

### ARTICLE III

#### GENERAL TERMS AND CONDITIONS

- 3.1 Scope of Agreement.** Except as specifically provided otherwise, the provisions of this Agreement will apply only with respect to the facilities comprising NCPA's System, the facilities of MSS Members, and Loads and Generating Units of MSS Members directly connected only to NCPA's System. NCPA is acting as MSS Aggregator on behalf of the multiple, geographically contiguous Metered Subsystems of the MSSAA Members and on behalf of SVP to the extent agreed

upon between NCPA and SVP for implementation of SVP's individual MSS Agreement. To the extent MSS Members have entitlements to Generating Units with Third Parties, this Agreement does not apply to such Third Parties. For the purposes of this Section 3.1, "Third Party" means any party other than NCPA, MSSAA Members, and the CAISO. Subject to the terms of Article II, this Agreement shall not affect NCPA or MSS Members' ability to join or establish another Balancing Authority Area or NCPA's right to exercise any available legal recourse to obtain or confirm that it possesses other forms of transmission rights.

### **3.2 CAISO and NCPA Responsibilities.**

**3.2.1 CAISO Responsibility.** The Parties acknowledge that the CAISO is responsible for the efficient use and reliable operation of the CAISO Controlled Grid and the operation of the CAISO's Balancing Authority Area consistent with achievement of planning and Operating Reserve criteria no less stringent than those established by the WECC and NERC Reliability Standards and criteria and in accordance with the CAISO Tariff and further acknowledge that the CAISO may not be able to satisfy fully these responsibilities if parties to agreements with the CAISO, including NCPA, fail to comply fully with all of their obligations under those agreements. The CAISO is not delegating to NCPA or its MSSAA Members any of its responsibilities to NERC and/or WECC by this Agreement.

**3.2.2 NCPA Responsibility.** The Parties acknowledge that NCPA, acting as the MSS Aggregator, has a legal obligation to act in the best interests of all its members that are signatories to the NCPA Joint Powers Agreement. The Parties further acknowledge that NCPA members that are not signatories to MSS Agreements with the CAISO or this Agreement may have legal rights to the use and output of Generating Units and transmission facilities owned or controlled by NCPA and that these rights cannot be altered or diminished by this Agreement. The Parties acknowledge that NCPA and the MSSAA Members are individually responsible for compliance with the WECC and NERC Reliability Standards and criteria applicable to the functions for which NCPA and each MSSAA Member are respectively registered with NERC. The references to WECC and NERC Reliability Standards throughout this Agreement do not make any alteration or enlargement of the requirements or standards applicable to NCPA or the individual MSSAA Members beyond their individual registrations with NERC.

### **3.3 Relationship Between Agreement and CAISO Tariff**

**3.3.1 Precedence of Agreement.** If and to the extent a matter is specifically addressed by a provision of this Agreement (including any schedules or other attachments to this Agreement), the provisions of this Agreement shall govern notwithstanding any inconsistent provision of the CAISO Tariff (including,

except as provided in Section 3.3.2, any CAISO Tariff provision that is referenced in this Agreement).

- 3.3.2 Precedence of CAISO Tariff.** If and to the extent this Agreement provides that a matter shall be determined in accordance with the applicable provisions of the CAISO Tariff, the applicable provisions of the CAISO Tariff shall govern.
- 3.3.3 Participating Generators.** Except as provided in Section 3.3.1, NCPA shall, with respect to the operation of any of the Generating Units listed in Schedule 14, comply with the requirements applicable to Participating Generators under Section 4.6 of the CAISO Tariff and all other provisions of the CAISO Tariff governing Participating Generators. Nothing in this Agreement shall obligate NCPA to execute a Participating Generator Agreement with respect to any NCPA or MSS Member Generating Unit.
- 3.3.4 Participating Loads.** Except as provided in Section 3.3.1, NCPA and the MSSAA Members shall, with respect to the operation of any Load listed in Schedule 14, comply with the requirements applicable to Participating Loads under Section 4.7 of the CAISO Tariff and all other provisions of the CAISO Tariff governing Participating Loads. Nothing in this Agreement shall obligate NCPA or any MSSAA Member to execute a Participating Load Agreement with respect to the Load of any MSS Member.
- 3.3.5 Resource Specific System Resources.** Except as provided in Section 3.3.1, NCPA and the MSSAA Members shall, with respect to the operation of any Resource Specific System Resource listed in Schedule 14(a), comply with the requirements applicable to Resource Specific System Resources under Section 4.12 of the CAISO Tariff and all other provisions of the CAISO Tariff governing Resource Specific System Resources. Nothing in this Agreement shall obligate NCPA or any MSSAA Member to execute a Resource Specific System Resource Agreement with respect to any NCPA or MSS Member Resource Specific System Resource.
- 3.3.6 Utility Distribution Companies.** Except as provided in Section 3.3.1, NCPA and the MSSAA Members shall, with respect to the operation of the distribution facilities belonging to any MSSAA Member, comply with the requirements applicable to Utility Distribution Companies under Section 4.4 of the CAISO Tariff. Nothing in this Agreement shall obligate NCPA or any MSSAA Member to execute a UDC Operating Agreement.
- 3.3.7 Disputes.** The applicability of any provision of the CAISO Tariff to NCPA or to an MSSAA Member, including as provided in Sections 3.3.1 through 3.3.5, inclusive, shall, in the event of a dispute between the Parties, be determined through the CAISO ADR Procedures in accordance with Section 13 of the CAISO Tariff.

**3.3.8 Participating TO.** Nothing in this Agreement shall preclude NCPA or the MSSAA Members from becoming a Participating TO by executing the TCA and fulfilling all other applicable requirements. If NCPA becomes a Participating TO, it shall comply with the requirements applicable to Participating TOs under Section 4.3 of the CAISO Tariff.

**3.3.9 Written Agreements.** This Agreement shall serve, with respect to NCPA and the MSSAA Members, as the written agreements required by Sections 4.4.1, 4.6, 4.7, and 10.1.4 of the CAISO Tariff.

### **3.4 Amendment to Agreement**

**3.4.1 Amendments.** Except with respect to the CAISO's rights set forth in Section 3.4.2 of this Agreement, this Agreement may be modified only by mutual written agreement among all of the Parties; provided, however, that NCPA, in its role as MSS Aggregator, is authorized by the MSSAA Members to execute any amendment that only modifies one or more of the Schedules to this Agreement. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. This shall not modify NCPA's or the CAISO's rights under Section 206 of the Federal Power Act.

**3.4.2 Section 205 Rights.** The CAISO shall have the right to apply unilaterally under Section 205 of the Federal Power Act to change the rates, terms, and conditions under this Agreement for services provided to NCPA. In proposing any changes, unless in response to a FERC order as provided in Section 3.6, the CAISO will consider the principles in this Agreement as detailed in Section 3.5.2. Additionally, unless in response to a FERC order as provided in Section 3.6, any changes proposed by the CAISO shall be subject to the following:

**3.4.2.1** The CAISO shall provide NCPA 30 days advance written notice of such change.

**3.4.2.2** The CAISO shall meet and confer with NCPA regarding the change, provided that the scheduling of such meeting shall not be unreasonably delayed.

**3.4.2.3** NCPA may waive these requirements upon written request by the CAISO.

**3.4.2.4** The CAISO shall provide NCPA with a copy of the FERC filing if, and when, made.

**3.4.3 Operational Changes.** In addition to changes that may otherwise be contemplated by Section 3.6, the Parties recognize that their responsibilities and operations may change during the term of this Agreement. The Parties agree that, in the event any such change substantially affects the allocation of rights, responsibilities, and obligations between the Parties under this

Agreement, the Parties, while continuing to honor the terms and conditions of this Agreement, will make good faith efforts to negotiate an appropriate amendment to this Agreement and shall endeavor in that process to restore that allocation.

### **3.5 Amendment to CAISO Tariff.**

**3.5.1 CAISO Tariff Amendments.** Nothing in this Agreement shall affect in any way the authority of the CAISO to modify unilaterally the CAISO Tariff in accordance with Section 15 of the CAISO Tariff or of the CAISO and NCPA or the MSSAA Members to exercise their rights under the Federal Power Act or any other law or to pursue any legal remedies.

**3.5.2 MSS Principles.** In making amendments to the CAISO Tariff as provided in Section 3.5.1, the CAISO will consider the impact on Metered Subsystems and the principles reached in this Agreement, including but not limited to:

**3.5.2.1 Cost Causation:** The intent of the Parties is that CAISO charges will be charged to the Scheduling Coordinator for the MSS Aggregator, based on the principle of cost causation, with due regard for historic considerations, timing and transition issues, and other relevant factors.

**3.5.2.2 Load Following Capability:** NCPA desires to maintain Load following capability to match the Loads of the MSS Members, and to make economic resource decisions with the resources in NCPA's portfolio.

**3.5.2.3 Compatibility of Market Participants:** For efficient use of transmission facilities and to decrease Congestion, the CAISO desires that all Market Participants operate using similar rules and scheduling timelines.

**3.6 Changes to Conform to FERC Orders.** Nothing in this Article III shall be interpreted to limit the CAISO's right to modify the CAISO Tariff or this Agreement to comply with or conform to any FERC order, or to limit NCPA's right to challenge such a proposed modification.

## **ARTICLE IV INTERCONNECTION**

**4.1 Points of MSS Interconnection.** The Points of MSS Interconnection are described in Schedule 1. Additional Points of **MSS** Interconnection may be established only by mutual agreement of the Parties, for which consent shall not unreasonably be withheld.

- 4.2 Interconnection Operation Standards.** The CAISO and NCPA shall maintain stable established operating parameters and control power and reactive flow within standards stated in Schedule 2.
- 4.3 Operation, Maintenance, and Load Serving Responsibilities.** NCPA and the MSSAA Members, as appropriate, shall operate and maintain their respective facilities forming any part of NCPAs System, and shall be responsible for the supply of the Energy and Ancillary Services required to reliably provide electric service to their respective Loads connected to NCPAs System as described in Section 3.1 within the CAISO Balancing Authority Area in accordance with Applicable Reliability Criteria, including WECC and NERC Reliability Standards and criteria as set out in Section 3.2.2 of this Agreement. The concurrent obligations of SVP are set out in the SVP MSS Agreement.
- 4.4 Expansion, Retirement, and Modification of Facilities.** NCPA and the MSSAA Members shall coordinate with the CAISO in the planning and implementation of any expansion, retirement, or modification of those facilities forming parts of NCPAs System that are identified in Schedule 1, replacements for such facilities, and other facilities forming parts of NCPA's System that serve similar functions or that otherwise will or may significantly affect the Points of MSS Interconnection, and shall provide sufficient advance notice to enable the CAISO to conduct any necessary studies. To the extent CAISO determines studies are required, those studies will be performed in a reasonable period of time. The Parties will amend Schedule 1, as necessary, should a new Point of MSS Interconnection be established in accordance with Section 4.1.
- 4.5 Installation of Facilities and Rights of Access**
- 4.5.1 Equipment Installation.** Pursuant to Schedule 3, the Parties shall permit one another, on reasonable notice and with mutual agreement in each case, to install equipment or have installed equipment or other facilities on the property of the other Party to enable the installing Party to meet its service obligations, unless doing so would negatively impact the reliability of service provided by the owning Party. Unless otherwise agreed, all costs of installation shall be borne by the installing Party.
- 4.5.2 Rights of Access.** A Party installing equipment on the property of the other Party shall be granted, free of charge, reasonable rights of access to inspect, repair, maintain and upgrade that equipment. Access shall be provided only on prior notice and such access shall not be unreasonably withheld.
- 4.5.3 Request for Access.** Notwithstanding any other provision in this Section 4.5, NCPA and the MSSAA Members shall provide the CAISO with access for inspection or audit, to their respective equipment or other facilities forming part of NCPAs System listed in Schedule 1, the operation of which affects any Point of MSS Interconnection or the CAISO Controlled Grid, without prior notice

during normal working hours, 8:00 a.m. to 5:00 p.m. Monday through Friday, excluding NERC defined holidays. For access for inspection or audit during times outside of normal working hours, the CAISO shall provide NCPA with one (1) Business Day advance notice. A shorter advance notice time may be attained subject to mutual agreement of the Parties. A NCPA Supervisor is to be present at anytime access is granted to any equipment or other facilities of NCPA's System the operation of which affects any Point of MSS Interconnection or the CAISO Controlled Grid. SVP's comparable obligations are addressed in SVP's MSS Agreement.

## **ARTICLE V OPERATIONS**

### **5.1 Outages**

**5.1.1 Outage Coordination.** NCPA shall coordinate Outages of Generating Units and transmission facilities, including the Points of MSS Interconnection, constituting parts of NCPA's System with the operators, and if mutually agreed by the CAISO and NCPA, the owners of the transmission facilities with which NCPA's System is interconnected so that each of those owners can take those Outages into account in coordinating maintenance of its transmission facilities with the CAISO.

**5.1.2 Scheduling Outages.** NCPA shall schedule with the CAISO on an annual basis, pursuant to Schedule 4, with updates submitted as required under CAISO Tariff Section 9.3.6, any Maintenance Outages of the equipment included in Schedule 1 and shall coordinate the Outage requirements of NCPA's System with the Participating TO with which NCPA's System is interconnected.

**5.1.3 Application of Law.** Notwithstanding anything to the contrary in this Agreement, to the extent required by any valid law, regulation or order issued by any state or federal authority having jurisdiction over NCPA or NCPA's System, which law, regulation or order applies to entities that have executed a written undertaking required by Section 4.6 of the CAISO Tariff, NCPA shall coordinate Outages of Generating Units and transmission facilities constituting parts of NCPA's System with the CAISO, pursuant to any generally applicable program established by the CAISO to implement such law, regulation or order.

**5.2 Safety and Reliability.** As set out in Section 3.2.2 of this Agreement, NCPA or the MSSAA Members, as applicable, shall operate and maintain their respective portions of NCPA's System in accordance with applicable safety standards and Reliability Standards, WECC and NERC requirements as applicable, regulatory requirements, operating guidelines, and Good Utility Practice so as to avoid any material unplanned-for adverse impact on the CAISO Controlled Grid. As set

forth in Section 3.2.1 of this Agreement, the CAISO shall operate and maintain the CAISO Controlled Grid and the operation of the CAISO Balancing Authority Area in accordance with applicable Reliability Standards pursuant to WECC and NERC requirements as applicable, regulatory requirements, operating guidelines, and Good Utility Practice so as to avoid any material unplanned-for adverse impact on NCPA's System. Without limiting the foregoing, NCPA or its MSSAA Members, as applicable, shall operate and maintain their respective portions of NCPA's System, during normal and System Emergency conditions, in compliance with NCPA's Emergency Action Plan ("EAP") and the requirements applicable to Utility Distribution Companies in CAISO Operating Procedures and standards. In the event any such CAISO Operating Procedure or standard is revised to modify the requirements applicable to Utility Distribution Companies, the Parties shall comply with such revision. SVP's comparable obligations are separately addressed in the SVP MSS Agreement.

- 5.3 Critical Protective Systems.** NCPA will coordinate with the CAISO, PG&E, and any Generators on NCPA's System to ensure that CAISO Controlled Grid Critical Protective Systems, including relay systems and other systems described in Schedule 5, are installed and maintained in order to function in a coordinated and complementary fashion with protective devices installed by NCPA, PG&E, and Generators. NCPA shall notify the CAISO as soon as is reasonably possible of any condition that it becomes aware of that may compromise or affect the operating safety and reliability of the CAISO Controlled Grid Critical Protective Systems, including the systems described in Schedule 5.
- 5.4 Single Point of Contact.** The CAISO and NCPA shall each provide a single point of contact at all hours for the exchange of operational procedures and information. In the case that NCPA is also a Participating TO, there may be only one single point of contact required and, in the reasonable discretion of the CAISO, duplicative reporting requirements and functions may be waived. The Parties agree to exchange operational contact information for insuring reliable communication in a format agreed to by the Parties. Each Party shall provide the other Party ten (10) calendar days advanced notice of updates to its operational contact information as that information is expected to change.
- 5.5 Transmission Losses, Outages, and Congestion.** NCPA shall be responsible for transmission losses within any MSS Member's Service Area and to any Points of MSS Interconnection. In addition, NCPA shall be responsible for transmission line Outages and transmission Congestion within any MSS Member's Service Area. Except as provided in Section 3.3.1, congestion within NCPA's System will be managed in accordance with the CAISO Tariff, including CAISO Tariff Section 31.3.3. This Section 5.5 does not affect Congestion on the CAISO Controlled Grid, which shall be managed in accordance with the CAISO Tariff.

ARTICLE VI  
INFORMATION SHARING

- 6.1** Forecasts. NCPA shall provide to the CAISO annually its ten-year forecasts of the MSS Demand growth, internal Generation, and expansions of or replacements for those transmission facilities that are part of NCPAs System identified in Schedule 1 and other transmission facilities that are part of NCPAs System that serve similar functions or that otherwise will or may significantly affect any Point of MSS Interconnection. Such forecast shall be provided on the date that Utility Distribution Companies are required to provide similar forecasts and shall be provided in accordance with the CAISO Tariff. Peak MSS Demand forecasts for MSSAA Members shall be submitted by NCPA's Scheduling Coordinator in accordance with Section 19.1 of the CAISO Tariff, or biannually as part of the CAISO's summer and winter assessment process, as agreed by the Parties. SVP's comparable obligation is addressed in the SVP MSS Agreement.
- 6.2** System Surveys and Inspections. NCPA and the CAISO shall cooperate to perform system surveys and inspections of facilities at or near the Points of MSS Interconnection that may significantly affect the facilities of the other Party.
- 6.3** Maintenance Schedules. NCPA shall provide the CAISO on an annual basis with a schedule of planned maintenance of those generation and transmission facilities identified in Schedule 1, and other transmission facilities serving a similar function or which otherwise would significantly affect the CAISO Balancing Authority Area in accordance with Schedule 4. NCPA and the CAISO shall also maintain records of the Maintenance Outages scheduled by NCPA on such facilities and their actual duration.
- 6.4** Reliability Information. NCPA and the CAISO shall each have the obligation to inform the other Party, as promptly as possible, of any circumstance of which it becomes aware (including, but not limited to, abnormal temperatures, storms, floods, earthquakes, and equipment depletions and malfunctions and deviations from Registered Data and operating characteristics) that is reasonably likely to threaten the reliability of the CAISO Controlled Grid or the integrity of NCPA's System respectively. NCPA and the CAISO each shall also inform the other Party as promptly as possible of any incident of which it becomes aware (including, but not limited to, equipment outages, over-loads or alarms) which, in the case of NCPA, is reasonably likely to threaten the reliability of the CAISO Controlled Grid, or, in the case of the CAISO, is reasonably likely to adversely affect NCPAs System. Such information shall be provided in a form and content which is reasonable in all the circumstances, sufficient to provide timely warning to the other Party of the potential threat and, in the case of the CAISO, not unduly discriminatory with respect to the CAISO's provision of similar information to other entities.

- 6.5 Major Outage Reports.** NCPA shall promptly provide such information as the CAISO may reasonably request concerning NCPA's operation of NCPA's System to enable the CAISO to meet its responsibility under the CAISO Tariff to conduct reviews and prepare reports following major Outages. Where appropriate, the CAISO will provide appropriate assurances that the confidentiality of commercially sensitive information shall be protected. The CAISO shall have no responsibility to prepare reports on Outages that affect customers on NCPA's System, unless the Outage also affects customers connected to the system of another entity within the CAISO Balancing Authority Area. NCPA shall be solely responsible for the preparation of any reports required by any governmental entity or the WECC with respect to any Outage that affects solely customers on NCPA's System. The CAISO shall promptly provide such information as NCPA may reasonably request concerning the CAISO's operation of the CAISO Balancing Authority Area to enable NCPA to meet its responsibility to conduct and prepare reports following major Outages as required by any governmental entity or the WECC. Where appropriate, NCPA will provide appropriate assurances that the confidentiality of commercially sensitive information shall be protected.
- 6.6 Annual Reviews and Reports**
- 6.6.1 CAISO Annual Reviews and Reports.** The CAISO shall make available to NCPA any public annual reviews or reports regarding performance standards, measurements or incentives relating to the CAISO Controlled Grid that the CAISO makes available to MSS Operators and Participating TOs.
- 6.6.2 NCPA Annual Reviews and Reports.** NCPA shall make available to the CAISO any public annual reviews or reports regarding performance standards, measurements or incentives relating to NCPA's System that may affect the CAISO Balancing Authority Area.
- 6.6.3 Joint Reporting.** The CAISO and NCPA shall jointly develop any necessary forms and procedures for collection, study, treatment, and transmittal of system data, information, reports and forecasts.
- 6.7 Direct Telemetry.** NCPA shall install and maintain direct telemetry links to the CAISO's EMS system to provide real-time data to the CAISO, including but not limited to Generation output, line and transformer flows at the NCPA Points of MSS Interconnection, and bus voltages at the NCPA Points of MSS Interconnection and at each Generating Unit, subject to any exemption available in accordance with the CAISO Tariff. Additional data points to be transmitted to the CAISO EMS system will be mutually agreed by the CAISO and NCPA.

## ARTICLE VII

### EMERGENCY OPERATIONS

#### 7.1 In General.

Except with respect to Sections 7.4.1, 7.4.2, 7.5.1, and 7.5.2 and provisions regarding NCPA's UFLS program, or unless NCPA is short of resources to meet its forecasted MSS Demand, as determined in accordance with Section 7.7.1 1.4 of the CAISO Tariff, the terms of this Article VII shall only apply during a System Emergency that is not a result of a deficiency of resources to serve Demand in the CAISO Balancing Authority Area but instead occurs due to operating contingencies, which may include but not be limited to forced loss of resources and/or transmission components or may otherwise be caused by an Uncontrollable Force, as further described in Attachment B to the NCPA EAP. NCPA shall have an "Emergency Action Plan" ("EAP") approved by the CAISO and on file with the CAISO, which EAP shall be attached to Schedule 11. The EAP shall include the operational steps NCPA on behalf of the MSSAA Members shall take during System Emergencies, when the CAISO implements its System Emergency-related Operating Procedures.

Under the direction of the CAISO, NCPA or its MSSAA Members, as applicable, shall follow all instructions as they pertain to the CAISO's System Emergency-related Operating Procedures, including actions to be taken by NCPA with respect to Generation, Ancillary Services, and the handling of Load reductions as specified in the EAP. NCPA shall participate in all System Emergency operations-related communication between the CAISO and other MSSs and UDCs within the CAISO Balancing Authority Area, which may include meetings, conference calls, hotlines, and/or e-mails.

NCPA shall provide all necessary Load and Generation data associated with the CAISO's System Emergency-related Operating Procedures, including Generation supplied, Load shed, and reserves made available during the time of a CAISO declared System Emergency.

In the event a System Emergency occurs or the CAISO determines that a System Emergency is threatened or imminent, NCPA shall, in accordance with Good Utility Practice and the NCPA EAP: (a) comply with all directions from the CAISO concerning the management and alleviation of a threatened or actual System Emergency, which may include shutting down or starting a Generating Unit, altering the scheduled delivery of Energy or Ancillary Services to or from, as well as within, the CAISO Balancing Authority Area, and/or disconnecting MSS Members' Load and (b) comply with all other procedures concerning System Emergencies set out in the NCPA EAP and CAISO Operating Procedures, in accordance with the applicable provisions of this Agreement. Without limiting the generality of the foregoing:

- 7.1.1 Generating Unit Availability.** When requested by the CAISO during a System Emergency, NCPA shall operate all of the Generating Units listed in Schedule 14 to supply the CAISO with generating capacity and/or Energy that can be made available by those Generating Units in order to make available as much generating capacity and/or Energy as possible to the CAISO during the term of any System Emergency, consistent with: (a) maintaining the adequate Supply of Energy to meet measured Demand of the MSS Members, other than in accordance with Section 7.4 of this Agreement; and (b) due consideration for the provisions of Section 3.1 and particular obligations of NCPA identified in the EAP attached to Schedule 11 or in the limitations specified in Schedule 14, provided that NCPA shall provide the CAISO with advance notice of any changes to the NCPA EAP or limitations in Schedule 14 that NCPAs obligations impose on the operation of the Generating Units of NCPAs System, and any changes agreed to by the CAISO shall be amendments to this Agreement. For that purpose, NCPA shall provide the CAISO any update to the NCPA EAP and any change in Schedule 14 with regard to any limitations on the operation of the Generating Units of NCPA's System. NCPA shall provide the CAISO updates regarding the status of the limitations in Schedule 14 promptly whenever it becomes aware of factors that affect such limitations, provided that updates shall be provided at least quarterly and no updates may be provided later than the deadline for the submission by other Generators of changes in limitations on the operation of Generating Units, which is the deadline for the submission of Bids into the Real-Time Market, except when a change is due to a Forced Outage. In making as much generating capacity and/or Energy available that can be made available by its Generating Units to the CAISO as possible for use in System Emergency conditions, subject to the foregoing, NCPA shall:
- 7.1.1.1** Schedule or reschedule in the form of a Bid, and operate to the maximum extent possible, the Generating Units and other sources of power of NCPAs System within and outside the CAISO's Balancing Authority Area to maximize the amount of generating capacity and/or Energy available that can be made available by those Generating Units and other resources to the CAISO; and
  - 7.1.1.2** Reschedule Maintenance Outages of equipment and facilities, including Generating Units and any facilities which may impact the operation of Generating Units, to maximize the amount of generating capacity and/or Energy available that can be made available by those Generating Units to the CAISO unless rescheduling of such Maintenance Outages is likely to cause damage to the equipment and facilities.
- 7.1.2 CAISO Dispatch Instructions.** In the event that the CAISO issues a Dispatch Instruction, including an Exceptional Dispatch Instruction, that contravenes the NCPA EAP attached to Schedule 11 or any limitation set forth in Schedule 14 duly communicated in accordance with Section 7.1.1, NCPA or its Scheduling

Coordinator shall not be required to follow that instruction, although it may consent to do so in a particular case (without prejudice to NCPAs right to direct its Scheduling Coordinator to decline any such instructions thereafter). If NCPA or its Scheduling Coordinator chooses not to follow such an instruction, it shall notify the CAISO as soon as possible that it will not follow the Dispatch Instruction, including an Exceptional Dispatch Instruction, due to the previously communicated limitation.

- 7.1.3 Compensation.** NCPA's Scheduling Coordinator shall receive compensation for generating capacity and/or Energy supplied in response to Exceptional Dispatch Instructions, issued by the CAISO in accordance with the CAISO Tariff.
- 7.1.4 Communication.** During a System Emergency, the CAISO and NCPA shall communicate through their respective control centers and in accordance with procedures established in this Agreement and the CAISO Tariff.
- 7.1.5 System Emergency Due to Deficiencies.** Notwithstanding anything to the contrary in Articles V, VII, VIII, IX, or X or any CAISO Tariff provision, neither NCPA nor the MSS Members shall be expected or required to curtail their Loads or offer to the CAISO generating capacity or Energy from their Generating Units in a System Emergency that is due to the failure of other Load Serving Entities to provide resources adequate to meet measured Demand and maintain Operating Reserves in accordance with the CAISO Tariff or meet the credit requirements of Section 12 of the CAISO Tariff.
- 7.1.5.1** Nothing in this Section 7.1.5 or this Agreement is intended to affect NCPA or MSS Members obligation to comply with any market mitigation requirement, including any must-offer requirement, that the FERC may lawfully impose upon NCPA or its MSS Members or upon MSS Operators generally, provided, however, NCPA recognizes that the CAISO will comply with the terms of any such FERC order regardless of issues NCPA may raise with respect to its lawfulness until such time as a final non-appealable decision is rendered.
- 7.2 Notice.** When a System Emergency occurs, the CAISO shall notify NCPAs control center as part of the process by which it notifies all Utility Distribution Companies and MSS Operators of System Emergency conditions. Details of the notification process are set forth in Schedule 7.
- 7.3 Records.** NCPA and the CAISO shall maintain all appropriate records with respect to operations during a System Emergency in accordance with the CAISO Tariff.

## 7.4 Load Shedding

**7.4.1 Automatic Load Shedding.** NCPA, on behalf of the MSSAA Members, shall implement and have at all times operational an automatic Underfrequency Load Shedding (UFLS) program described in Schedule 8 and any under-voltage relay protection program that may be described in Schedule 9. SVP's comparable obligation is addressed in the SVP MSS Agreement.

**7.4.2 Manual Load Shedding.** When called upon to do so by the CAISO in accordance with this Section 7.4.2 and Section 7.4.3 to avert, manage, or alleviate a System Emergency, NCPA, on behalf of the MSSAA Members, shall implement the manual Load Shedding program described in Schedule 10. The CAISO shall notify NCPA when conditions exist that would require NCPA to implement the Load curtailment and interruptible Load programs described in Schedules 10, 10A, and 10B. Subject to the provisions of Sections 7.1.2 and 7.4.3, if the CAISO determines that Load curtailment is required to manage a System Emergency, the CAISO shall determine the amount and location, if applicable, of Load to be reduced and, to the extent practicable, shall allocate a portion of the required Demand reduction to NCPA as the MSS Aggregator and each UDC and MSS Operator based on the ratio of NCPA's MSS Demand at the time of the CAISO Balancing Authority Area annual peak Demand for the previous year to total CAISO Balancing Authority Area annual peak Demand for the previous year, taking into account system considerations and NCPA's curtailment rights. The CAISO shall consult with NCPA, together with other Market Participants, in the CAISO's annual development of a prioritization schedule for the Load Shedding program in accordance with Section 7.7.7 of the CAISO Tariff. SVP's comparable obligation is addressed in the SVP MSS Agreement.

**7.4.3 Manual Load Shedding Priorities.** Section 7.7.1 1.4 of the CAISO Tariff provides that the CAISO will determine each UDC or MSS that has insufficient resources to meet its forecasted Demand in accordance with the CAISO forecast. If Load Shedding is required solely due to insufficient resources to meet Demand and/or inability to meet Operating Reserve obligations (as defined by WECC or its successor and implemented by the CAISO), as determined in accordance with Section 7.7.1 1.4 of the CAISO Tariff, and only if NCPA, on behalf of the MSSAA Members, is short of resources to meet its forecasted MSS Demand and exports, as determined in accordance with Section 7.7.1 1.4 of the CAISO Tariff, will NCPA, on behalf of the MSSAA Members, be required to shed Load, as directed by the CAISO. NCPA shall provide the CAISO with detailed real time information, in graphical or tabular format for those contracts and resources that do not have direct telemetry, demonstrating its full resource sufficiency during any time that the CAISO interrupted firm Load within the CAISO Balancing Authority Area or during which time a CAISO direction to interrupt firm Load was in force, in the manner

of other MSS Operators and UDCs seeking similar exclusion from firm Load Shedding obligations, and NCPA and its Scheduling Coordinator shall be subject to the provisions of Section 7.7.11.4 of the CAISO Tariff for any failure to make such demonstration. SVP's comparable obligation is addressed in the SVP MSS Agreement.

- 7.4.4 Load Restoration.** Load shed in accordance with Section 7.4.1, 7.4.2 and 7.4.3 of this Agreement shall be restored pursuant to Schedule 12.
- 7.4.5 Coordination.** The CAISO shall use reasonable efforts to coordinate NCPA's Underfrequency Load Shedding program with the Underfrequency Load Shedding programs of other MSS Operators and Utility Distribution Companies, and the implementation of all such other programs, so that no one entity bears a disproportionate share of Underfrequency Load Shedding in the CAISO Balancing Authority Area. NCPA and the MSSAA Members warrant that the Underfrequency Load Shedding program does and will continue to fully adhere to the applicable NERC and WECC plans and requirements governing such programs, in accordance with Schedule 8.
- 7.4.6 Supply Levels.** To the extent NCPA, on behalf of the MSSAA Members, reduces NCPA's System MSS Demand in response to a System Emergency, it shall exercise its best efforts to maintain the same level of Generation and imports as was scheduled prior to the MSS Demand reduction in order to provide the CAISO with Energy, subject to the provisions of Section 7.1.2. NCPA's Scheduling Coordinator shall receive compensation for any Energy or Ancillary Services made available to the CAISO as a result of such Load Shedding in accordance with the CAISO Tariff and CAISO Operating Procedures. SVP's comparable obligation is addressed in the SVP MSS Agreement.

## **7.5 Electrical Emergency Plan**

- 7.5.1 Coordination of EEP and EAP.** NCPA shall cooperate with the CAISO's implementation of the Electrical Emergency Plan ("EEP") developed by the CAISO in accordance with Section 7.7.5 of the CAISO Tariff. NCPA shall implement the NCPA EAP attached to Schedule 11 of this Agreement and filed with FERC for informational purposes, and the CAISO shall cooperate with NCPA's implementation of the EAP.
- 7.5.2 Notification of Voluntary Load Curtailment.** NCPA shall notify the MSSAA Members pursuant to NCPA's EAP of any voluntary Load curtailments of which the CAISO notifies NCPA pursuant to the EEP.
- 7.5.3 Notification of Required Load Curtailment.** When the CAISO allocates an amount of Load curtailment to NCPA pursuant to the EEP to manage a System Emergency, NCPA shall notify the MSSAA Members, and the MSSAA

Members shall effectuate the required Load reductions. SVP's comparable obligation is addressed in the SVP MSS Agreement.

## ARTICLE VIII

### LOCAL AND REGIONAL RELIABILITY

#### 8.1 Reliability Within NCPA's System

**8.1.1 NCPA System Reliability.** NCPA or the MSSAA Members, as applicable, shall be solely responsible for maintaining the reliability of electric service to their respective customers in NCPA's System in accordance with Applicable Reliability Criteria, WECC and NERC Reliability Standards and requirements as specified in Section 3.2.2, regulatory requirements, and Good Utility Practice, subject to the responsibilities of the CAISO as the Balancing Authority for the Balancing Authority Area in which NCPA's System is located. SVP's comparable obligations are addressed in the SVP MSS Agreement.

**8.1.2 Reliability Generation.** NCPA shall be responsible for any reliability Generation, Voltage Support, and Black Start service requirements within NCPA's System, At the Points of MSS Interconnection, Voltage Support shall be managed in accordance with the PG&E IA and the CAISO Tariff. SVP's comparable obligations are addressed in the SVP MSS Agreement.

**8.1.3 Reliability Support Cost.** If and to the extent the NERC or WECC criteria change or NCPA does not maintain sufficient Generation to meet the reliability criteria in Schedule 16, as may be amended, as applied to NCPA's System and thus avoid adverse impacts on the CAISO Controlled Grid, then NCPA's Scheduling Coordinator may be assessed costs incurred by the CAISO to support the reliability of NCPA's System. The CAISO will notify NCPA that the reliability criteria have not been met and the Parties shall negotiate in good faith over necessary modifications and, if they cannot reach agreement, submit the dispute to dispute resolution in accordance with Article XIV of this Agreement.

**8.2 Balancing Authority Area Reliability.** For the costs specified in this Article VIII, NCPA, through its Scheduling Coordinator, shall be responsible for supplying or bearing its proportionate share of the costs of generating resources required for the reliability of electric service to Loads in the CAISO Balancing Authority Area, except for Reliability Must-Run ("RMR") Generation costs on the CAISO Controlled Grid, where such costs are the responsibility of the Participating TO where the RMR unit is interconnected, provided further that NCPA or the MSSAA Members are not a Participating TO. NCPA, through its Scheduling Coordinator, may meet such obligation from resources it owns or with respect to which it has contractual entitlements to the Energy and Ancillary Services or it may purchase those products through the CAISO Markets in accordance with the terms of the CAISO Tariff.

- 8.2.1 NCPA System Reliability Generation.** NCPA's reliability Generation is currently identified in Schedule 14. In addition, some of NCPA's Generation may provide RMR Generation services to PG&E and in that instance will be subject to the terms of the CAISO Tariff applicable to Reliability Must-Run Generation.
- 8.2.2 Reliability Must-Run Availability.** Should NCPA elect to Load follow in accordance with Section 4.9.13 of the CAISO Tariff, nothing in this Agreement shall obligate NCPA or the NCPA Members to make any Generating Units available as Reliability Must-Run Generation other than those identified in Schedule 14 as RMR Units, unless NCPA or an MSS Member notifies the CAISO that it desires to participate in the RMR Unit designation process. To the extent NCPA does not notify the CAISO that it desires to participate in the RMR Unit designation process, the CAISO agrees that, in circumstances affecting local reliability of the CAISO Controlled Grid that would otherwise be mitigated by RMR Units, any Generation not being used to serve MSS Members will be made available to the CAISO, subject to Article VII of this Agreement.
- 8.3 Voltage Support.** Except as otherwise agreed by the Parties, unless Pacific Gas and Electric Company directs NCPA to maintain a specific voltage at any Point of MSS Interconnection for a NCPA or MSSAA Member Generating Unit, NCPA shall maintain the voltage on NCPA's System so that reactive flows at the Points of MSS Interconnection are within the power factor band of 0.97 lag to 0.99 lead. NCPA shall not be compensated for maintaining the power factor at the levels required by this Section 8.3 within this bandwidth. If NCPA fails to maintain the power factor at the levels specified by this Section 8.3, NCPA's Scheduling Coordinator shall bear a portion of the CAISO's Voltage Support costs.
- 8.4 Black Start.** NCPA shall either provide its own share of CAISO Balancing Authority Area Black Start capability or, to the extent NCPA does not provide its own Black Start capability through its Scheduling Coordinator, NCPA's Scheduling Coordinator shall bear a portion of the CAISO's Black Start costs in accordance with CAISO Tariff Section 4.9.4.5.
- 8.5 Ancillary Services.** The CAISO is entrusted with the responsibility of procuring Ancillary Services for the CAISO Balancing Authority Area. NCPA's responsibility for the CAISO Balancing Authority Area requirements of Ancillary Services shall be determined in accordance with the CAISO Tariff. If NCPA's Scheduling Coordinator's Submission to Self-Provide an Ancillary Service is sufficient to meet NCPA's Ancillary Service Obligation, which capacity is committed to the various required Ancillary Services, and maintains the Ancillary Service capacity as available to the CAISO for that purpose, NCPA's Scheduling Coordinator shall not be required to purchase capacity in the CAISO's Ancillary

Service markets. To the extent NCPA's Scheduling Coordinator does not self-provide sufficient capacity for this purpose, NCPA may, through its Scheduling Coordinator, purchase the required capacity in the CAISO's Ancillary Service markets. To the extent NCPA's Scheduling Coordinator does not maintain the availability of capacity committed to the CAISO for Ancillary Services for that purpose, the Scheduling Coordinator shall be responsible for the applicable charges under the CAISO Tariff.

## ARTICLE IX ACCESS & SCHEDULING

- 9.1 Existing Contracts and Encumbrances and Access to the CAISO Controlled Grid**
- 9.1.1 Settlement Agreement.** This Agreement is intended to operate in conjunction with the Settlement Agreement. Nothing in this Agreement shall be construed or interpreted in any manner that would interfere with the terms and conditions of any Existing Contract or Encumbrance or relieve the CAISO of its obligation to honor such Existing Contracts and Encumbrances, provided that NCPA or its Scheduling Coordinator shall schedule its use of Existing Contracts and Encumbrances as specified in Section 9.2.3 of this Agreement. The Existing Contracts and Encumbrances are listed on Schedule 13.
- 9.1.2 Open Access to CAISO Controlled Grid.** NCPA and the MSS Members shall have open and non-discriminatory access to the CAISO Controlled Grid for the scheduling of transactions that do not utilize Existing Contracts and Encumbrances for it or the MSS Members in accordance with the CAISO Tariff and for other transmission services the CAISO may provide in the future under the CAISO Tariff.
- 9.1.3 Use of CAISO Controlled Grid.** NCPA and the MSS Members may use the CAISO Controlled Grid in accordance with the CAISO Tariff to buy and sell electric products in the CAISO Markets and in bilateral transactions with other Market Participants.
- 9.1.4 Open Access to NCPA System.** NCPA and the MSSAA Members shall afford open and non-discriminatory access to the transmission facilities included in NCPA's System to any entity qualified to obtain an order under Section 211 of the Federal Power Act that affords such access to the transmission facilities that such entity owns or controls. SVP's comparable obligations are addressed in the SVP MSS Agreement.

## 9.2 Access to CAISO Markets

**9.2.1 Energy, Ancillary Services and RUC Capacity.** Energy, Ancillary Services and RUC Capacity provided by Generating Units and Loads on NCPAs System may be sold in the CAISO Markets on the terms applicable under the CAISO Tariff to Participating Generators and Participating Loads, respectively, and further applicable to MSS Operators or MSS Aggregators in accordance with the CAISO Tariff, except where otherwise modified by this Agreement. If NCPAs Scheduling Coordinator submits Bids to provide Energy or Ancillary Services from a Generating Unit or Load of NCPA's System, NCPA warrants to the CAISO that it has the capability to provide that service in accordance with the CAISO Tariff and that it shall comply with CAISO Dispatch Instructions for the provision of service in accordance with this Agreement. NCPA may self-provide all or any portion of its obligation for Energy and Ancillary Services in accordance with the CAISO Tariff, except where otherwise specified in this Agreement.

**9.2.2 Participation in the Integrated Forward Market.** Should NCPA elect to Load follow in accordance with Section 4.9.13 of the CAISO Tariff, NCPAs Scheduling Coordinator must also submit Bids, including but not limited to Self-Schedules, of Supply in the Day-Ahead Market to match its Demand Forecast as developed by NCPA. Sources of Supply may include generation, imports, Existing Transmission Contract deliveries, and trades.

**9.2.3 Scheduling Timelines.** All Bids, including Self-Schedules, submitted on behalf of the MSS Members for delivery of Energy, Ancillary Services, and RUC Capacity to Loads in NCPA's System and for exports from NCPA's System shall be submitted by a Scheduling Coordinator certified in accordance with the applicable provisions of the CAISO Tariff that has entered into a Scheduling Coordinator Agreement with the CAISO that is currently in effect. The Scheduling Coordinator may be NCPA itself or a Scheduling Coordinator designated by NCPA. Except as otherwise specified in this Section 9.2, NCPA's Scheduling Coordinator shall submit all Bids, including (i) Self-Schedules for the use of its Existing Contracts and Encumbrances, and Transmission Ownership Rights ("TOR") comprising NCPAs System, (ii) Bids and Self-Schedules for the use of the CAISO Controlled Grid as a new firm use, and (iii) Bids, including but not limited to Self-Schedules, for the delivery of Energy and Ancillary Services, within the timelines established by the CAISO Tariff. NCPAs Scheduling Coordinator shall not be precluded from making real-time changes if such scheduling capability is afforded NCPA or MSS Members under Existing Contracts, Encumbrances, or the Settlement Agreement pursuant to Schedule 13 of this Agreement. Schedule 13 includes any scheduling timelines required for Existing Contracts and Encumbrances, and Transmission Ownership Rights comprising NCPA's System. If NCPA elects to perform Load following as an MSS Aggregator in accordance with Section 4.9.13 of the CAISO Tariff, NCPA's Scheduling Coordinator shall have

the ability to deviate from its real-time scheduled amounts in order to follow Load as described in Section 12.12, and not be restricted by the scheduling timelines established by the CAISO Tariff.

- 9.2.4 Black Start and Voltage Support.** NCPA or its Scheduling Coordinator shall be entitled to Bid the resources on NCPAs System in any open solicitation held by the CAISO for Black Start or Voltage Support services, provided that the supply of any service by NCPA shall not impair its ability to provide the service it is required by Article VIII of this Agreement to provide for NCPAs System, and, if the services are sold to the CAISO, NCPA or its Scheduling Coordinator shall provide such services in accordance with the CAISO Tariff.
- 9.3 Congestion Revenue Rights.** The MSSAA Members as Load Serving Entities are eligible to participate in and receive an allocation of CRRs through the CRR Allocation process in accordance with Section 36 of the CAISO Tariff. NCPA, in order to represent the MSSAA Members in the CRR Allocation process, must execute a *pro forma* MSS Aggregator CRR Entity Agent Agreement in accordance with the CAISO Tariff. Once executed, NCPA will be authorized to act on behalf of the MSSAA Members, acting as the CRR Entity Agent, with regard to CRR matters, including, but not limited to, allowing NCPA to participate in the CRR nomination process, to accept financial responsibility under the agreement, to perform settlement functions, and to comply with other CAISO Tariff requirements.

## ARTICLE X

### GENERATING UNITS AND MARKET-PARTICIPATING LOADS

- 10.1 Identification of Resources.** NCPA has identified in Schedule 14 the individual Generating Units and market-participating Loads that NCPA and the MSSAA Members own, operate, or to which they have a contractual entitlement. The individual Generating Units and market-participating Loads that SVP owns, operates, or to which SVP has contractual entitlement are identified in Schedule 14 of the SVP MSS Agreement.
- 10.1.1 Technical Characteristics.** NCPA has provided to the CAISO in Schedule 14 the required information regarding the capacity and operating characteristics of each of the Generating Units and market-participating Loads listed in that Schedule. The CAISO may verify, inspect, and test the capacity and operating characteristics provided in Schedule 14, and any changes thereto made pursuant to Section 10.1.2 of this Agreement, in accordance with Section 8.10 of the CAISO Tariff.
- 10.1.2 Notification of Changes.** NCPA shall notify the CAISO sixty (60) days prior to any change to the information provided in Schedule 14, provided that such notice shall not be required for changes to parameters of operating limitations

set forth in Schedule 14, which shall be made in accordance with the CAISO's Operating Procedures. The Parties shall amend Schedule 14, as applicable, to reflect that change. Subject to such notification, and verification, inspection, and testing in accordance with Section 10.1.1, but without waiting for the execution and effectiveness of an amended Schedule 14, the Parties shall implement any new information for a Generating Unit or market-participating Load identified in Schedule 14 upon the effective date for the next scheduled update to the CAISO's Master File.

**10.1.3 Generating Unit Limitations.** Nothing in this section shall preclude NCPA from informing the CAISO of changes in limitations on the operation of a Generating Unit, as provided in Section 7.1 of this Agreement, or to comply with environmental laws and regulations, provided that NCPA provides the CAISO with advance notice of any changes in such limitations.

## **10.2 Generating Unit Operation**

**10.2.1 Generating Unit Telemetry.** NCPA shall install and maintain direct telemetry links to the CAISO's EMS system for each NCPA Generating Unit that enable the CAISO to view the status, voltage, and output of the Generating Unit and CAISO certified meters that transmit data automatically to the CAISO's Revenue Meter Data Acquisition and Processing System. NCPA shall calculate and specify to the CAISO any distribution loss factor applicable to the Generating Units of NCPA's System.

- 10.2.2 Regulation Ancillary Service.** If NCPA, through its Scheduling Coordinator, chooses to submit Bids to supply Regulation or to make a Submission to Self-Provide an Ancillary Service for Regulation from a Generating Unit, it must provide the CAISO with control over the Generating Unit providing Regulation and place the Generating Unit on Automatic Generation Control (“AGC”) responsive to the CAISO’s Regulation signal. Regulation service shall be provided in accordance with the CAISO Tariff. NCPA or its Scheduling Coordinator may adjust output of the Generating Units of NCPA’s System, in response to NCPA’s Load following needs, provided that, if NCPA is providing Regulation to the CAISO from any Generating Unit, it may not adjust the output of that Generating Unit unless the integrity of the CAISO’s Regulation signal, and the continuous responsiveness of such Generating Unit, via AGC, to the CAISO’s Regulation signal, is not compromised. If the CAISO determines that the integrity of the CAISO’s Regulation signal or the continuous responsiveness to the CAISO’s Regulation signal is compromised, NCPA’s Generating Unit shall be deemed not to have provided the Regulation, and NCPA shall be subject to the provisions of the CAISO Tariff applicable to failure to provide Regulation. To the extent that NCPA chooses not to provide Regulation from an NCPA Generating Unit, the CAISO shall not control the Generating Unit via a direct link between the CAISO and the Generating Unit without NCPA’s consent.
- 10.3 CAISO Authority to Dispatch NCPA Resources.** The CAISO’s authority to issue Dispatch Instructions, including Exceptional Dispatch Instructions, for any portion of the capacity of any Generating Unit of NCPA or the MSS Members, other than in accordance with a Bid submitted to the CAISO by NCPA’s Scheduling Coordinator, is set forth in and subject to Section 7.1 of this Agreement.
- 10.4 WECC Requirements Applicable to Participating Generators**
- 10.4.1 Reliability Criteria.** NCPA and the MSSAA Members shall comply with the requirements of Section 4.6.5 of the CAISO Tariff applicable to Participating Generators, and in accordance with Section 3.2.2. SVP’s comparable obligations are addressed in the SVP MSS Agreement.
- 10.4.2 Payment of WECC Sanctions.** NCPA and the MSSAA Members shall be responsible for payment directly to the WECC of any monetary sanction assessed against NCPA or the MSSAA Members by the WECC, as provided in Section 4.6.5.3 of the CAISO Tariff. SVP’s comparable obligations are addressed in the SVP MSS Agreement.

## ARTICLE XI

### METERING

- 11.1 CAISO Certified Revenue Quality Metering.** NCPA shall ensure installation of CAISO-certified revenue quality meters and associated equipment at (a) the Points of MSS Interconnection, and (b) for each Generating Unit listed in Schedule 14, at each bus to which one or more Generating Units is connected, provided that the Demand of any Load at that bus, other than a Generating Unit auxiliary Load, is separately metered.
- 11.2 Metering Requirements.** The provisions of the CAISO Tariff applicable to CAISO Metered Entities shall apply to NCPA, subject to the particular rights and obligations of the Parties with respect to metering set forth in Schedule 15 of this Agreement, including access to and testing of NCPAs meters.
- 11.3 NCPA SQMD Calculation.** The calculation of NCPAs Settlement Quality Meter Data ("SQMD") shall be in accordance with Schedule 15 of this Agreement.

## ARTICLE XII

### CHARGES

- 12.1 Charges Generally.** Except as may be provided otherwise in the provisions contained within Article XII or other sections of this Agreement, NCPAs Scheduling Coordinator shall be responsible for charges incurred in accordance with Sections 4.9 and 11 of the CAISO Tariff, provided that nothing in this Agreement shall prohibit NCPA from challenging the allocation of any new charge under the CAISO Tariff to NCPA on the ground that the proposed charge is not appropriately assessed against a MSS Aggregator and MSS Operator, or on any other ground. Further, except as specifically provided in this Agreement, NCPA shall only be responsible for charges allocated by the CAISO Tariff to Participating TOs if it becomes a Participating TO, as permitted by Section 3.3.7. CAISO and NCPA recognize that Section 12.7.2 below is before the FERC and subject to modification based on a prospective FERC order. The Parties recognize that the FERC is expected to rule on the CAISO's Request for Clarification or Rehearing filed on July 21, 2008 and that such ruling could impact Section 12.7.2. To the extent that the anticipated FERC order requires a change to the existing language of Section 12.7.2, the Parties will promptly meet to amend this Agreement consistent with the FERC order. This proposed language is not intended to waive any arguments any party may have made or any positions it has taken or may take in that proceeding.
- 12.2 Congestion Management.** NCPA shall be responsible for the cost of managing and relieving Congestion within any MSS Member's Service Area, as specified in Section 5.5, only to the extent that the cause of Congestion is attributed to MSS

Member operations. If the cause of Congestion is not directly attributed to MSS Member operations, and the CAISO utilizes Exceptional Dispatch Instructions to resolve the identified Congestion, the resulting costs shall be allocated pursuant to the provisions specified in Section 11.5.6.2.5.2 of the CAISO Tariff, and will not be solely allocated to NCPA.

- 12.3 Unaccounted for Energy Costs.** NCPAs System shall be treated as a Utility Distribution Company Service Area for purposes of allocating responsibility for Unaccounted for Energy costs in accordance with the CAISO Tariff.
- 12.4 Reliability Generation.** NCPA shall be responsible for the costs of maintaining the reliability of transmission facilities in NCPAs System, including costs of Generating Units operated by or on behalf of NCPA for that purpose. If and to the extent NCPA does not maintain sufficient Generation to meet the reliability criteria in Schedule 16 as applied to NCPAs System and thus avoid material adverse impacts on the CAISO Controlled Grid, then NCPA may be assessed costs incurred by the CAISO to support the reliability of NCPAs System.
- 12.5 Neutrality Costs.** NCPAs Scheduling Coordinator's obligation to pay neutrality adjustments and Existing Contracts cash neutrality charges (or collect refunds) shall be based on NCPAs net metered MSS Demand and exports from the CAISO Balancing Authority Area irrespective of the NCPA's MSS Settlement election as specified in Section 4.9.13 of the CAISO Tariff.
- 12.6 CAISO Balancing Authority Area Summer Reliability Costs.** NCPA, through its Scheduling Coordinator, shall have the option to avoid any share of the CAISO's costs for any summer Demand reduction program or for any summer reliability Generation procurement program pursuant to CAISO Tariff Section 42.1.8. In order to avoid such costs, NCPA shall secure capacity on an annual basis at least equal to one hundred fifteen percent (115%) of the peak MSS Demand responsibility of MSSAA Members, and provide documentation to the CAISO of the resources proposed to meet that MSS peak Demand. Such capacity reserves may include on-demand rights to Energy, peaking resources, and MSSAA Members' Demand reduction programs. For the purposes of this Section 12.6, the MSS peak Demand responsibility shall be equal to the forecasted annual coincident MSS peak Demand Forecast plus any firm power sales by MSSAA Members plus any MSSAA Members' on-demand obligations to third parties, less interruptible Loads, and less any firm power purchases. Firm power for the purposes of this Section 12.6 shall be Energy that is intended to be available to the purchaser without being subject to interruption or curtailment by the supplier except for Uncontrollable Forces or emergency, and for which the supplier carries WECC-required operating reserves. To the extent that NCPA demonstrates its provision of capacity reserves in accordance with this Section 12.6 by November 1 for the following calendar year, MSSAA Members' Scheduling Coordinator shall not be obligated to bear any share of the CAISO's costs for any summer Demand reduction program or for any summer reliability

Generation procurement program pursuant to CAISO Tariff Section **42.1.8**. SVP must demonstrate its provision of the resources proposed to meet that peak Demand responsibility separately.

**12.7 Allocation of Net IFM Bid Cost Uplift.** NCPAs Scheduling Coordinator's obligation to pay Net IFM Bid Cost Uplift charges shall be based on the following two tier structure:

**12.7.1 Tier 1 IFM Bid Cost Uplift.** The hourly Net IFM Bid Cost Uplift is allocated to NCPA's Scheduling Coordinator in proportion to NCPA's MSS non-negative IFM Load Uplift Obligation, but with an IFM Bid Cost Uplift rate not exceeding the ratio of the hourly Net IFM Bid Cost Uplift for the Trading Hour divided by the sum of all hourly Generation scheduled in the Day-Ahead Schedule and IFM upward AS Awards for all Scheduling Coordinators from CAISO-committed Bid Cost Recovery Eligible Resources in that Trading Hour. The IFM Load Uplift Obligation for NCPA's Scheduling Coordinator is the difference between the total Demand scheduled in the Day-Ahead Schedule of that Scheduling Coordinator and the sum of the scheduled Generation and scheduled imports from Self-Schedules in the Day-Ahead Schedule of that Scheduling Coordinator, adjusted by any applicable Inter-SC Trades of IFM Load Uplift Obligations.

**12.7.2 Tier 2 IFM Bid Cost Uplift.** The Scheduling Coordinator for NCPA as the MSS Aggregator that has elected both to not follow its Load and gross Settlement will be charged for an amount equal to any remaining hourly Net IFM Bid Cost Uplift for the Trading Hour in proportion to NCPA's Measured Demand minus NCPA's Measured Demand served solely by means of valid and balanced TOR Self-Schedules. The Scheduling Coordinator for NCPA as the MSS Aggregator that has elected to follow its Load or net Settlement, or both, will be charged for an amount equal to any remaining hourly Net IFM Bid Cost Uplift for the Trading Hour in proportion to NCPA's MSS Aggregation Net Measured Demand minus NCPA's Measured Demand served solely by means of valid and balanced TOR Self-Schedules.

**12.8 Allocation of Net RTM Bid Cost Uplift.** The allocation of Net RTM Bid Cost Uplift is based on the MSS elections as specified in Section 4.9.13 of the CAISO Tariff. The hourly RTM Bid Cost Uplift is allocated to the Scheduling Coordinator for NCPA as the MSS Aggregator that has elected to not follow its Load and gross Settlement, in proportion to NCPA's MSS Measured Demand minus NCPA's Measured Demand served solely by means of valid and balanced TOR Self-Schedules for the Trading Hour. For the Scheduling Coordinator for NCPA as the MSS Aggregator that has elected not to follow its Load and net Settlement, the hourly RTM Bid Cost Uplift is allocated in proportion to NCPA's MSS Aggregation Net Measured Demand minus NCPA's Measured Demand served solely by means of valid and balanced TOR Self-Schedules. For the Scheduling Coordinator for NCPA as an MSS Aggregator that has elected to

follow its Load, the hourly RTM Bid Cost Uplift is allocated in proportion to NCPA's MSS Net Negative Uninstructed Deviation with MSS Load Following Energy and HASP Self-Scheduled Energy from Load following resources identified in Schedule 14(a) of this Agreement and associated Operational Adjustments included in the netting, plus any HASP reductions not associated with the HASP Self-Scheduled Energy from Load following resources listed in Schedule 14(a) of this Agreement.

- 12.9 Grid Management Charges Based on Market Services.** If the CAISO is charging Grid Management Charges for Market Services Charge, NCPAs Scheduling Coordinator will not be assessed Grid Management Charges for Market Services Charge associated with MSS Load Following Energy and HASP Self-Scheduled Energy from Load following resources identified in Schedule 14(a) of this Agreement and associated Operational Adjustments.
- 12.10 MSS Deviation Band.** The amount by which a Load following MSS Operator can deviate from Expected Energy without incurring a Load Following Deviation Penalty, as defined in Section 12.12, is equal to three percent (3%) of an MSS Operator's gross metered MSS Demand and exports from the MSS, adjusted for Forced Outages and any CAISO directed firm Load Shedding from the MSS's portfolio as a whole.
- 12.11 Load Following Deviation Band Compliance.** To the extent that sufficient Energy for the purposes of serving MSS Demand in the Service Areas of MSS Members for which NCPA serves as MSS Aggregator and or Scheduling Coordinator and exports from the Service Areas of those MSS Members, including losses, is not reflected in Bids, including Self-Schedules, submitted by NCPAs Scheduling Coordinator and delivered in real time, NCPA shall be deemed (through its Scheduling Coordinator) to have purchased or sold Imbalance Energy in the CAISO's Real-Time Market. The CAISO will settle with NCPA's Scheduling Coordinator with regard to Imbalance Energy in accordance with the CAISO Tariff. However, should NCPA elect, on behalf of the MSS Members, in accordance with Section 4.9.13 of the CAISO Tariff, to follow NCPA MSS Demand and exports from the MSS Aggregation with NCPAs System resources and imports into the MSS Aggregation, including Self-Scheduled System Resources and Self-Scheduled Resource Specific System Resources listed in Schedule 14(a), to the extent that the net Imbalance Energy for all of NCPAs MSS Demand and exports from the MSS Aggregation, and NCPA's System resources and imports into the MSS Aggregation, including Self-Scheduled System Resources and Self-Scheduled Resource Specific System Resources listed in Schedule 14(a), is within NCPAs portfolio MSS Deviation Band, as specified in Section 12.10, NCPA's Scheduling Coordinator will not be subject to the Load Following Deviation Penalty, as specified in Section 12.12, or costs other than the cost of the Imbalance Energy itself. Schedule 19 of this Agreement describes the process for calculating the applicable amount of net Imbalance Energy, which is referred to as deviation energy within Schedule 19.

To the extent that NCPAs Scheduling Coordinator is operating outside of its portfolio MSS Deviation Band, NCPA's Scheduling Coordinator shall be subject to the Load Following Deviation Penalty. In following Load, NCPAs Scheduling Coordinator may utilize any resource available to it regardless of whether, or at what level, the resource is reflected in Bids, including Self-Schedules, submitted by NCPA's Scheduling Coordinator, except with respect to any portion of the capacity of a resource for which NCPAs Scheduling Coordinator has scheduled to provide an Ancillary Service or RUC Capacity to the CAISO for that resource or to the extent the CAISO has issued a System Emergency operating order consistent with Section 7.1.1.

**12.12 Deviation Band Penalties Calculation.** For purposes of assessing Load Following Deviation Penalties to NCPAs Scheduling Coordinator, the CAISO will evaluate the amount of (i) positive deviation energy outside of the portfolio MSS Deviation Band supplied to the CAISO Markets or (ii) negative deviation energy outside of the portfolio MSS Deviation Band supplied from the CAISO Markets not served by NCPA resources. To the extent that NCPA's Scheduling Coordinator has provided positive deviation energy outside of the portfolio MSS Deviation Band supplied to the CAISO Markets, measured as defined in Schedule 19, then the payment for excess Energy outside of the portfolio MSS Deviation Band shall be rescinded and thus NCPAs Scheduling Coordinator will pay the CAISO an amount equal to one hundred percent (100%) of the product of the highest LMP paid to the MSS Operator for its Generation in the Settlement Interval for the amount of the Imbalance Energy that is supplied in excess of the portfolio MSS Deviation Band. To the extent that NCPA's Scheduling Coordinator has a negative amount of deviation energy outside of the portfolio MSS Deviation Band supplied from the CAISO Markets that is not served by NCPA resources, measured as defined in Schedule 19, then NCPAs Scheduling Coordinator shall pay the CAISO an amount equal to the product of the Default LAP price for the Settlement Interval and two hundred percent (200%) of the shortfall that is outside of the portfolio MSS Deviation Band. The two hundred percent (200%) penalty is in addition to the charges for the Imbalance Energy that is supplied from the CAISO Markets.

**12.13 Operating and Maintenance Costs.** NCPA shall be responsible for all its costs incurred in connection with procuring, installing, operating, and maintaining the facilities, Generating Units, and market-participating Loads of NCPAs System for the purpose of meeting its obligations under this Agreement.

**12.14 Billing and Payment.** Billing and payment will be in accordance with the CAISO Tariff.

**12.15 MSS Net Negative Uninstructed Deviation.** The calculation of MSS Net Negative Uninstructed Deviation must include MSS Load Following Energy and HASP Self-Scheduled Energy from Load following resources identified in Schedule 14(a) of this Agreement and associated Operational Adjustments as

part of the calculation of Net Negative Uninstructed Deviation quantities when used for purposes of applicable CAISO Settlement allocation. MSS Load Following Energy and HASP Self-Scheduled Energy from Load following resources identified in Schedule 14(a) of this Agreement and associated Operational Adjustments shall be netted against Uninstructed Imbalance Energy to properly account for the actual quantity of Net Negative Uninstructed Deviation.

**12.16 Residual Unit Commitment.** Should NCPA elect, on behalf of the MSS Members, in accordance with Section 4.9.13 of the CAISO Tariff to perform Load-following, NCPA will be considered to have automatically opted-out of RUC participation, and NCPA's Scheduling Coordinator will be exempt from costs associated with RUC and Bid Cost Recovery for RUC.

**12.17 Emissions Costs.**

**12.17.1** Unless specified otherwise in this Agreement, if the CAISO is compensating Generating Units for Emissions Costs, and if NCPA as MSS Aggregator elects to charge the CAISO for the Emissions Costs of the Generating Units serving Load of NCPA's System, then NCPA's Scheduling Coordinator shall bear its proportionate share of the total amount of those costs incurred by the CAISO based on NCPA as MSS Aggregator's gross Measured Demand excluding out of state exports. The Scheduling Coordinator for NCPA as an MSS Aggregator shall only be eligible to submit Emissions Cost Invoices pursuant to Section 11.18.6 of the CAISO Tariff if NCPA's MSS Generating Units have been made available to the CAISO through the submittal of Energy Bids.

**12.17.2** If NCPA as MSS Aggregator elects not to charge the CAISO for the Emissions Costs of the Generating Units serving Load of NCPA's System, then NCPA's Scheduling Coordinator shall bear its proportionate share of the total amount of those costs incurred by the CAISO based on NCPA as MSS Aggregator's net Measured Demand excluding out-of-state exports.

**12.17.3** If NCPA as MSS Aggregator elects to follow its Load, in accordance with Section 4.9.13 of the CAISO Tariff, and if NCPA as MSS Aggregator elects not to charge the CAISO for Emissions Costs of the Generating Units serving the Load of NCPA's System, then NCPA's Scheduling Coordinator shall bear its proportionate share of the total amount of those costs incurred by the CAISO based on NCPA as an MSS Aggregator's Net Negative Uninstructed Deviations with MSS Load Following Energy and HASP Self-Scheduled Energy from Load following resources identified in Schedule 14(a) of this Agreement and associated Operational Adjustments included in the netting.

**12.17.4** NCPA as MSS Aggregator shall make the election of whether to charge the CAISO for these costs on an annual basis on November 1 for the following calendar year.

**ARTICLE XIII****PENALTIES AND SANCTIONS**

- 13.1 Penalties.** NCPA or its Scheduling Coordinator shall be subject to penalties and/or sanctions for failure to comply with any provisions of this Agreement only to the extent that (a) the penalty or sanction is set forth in the CAISO Tariff and has been approved by FERC; and (b) the CAISO Tariff provides for the imposition of the same penalty or sanction on a UDC, MSS Aggregator, MSS Operator, Participating Generator, or Participating Load in the same circumstances. Nothing in this Agreement, with the exception of the provisions of Article XIV, shall be construed as waiving the rights of NCPA to oppose or protest any penalty or sanction proposed by the CAISO to the FERC or the specific imposition by the CAISO of any FERC-approved penalty or sanction on NCPA.
- 13.2 Corrective Measures.** If NCPA or its MSSAA Members fail to meet or maintain the requirements set forth in this Agreement or in the applicable provisions of the CAISO Tariff, the CAISO shall be permitted to take any of the measures, contained or referenced herein or in the applicable provisions of the CAISO Tariff, that the CAISO deems to be necessary to correct the situation.

**ARTICLE XIV****DISPUTE RESOLUTION**

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

**ARTICLE XV****REPRESENTATIONS AND WARRANTIES**

- 15.1 Representations and Warranties.** Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.
- 15.2 Necessary Approvals.** Each Party represents that all necessary leases, approvals, licenses, permits, easements, rights of way or access to install, own

and/or operate its facilities subject to this Agreement have been or will be obtained prior to the effective date of this Agreement.

- 15.3 NCPA Representation of MSS Members.** NCPA represents and warrants that, as of the effective date of this Agreement as set forth in Section 2.1, it is authorized by all applicable MSS Members to perform the duties and obligations set forth in this Agreement.

## ARTICLE XVI

### LIABILITY AND INDEMNIFICATION

- 16.1 Liability and Indemnification.** The provisions of Section 14 of the CAISO Tariff will apply to liability and indemnification arising under this Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to NCPA and references to the CAISO Tariff shall be read as references to this Agreement.

## ARTICLE XVII

### UNCONTROLLABLE FORCES

- 17.1 Uncontrollable Forces.** Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Agreement, except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as a reference to NCPA and references to the CAISO Tariff shall be read as references to this Agreement.

## ARTICLE XVIII

### MISCELLANEOUS

- 18.1 Notices.** Any notice, demand or request which may be given to or made upon either Party regarding this Agreement shall be made in writing to the employee or official identified in Schedule 17 of this Agreement, and shall be deemed properly given: (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 17 as the information changes. Such changes shall not constitute an amendment to this Agreement.
- 18.2 Waivers.** Any waiver at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this

Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.

- 18.3 Governing Law and Forum.** This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in accordance with, the laws of the State of California, except its conflict of laws provisions. The Parties agree that any legal action or proceeding arising under or relating to this Agreement to which the CAISO ADR Procedures do not apply shall be brought in one of the following forums as appropriate: any court of the State of California, any federal court of the United States of America located in the State of California, or, where subject to its jurisdiction, before the Federal Energy Regulatory Commission.
- 18.4 Merger.** This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to the provisions of this Agreement.
- 18.5 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.
- 18.6 Consistency with Federal Laws and Regulations.** Nothing in this Agreement shall compel either Party to violate federal statutes or regulations, or orders lawfully promulgated thereunder. If any provision of this Agreement is inconsistent with any obligation imposed on a Party by such federal statute, regulation or order, to that extent, it shall be inapplicable to that Party. No Party shall incur any liability by failing to comply with a provision of this Agreement that is inapplicable to it by reason of being inconsistent with any such federal statutes, regulations, or orders lawfully promulgated thereunder; provided, however, that such Party shall use its best efforts to comply with this Agreement, to the extent that applicable federal laws, regulations, and orders lawfully promulgated thereunder permit it to do so.
- 18.7 Severability.** If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.

**18.8 Assignments.** NCPA and the **CAISO** may each assign its respective rights and obligations under this Agreement, with the prior written consent of the other, in accordance with Section 22.2 of the CAISO Tariff, which is incorporated by reference into this Agreement. Such consent shall not be unreasonably withheld.

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

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**NORTHERN CALIFORNIA POWER AGENCY**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**CITY OF ALAMEDA**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**CITY OF BIGGS**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**CITY OF GRIDLEY**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**CITY OF HEALDSBURG**

By: \_\_\_\_\_

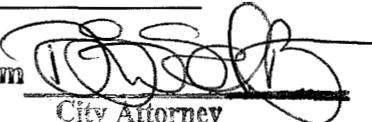
Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**CITY OF LODI**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

Approved as to form   
City Attorney

**CITY OF LOMPOC**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

**CITY OF PALO ALTO**

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

**PLUMAS SIERRA RURAL ELECTRIC COOPERATIVE**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**PORT OF OAKLAND**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**CITY OF UKIAH**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**SCHEDULE 1**  
**NCPA'S SYSTEM FACILITIES**  
**[Section 4.1, 4.4, 4.5.3, 5.1.2, 6.1, 6.31]**

The following facilities form NCPA's System, including the Points of MSS Interconnection.

## Points of MSS interconnection

Member Customer	Point of MSS Interconnection	Voltage (kV)	2010 Normal Delivery Capability (MW)	2010 Coincident Peak Load (MW)	2010 Non - Coincident Peak Load (MW)
Alameda	Oakland Substation C and Oakland Substation J	115 (Both Points)	229	58.51	68.35
Biggs	Biggs Sub (60 kV and 12kV)	60 and 12	29.2	2.78	3.94
Gridley	Gridley Sub	60	62	10.14	10.54
Healdsburg	Healdsburg Sub	60	28	20.48	20.48
Lodi**	Industrial Sub (Lodi Line 1 and Lodi Line 2); and White Slough STIG <sup>1</sup>	60 (Both Industrial Points) 230 (White Slough STIG)	124.5	121.39	123.97
Lompoc	Lompoc Sub (Lompoc Line 1 and Lompoc Line 2)	115 (Both Points)	72.5	18.30	24.14
Palo Alto	Colorado Sub (Palo Alto Line 1, Palo Alto Line 2. and	115 (All 3 Points)	379	178.79	186.24
Plumas Sierra***	Quincy Sub Marble Sub	60 60	28.3	22.89	26.09
Ukiah***	Babcock Sub	115	31.4	31.51	31.51
Silicon Valley Power*	Northern Receiving Station (NRS) (Newark-NRS No. 1, Newark-NRS No. 2, and Nortech-NRS); Kifer Receiving Station (Newark-Kifer and FMC-Kifer); and SVP Switching Station (SSS)	115 (All 5 NRS and Kifer Points)  230 (SSS)			
Port of Oakland	San Leandro – Oakland “J”, 10286 115-kV for Edes #1 Tap; Oakland “J” – Grant, 10244 115-kV for Edes #2 Tap; Oakland “C”	115	16.7	8.93	10.62

<sup>1</sup> Lodi Wastewater treatment plant Load will be served via the Lodi White Slough STIG Interconnection with PG&E, be separately metered, and be included in the normal, coincident and non-coincident Load information for Lodi.

	Maritime Tap; and Oakland Army Base Tap	115 115	40 40		
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\*The Points of **MSS** interconnection listed herein for Silicon Valley Power are governed by the terms of the Silicon Valley Power MSS Agreement with the CAISO with respect to the operational and other matters addressed in that agreement.

\*\*The Normal Delivery Capacity listed for the City of Lodi is expected to be upgraded in the near future, and does not reflect the offset provided by the Lodi Combustion Turbine, approximately 25 MW, that will be used to suppress peak Demand when the Normal Delivery Capacity is exceeded.

\*\*\*The Normal Delivery Capacity listed for the City of Ukiah and Plumas Sierra is expected to be upgraded in the near future. The Plumas Sierra listing does not reflect the offset provided by the Plumas interconnection with the Sierra Pacific Balancing Authority Area at Marble Substation, which can be used to serve peak Demand where the Normal Delivery Capacity is exceeded. The City of Ukiah listing does not reflect the offset provided by the Lake Mendocino Hydro Aggregate, approximately 3.5 MW, which will be used to suppress peak Demand when the Normal Delivery Capacity is exceeded.

The Points of Interconnection for all Generating Units listed on Schedule **14** also are Points MSS of Interconnection.

#### Other System Facilities

1. Double Circuit 230 kV line from Collierville to Bellota.
2. MSS Members' rights in Transmission Agency of Northern California's (TANC) ownership of the California-Oregon Transmission Project (COTP), to the extent that a portion of the COTP remains in the CAISO Balancing Authority Area.
3. **Two** 230 kV lines from Geysers to Castle Rock Junction. NCPA 230 kV No. 1 goes from Geothermal Plant No. 1 to Lakeville. NCPA 230 kV No. 2 goes from Geothermal Plant No. 2 to Fulton.
4. All facilities listed on Schedule **14** of this Agreement.

**SCHEDULE 2**  
**INTERCONNECTED OPERATION STANDARDS**  
**[Section 4.21**

The CAISO and NCPA shall jointly maintain stable operating parameters and control real and reactive power flows in accordance with the following Interconnected Operation Standards.

**NCPA Responsibilities**

- 1.0 NCPA shall operate the facilities of NCPA's System at each Point of MSS interconnection in such manner as to avoid any material or adverse impact on the CAISO Balancing Authority Area. In accordance with this performance goal, NCPA shall:
  - 1.1 Operate the facilities of NCPA's System at each Point of MSS Interconnection within established operating parameters including normal ratings, emergency ratings, voltage limits, and balance of load between electrical phases.
  - 1.2 Maintain primary and backup protective systems such that faults on NCPAs System facilities will be cleared within the timeframe specified by the Participating TO and NCPA with minimal impact on the CAISO Controlled Grid.
  - 1.3 Maintain Load power factor at each Point of MSS Interconnection with the CAISO Controlled Grid in accordance with Section 8.3 of this Agreement unless requested by PG&E to operate power factor at a specific value for system reliability purposes.
  - 1.4 In addition, NCPA shall operate the facilities of NCPAs System at each Point of MSS Interconnection in accordance with the requirements applicable to Utility Distribution Companies in the CAISO Operating Procedures and standards, and such that at the Points of MSS Interconnection between the CAISO Controlled Grid and NCPA's System no circuits or equipment shall exceed the allowable ampacity rating or simultaneous transfer limit between the CAISO Controlled Grid and NCPAs System (such simultaneous transfer limit shall be studied and established by the Parties). If the actual or anticipated power flow between the CAISO Controlled Grid and NCPAs System causes a circuit at a Point of MSS Interconnection to exceed its applicable ampacity rating or such flow exceeds or is anticipated to exceed the agreed to allowable simultaneous transfer limit between the CAISO Controlled Grid and NCPAs System, and further if the CAISO determines and NCPA concurs with the CAISO's determination, in accordance with Good Utility Practice, that NCPAs System is the cause of such exceedance or anticipated exceedance, NCPA retains the right, and the CAISO

shall have the right to require NCPA, to take immediate action to reduce such flow on the overloaded circuit or reduce such simultaneous power flow between the CAISO Controlled Grid and NCPAs System by one or more actions (as determined by NCPA) including, but not limited to, increasing internal Generation within NCPAs System or curtailing MSS Member Load as necessary. If the CAISO determines, in accordance with Good Utility Practice, that NCPA's System is not the cause of the existing or anticipated exceedance, the CAISO may require third parties to take necessary action to reduce flows on overloaded circuits or reduce simultaneous power flows between the CAISO Controlled Grid and NCPAs System if applicable and allowable through arrangements that the CAISO may have with such third parties or pursuant to the CAISO's authority under the CAISO Tariff or its delegated jurisdictional authority through WECC or NERC. If the CAISO is unable to determine a) whether NCPAs System caused, or b) to what extent NCPA's System may have caused, such exceedance or anticipated exceedance, or c) the Parties do not agree on the causation determination, the Parties agree, in accordance with Good Utility Practice, to confer and mutually decide what actions shall be taken.

### **CAISO Responsibilities**

- 2.0 The CAISO shall operate the CAISO Controlled Grid at each Point of MSS Interconnection with NCPA in such manner as to avoid any material or adverse impact on NCPA facilities. In accordance with this performance goal, the CAISO shall:
  - 2.1 Participate with all affected parties (including NCPA and PG&E) in the development of joint power quality performance standards and jointly maintain compliance with such standards.
  - 2.2 Observe NCPA grid voltage limits specified in Attachment 1 including requirements for reduced voltage on CAISO Controlled Grid facilities which apply during heavy fog (or other unusual operating conditions) as needed to minimize the risk of insulator flashover. Any anticipated reduction in operating voltages on CAISO Controlled Grid facilities shall be studied and established by NCPA and the CAISO.
  - 2.3 Approve NCPA's maintenance requests in a timely manner for transmission facilities that impact the CAISO Controlled Grid, and shall not unreasonably withhold approval of such requests for authorization to perform energized insulator washing work or to take planned Outages needed to replace or insul-grease insulators.
  - 2.4 Support NCPA investigation of power quality incidents, and provide related data to NCPA in a timely manner.



- 2.5 Support installation of apparatus on the CAISO Controlled Grid to improve power quality, and take all reasonable measures to investigate and mitigate power quality concerns caused by actions or events in neighboring systems or Balancing Authority Areas.
  
- 2.6 Maintain Load power factor at each Point of MSS Interconnection with NCPA's System in accordance with Section 8.3 of the Agreement.

**SCHEDULE 2**  
**ATTACHMENT 1**  
**NCPA GRID VOLTAGE LIMITS**

There are no NCPA grid voltage limitations at the present time.

### SCHEDULE 3

#### RIGHTS OF ACCESS TO FACILITIES

##### [Section 4.5.1]

- 1.0 Equipment Installation.** In order to give effect to this Agreement, a Party that requires use of particular equipment (the equipment owner) may require installation of such equipment on property owned by the other Party (the property owner), provided that the equipment is necessary to meet the equipment owner's service obligations and that the equipment shall not have a negative impact on the reliability of the service provided, nor prevent the property owner from performing its own obligations or exercising its rights under this Agreement.
- 1.1 Free Access.** The property owner shall grant to the equipment owner free of charge reasonable installation rights and rights of access to accommodate equipment inspection, maintenance, repair, upgrading, or removal for the purposes of this Agreement, subject to the property owner's reasonable safety, operational, and future expansion needs.
- 1.2 Notice.** The equipment owner shall provide reasonable notice to the property owner when requesting access for site assessment, equipment installation, or other relevant purposes. Such access shall not be provided unless the parties mutually agree to the date, time, and purpose of each access. Agreement on the terms of the access shall not be unreasonably withheld or delayed.
- 1.3 Removal of Installed Equipment.** Following reasonable notice, the equipment owner shall be required, at its own expense, to remove or relocate equipment, at the request of the property owner, provided that the equipment owner shall not be required to do so if it would have a negative impact on the reliability of the service provided, or would prevent the equipment owner from performing its own obligations or exercising its rights under this Agreement.
- 1.4 Costs.** The equipment owner shall repair at its own expense any property damage it causes in exercising its rights and shall reimburse the property owner for any other reasonable costs that it may be required to incur to accommodate the equipment owner's exercise of its rights under Section 4.5 of this Agreement.
- 2.0 Rights to Assets.** The Parties shall not interfere with each other's assets, without prior written agreement.
- 3.0 Inspection of Facilities.** In order to meet their respective obligations under this Agreement, each Party may view or inspect facilities owned by the other Party.

Provided that reasonable notice is given, a Party shall not unreasonably deny access to relevant facilities for viewing or inspection by the requesting Party.

## **SCHEDULE 4**

### **MAINTENANCE COORDINATION**

#### **[Section 5.1.2, 6.3]**

NCPA shall exchange with the CAISO a provisional planned Outage program for all lines and equipment in Schedule 1 in accordance with the CAISO Tariff. That document will be updated quarterly or as changes occur to the proposed schedule.

The CAISO shall approve all proposed Outages on equipment and lines listed on Schedule 1 unless a proposed Outage would cause the CAISO to violate Applicable Reliability Criteria. Approval of Outages shall not be unreasonably withheld.

As noted on Schedule 1, some facilities are jointly owned by NCPA and one or more other entities. The CAISO acknowledges that, under the terms of the operating agreements applicable to each such facility, NCPA may not be able to control unilaterally the timing of Outages. NCPA shall exercise its rights under the operating agreements, if any, applicable to each jointly owned facility listed on Schedule 1 to coordinate scheduling of Outages with the CAISO in accordance with this Agreement to the maximum extent possible and shall not enter into any operating agreement or amendment to an existing operating agreement with respect to any such facility that diminishes NCPA's rights to schedule Outages. However, NCPA shall communicate directly to the CAISO regarding its coordination of scheduled Outages.

Applications for scheduled work shall be submitted to the CAISO by NCPA's Grid Operations group via means to be agreed to by both Parties. The documents submitted by NCPA shall record the details for all work and become the database for reporting and recording Outage information.

## **SCHEDULE 5**

### **CRITICAL PROTECTIVE SYSTEMS**

#### **[Section 5.31**

Distribution protective relay schemes affecting the CAISO Controlled Grid are those associated with transformers that would trip transmission breakers and/or busses at NCPA's Points of MSS Interconnection when activated. These would include any of the following:

1. High Side Overcurrent Relays
2. Differential Overcurrent Relays
3. Sudden Pressure Relays
4. Low Oil Relays
5. Neutral Ground Overcurrent Relays
6. On fuse protected transformers, it would be the high-side fuses.

NCPA shall provide the CAISO a description of the relaying schemes at the Points of MSS Interconnection prior to commencing operations as an MSS Aggregator.

**SCHEDULE 6**

**[RESERVED]**

## **SCHEDULE 7 EMERGENCIES**

### **[Section 7.21**

The CAISO shall notify NCPA's Dispatch Center ("NDC") Operator of the emergency, including information regarding the cause, nature, extent, and potential duration of the emergency. The NDC Operator shall make the appropriate notifications within NCPA organization. The NDC Operator shall then take such actions as are appropriate for the emergency.

NCPA shall make requests for information from the CAISO regarding emergencies through contacts to the CAISO's Operations Shift Supervisor, by the NDC Operator, or NCPA's information Officer may coordinate public information with the CAISO Communication Coordinator.

NCPA is required to estimate service restoration by geographic areas, and shall use its call center and the media to communicate with customers during service interruptions. NCPA is also required to communicate the same information to appropriate state and local governmental entities. For transmission system caused outages, the CAISO's Operations Shift Supervisor will notify the NDC Operator, who will make appropriate notifications within NCPA's organization of any information related to the outage such as cause, nature, extent, potential duration and customers affected.

NCPA and CAISO Grid Control Center logs, Electric Switching Orders and Energy Management System temporal database will be used in preparation of Outage reviews. These documents are defined as the chronological record of the operation of the activities which occur with the portion of the electrical system assigned to that control center. The log shall contain all pertinent information, including orders received and transmitted, relay operations, messages, clearances, accidents, trouble reports, daily switching program, etc.

NCPA shall retain records in accordance with its standard practices for six years.

## **SCHEDULE 8**

### **UNDERFREQUENCY LOAD SHEDDING**

#### **[Section 7.4.1, 7.4.5]**

The objective of the Underfrequency Load Shedding (UFLS) program is to provide security and protection to the interconnected bulk power network by arresting frequency decay during periods of insufficient resources.

NCPAs UFLS program establishes Underfrequency Load Shedding objectives consistent with the Load Shedding policies of the WECC, NERC and NCPA. NCPA's UFLS program, as implemented by the MSSAA Members, shall at all times comport with the requirements of the WECC Coordinated Off-Nominal Frequency Load Shedding and Restoration Plan (Final Report November 25, 1997, as revised December 5, 2003) and any of its subsequent amendments. NCPA's UFLS program utilizes WECC planning criteria in this area. Per WECC requirements, UFLS is on the feeder side of the transformer.

NCPAs UFLS program, other than for the Port of Oakland, is set forth in Attachment A to NCPAs EAP, which is attached to Schedule 11, and incorporates the tripping scheme set forth therein.

The Port of Oakland will continue to participate in the UFLS program of PG&E. The Port of Oakland's Interconnection Agreement with PG&E, dated December 15, 2000 (with a termination date in Section 5.3.1 (b) of that agreement of no later than January 1, 2021) and which, to the extent relevant to the UFLS obligations under this Agreement, is incorporated herein by reference, provides the Port of Oakland's UFLS program for distribution circuits when required by PG&E in accordance with the PG&E Electrical Emergency Plan (EEP) dated June 20, 2002 and which, to the extent relevant to the UFLS obligations under this Agreement, is incorporated herein by reference. NCPA will develop a separate UFLS program for the Port of Oakland prior to such time as the Port of Oakland's Interconnection Agreement with PG&E described above may cease to apply for any reason to the Port of Oakland, including without limitation by way of amendment or termination, or that would in the CAISO's discretion effectively cease to satisfy the UFLS obligations under this Agreement. Until such time as NCPA and the Port of Oakland implement a program for Port of Oakland's UFLS independent of PG&E, NCPA and the Port of Oakland shall continue to operate in accordance with the applicable PG&E EEP dated June 30, 2002 and the Port of Oakland's Interconnection Agreement with PG&E, dated December 15, 2000. NCPA will notify the CAISO immediately if the PG&E UFLS program described above ceases to apply to Port of Oakland.

This Schedule 8 and the NCPA EAP shall be revised to incorporate an updated UFLS program, including any separate UFLS program for Port of Oakland, upon implementation by NCPA.

**SCHEDULE 9**  
**OTHER AUTOMATIC LOAD SHEDDING**

**[Section 7.4.1]**

NCPA has no other automatic Load Shedding devices other than those identified in Schedule 8.

**SCHEDULE 10**  
**MANUAL LOAD SHEDDING**

**[Section 7.4.2]**

Criteria for the implementation of manual Load Shedding are set forth in the NCPA Emergency Action Plan attached to Schedule 11.

**SCHEDULE 10A**  
**ROTATING LOAD CURTAILMENT PROCEDURES**

**[Section 7.4.2]**

NCPA's rotating load curtailment procedures are described in the NCPA Emergency Action Plan attached to Schedule 11. To maintain a minimum amount of continuously interrupted Load, as directed by the CAISO, for an extended amount of time, no portion of NCPA's interrupted Load shall be restored unless an equal or greater amount of Load is interrupted first.

**SCHEDULE IOB  
INTERRUPTIBLE LOAD**

**[Section 7.4.2]**

Should NCPA or any MSSAA Member establish an interruptible Load program and seek to Bid any interruptible Load into any CAISO Market, NCPA shall provide a complete description of the program to the CAISO at least sixty (60) days prior to the submission of the first such Bid by NCPA's Scheduling Coordinator and all applicable Operating Procedures shall be followed. SVP's comparable obligations are described within the SVP MSS Agreement.

**SCHEDULE 11**  
**EMERGENCY ACTION PLAN**

**[Sections 5.2, 7.1, 7.1.1, 7.1.2, 7.5.1 and 7.5.2]**

NCPA's current Emergency Action Plan is attached to this Schedule 11. The NCPA Dispatch Center (NDC) will be the first point of contact for NCPA Emergency Operations under this Agreement, except with respect to the Port of Oakland. All directives/orders affecting the individual MSSAA Members, other than the Port of Oakland, will be issued through the NDC.

The Port of Oakland will continue to participate in the UFLS program and the manual Load Shedding program of PG&E, subject to the terms of Schedule 8, this Schedule 11, and the attached EAP.

The Port of Oakland's Interconnection Agreement with PG&E, dated December 15, 2000 and which, to the extent relevant to the manual Load Shedding obligations under this Agreement, is incorporated herein by reference, provides the Port of Oakland procedure for service interruptions to distribution circuits when required by PG&E to implement manual Load Shedding in accordance with the relevant applicable PG&E Electrical Emergency Plan (EEP) dated June 30, 2002 and which, to the extent relevant to the manual Load Shedding obligations under this Agreement, is incorporated herein by reference. NCPA will develop a separate manual Load Shedding program for the Port of Oakland prior to such time as the Port of Oakland's Interconnection Agreement with PG&E described above may cease to apply for any reason to the Port of Oakland, including without limitation by way of amendment or termination, or that would in the CAISO's discretion effectively cease to satisfy the manual Load Shedding obligations under this Agreement. Until such time as NCPA and the Port of Oakland implement a program for Port of Oakland manual Load Shedding and rotating service interruptions independent of PG&E, NCPA and the Port of Oakland will continue to operate in accordance with the applicable PG&E EEP dated June 30, 2002 and the Port of Oakland's Interconnection Agreement with PG&E, dated December 15, 2000. NCPA will notify the CAISO immediately if the PG&E manual Load Shedding program described above ceases to apply to Port of Oakland.

This Schedule 11 and the NCPA EAP shall be revised to incorporate updates, including any separate manual Load Shedding program for Port of Oakland, upon implementation by NCPA.

## **NCPA EMERGENCY ACTION PLAN (EAP)**

### **PURPOSE**

**A.** The primary purpose of this plan is to provide the MSS Members (MSSs), other than the Port of Oakland, and NCPA Staff with a written procedure to follow in case of System Emergencies that may directly and/or indirectly affect the NCPA Member(s) abilities to schedule their resources and MSS Demand within the California Independent System Operator (CAISO) Balancing Authority Area. The Port of Oakland will be subject to the procedures in case of System Emergencies specified in the Pacific Gas and Electric Company (PG&E) Electrical Emergency Plan (EEP) dated June 30, 2002 and is not subject to the procedures set forth herein. There may be times that the CAISO Balancing Authority Area is experiencing adverse conditions (i.e., storms, fires, loss of generation, transmission, etc.) causing large interruptions to load throughout the state. During these conditions this EAP will allow the NCPA Dispatch Center (NDC) to operate under established emergency procedures with CAISO and PG&E. System Emergencies shall be limited as specified in Section 7.1 of the NCPA MSS Aggregator Agreement (MSSAA), whereby NCPA acts as MSS Aggregator for the MSS Members within the Service Area of the NCPA System, dated 9/1/2002, as amended.

**B.** The secondary purpose of this plan is to satisfy the requirements of the MSSAA.

It is NCPA's goal to use all available resources to help limit the amount of power interruption to all NCPA Member Cities by assisting the CAISO, PG&E-TOC, SMUD (in coordination with Western as required) and/or the WECC Reliability Coordinators in the prevention and/or the restoration of grid related outages throughout the Western United States.

The CAISO will make every effort during a System Emergency that is the result of a deficiency of resources to meet Demand in the CAISO Balancing Authority Area, as specified in Section 7.7.1 1.4 of the CAISO's Tariff, and to facilitate the continued export of Energy to the City of Roseville to which the City of Roseville would otherwise be entitled. However, the CAISO may request that NCPA limit exports to the City of Roseville during a System Emergency that is not the result of a deficiency of resources to meet Demand in the CAISO Balancing Authority Area but instead occurs due to operating contingencies, which may include but not be limited to a forced loss of resources and/or transmission components or may otherwise be caused by an Uncontrollable Force.

### **REFERENCES**

- NCPA Emergency Notification Procedure (7/07)
- NCPA System Alert Procedure #600-15
- NCPA EAP Lake Alpine Dam
- NCPA EAP Utica Reservoir Dam

- NCPA EAP New Spicer Meadows Dam
- NCPA EAP McKay's Point Diversion Dam
- NCPA/CAISO Reserve Sharing Agreement
- CAISO Operating Procedure 4610 –System Restoration
- CAISO Operating Procedure 4510 –Load Management
- CAISO Operating Procedure 4420 – Electrical System Emergency
- CAISO Operating Procedure 4220 – Restricted Maintenance Operations
- CAISO Operating Procedure 7320 –Bay Area Transmission Management
- PG&E Electric Emergency Plan – Dated 06/30/2002

## **RESPONSIBILITY**

**1.0** The NDC will be the first point of contact for NCPA Emergency Operations under the NCPA Operating Procedures, CAISO Emergency Operations under the CAISO Operating Procedures and all Emergency Operations under the MSSAA. All directives/orders affecting the individual MSSAA Members will be issued through the NDC. In the event of any conflicting instructions/orders with the above procedures from a third party, and in the absence of any direct order from the WECC Reliability Coordinator, the NDC instructions/orders will prevail. The NDC will ensure that all emergency procedures are followed and all instructions for the operation of all the NCPA Resources are directed by the NDC or its designate following the applicable NERC Reliability Standards and WECC Criteria, as well as "Good Utility Practice".

**1.1** The NDC may have to relocate operations to the Disaster Recovery Center ("DRC"). During this time, all orders, instructions and coordination with CAISO and PG&E will be communicated by the NDC from the DRC. NCPA on call staff including the dispatch support person will be dispatched per this EAP by the NDC either from the normal or back-up locations. See Attachment C of the EAP.

**a.** The MSSAA Members Underfrequency Load Shedding Schemes are to be in compliance with WECC requirements and in service at all times or have reported to the NDC the reason for being out of service and the estimated time it will return to normal status (in service). See Attachment A of the EAP.

**b.** The NCPA Scheduling Coordinator (NCPA-SC) will follow the NCPA Emergency Notification Procedure for communication with the MSSAA Members and their associated Operation Centers of all conditions calling for the NCPA EAP and/or the CAISO System Emergency Operating Procedures to be placed in service.

## **PROCEDURE**

**2.0** The NDC will make notifications to all parties associated with the NCPA Emergency Notification Procedure when implementing the EAP. The EAP will be implemented when, in the judgment of the NDC, conditions in the CAISO Balancing Authority Area will be affecting NCPA Operations or if the CAISO, PG&E Transmission Operation

Center (PG&E-TOC) and/or WECC Reliability Coordinators declare a WECC System or statewide emergency. The EAP may also be implemented by the NDC in cases where only NCPA is experiencing an emergency (i.e., EAP's associated with the Hydro Project and/or other resource failures).

**2.1** As provided in the MSSAA, the CAISO will communicate all instructions for NCPA to follow through the NDC (the CAISO may communicate with the NDC directly or through its assignee, provided that the procedure for the CAISO's designation of any assignee is agreed to by NCPA). All instructions will be followed under the MSSAA to the extent they do not conflict with NCPA Policies & Procedures, as incorporated in NCPA EAP, or violate any State and Local laws.

- a.** NCPA can only deliver power outside of the MSS that is surplus to the MSS full requirements as reasonably determined and documented by the NDC.
- b.** NCPA cannot supply generation to third parties unless the native load of NCPA and the MSS Members is being 100% served.
- c.** NCPA, while participating in involuntary load curtailments, cannot provide such realized surplus power unless the CAISO is under System Emergency Stage 3 Contingency Conditions.

**2.2** NCPA will communicate with CAISO, PG&E-TOC, WECC Reliability Coordinator and any affected third party during the time the EAP is in force.

- a.** In coordination with the EAP, the NDC will implement NCPA Policy #600-15 and Issue a NCPA System Alert Message. All work on NCPA Resources and their associated facilities is to be cancelled and all resources that can be returned to service should be returned with the exception of annual planned Unit outages.
- b.** The NDC will coordinate the implementation of all CAISO Emergency Procedures with the MSSAA Members including Stage-3 involuntary load curtailments and the potential of manual deep load shedding by CAISO through PG&E-TOC (see Attachment B to the EAP). NCPA will provide all necessary post-event information to CAISO, and if applicable to PG&E-TOC, regarding the amounts of load curtailed per MSS Member.
- c.** The NDC Shift Dispatcher has the authority to implement the operations under this EAP and to dispatch the NCPA Resources to assist in restoring the CAISO and/or WECC Grid to normal status even if doing so requires manual load shedding of the MSSAA Member Loads or other actions that may be necessary as determined by the NDC Shift Dispatcher.

## **NCPA ACTIONS**

**3.0** The NDC will contact the Dispatch Supervisor to coordinate double coverage in the NDC when implementing the EAP. In addition, the Relief Operators are to be notified

that the NCPA-EAP has been implemented and they are to be on call during this time in case additional personnel are needed. The NDC information systems support staff will be notified to standby in case of SCADA or other related computer complications during the time the EAP is in service.

**3.1** The NCPA Unmanned Generating Plants are to be manned, this includes the Collierville Hydro Plant, CT#1 (3 simple cycle Units), the STIG 50mw Unit and the Murphy's Hydro Headquarters. The NCPA Geothermal Project (four units) is already manned; geothermal staff needs to be notified that the EAP has been implemented. The generation transmission connections to the CAISO grid are controlled from the power plant switches and can be operated by the NDC via SCADA for all stations except the Geothermal facility, which are controlled by SCADA at the plant sites. Communication with the plants before operation of station switches must be established before any operations occur.

**a.** The NCPA Collierville generating Units (250mws) should be on line at minimum load, available for full load pickup if requested by the CAISO, PG&E-TOC and/or the WECC Reliability Coordinators pending other operational constraints.

**b.** All backup generators for station service and UPS Systems batteries including the NDC are to be available and maintained in good operating condition at all times with ample fuel supply/charge so as to meet the demand needed during total blackout conditions.

**c.** The NDC staff will have all applicable operating procedures readily available for any system emergency in which NCPA may be involved either directly or in fulfillment of its obligations pursuant to the MSSAA to aid in the prevention of damage to and/or the restoration of the CAISO and/or the WECC associated grid.

**d.** The NDC will be prepared to switch Operation Centers over to the DRC if the need arises. The NCPA Dispatcher and the dispatch support person are to bring with them the EAP along with any other documents that may be needed before additional staff support arrives.

**e.** The NDC will follow the WECC communication plan as it pertains to our NDC operation.

**f.** The NDC VHF base radio station with direct communication to all generation facilities will be tested and kept in service at all times. Communication with the generation facilities is to be established during the times the EAP is in service.

**g.** The NCPA plant sites all have cell phones as a backup. Standing orders will be issued to all plant sites on operation of the Units in case of communication loss including Black Start procedures.

h. The NDC will Black-Start all available units that are Black-Start capable, either on orders from CAISO, PG&E-TOC, the WECC Reliability Coordinator to assist in restoration of the California Grid or as needed by the NDC for load restoration within the cities of Alameda or Lodi.

i. In case of a natural gas fuel supply shortage preceding and/or following an emergency under this EAP, the three (3) CT#1 Units can be switched to fuel oil. If the shortage is caused by extreme cold weather NCPA will follow orders issued by our gas supplier and also switch to fuel oil. If the CT#2 Unit (STIG) is curtailed, the CT#1 Units on fuel oil can substitute for the loss in generation from CT#2 Unit. Emissions constraints may limit the operation of the CT#1 Units when switched to fuel oil.

3.2 NCPA will follow all Emergency Operating Procedures listed above and will take and implement instructions from CAISO, PG&E-TOC and WECC Reliability Coordinators to aid the grid in its restoration efforts.

3.3 All news media inquiries received by the NDC or other NCPA Staff during abnormal conditions, should be directed to the on site supervisor. To the extent possible, all factual information released to the media will be coordinated with CAISO, and PG&E-TOC, if applicable. If no supervisor is on site then the supervisor most informed of the current system conditions should be contacted, see Emergency Notification Procedure contact list and numbers.

This procedure will be modified as conditions warrant.  
Tracy Bibb, Manager Coordinated System Operations.

**ATTACHMENT “A” = Off-Nominal Frequency Relay Plan**

**ATTACHMENT “B” = Load Shedding Scenarios**

**ATTACHMENT “C” = Relocation of Dispatch Operations**

## Attachment A

### Off-Nominal Frequency Relay Plan

As specified in Section 3.2.2 of this Agreement, the MSSAA Members are individually responsible for compliance with the WECC and NERC Reliability Standards and criteria applicable to the functions for which each MSSAA Member are respectively registered with NERC. At the present time, the MSSAA Members are responsible either individually or in aggregate for complying with the WECC Coordinated Off-Nominal Frequency Load Shedding and Restoration Plan (Final Report published November 25, 1997, as revised and amended December 5, 2003), and any subsequent amendments.

## Attachment B

### Load Shedding Scenarios

<b>Potential Power System Stress Scenarios</b>					
	1	2	3	4	5
	CAISO Balancing Authority Area Resources $\geq$ Balancing Authority Area Loads (adequate Reserve margin)	CAISO Balancing Authority Spinning Reserve portion of Operating Reserves depletes or is anticipated to drop below the WECC Operating Reserve requirements and cannot be restored; <b>Stage 3 Emergency</b> ; CAISO requests firm load shedding; No concurrent Balancing Authority Area contingencies			A contingency and/or Uncontrollable Force, forces the CAISO Balancing Authority Spinning Reserve portion of Operating Reserves to deplete or to be anticipated to drop below the WECC Operating Reserve requirements and cannot be restored.
<b>Situation</b>	No AWE	Resources NON-MSS < Load NON-MSS Resources MSS $\geq$ Load MSS	Resources MSS < Load MSS Resources NON-MSS < Load NON-MSS	Resources MSS < Load MSS Resources NON-MSS > Load NON-MSS	Uncontrollable Force, grid frequency impacted (Pre-conditions, normal)
<b>Description</b>	All Load Serving Entities meeting loads with ample resources and Reserves	NON-MSS have insufficient resources to meet loads MSS are meeting loads and their Reserve Requirements	Both MSSs and NON-MSSs have insufficient resources to meet loads	MSS has insufficient resources to meet load NON-MSS have sufficient resources	Flood, earthquake, embargo, war, transmission line down, pipeline explosion, physical loss of generation, etc.
<b>Possible Stress Points</b>	Tracy Xformer, Bay Area, Sacto Valley, Other Local Failure	Stage 3 Emergency Load shed plus column 1*	Stage 3 Emergency	Stage 3 emergency	Balancing Authority Area wide and/or local

**NCPA MSS AGGREGATOR AGREEMENT**

<p><b>MSS Response</b></p>	<p>Affected <b>MSSs</b> shed protocol, contract, or procedure defined load share or as otherwise operationally necessary for localized problems</p>	<p>Load available <b>MSS Reserves</b> as requested by the CAISO*</p>	<p>Load all available Reserves and each UDC and <b>MSS</b> take pro rata load cuts as requested by the CAISO</p>	<p>The CAISO will buy from the Real Time market first, then use all Balancing Authority Reserves down until the Spinning Reserve portion of Operating Reserves depletes or is anticipated to drop below the WECC Operating Reserve requirements and cannot be restored, then shed load of deficient <b>MSSs</b></p>	<p><b>MSS</b> and <b>NON-MSS</b> load all available Reserves &amp; take necessary pro-rata load cuts</p>
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\* Load interrupted by a **MSS** under various CAISO Procedures will be the **accumulative obligation** amount of all requests and not the **summation** of them.

## Attachment C

### Relocation of Dispatch Operations

NCPA Disaster Recovery Center  
7664 Old Auburn Road, Citrus Heights, CA 95610

In the unlikely event that the NCPA Dispatch Center (NDC) must be evacuated, the dispatch operations will be conducted from the NCPA Disaster Recovery Center (DRC). The following procedure outlines the steps required to relocate to the DRC with the functionality necessary to continue all real-time operations.

Steps to be completed by the NCPA Dispatcher on duty at the NDC:

1. Collect the following items:
  - a. Current days preschedules (other days if available)
  - b. RT changes sheet, Turnover sheet, COTP limits and current changes.
  - c. Operations binder
  - d. Hydro/Geo Binders
  - e. Emergency Action Plan binders (NCPA and Hydro project)
  - f. Dispatch cell phone and wall/vehicle chargers (916-849-0532)
  - g. Dispatch kev set
2. Forward phones to DRC (see confidential procedure in SC and Dispatch Operations Manual).
3. Proceed to DRC by following directions below

Steps to be completed by the NCPA Scheduling Coordinator on duty at the NDC:

1. Collect the following items
  - a. Current's day's check off sheets (other days if available)
  - b. Red "SC Operations Manual" binder
2. Forward phones to DRC (see confidential procedure in SC and Dispatch Operations Manual).
3. Proceed to DRC (see directions in SC and Dispatch operational binder)

To obtain access to DRC follow directions located in confidential envelope contained within the operations binder.

Steps to be completed by the Dispatcher on duty at the DRC:

1. Notify WAPA, SMUD, APM, CAISO, and PG&E of move to DRC
2. Establish communication with all plants and members (see Emergency Notification List)
3. Continue to load follow based on most recent meter readings available

Steps to be completed by the Scheduling Coordinator on duty at the DRC:

- Notify operations supervisor(s) and support personnel of move to DRC
- Establish communication with the CAISO

Steps to be completed by support personnel at the DRC:

- Setup and/or maintain all tools necessary to operate the MSS.

## SCHEDULE 12 LOAD RESTORATION

### [Section 7.4.4]

NCPA shall follow the procedures set forth below in this Schedule 12 in promoting orderly, coordinated restoration of electric systems after a major system disturbance has occurred which resulted in Underfrequency Load Shedding (“UFLS”) in California.

1. Immediately after UFLS has occurred in NCPA’s System, NCPA shall remain in contact with CAISO real-time operations and PG&E’s Area Control Center (ACC) until normal frequency has been restored throughout the CAISO Balancing Authority Area or the CAISO Shift Supervisor has concluded that such full-time communications can be terminated. Emergency communications over the California ACC Hot-line will be under the direction of the CAISO Shift Supervisor and the senior dispatcher present at the PG&E ACC(s).
2. Manual Load restoration shall not normally be initiated until the California ACC Hot Line is attended. No Load is to be manually restored unless directed by the CAISO, either directly or through its assignee, provided that the procedure for the CAISO’s designation of any assignee is agreed to by NCPA, after the frequency has recovered and there is indication that the frequency can be maintained. NCPA shall await direction from the CAISO or its assignee, who will be in contact with the CAISO Shift Supervisor. The CAISO Shift Supervisor shall determine whether adequate generation resources are available on line to support the Load to be restored.
3. If the CAISO cannot meet the WECC and NERC Disturbance Control Standard or the Control Performance Standard or other applicable Reliability Standards post disturbance, no manual Load restoration shall be permitted. If the frequency is such that automatic Load restoration occurs under these conditions, if NCPA has restored Load automatically, it will manually shed an equivalent amount of Load to offset the Load which was automatically restored.
4. Restoration of ties and off-site power Supply to nuclear generating facilities should be given top priority. Manual Load restoration will be deferred during periods of tie restoration. NCPA should be equipped and prepared to drop Load manually when necessary to allow frequency recovery sufficient to re-establish CAISO intra-area ties and Interties between the CAISO Balancing Authority Area and outside systems. Where manual Load Shedding is required, the CAISO shall make reasonable efforts to allocate the Load Shedding requirement equitably among NCPA as the MSS Aggregator, UDCs, and MSS Operators where Load Shedding shall be beneficial, and such Load Shedding shall be made in accordance with Section 7.4.

5. NCPA shall use its existing plans and priorities to restore Load within the parameters given by the CAISO, giving the appropriate priority to essential services such as military, public safety agencies, water treatment plants, sewage treatment plants, etc.

**SCHEDULE 13**
**EXISTING CONTRACTS, ENCUMBRANCES AND TRANSMISSION OWNERSHIP RIGHTS**
**[Sections 9.1.1 and 9.2.3]**

Existing Contract or Encumbrance	Amount (MW)	Scheduling Timelines	
		To PG&E	To CAISO
South of Tesla Principles (SOTP) between PG&E and TANC (PG&E # 143)	66.639* (51 + 15.639)	30 min prior to the start of the active hour	In accordance with the CAISO Tariff
<b>NCPA System Transmission Ownership Rights in the CAISO Balancing Authority Area at Balancing Authority Area Interties (and Related Contracts)</b>	<b>Amount (MW)</b>	<b>Scheduling Timelines</b>	
			To CAISO
Plumas-Sierra Rural Electric Cooperative Transmission Ownership Rights up to Marble Substation Intertie (as described in the CAISO's Interconnected Control Area Operating Agreement with Sierra Pacific Power Co. for the Marble Substation Intertie)	25**	N/A	30 min prior to the start of the active hour
COTP Terminus (as described in the BANC-CAISO Adjacent Balancing Authority Operating Agreement)	333 North to South* (279 + 54)  253 South to North* (213 + 40)	N/A	30 min prior to the start of the active hour

\*The amount of **MSS** Members Existing Contracts and Encumbrances, and Transmission Ownership Rights, as reflected in Schedule 13, aggregates the MSSAA Members' and SVP's COTP and SOTP rights. Such COTP and SOTP amounts are subject to interim adjustment in accordance with the Settlement Agreement. Interim adjustments shall not require amendment to this Agreement; provided, however, permanent changes to these amounts will be deemed an amendment to this Agreement and shall be given effect in accordance with the Settlement Agreement. The Agreement COTP Terminus Transmission Ownership Rights amounts are contingent upon the direction of the transaction and the

California Oregon Intertie rating. The SOTP amounts are contingent upon the availability of unused transmission service rights as further described in the Path 15 Operating Instructions (Appendix B, Transmission Control Agreement, as approved in Docket ER99-1770 and as may be amended or superseded).

\*\*The actual transfer capacity of the Marble Intertie is 25 MW, but due to constraints on the Summit Branch Group, the Nomogram (CAISO Procedure: T-154F) limits the actual transfer capacity to equal: 1) Spring (April through May) 15 **MW**; 2) Summer (June through October) 7 MW; and 3) Winter (November through March) 11.5 MW.

Note: Details regarding the agreed upon scheduling provisions for each Existing Contract or Encumbrance are described in the Settlement Agreement.

**SCHEDULE 14****GENERATING UNITS AND MARKET-PARTICIPATING LOADS**

**[Section 3.3.3, 3.3.4, 7.1.1, 7.1.2, 8.2.1, 8.2.2, 10.1, 10.1.1, 10.1.2, and 11.11**

NCPA has identified in the attached tables all of the individual Generating Units and market-participating Loads that NCPA or the MSSAA Members own or control on NCPAs System, together with certain information required by the CAISO. The individual Generating Units and market-participating Loads that SVP owns or controls within NCPAs System are identified in Schedule **14** of the SVP MSS Agreement, together with certain information required by the CAISO.

**Schedule 14**
**Section 1: Technical Characteristics of Generating Units  
 Northern California Power Agency**

Name of Facility (Including Unit Number)	QF (Y/N)	RMR (Y/N)	Name of Generating Unit Owner	CAISO Resource ID	Type of Unit	Primary Fuel Type	Designed Gross (Nameplate) Capacity 1/ (MW)	Limitations (Reference#)
Alameda Gas Turbine #1	N	N	NCPA	ALMEGT_1_UNIT 1	Combustion Turbine	Natural Gas	25.40	THERM2
Alameda Gas Turbine #2	N	N	NCPA	ALMEGT_1_UNIT2	Combustion Turbine	Natural Gas	25.40	THERM2
Collierville Hydro Aggregate	N	N	NCPA	COLVIL_7_PL1X2	Hydro Aggregate	Water	252.50	HYDI
Collierville Hydro Unit 1	N	N	NCPA		Hydro	Water	126.50	HYDI
Collierville Hydro Unit 2	N	N	NCPA				126.00	HYDI
Geothermal Plant 1 Aggregate	N	N	NCPA	NCPA_2_PL11X2	Geothermal Aggregate	Geothermal	110.00	GEO6
Geothermal Plant 1 - Unit 1	N	N	NCPA	NCPA_7_GP1UN1	Geothermal	Geothermal	55.00	GEO1, 6
Geothermal Plant 1 - Unit 2	N	N	NCPA	NCPA_7_GP1UN2	Geothermal	Geothermal	55.00	GEO2, 6
Geothermal Plant 2 Aggregate	N	N	NCPA	NCPA_2_PL21X2	Geothermal Aggregate	Geothermal	110.00	GEO7
Geothermal Plant 2 - Unit 3	N	N	NCPA	NCPA_7_GP2UN3	Geothermal	Geothermal	55.00	GEO4, 7
Geothermal Plant 2 - Unit 4	N	N	NCPA	NCPA_7_GP2UN4	Geothermal	Geothermal	55.00	GEO5, 7
Graeagle Hydro Project	N	N	Henwood	GRGLHP_6_UNITA1	Hydro			HYD2
Lake Mendocino Hydro Aggregate	N	N	City of Ukiah	UKIAH_7_LAKEMN	Hydro Aggregate	Water	3.50	HYD4
Lake Mendocino Unit 1	N	N	City of Ukiah		Hydro	Water	1.00	
Lake Mendocino Unit 2	N	N	City of Ukiah		Hydro	Water	2.50	
Lodi Gas Turbine	N	N	NCPA	LODI25_2_UNIT 1	Combustion Turbine	Natural Gas	25.40	THERM3

Lodi Steam Injected Gas Turbine	N	N	NCPA	STIGCT_2_LODI	Combustion Turbine	Natural Gas	51.20	THERM4, 5
Spicer Hydro Aggregate	N	N	NCPA	SPICER_1_UNITS	Hydro Aggregate	Water	6.00	HYD3
Spicer Hydro Unit 1	N	N	NCPA		Hydro	Water	2.80	
Spicer Hydro Unit 2	N	N	NCPA		Hydro	Water	2.80	
Spicer Hydro Unit 3	N	N	NCPA		Hydro	Water	0.50	
Cooperatively Owned Back Up Aggregate				PALALT_7_COBUG				THERM6
Cobug Unit 1	N	N	City of Palo Alto		Combustion Turbine	Natural Gas	1.20	
Cobug Unit 2	N	N	City of Palo Alto		Combustion Turbine	Natural Gas	1.20	
Cobug Unit 3	N	N	City of Palo Alto		Combustion Turbine	Natural Gas	1.20	
Cobug Unit 4	N	N	City of Palo Alto		Combustion Turbine	Natural Gas	1.20	
High Sierra Cogeneration Aggregate	N	N	Plumas Sierra REC	PLMSSR_6_HISIER			6.00	NONE
	N	N	Plumas Sierra REC		Reciprocating Engine	Natural Gas	3.00	
	N	N	Plumas Sierra REC		Reciprocating Engine	Natural Gas	3.00	

1/ Current effective values for purposes of submitting Self-Schedules and Bids for Energy and/or Ancillary Services in CAISO Markets may differ from those set forth in this Schedule 14, depending on the results of CAISO performance testing pursuant to Sections 8.9 and 8.10 of the CAISO Tariff and Appendix K: Ancillary Service Requirements Protocol of the CAISO Tariff. This and other values are subject to certification by the CAISO in accordance with the CAISO Tariff. More detailed Generating Unit operating data must be provided at a time and in a format specified by the CAISO in response to CAISO requests pursuant to CAISO Tariff Sections 4.6.4, 4.6.7.1 and 30.

## Schedule 14

### Section 2: Limitations - Thermal Units Northern California Power Agency

Reference #	Description of Limitation
THERM1	Deleted
THERM2	For the Alameda Gas Turbine Units, per Permit to Operate (PTO) by Bay Area Air Quality Management district, air emissions permit limits total generation at the Alameda site to 25,800 gross MWh per year. (i.e. Any combination of generation from Alameda Unit 1 and 2 is limited to 25,800 MWh per year). The annual operating hours is limited to a total of 1,015 hours for the project. Each unit has a minimum off time of 15 minutes. However, operating each unit past 400 hours per year could trigger significant capital costs in tests and retrofits, and the economic justification to NCPA is not accounted for in its budget. To the extent that NCPA is required to retrofit or test the facility it could temporarily impact the availability of the units.
THERM3	For the Lodi Gas Turbine unit, air emissions permit limits daily operating hours (See Lodi Limitations tab). Unit is limited to 7 gallons of diesel fuel through the starting engine or approximately 2 starts per day (a failed start counts as a start). Unit has a minimum off time of 15 minutes. Annual operating hours are limited to 200 hours except in a response to a CAISO declared stage 1, 2, 3, or Transmission Emergency provided the unit is in the local transmission area. Declared emergencies are not counted against the 200 hour per year limit. The unit is then limited to <b>877</b> hours unless there is an emergency declared by the governor.
THERM4	For the Lodi STIG unit, daily emissions limits are 112 lbs of NO <sub>x</sub> . At start up, approximately 50 lbs of NO <sub>x</sub> are emitted over a three to four hour period. After that, the unit emits approximately 3 lbs of NO <sub>x</sub> per hour at rated capacity. These emissions limits would be reached after 23 hours of operation at the Normal Maximum Operating Limit specified in Section 1 from a single start-up.
THERM5	Lodi STIG 49.9MW net per permit conditions and 1.3MW of parasitic load.
THERM6	Annual operating hours are limited to 10,400 hours. Unit has a minimum off time of 30 minutes.

**Schedule 14****Section 2: Lodi Gas Turbine**  
**Additional Limitations based on Generation Levels**

<b>Gross Generation (MW)</b>	<b>Daily Operating Hours</b>
	10.7
<b>26</b>	<b>10.3</b>
<b>27</b>	9.9
<b>28</b>	<b>9.5</b>

## SCHEDULE 14

### Section 2: Limitations - Hydro Units Northern California Power Agency

Reference #	Description of Limitation
HYD1	For Collierville Hydro, FERC license requirements and California State Fish Game requirements govern Hydro facility operations. Reservoir spills at Elevation of 3370 feet. Reservoir minimum operating elevation of 3318 feet (No spilling allowed). Unit trips at reservoir elevation of 3280 feet. Operations at the minimum operating level of 3-5 mw will be determined by cooling water temperatures. At this time the maximum station ramping rate has been determined to be 25MW/minute based on the CCWD water tap. Unit 1 and 2 will be operated as a single unit with a single resource ID.
HYD2	Graeagle Hydro Project is exempted from NCPA scheduling and ISO metering. When it runs, it will have the effect of reducing load within Plumas Sierra MSS.
HYD3	For Spicer Hydro Plant, FERC license requirements and California State Fish Game requirements govern Hydro facility operations. Minimum elevation for 2.75 MW output is 6560 feet. Maximum elevation is 6610 feet. Minimum elevation to operate is 6488 feet. New Spicer ramp rate (maximum) is 14 hours to full load. New Spicer ramp rate (maximum) from full load to minimum load is 16 hours.
HYD4	For Lake Mendocino Hydro, Army Corp of Engineers requirements govern Hydro facility operations. Project ramp rates are dependent upon release requirements and can range from 25 CFS to 1,000 CFS per hour during normal conditions and from 125 CFS to 1,000 CFS per hour during flood conditions. This unit is non-dispatchable by the CAISO because of the water flow requirements

**SCHEDULE 14**

**Section 2: Limitations - Geothermal Units  
Northern California Power Agency**

<b>Reference #</b>	<b>Description of Limitation</b>
GE01	For Geothermal Plant 1 - Unit 1, Aggregate Geo operations are limited to Confidential Geothermal Operating Plan (see tab)
GE02	For Geothermal Plant 1 - Unit 2, Aggregate Geo operations are limited to Confidential Geothermal Operating Plan (see tab)
GE03	<b>Deleted</b>
GE04	For Geothermal Plant 2 - Unit 3, Aggregate Geo operations are limited to Confidential Geothermal Operating Plan (see tab)
GE05	For Geothermal Plant 2 - Unit 4, Aggregate Geo operations are limited to Confidential Geothermal Operating Plan (see tab)
GE06	For Geothermal Plant 1, individual unit ratings for units 1 and 2 are 44 and 42 MW, respectively. When both units are operating, output reduces to 41 and 33 MW, respectively.
GE07	For Geothermal Plant 2, individual unit ratings for units 3 and 4 are 42.42 and 46.03 MW, respectively. When both units are operating, output reduces to 36 and 33 MW, respectively.
GE08	<b>Deleted</b>

## SCHEDULE 14

### Section 2: Limitations Northern California Power Agency

#### Geothermal Operating Plan <sup>(4)</sup>

Geothermal Unit	Daily Max <sup>(1)</sup> Operating Cap (MWG)	Daily Min Operating Cap (MWG)	Annual Avg Capacity (MWG)
1	31	31	30
2	<b>28</b>	<b>28</b>	<b>27</b>
4/3	54	35 <sup>(2)</sup>	51
Total	113	94	108 <sup>(3)</sup>

<sup>(1)</sup> Daily Max Generation varies as steam field conditions change

<sup>(2)</sup> Single unit operation at minimum Plant 2 load of 35 MW

<sup>(3)</sup> Annual target range set by changes in plant, steam field, availability factor and market conditions

<sup>(4)</sup> Values indicated are applicable at the time of revision of this MSS Schedule 14. Stated values may vary over time due to natural changes in the steam field conditions that cannot be precisely predicted or forecasted. Values will be revised as necessary upon subsequent revisions to this MSS Schedule 14.

**SCHEDULE 14(a)**
**Load Following System Resources Description**
**[Section 3.3.5, 12.8, 12.9, 12.11, 12.15, 12.17.3, and Schedule 19]**
**System Resources**

NCPA_BLYTHE161_I_F_0001	NCPA_LUGO_I_NF_ET03	NCPA-MOENKOPI500_I_F_ET04	NCPA_TRCYCOTP_I_F_0008
NCPA_BLYTHE161_I_F_0002	NCPA_LUGO_I_NF_ET04	NCPA_MOENKOPI500_I_F_ET05	NCPA_TRCYCOTP_I_F_0009
NCPA_BLYTHE161_I_F_0003	NCPA_LUGO_I_NF_ET05	NCPA_MOENKOPI500_I_NF_0001	NCPA_TRCYCOTP_I_F_0010
NCPA_BLYTHE161_I_F_0004	NCPA_LUGO_I_NF_ET06	NCPA_MOENKOPI500_I_NF_0002	NCPA_TRCYCOTP_I_F_0011
NCPA_BLYTHE161_I_F_0005	NCPA_LUGO_I_NF_ET07	NCPA_MOENKOPI500_I_NF_0003	NCPA_TRCYCOTP_I_F_0012
NCPA_BLYTHE161_I_F_ET01	NCPA_LUGO_I_NF_ET08	NCPA_MOENKOPI500_I_NF_0004	NCPA_TRCYCOTP_I_F_0013
NCPA_BLYTHE161_I_NF_0001	NCPA_LUGO_I_NF_ET09	NCPA_MOENKOPI500_I_NF_0005	NCPA_TRCYCOTP_I_F_0014
NCPA_BLYTHE161_I_NF_0002	NCPA_LUGO_I_NF_ET10	NCPA-MOENKOPI500_I_NF_ET01	NCPA_TRCYCOTP_I_F_0015
NCPA_BLYTHE161_I_NF_ET01	NCPA_LUGO_I_UC_0001	NCPA_MOENKOPI500_I_NF_ET02	NCPA_TRCYCOTP_I_F_CO01
NCPA_BLYTHE161_I_UC_0001	NCPA_LUGO_I_UC_0002	NCPA_MOENKOPI500_I_NF_ET03	NCPA_TRCYCOTP_I_F_CO02
NCPA_BLYTHE161_I_UC_ET01	NCPA_LUGO_I_UC_0003	NCPA_MOENKOPI500_I_NF_ET04	NCPA_TRCYCOTP_I_F_CO03
NCPA_CFEROA_I_F_0001	NCPA_LUGO_I_UC_0004	NCPA_MOENKOPI500_I_NF_ET05	NCPA_TRCYCOTP_I_F_CO04
NCPA_CFEROA_I_F_0002	NCPA_LUGO_I_UC_0005	NCPA_MOENKOPI500_I_UC_0001	NCPA_TRCYCOTP_I_F_CO05
NCPA_CFEROA_I_F_0003	NCPA_LUGO-I-UC_ET0 1	NCPA_MOENKOPI500_I_UC_0002	NCPA_TRCYCOTP_I_F_CO06
NCPA_CFEROA_I_F_0004	NCPA_LUGO_I_UC_ET02	NCPA_MOENKOPI500_I_UC_0003	NCPA_TRCYCOTP_I_F_CO07
NCPA_CFEROA_I_F_0005	NCPA_LUGO_I_UC_ET03	NCPA_MOENKOPI500_I_UC_0004	NCPA_TRCYCOTP_I_F_CO08
NCPA_CFEROA_I_F_ET01	NCPA_LUGO_I_UC_ET04	NCPA-MOENKOPI500_I_UC_0005	NCPA_TRCYCOTP_I_F_CO09
NCPA_CFEROA_I_NF_0001	NCPA_LUGO_I_UC_ET05	NCPA_MOENKOPI500_I_UC_ET01	NCPA_TRCYCOTP_I_F_CO10
NCPA_CFEROA_I_NF_0002	NCPA_LUGO_I_UC_ET06	NCPA_MOENKOPI500_I_UC_ET02	NCPA_TRCYCOTP_I_F_CO11
NCPA_CFEROA_I_NF_ET01	NCPA-LUGO-I-UC_ET07	NCPA_MOENKOPI500_I_UC_ET03	NCPA_TRCYCOTP_I_F_CO12
NCPA_CFEROA_I_UC_0001	NCPA_LUGO_I_UC_ET08	NCPA_MOENKOPI500_I_UC_ET04	NCPA_TRCYCOTP_I_F_CO13
NCPA_CFEROA_I_UC_ET01	NCPA_LUGO_I_UC_ET09	NCPA_MOENKOPI500_I_UC_ET05	NCPA_TRCYCOTP_I_F_CO14
NCPA_CFETIJ_I_F_0001	NCPA_LUGO_I_UC_ET10	NCPA_MOHAVE500_I_F_0001	NCPA-TRCYCOTP_I_F_CO15
NCPA_CFETIJ_I_F_0002	NCPA-MALIN500_I_F_0001	NCPA_MOHAVE500_I_F_0002	NCPA-TRCYCOTP_I_F_CO 6
NCPA_CFETIJ_I_F_0003	NCPA_MALIN500_I_F_0002	NCPA_MOHAVE500_I_F_0003	NCPA_TRCYCOTP_I_F_CO17
NCPA_CFETIJ_I_F_0004	NCPA_MALIN500_I_F_0003	NCPA_MOHAVE500_I_F_0004	NCPA_TRCYCOTP_I_F_CO18
NCPA_CFETIJ_I_F_0005	NCPA-MALN500_I_F_0004	NCPA_MOHAVE500_I_F_0005	NCPA-TRCYCOTP_I_F_CO 9
NCPA_CFETIJ_I_F_ET01	NCPA-MALIN500_I_F_0005	NCPA_MOHAVE500_I_F_ET01	NCPA_TRCYCOTP_I_F_CO20
NCPA_CFETIJ_I_NF_0001	NCPA_MALIN500_I_F_0006	NCPA_MOHAVE500_I_NF_0001	NCPA_TRCYCOTP_I_F_CO21
NCPA_CFETIJ_I_NF_0002	NCPA_MALIN500_I_F_0007	NCPA_MOHAVE500_I_NF_0002	NCPA_TRCYCOTP_I_F_CO22
NCPA_CFETIJ_I_NF_ET01	NCPA_MALIN500_I_F_0008	NCPA_MOHAVE500_I_NF_ET01	NCPA_TRCYCOTP_I_F_CO23
NCPA_CFETIJ_I_UC_0001	NCPA_MALIN500_I_F_0009	NCPA_MOHAVE500_I_UC_0001	NCPA_TRCYCOTP_I_F_CO24

NCPA_CFETIJ_I_UC_ET01	NCPA_MALIN500_I_F_0010	NCPA_MOHAVE500_I_UC_ET01	NCPA_TRCYCOTP_I_F_CO25
NCPA_CRAG_I_F_0001	NCPA_MALIN500_I_F_0011	NCPA_MOHAVE69_I_F_0001	NCPA_TRCYCOTP_I_F_CO26
NCPA_CRAG_I_F_0002	NCPA_MALIN500_I_F_0012	NCPA_MOHAVE69_I_F_0002	NCPA_TRCYCOTP_I_F_CO27
NCPA_CRAG_I_F_0003	NCPA_MALIN500_I_F_0013	NCPA_MOHAVE69_I_F_0003	NCPA_TRCYCOTP_I_F_CO28
NCPA_CRAG_I_F_0004	NCPA_MALIN500_I_F_0014	NCPA_MOHAVE69_I_F_ET01	NCPA_TRCYCOTP_I_F_CO29
NCPA_CRAG_I_F_0005	NCPA_MALIN500_I_F_0015	NCPA_MOHAVE69_I_NF_0001	NCPA_TRCYCOTP_I_F_CO30
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NCPA_CTW230_I_F_0012	NCPA_MARBLE60_I_F_TO01	NCPA_NOB_I_F_0005	NCPA_TRCYCOTP-I-NF_0005
NCPA_CTW230_I_F_0013	NCPA_MARBLE60_I_F_TO02	NCPA_NOB_I_F_0006	NCPA_TRCYCOTP-I-NF_CO01
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NCPA_DEVERS230_I_F_0005	NCPA_MARKETPLACE_I_F_0007	NCPA_NORTHGILA69_I_F_0005	NCPA_TRCYCOTP_I_UC_CO02
NCPA_DEVERS230_I_F_ET01	NCPA_MARKETPLACE_I_F_0008	NCPA_NORTHGILA69_I_F_ET01	NCPA_TRCYCOTP_I_UC_ET01

NCPA_DEVERS230_I_NF_0001	NCPA_MARKETPLACE_I_F_0009	NCPA_NORTHGILA69_I_NF_0001	NCPA_TRCYPGAE_I_F_0001
NCPA_DEVERS230_I_NF_0002	NCPA_MARKETPLACE_I_F_0010	NCPA_NORTHGILA69_I_NF_0002	NCPA-TRCYPGAE_I_F_0002
NCPA_DEVERS230_I_NF_ET01	NCPA_MARKETPLACE_I_F_ET01	NCPA_NORTHGILA69_I_NF_ET01	NCPA_TRCYPGAE_I_F_0003
NCPA_DEVERS230_I_UC_0001	NCPA_MARKETPLACE_I_F_ET02	NCPA_NORTHGILA69_I_UC_0001	NCPA_TRCYPGAE_I_F_0004
NCPA_DEVERS230_I_UC_ET01	NCPA_MARKETPLACE_I_F_ET03	NCPA_NORTHGILA69_I_UC_ET01	NCPA_TRCYPGAE_I_F_0005
NCPA_ELDORADO230_I_F_0001	NCPA_MARKETPLACE_I_F_ET04	NCPA_OAKDALE_I_F_0001	NCPA-TRCYPGAE_I_F_0006
NCPA_ELDORADO230_I_F_0002	NCPA_MARKETPLACE_I_F_ET05	NCPA_OAKDALE_I_F_0002	NCPA-TRCYPGAE_I_F_0007
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NCPA_ELDORADO230_I_NF_ET01	NCPA_MARKETPLACE_I_NF_ET02	NCPA_PARKER230_I_F_0001	NCPA-TRCYPGAE_I_F_0014
NCPA_ELDORADO230_I_UC_0001	NCPA_MARKETPLACE_I_NF_ET03	NCPA_PARKER230_I_F_0002	NCPA_TRCYPGAE_I_F_0015
NCPA_ELDORADO230_I_UC_ET01	NCPA_MARKETPLACE_I_NF_ET04	NCPA_PARKER230_I_F_0003	NCPA_TRCYPGAE_I_F_0016
NCPA_ELDORADO500_I_F_0001	NCPA_MARKETPLACE_I_NF_ET05	NCPA_PARKER230_I_F_0004	NCPA-TRCYPGAE_I_F_0017
NCPA_ELDORADO500_I_F_0002	NCPA_MARKETPLACE_I_UC_0001	NCPA_PARKER230_I_F_0005	NCPA-TRCYPGAE_I_F_0018
NCPA_ELDORADO500_I_F_0003	NCPA_MARKETPLACE_I_UC_ET01	NCPA_PARKER230_I_F_ET01	NCPA_TRCYPGAE_I_F_0019
NCPA_ELDORADO500_I_F_0004	NCPA_MCCULLOUG500_I_F_0001	NCPA_PARKER230_I_NF_0001	NCPA-TRCYPGAE_I_F_0020
NCPA_ELDORADO500_I_F_0005	NCPA_MCCULLOUG500_I_F_0002	NCPA_PARKER230_I_NF_0002	NCPA_TRCYPGAE_I_F_0021
NCPA_ELDORADO500_I_F_0006	NCPA_MCCULLOUG500_I_F_0003	NCPA_PARKER230_I_NF_ET01	NCPA_TRCYPGAE_I_F_0022
NCPA_ELDORADO500_I_F_0007	NCPA_MCCULLOUG500_I_F_0004	NCPA_PARKER230_I_UC_0001	NCPA-TRCYPGAE_I_F_0023
NCPA_ELDORADO500_I_F_0008	NCPA_MCCULLOUG500_I_F_0005	NCPA_PARKER230_I_UC_ET01	NCPA-TRCYPGAE_I_F_0024
NCPA_ELDORADO500_I_F_0009	NCPA_MCCULLOUG500_I_F_0006	NCPA_PVWEST_I_F_0001	NCPA_TRCYPGAE_I_F_0025
NCPA_ELDORADO500_I_F_0010	NCPA_MCCULLOUG500_I_F_0007	NCPA-PVWEST_I_F_0002	NCPA-TRCYPGAE_I_F_0026
NCPA_ELDORADO500_I_F_ET01	NCPA_MCCULLOUG500_I_F_0008	NCPA-PVWEST_I_F_0003	NCPA-TRCYPGAE_I_F_0027
NCPA_ELDORADO500_I_F_ET02	NCPA_MCCULLOUG500_I_F_0009	NCPA_PVWEST_I_F_0004	NCPA-TRCYPGAE_I_F_0028
NCPA_ELDORADO500_I_F_ET03	NCPA_MCCULLOUG500_I_F_0010	NCPA-PVWEST_I_F_0005	NCPA_TRCYPGAE_I_F_0029
NCPA_ELDORADO500_I_F_ET04	NCPA_MCCULLOUG500_I_F_ET01	NCPA-PVWEST_I_F_0006	NCPA-TRCYPGAE_I_F_0030
NCPA_ELDORADO500_I_F_ET05	NCPA_MCCULLOUG500_I_F_ET02	NCPA-PVWEST_I_F_0007	NCPA-TRCYPGAE_I_F_BR01
NCPA_ELDORADO500_I_NF_0001	NCPA_MCCULLOUG500_I_F_ET03	NCPA-PVWEST_I_F_0008	NCPA-TRCYPGAE_I_F_BR02
NCPA_ELDORADO500_I_NF_0002	NCPA_MCCULLOUG500_I_F_ET04	NCPA-PVWEST_I_F_0009	NCPA-TRCYPGAE_I_F_BR03
NCPA_ELDORADO500_I_NF_0003	NCPA_MCCULLOUG500_I_F_ET05	NCPA-PVWEST_I_F_0010	NCPA-TRCYPGAE_I_F_BR04
NCPA_ELDORADO500_I_NF_0004	NCPA_MCCULLOUG500_I_NF_0001	NCPA-PVWEST_I_F_ET01	NCPA_TRCYPGAE_I_F_BR05
NCPA_ELDORADO500_I_NF_0005	NCPA_MCCULLOUG500_I_NF_0002	NCPA-PVWEST_I_F_ET02	NCPA-TRCYPGAE_I_F_BR06
NCPA_ELDORADO500_I_NF_ET01	NCPA_MCCULLOUG500_I_NF_0003	NCPA-PVWEST_I_F_ET03	NCPA-TRCYPGAE_I_F_BR07
NCPA_ELDORADO500_I_NF_ET02	NCPA_MCCULLOUG500_I_NF_0004	NCPA-PVWEST_I_F_ET04	NCPA_TRCYPGAE_I_F_BR08
NCPA_ELDORADO500_I_NF_ET03	NCPA_MCCULLOUG500_I_NF_0005	NCPA_PVWEST_I_F_ET05	NCPA_TRCYPGAE_I_F_BR09
NCPA_ELDORADO500_I_NF_ET04	NCPA_MCCULLOUG500_I_NF_ET01	NCPA_PVWEST_I_NF_0001	NCPA-TRCYPGAE_I_F_BR10
NCPA_ELDORADO500_I_NF_ET05	NCPA_MCCULLOUG500_I_NF_ET02	NCPA_PVWEST_I_NF_0002	NCPA-TRCYPGAE_I_F_BR11

NCPA_ELDORADO500   UC_0001	NCPA_MCCULLOUG500   NF_ET03	NCPA_PVWEST   NF_0003	NCPA-TRCYPGAE   F_BR12
NCPA_ELDORADO500   UC_ET01	NCPA_MCCULLOUG500   NF_ET04	NCPA_PVWEST   NF_0004	NCPA-TRCYPGAE   F_BR13
NCPA_FOURCORNE345   F_0001	NCPA_MCCULLOUG500   NF_ET05	NCPA_PVWEST   NF_0005	NCPA-TRCYPGAE   F_BR14
NCPA_FOURCORNE345   F_0002	NCPA_MCCULLOUG500   UC_0001	NCPA_PVWEST   NF_ET01	NCPA-TRCYPGAE   F_BR15
NCPA_FOURCORNE345   F_0003	NCPA_MCCULLOUG500   UC_ET01	NCPA_PVWEST   NF_ET02	NCPA-TRCYPGAE   F_BR16
NCPA_FOURCORNE345   F_0004	NCPA_MDWP   F_0001	NCPA_PVWEST   NF_ET03	NCPA-TRCYPGAE   F_BR17
NCPA_FOURCORNE345   F_0005	NCPA-MDWP   F_0002	NCPA-PVWEST-I-NF_ET04	NCPA-TRCYPGAE   F_BR18
NCPA_FOURCORNE345   F_ET01	NCPA_MDWP   F_0003	NCPA_PVWEST   NF_ET05	NCPA-TRCYPGAE   F_BR19
NCPA-FOURCORNE345   NF_0001	NCPA-MDWP   F_0004	NCPA_PVWEST   UC_0001	NCPA-TRCYPGAE   F_BR20
NCPA_FOURCORNE345   NF_0002	NCPA-MDWP   F_0005	NCPA-PVWEST-I-UC_0002	NCPA-TRCYPGAE   F_BR21
NCPA-FOURCORNE345   NF_ET01	NCPA-MDWP   F_ET01	NCPA-PVWEST   UC_0003	NCPA-TRCYPGAE   F_BR22
NCPA_FOURCORNE345   UC_0001	NCPA-MDWP   NF_0001	NCPA_PVWEST   UC_0004	NCPA-TRCYPGAE   F_BR23
NCPA-FOURCORNE345   UC_ET01	NCPA-MDWP   NF_0002	NCPA-PVWEST-I-UC_0005	NCPA-TRCYPGAE   F_BR24
NCPA-GONIPP   F_0001	NCPA-MDWP   NF_ET01	NCPA_PVWEST   UC_ET01	NCPA-TRCYPGAE   F_BR25
NCPA_GONIPP   F_0002	NCPA-MDWP   UC_0001	NCPA_PVWEST   UC_ET02	NCPA-TRCYPGAE   F_BR26
NCPA_GONIPP   F_0003	NCPA-MDWP   UC_ET01	NCPA-PVWEST   UC_ET03	NCPA-TRCYPGAE   F_BR27
NCPA_GONIPP   F_0004	NCPA_MEAD230   F_0001	NCPA_PVWEST   UC_ET04	NCPA-TRCYPGAE   F_BR28
NCPA_GONIPP   F_0005	NCPA_MEAD230   F_0002	NCPA-PVWEST-I-UC_ET05	NCPA-TRCYPGAE   F_BR29
NCPA-GONIPP   F_0006	NCPA_MEAD230   F_0003	NCPA_RANCHOSECO   F_0001	NCPA-TRCYPGAE   F_BR30
NCPA-GONIPP   F_0007	NCPA_MEAD230   F_0004	NCPA_RANCHOSECO   F_0002	NCPA-TRCYPGAE   F_ET01
NCPA_GONIPP   F_0008	NCPA_MEAD230   F_0005	NCPA_RANCHOSECO   F_0003	NCPA-TRCYPGAE   F_ET02
NCPA_GONIPP   F_0009	NCPA_MEAD230   F_0006	NCPA_RANCHOSECO   F_0004	NCPA-TRCYPGAE   F_ET03
NCPA-GONIPP   F_0010	NCPA_MEAD230   F_0007	NCPA_RANCHOSECO   F_0005	NCPA-TRCYPGAE   F_ET04
NCPA_GONIPP   F_ET01	NCPA_MEAD230   F_0008	NCPA_RANCHOSECO   NF_0001	NCPA-TRCYPGAE   F_ET05
NCPA-GONIPP-I-NF_0001	NCPA_MEAD230   F_0009	NCPA_RANCHOSECO   NF_0002	NCPA-TRCYPGAE   F_ET06
NCPA-GONIPP   NF_0002	NCPA_MEAD230   F_0010	NCPA_RANCHOSECO   UC_0001	NCPA-TRCYPGAE   F_ET07
NCPA_GONIPP   NF_0003	NCPA_MEAD230   F_ET01	NCPA_RDM230   F_0001	NCPA-TRCYPGAE   F_ET08
NCPA-GONIPP-I-NF_0004	NCPA_MEAD230   NF_0001	NCPA_RDM230   F_0002	NCPA-TRCYPGAE   F_ET09
NCPA-GONIPP-I-NF_0005	NCPA_MEAD230   NF_0002	NCPA_RDM230   F_0003	NCPA-TRCYPGAE   F_ET10
NCPA-GONIPP-I-NF_ET01	NCPA_MEAD230   NF_0003	NCPA_RDM230   F_0004	NCPA-TRCYPGAE   NF_0001
NCPA-GONIPP   UC_0001	NCPA_MEAD230   NF_0004	NCPA_RDM230   F_0005	NCPA-TRCYPGAE-I-NF_0002
NCPA-GONIPP   UC_ET01	NCPA-MEAD230   NF_0005	NCPA_RDM230   NF_0001	NCPA-TRCYPGAE   NF_0003
NCPA_IPP   F_0001	NCPA_MEAD230   NF_ET01	NCPA_RDM230   NF_0002	NCPA-TRCYPGAE-I-NF_0004
NCPA_IPP   F_0002	NCPA_MEAD230   UC_0001	NCPA_RDM230   UC_0001	NCPA-TRCYPGAE   NF_0005
NCPA_IPP   F_0003	NCPA_MEAD230   UC_ET01	NCPA_SILVERPEAK55   F_0001	NCPA-TRCYPGAE   NF_BR01
NCPA_IPP   F_0004	NCPA-MEAD2MSCHD   F_0001	NCPA_SILVERPEAK55   F_0002	NCPA-TRCYPGAE-I-NF_BR02
NCPA_IPP   F_0005	NCPA_MEAD2MSCHD   F_0002	NCPA_SILVERPEAK55   F_0003	NCPA-TRCYPGAE   NF_BR03
NCPA_IPP   F_0006	NCPA_MEAD2MSCHD   F_0003	NCPA_SILVERPEAK55   F_0004	NCPA-TRCYPGAE   NF_BR04
NCPA_IPP   F_0007	NCPA_MEAD2MSCHD   F_0004	NCPA_SILVERPEAK55   F_0005	NCPA-TRCYPGAE   NF_BR05
NCPA_IPP   F_0008	NCPA_MEAD2MSCHD   F_0005	NCPA_SILVERPEAK55   F_ET01	NCPA-TRCYPGAE-I-NF_BR06
NCPA_IPP   F_0009	NCPA_MEAD2MSCHD   F_0006	NCPA_SILVERPEAK55   NF_0001	NCPA-TRCYPGAE   NF_BR07

NCPA-IPP_I_F_0010	NCPA_MEAD2MSCHD_I_F_0007	NCPA_SILVERPEAK55_I_NF_0002	NCPA_TRCYPGAE_I_NF_BR08
NCPA-IPP_I_F_ET01	NCPA_MEAD2MSCHD_I_F_0008	NCPA_SILVERPEAK55_I_NF_ET01	NCPA_TRCYPGAE_I_NF_ET01
NCPA-IPP-I-NF_0001	NCPA_MEAD2MSCHD_I_F_0009	NCPA_SILVERPEAK55_UC_0001	NCPA_TRCYPGAE_I_NF_ET02
NCPA_IPP_I_NF_0002	NCPA_MEAD2MSCHD_I_F_0010	NCPA_SILVERPEAK55_UC_ET01	NCPA_TRCYPGAE_I_NF_ET03
NCPA_IPP_I_NF_0003	NCPA_MEAD2MSCHD_I_F_ET01	NCPA_STANDIFORD_I_F_0001	NCPA_TRCYPGAE_I_NF_ET04
NCPA-IPP-I-NF_0004	NCPA-MEAD2MSCHD-I-NF_0001	NCPA-STANDIFORD_I_F_0002	NCPA_TRCYPGAE_I_NF_ET05
NCPA-IPP-I-NF_0005	NCPA-MEAD2MSCHD-I-NF_0002	NCPA-STANDIFORD_I_F_0003	NCPA-TRCYPGAE-I-NF_ET06
NCPA-IPP_I_NF_ET01	NCPA-MEAD2MSCHD_I_NF_0003	NCPA_STANDIFORD_I_F_0004	NCPA-TRCYPGAE-I-NF_ET07
NCPA_IPP_I_UC_0001	NCPA_MEAD2MSCHD_I_NF_0004	NCPA_STANDIFORD_I_F_0005	NCPA-TRCYPGAE-I-NF_ET08
NCPA-IPP_I_UC_ET01	NCPA-MEAD2MSCHD-I-NF_0005	NCPA-STANDIFORD-I-NF_0001	NCPA-TRCYPGAE-I-NF_ET09
NCPA_IVLY2_I_F_0001	NCPA-MEAD2MSCHD-I-NF_ET01	NCPA-STANDIFORD-I-NF_0002	NCPA-TRCYPGAE-I-NF_ET10
NCPA_IVLY2_I_F_0002	NCPA_MEAD2MSCHD_I_UC_0001	NCPA_STANDIFORD_I_UC_0001	NCPA_TRCYPGAE_I_UC_0001
NCPA_IVLY2_I_F_0003	NCPA_MEAD2MSCHD_I_UC_ET01	NCPA_SUMMIT120_I_F_0001	NCPA-TRCYPGAE_I_UC_0002
NCPA_IVLY2_I_F_0004	NCPA-MEAD5MSCHD_I_F_0001	NCPA-SUMMIT120_I_F_0002	NCPA-TRCYPGAE_I_UC_BR01
NCPA_IVLY2_I_F_0005	NCPA_MEAD5MSCHD_I_F_0002	NCPA-SUMMIT120_I_F_0003	NCPA-TRCYPGAE_I_UC_BR02
NCPA_IVLY2_I_F_ET01	NCPA-MEAD5MSCHD_I_F_0003	NCPA_SUMMIT120_I_F_0004	NCPA-TRCYPGAE_I_UC_BR03
NCPA_IVLY2_I_NF_0001	NCPA_MEAD5MSCHD_I_F_0004	NCPA-SUMMIT120_I_F_0005	NCPA-TRCYPGAE_I_UC_ET01
NCPA_IVLY2_I_NF_0002	NCPA_MEAD5MSCHD_I_F_0005	NCPA_SUMMIT120_I_NF_0001	NCPA-TRCYPGAE_I_UC_ET02
NCPA_IVLY2_I_NF_ET01	NCPA_MEAD5MSCHD_I_F_0006	NCPA_SUMMIT120_I_NF_0002	NCPA_WESTLYLBNS_I_F_0001
NCPA-IVLY2_I_UC_0001	NCPA_MEAD5MSCHD_I_F_0007	NCPA_SUMMIT120_I_UC_0001	NCPA_WESTLYLBNS_I_F_0002
NCPA_IVLY2_I_UC_ET01	NCPA_MEAD5MSCHD_I_F_0008	NCPA_SUMMIT120_I_UC_0002	NCPA_WESTLYLBNS_I_F_0003
NCPA_LAKE_I_F_0001	NCPA_MEAD5MSCHD_I_F_0009	NCPA-SYLMAR_I_F_0001	NCPA_WESTLYLBNS_I_F_0004
NCPA_LAKE_I_F_0002	NCPA-MEAD5MSCHD_I_F_0010	NCPA-SYLMAR_I_F_0002	NCPA_WESTLYLBNS_I_F_0005
NCPA_LAKE_I_F_0003	NCPA-MEAD5MSCHD_I_F_ET01	NCPA-SYLMAR_I_F_0003	NCPA-WESTLYLBNS_I_NF_0001
NCPA_LAKE_I_F_0004	NCPA-MEAD5MSCHD-I-NF_0001	NCPA-SYLMAR_I_F_0004	NCPA_WESTLYLBNS_I_NF_0002
NCPA_LAKE_I_F_0005	NCPA_MEAD5MSCHD_I_NF_0002	NCPA-SYLMAR_I_F_0005	NCPA_WESTLYLBNS_I_UC_0001
NCPA_LAKE_I_NF_0001	NCPA-MEAD5MSCHD_I_NF_0003	NCPA-SYLMAR_I_F_ET01	NCPA_WESTLYTSLA_I_F_0001
NCPA_LAKE_I_NF_0002	NCPA_MEAD5MSCHD_I_NF_0004	NCPA-SYLMAR_I_NF_0001	NCPA_WESTLYTSLA_I_F_0002
NCPA_LAKE_I_UC_0001	NCPA-MEAD5MSCHD-I-NF_0005	NCPA-SYLMAR_I_NF_0002	NCPA_WESTLYTSLA_I_F_0003
NCPA_LLL115_I_F_0001	NCPA-MEAD5MSCHD-I-NF_ET01	NCPA-SYLMAR_I_NF_ET01	NCPA-WESTLYTSLA_I_F_0004
NCPA_LLL115_I_F_0002	NCPA_MEAD5MSCHD_I_UC_0001	NCPA-SYLMAR_I_UC_0001	NCPA_WESTLYTSLA_I_F_0005
NCPA_LLL115_I_F_0003	NCPA_MEAD5MSCHD_I_UC_ET01	NCPA-SYLMAR_I_UC_ET01	NCPA_WESTLYTSLA_I_NF_0001
NCPA_LLL115_I_F_0004	NCPA_MIR2_I_F_0001	NCPA_TESLA230_I_F_0001	NCPA_WESTLYTSLA_I_NF_0002
NCPA_LLL115_I_F_0005	NCPA-MIR2_I_F_0002	NCPA_TESLA230_I_F_0002	NCPA-WESTLYTSLA_I_UC_0001
NCPA_LLL115_I_NF_0001	NCPA-MIR2_I_F_0003	NCPA_TESLA230_I_F_0003	NCPA_WESTWING500_I_F_0001
NCPA_LLL115_I_NF_0002	NCPA-MIR2_I_F_0004	NCPA_TESLA230_I_F_0004	NCPA_WESTWING500_I_F_0002
NCPA_LLL115_I_UC_0001	NCPA-MIR2_I_F_0005	NCPA_TESLA230_I_F_0005	NCPA-WESTWING500_I_F_0003
NCPA_LUGO_I_F_0001	NCPA-MIR2_I_F_0006	NCPA_TESLA230_I_F_0006	NCPA_WESTWING500_I_F_0004
NCPA_LUGO_I_F_0002	NCPA-MIR2_I_F_0007	NCPA_TESLA230_I_F_0007	NCPA_WESTWING500_I_F_0005
NCPA_LUGO_I_F_0003	NCPA-MIR2_I_F_0008	NCPA_TESLA230_I_F_0008	NCPA_WESTWING500_I_F_ET01
NCPA_LUGO_I_F_0004	NCPA_MIR2_I_F_0009	NCPA_TESLA230_I_F_0009	NCPA_WESTWING500_I_F_ET02

NCPA_LUGO_I_F_0005	NCPA-MIR2_I_F_0010	NCPA_TESLA230_I_F_0010	NCPA_WESTWING500_I_F_ET03
NCPA_LUGO_I_F_0006	NCPA-MIR2_I_F_ET01	NCPA_TESLA230_I_NF_0001	NCPA_WESTWING500_I_F_ET04
NCPA_LUGO_I_F_0007	NCPA-MIR2_I_NF_0001	NCPA_TESLA230_I_NF_0002	NCPA_WESTWING500_I_F_ET05
NCPA_LUGO_I_F_0008	NCPA-MIR2_I_NF_0002	NCPA_TESLA230_I_NF_0003	NCPA_WESTWING500_I_NF_0001
NCPA_LUGO_I_F_0009	NCPA-MIR2_I_NF_0003	NCPA_TESLA230_I_NF_0004	NCPA_WESTWING500_I_NF_0002
NCPA-LUGO_I_F_0010	NCPA-MIR2_I_NF_0004	NCPA_TESLA230_I_NF_0005	NCPA_WESTWING500_I_NF_ET01
NCPA_LUGO_I_F_ET01	NCPA-MIR2_I_NF_0005	NCPA_TESLA230_I_UC_0001	NCPA_WESTWING500_I_NF_ET02
NCPA_LUGO_I_F_ET02	NCPA-MIR2_I_NF_ET01	NCPA_TESLA230_I_UC_0002	NCPA_WESTWING500_I_NF_ET03
NCPA_LUGO_I_F_ET03	NCPA-MIR2_I_UC_0001	NCPA_TRCYCOTPISO_I_F_0001	NCPA_WESTWING500_I_NF_ET04
NCPA_LUGO_I_F_ET04	NCPA-MIR2_I_UC_ET01	NCPA_TRCYCOTPISO_I_F_0002	NCPA_WESTWING500_I_NF_ET05
NCPA-LUGO_I_F_ET05	NCPA_MOENKOPI500_I_F_0001	NCPA_TRCYCOTPISO_I_F_0003	NCPA_WESTWING500_I_UC_0001
NCPA_LUGO_I_F_ET06	NCPA_MOENKOPI500_I_F_0002	NCPA_TRCYCOTPISO_I_F_0004	NCPA_WESTWING500_I_UC_0002
NCPA_LUGO_I_F_ET07	NCPA_MOENKOPI500_I_F_0003	NCPA_TRCYCOTPISO_I_F_0005	NCPA_WESTWING500_I_UC_0003
NCPA_LUGO_I_F_ET08	NCPA_MOENKOPI500_I_F_0004	NCPA_TRCYCOTPISO_I_NF_0001	NCPA_WESTWING500_I_UC_0004
NCPA_LUGO_I_F_ET09	NCPA_MOENKOPI500_I_F_0005	NCPA_TRCYCOTPISO_I_NF_0002	NCPA_WESTWING500_I_UC_0005
NCPA_LUGO_I_F_ET10	NCPA_MOENKOPI500_I_F_0006	NCPA_TRCYCOTPISO_I_UC_0001	NCPA_WESTWING500_I_UC_ET01
NCPA_LUGO_I_NF_0001	NCPA_MOENKOPI500_I_F_0007	NCPA_TRCYCOTP_I_F_0001	NCPA_WESTWING500_I_UC_ET02
NCPA_LUGO_I_NF_0002	NCPA_MOENKOPI500_I_F_0008	NCPA_TRCYCOTP_I_F_0002	NCPA_WESTWING500_I_UC_ET03
NCPA_LUGO_I_NF_0003	NCPA_MOENKOPI500_I_F_0009	NCPA_TRCYCOTP_I_F_0003	NCPA_WESTWING500_I_UC_ET04
NCPA_LUGO_I_NF_0004	NCPA_MOENKOPI500_I_F_0010	NCPA_TRCYCOTP_I_F_0004	NCPA_WESTWING500_I_UC_ET05
NCPA_LUGO_I_NF_0005	NCPA_MOENKOPI500_I_F_ET01	NCPA_TRCYCOTP_I_F_0005	
NCPA_LUGO_I_NF_ET01	NCPA_MOENKOPI500_I_F_ET02	NCPA_TRCYCOTP_I_F_0006	
NCPA_LUGO_I_NF_ET02	NCPA_MOENKOPI500_I_F_ET03	NCPA_TRCYCOTP_I_F_0007	

**Resource Specific System Resources**

Reserved for Resource Specific System Resources

## SCHEDULE 15 METERING OBLIGATIONS

[Section 11.2 and 11.3]

### Obligations and Rights of NCPA

- 11.0 Submission of Meter Data through the CAISO's Settlement Quality Meter Data Systems ("SQMDS") and Revenue Meter Data Acquisition and Processing System ("RMDAPS").** NCPA agrees to make available to the CAISO through SQMDS and RMDAPS, or the successor system, its Meter Data in accordance with the CAISO Tariff. The CAISO's requirements regarding the frequency with which it requires Meter Data to be made available to it through RMDAPS and SQMDS by NCPA are referred to in the CAISO Tariff and the Business Practice Manual for Metering.
- 11.1 Meter Information.** NCPA shall provide in the format prescribed by Schedule 15.1 the required information with respect to all of its meters used to provide Meter Data to the CAISO. NCPA must immediately notify the CAISO of any changes to the information provided to the CAISO in accordance with this Section and provide the CAISO with any information in relation to such change as reasonably requested by the CAISO. NCPA shall have the right to modify Schedule 15.1, although such modification shall not constitute an amendment to this Agreement.
- 11.2 Transformer and Line Loss Correction Factor.** If NCPA uses low voltage side metering, it shall use the CAISO approved Transformer and Line Loss Correction Factor referred to in the CAISO Tariff and the Business Practice Manual for Metering.
- 11.3 Rights to Access Metering Facilities.** NCPA shall use its best efforts to procure any rights necessary for the CAISO to access all Metering Facilities of MSS Members to fulfill its obligations under the CAISO Tariff, and its obligations under this Agreement. If, after using its best efforts, NCPA is unable to provide the CAISO with such access rights, NCPA shall ensure that one of its employees is an CAISO Authorized Inspector and such employee undertakes, at the CAISO's request, the certification, testing, inspection and/or auditing of those Metering Facilities in accordance with the procedures established pursuant to the CAISO Tariff and the Business Practice Manual for Metering, including the requirement to complete and provide to the CAISO all necessary documentation. The CAISO acknowledges that it will not be prevented from fulfilling its obligations under the CAISO Tariff or this Agreement by reason of the fact that it is provided with escorted access to the Metering Facilities of NCPA.

- 1.4 Security and Validation Procedures.** The security measures and the validation, editing, and estimation procedures that the CAISO shall apply to Meter Data made available to the CAISO by NCPA shall be as referred to in the CAISO Tariff and the Business Practice Manual for Metering.
- 1.5 Authorized Users.** In addition to the persons referred to in the CAISO Tariff, including NCPA and the relevant Scheduling Coordinator, as being entitled to access Meter Data on SQMDS, NCPA may set forth in Schedule 15.2 of this Agreement any additional authorized users that shall be entitled to access NCPAs Settlement Quality Meter Data held by the CAISO. NCPA shall include in Schedule 15.2 as authorized users the relevant UDCs and TOs. The CAISO shall provide the authorized users with any password or other information necessary to access NCPAs Settlement Quality Meter Data held by the CAISO on SQMDS. Any amendment or addition to Schedule 15.2 shall not constitute an amendment to this Agreement.
- 1.6 Certification, Inspection, and Auditing of Meters.** NCPA shall be responsible for all reasonable costs incurred by the CAISO or a CAISO Authorized Inspector in connection with them carrying out the certification, inspection, testing or auditing of the meters identified in Schedule 15.1 from which NCPA provides Meter Data to the CAISO. The CAISO or CAISO Authorized Inspector shall furnish NCPA, upon request, an itemized bill for such costs.

### **Obligations and Rights of the CAISO**

- 2.0 Direct Polling of Revenue Quality Meter Data.** The CAISO shall allow the Scheduling Coordinator representing NCPA and all authorized users to directly poll CAISO certified meters for the Meter Data relating to NCPA in accordance with the procedures referred to in the CAISO Tariff and the Business Practice Manual for Metering.
- 2.1 CAISO as a Third-Party Beneficiary.** The CAISO shall be a third-party beneficiary to any future agreement between NCPA and any other party relating to the Metering Facilities of NCPA for the purpose of granting the CAISO access to any relevant information, records and facilities as needed by the CAISO to fulfill its obligations under the CAISO Tariff and its obligations under this Agreement.
- 2.2 Remote and Local Access to Metering Data.** The CAISO shall provide NCPA any password or other requirements necessary for NCPA to access its Meter Data remotely or locally at the meter.

### **Calculation of NCPA Settlement Quality Meter Data**

The calculation of NCPA's Settlement Quality Meter Data ("SQMD") shall be made in accordance with a calculation procedure that is mutually agreed by the Parties, which calculation procedure will generally be as follows:

**NCPA SQMD (Gross MSS Demand)** = Settlement Quality Meter Data at the Points of MSS Interconnection plus Metered Generation from Internal Generating Units.

In order to determine the quantity of Gross MSS Demand that is served by TOR or ETC deliveries, and in turn will not be subject to Congestion costs resulting from the CAISO LMP calculation, the quantity of Gross MSS Demand that is served by TOR or ETC deliveries must be identified for Settlement purposes. The quantity of Gross MSS Demand that is served by TOR or ETC deliveries will be scheduled at one of the NCPA or SVP Custom LAPs, as described below, which will be used to identify the quantity of Gross MSS Demand that is served by TOR or ETC deliveries. The quantity of Gross MSS Demand that is not served by TOR or ETC deliveries will be provided to the CAISO using a specified SQMDS Resource ID which will be equal to Gross MSS Demand less the amount of Gross MSS Demand served by TOR or ETC deliveries. NCPA will calculate and supply to the CAISO, using SQMDS Resource IDs, the metered values associated with the Gross MSS Demand served at the SVP Custom LAP, Plumas Custom LAP, and SOTP Custom LAP served by TOR and ETC deliveries, and Gross MSS Demand not served by TOR and ETC deliveries.

### **NCPA and SVP Custom TOR / ETC LAPs**

**SVP Custom LAP =** Metered deliveries at the SVP Custom LAP, which was created for the purpose of settling Gross MSS Demand associated with TOR and ETC deliveries to the SVP City Gate, is separated from other Gross MSS Demand for the purpose of settling Congestion costs.

**Plumas Custom LAP =** Metered deliveries at the Plumas Custom LAP, which was created for the purpose of settling Gross MSS Demand associated with TOR and ETC deliveries to Plumas Sierra REC, is separated from other Gross MSS Demand for the purpose of settling Congestion costs.

**SOTP Custom LAP =** Metered deliveries at the SOTP Custom LAP, which was created for the purpose of settling Gross MSS Demand associated with TOR and

ETC deliveries to the MSSAA Members with SOTP Entitlement, as further described in Schedule 13, is separated from other Gross MSS Demand for the purpose of settling Congestion costs.

This calculation will be done on an aggregated basis, by applicable LAP, consistent with the level of aggregation of the Schedules, provided in the form of a Bid, which will be submitted to the CAISO. The Load Distribution Factors, which are used to disaggregate the aggregated scheduled and metered information, are developed by the CAISO.

## SCHEDULE 15.1 METER INFORMATION

Location	Street Address	City, State, Zip	Owner	meter_id
Alameda CT 1, Unit 1	2900 Main Street	Alameda, CA 94501	NCPA	5910078
Alameda CT 1, Unit 2	2900 Main Street	Alameda, CA 94501	NCPA	5910079
Geothermal Plant 1 (Unit 1)	11785 Socrates Mine Road	Middletown, CA 95461	NCPA	5910081
Geothermal Plant 2 (Unit 3)	11785 Socrates Mine Road	Middletown, CA 95461	NCPA	5910083
Hydro Bellota 1	24400 Flood Road	Linden, CA 95236-9429	NCPA	5910093
Hydro Bellota 2	24400 Flood Road	Linden, CA 95236-9429	NCPA	5910094
Hydro New Spicer Meadows	Cabbage Patch Substation	Hwy 4	NCPA	5910295
Lodi CT1	2131 W Turner Road	Lodi, CA 95242	NCPA	5910074
Lodi STIG	12745 N. Thornton Road	Lodi, CA 95242	NCPA	5910306
Biggs 12kV	2901 7th Street	Biggs, CA	NCPA	5839002
Biggs 60kV (Main)	11th & Dakota Ave	Biggs, CA	NCPA	5839001
Gridley, City of	52 East Gridley Road	Gridley, CA 95948-2604	NCPA	5821501
Healdsburg, City of	780 Heron Drive	Healdsburg, CA 95448	NCPA	5840001
Lodi #1 Industrial	1230 E. Thurman Street	Lodi, CA 95240	NCPA	5840505
Lodi #2 Industrial	1230 E. Thurman Street	Lodi, CA 95240	NCPA	5840507
Lodi White Slough Stig	12751 N. Thornton Road	Lodi, CA 95242	NCPA	5910457
Lompoc #1 115kV	1110 N. D Street	Lompoc, CA 93436-6912	NCPA	5841001
Lompoc #2 115kV	1110 N. D Street	Lompoc, CA 93436-6912	NCPA	5841002
Oakland Station C	710 2nd & Grove Street	Oakland, CA, 94607	NCPA	5839501
Oakland Station J	Collisium & 50th Ave	Oakland, CA 94601	NCPA	5839503
Palo Alto Colorado Line #1	1040 Colorado Avenue	Palo Alto, CA 94303-3808	NCPA	5827501
Palo Alto Colorado Line #2	1040 Colorado Avenue	Palo Alto, CA 94303-3808	NCPA	5827502
Palo Alto Colorado Line #3	1040 Colorado Avenue	Palo Alto, CA 94303-3808	NCPA	5827503
Palo Alto Municipality Yard	3201 East Bayshore Road	Palo Alto, CA	Palo Alto	5910604
Plumas Quincy Sub.	2468 E. Main Street	Quincy, CA 95971	NCPA	5811501
High Sierra Cogeneration	711-045 Center Rd.	Susanville, CA 96130	Plumas Sierra REC	5910747
Marble Substation	Marble Lane & A23 Street	Sattley, CA	SPPC	5910514 and 5910515
Ukiah - Babcock	700 Babcock Lane	Ukiah, CA 95482	NCPA	5841501
Lake Mendocino Hydro	Lake Mendocino	Ukiah, CA 95482	NCPA	5841502
NCPA-Oak 1	9250 Earhart Road	Oakland, CA, 94621	NCPA	5910396 and 5910397
Port of Oakland Harbor	7 <sup>th</sup> Street and Maritime Street	Oakland, CA	NCPA	5910399
Port of Oakland Army Base <sup>2</sup>	7 <sup>th</sup> Street and Maritime Street	Oakland, CA	NCPA	5833501

<sup>2</sup> Meters for the Army Base will only be read if the Army Base is incorporated into Port of Oakland Load.

**SCHEDULE 15.2****ACCESS TO METER DATA AND AUTHORIZED USERS**

NCPA shall provide in Schedule 15.2 a list of all authorized users of NCPA's Settlement Quality Meter Data and any restrictions or limitations placed on them.

**Authorized Users**

Pacific Gas and Electric Company

**SCHEDULE 16**  
**TRANSMISSION RELIABILITY CRITERIA**

**[Section 8.1.3 & 12.41**

For transmission reliability, NCPA and the MSSAA Members shall abide by all NERC and WECC Planning Criteria and the following:

**Power Flow Assessment:**

Contingencies	Thermal <sup>3</sup>	Criteria	Voltage <sup>4</sup>
Generating unit <sup>1</sup>	AIR		AIR
Transmission line <sup>1</sup>	AIR		AIR
Transformer <sup>1</sup>	AIR <sup>5</sup>		AIR <sup>5</sup>
Overlapping <sup>2</sup>	AIR		AIR

- 1 All single contingency Outages (i.e. Generating Unit, transmission line or transformer) will be simulated on Participating Transmission Owners' local area systems.
- 2 Key Generating Unit out, system readjusted, followed by a line Outage.
- 3 Applicable Rating – Based on CAISO Transmission Register or facility upgrade plans.
- 4 Applicable Rating – CAISO Grid Planning Criteria or facility owner criteria as appropriate.
- 5 Based on judgment of CAISO and facility owner, a thermal or voltage criterion violation resulting from a transformer Outage may not be cause for Reliability Must-Run Generation solution if the violation is considered marginal (e.g. acceptable loss of life or low voltage), otherwise (e.g. unacceptable loss of life or voltage collapse) a Reliability Must-Run Generation solution would be indicated.

**Post Transient Load Flow Assessment:**

Contingencies	Reactive Margin Criteria <sup>2</sup>
Selected <sup>1</sup>	AIR

- 1 If power flow results indicate significant low voltages for a given power flow contingency, simulate that Outage using the post transient load flow program. The post-transient assessment will develop appropriate Q N and/or P N curves.
- 2 Applicable Rating – positive margin based on 105% of 1 in 2 year load forecast.

**Stability Assessment:**

Contingencies

Stability Criteria<sup>2</sup>Selected<sup>1</sup>

AIR

- 1 If power flow or post transient study results indicate significant low voltages or marginal reactive margin for a given contingency, simulate that Outage using the dynamic stability program.
- 2 Applicable Rating – CAISO Grid Planning Criteria or facility owner criteria **as** appropriate.

**SCHEDULE 17**  
**CONTACTS FOR NOTICES****[Section 18.11****NCPA**

Name of Primary Representative: Tony Zimmer

Title: Supervisor, Industry Restructuring and Interconnection Affairs

Address: 651 Commerce Drive

City/State/Zip Code: Roseville CA 95678

Email Address: tony.zimmer@ncpa.com

Phone: (916) 781 - 4229

Fax No: (916) 781 - 4252

Name of Alternative Representative: Dave Dockham

Title: Assistant General Manager – Power Management

Address: 651 Commerce Drive

City/State/Zip Code: Roseville CA 95678

Email Address: dave.dockham@ncpa.com

Phone: (916) 781 - 4256

Fax No: (916) 781 - 4252

**CAISO**

Name of Primary Representative: Roni L. Reese  
Title: Senior Contracts Analyst  
Address: 250 Outcropping Way  
City/State/Zip Code: Folsom, CA 95630  
Email Address: rreese@caiso.com  
Phone: (916) 608-7027  
Fax No: (916) 608-7292

Name of Alternative Representative: Christopher J. Sibley  
Title: Lead Contract Negotiator  
Address: 250 Outcropping Way  
City/State/Zip Code: Folsom, CA 95630  
Email Address: csibley@caiso.com  
Phone: (916) 608-7030  
Fax No: (916) 608-7292

**SCHEDULE 18**  
**MSS MEMBERS**

**[Section 1.2]**

**MSSAA Members**

City of Alameda  
City of Biggs  
City of Gridley  
City of Healdsburg  
City of Lodi  
City of Lompoc  
City of Palo Alto  
City of Ukiah  
Plumas-Sierra Rural Electric Cooperative  
Port of Oakland (The Port of Oakland's Oakland International Airport Service Area, the Port of Oakland Harbor Service Area, and the Port of Oakland Army Base)

**SVP**

City of Santa Clara (Silicon Valley Power)

## Schedule 19

### MSSA Load Following Deviation Energy Formula

**[Sections 12.11 and 12.12]**

All references in the MSSA Load Following Deviation Energy Formula to Scheduled MSS Demand and Metered MSS Demand includes all MSS Demand, both with a delivery point of the NCPA MSS LAP, and any Demand with a delivery point of one of the NCPA or SVP custom LAPs used to account for load served by ETC or TOR deliveries. Each of the NCPA and SVP custom LAPs are further described in Schedule 15 of this Agreement. The MSSA Load Following Deviation Energy Formula may be updated in the future as operational experience is gained, and necessary refinements are identified. Only those modifications to this Schedule 19 which are mutually acceptable to both NCPA and CAISO will be incorporated in to the MSSA Load Following Deviation Energy Formula, but any modification to Schedule 19 that may reflect a change in resources utilized by NCPA to serve MSS Demand will be incorporated in an expedited manner, and will not be arbitrarily withheld.

#### **Load Following MSS Participation in Integrated Forward Market**

NCPA, acting as MSS Aggregator, can bid a combination of resources that result in final Schedules that are greater or less than the amount of Energy required to balance its Demand obligations in the Day-Ahead market. The resulting difference represents the amount of Energy, which can be positive for a sale or negative for a purchase, that is considered sold or purchased with the CAISO in the Day-Ahead Integrated Forward Market. The resulting sale or purchase is obligated to be delivered to or from the CAISO in real-time. The following is a description of the formula used to derive this value:

**DA CAISO Sale (+)/Purchase (-) for the operating hour (MW) =** DA CAISO  
 Sale/Purchase must be calculated as:  
 Sum of Day-Ahead Final Market Energy Schedule for MSSA  
 Internal Generation \* (1- Fixed Loss Factor )  
 + Sum of Day-Ahead Final Market Energy Schedule for MSS  
 Internal Generation  
 - Sum of Day-Ahead Scheduled MSS Demand  
 + Sum of Day-Ahead Preferred NCPA MSS Trade

Where:

**DA Preferred NCPA MSS Trade =** DA Preferred NCPA MSS Trade must be  
 calculated as:  
 Sum of Non-Marble Day-Ahead Preferred  
 Import Energy to the MSS Aggregation \* (1-

Fixed Loss Factor)  
+ Sum of Marble Day-Ahead Preferred Import Energy to the MSS Aggregation  
+ Sum of Day-Ahead Inter-SC Trade in to the MSS Aggregation  
+ Sum of MSSA External Generation  
+ Sum of Day-Ahead Preferred Bilateral Trade in to the MSS Aggregation  
- Sum of Day-Ahead Preferred Export Energy out of the MSS Aggregation  
- Sum of Day-Ahead Inter-SC Trade out of the MSS Aggregation  
- Sum of MSSA External Demand  
- Sum of Day-Ahead Preferred Bilateral Trade out of the MSS Aggregation

Where:

- MSSA Internal Generation means generation that is located outside the geographic boundary of a MSS but is contained within the MSS Aggregation.
- MSS Internal Generation means generation located either behind a City Gate Meter or contained within the geographic boundary of a MSS.
- City Gate Meter means a physical or logical meter(s) that records all power usage by a MSS located at the Points of MSS Interconnection. Each of the MSS Member City Gate Meter(s) is listed in Schedule ■ .
- Fixed Loss Factor means the loss factor used to estimate the actual losses. This factor is negotiated between NCPA and the CAISO, which is currently set at two percent (2%).
- Day-Ahead Scheduled MSS Demand means the Load Self-Scheduled as submitted by NCPA, prior to any Day-Ahead adjustments applied by the CAISO Market software.
- MSS External Generation means the sum of all Scheduled Generation in the Day-Ahead Market using the NCPA SCID that is not in the MSS Aggregation.
- MSSA External Demand means the sum of all Scheduled Demand in the Day-Ahead Market using the NCPA SCID that is not in the MSS Aggregation.
- Day-Ahead Preferred Bilateral Trades in to and out of the MSS Aggregation are trades that are arranged by contract with a Third Party in the Day-Ahead time-frame and that are not Scheduled with the CAISO as an Inter-SC Trade.

- Day-Ahead Preferred Import Energy, Day-Ahead Preferred Export Energy, and Day-Ahead Inter-SC Trades in to and out of the MSS Aggregation are as submitted Day-Ahead to the CAISO.
- Marble Day-Ahead Preferred Import Energy in to the MSS Aggregation is scheduled using the Plumas-Sierra Rural Electric Cooperative Transmission Rights up to Marble Substation Intertie, as described in Schedule 13.
- Non-Marble Day-Ahead Preferred Import Energy in to the MSS Aggregation is all scheduled imports other than Marble Day-Ahead Preferred Import Energy in to the MSS Aggregation.

DA Preferred NCPA MSS Trade will be calculated by NCPA and provided to the CAISO. The CAISO will use this information in combination with the other data referenced in the DA CAISO Sale equation to calculate the DA CAISO Sale quantity. DA Preferred NCPA MSS Trade is referred to as preferred because all CAISO Scheduled values are based on the schedules and Bids as submitted by NCPA in to the Integrated Forward Market. Both DA CAISO Sale and DA Preferred NCPA MSS Trade are based on pre-schedules and are hourly values. The CAISO can request that DA Preferred NCPA MSS Trade be reported in MW's for the hour or in MWh on a 10-minute basis. The DA CAISO Sale quantity is calculated by CAISO.

### **MSS Load Following Deviation Energy Formula (DOPD)**

The Deviation Energy ("DOPD") represents the MSS Aggregation Imbalance Energy in MWh adjusted for Day-Ahead Sales or Purchases, as calculated above, and MSSA expected Instructed Imbalance Energy and Regulation Energy.

MSSA expected Instructed Imbalance Energy is an amount calculated by the CAISO that represents the Energy dispatched by the CAISO to the MSSA that is required to be provided by the MSSA. MSSA expected Instructed Imbalance Energy includes Energy from Energy Bids (including those associated with Spinning Reserve and Non-Spinning Reserve), Real-Time Energy from RMR Units, and Exceptional Dispatch Energy. MSSA expected Instructed Imbalance Energy does not include energy associated with Load following instructions.

**Deviation Energy (DOPD) for the Settlement Interval (MWh) =** Deviation Energy

must be calculated as:

- Metered MSS Gross Demand
- + Sum of Metered MSSA Internal Generation \* (1 - Fixed Loss Factor)
- + Sum of Metered MSS Internal Generation
- + RT NCPA MSS Trade
- + Sum of Regulation Down Energy
- Sum of Instructed Imbalance Energy

- Sum of Regulation Up Energy
- (DA CAISO Sale/Purchase) / 6

Where:

**RT NCPA MSS Trade =** RT NCPA MSS Trade must be calculated as:

- + Sum of Non-Marble Final Imports in to the MSS Aggregation \* (1 - Fixed Loss Factor)
- + Sum of Marble Final Imports in to the MSS Aggregation
- + Sum of Inter-SC Trades in to the MSS Aggregation
- + Sum of Bilateral Trades in to the MSS Aggregation
- + Sum of MSSA External Generation
- + Real-Time Grizzly Delivery
- Sum of Final Exports out of the MSS Aggregation
- Sum of Inter-SC Trades out of the MSS Aggregation
- Sum of Bilateral Trade out of the MSS Aggregation
- Sum of MSSA External Demand
- RT CAISO Sale (+)/Purchase (-)

Where:

- RT NCPA MSS Trade means the amount of energy Scheduled and or delivered between the MSS Aggregation and the CAISO Balancing Authority based on the transactions which are active in Real-Time.
- Metered MSS Gross Demand is the result of a logical meter calculation that adds Metered MSS Internal Generation back in to the Metered Load.
- Fixed Loss Factor means the loss factor used to estimate actual losses. This factor is negotiated between NCPA and the CAISO, which is currently set at two percent (2%).
- Instructed Imbalance Energy is expected energy associated with those ADS instruction service types that represent a requirement for the delivery of energy to the CAISO that is incremental (or decremental) to the MSSA's Load-Following needs. The equation reflected above assumes that ADS will deliver instructions that will account for all differences between the Day-Ahead Schedule and the Real-Time target of the unit, in a way that accurately accounts for any MSS Load Following Energy, and differentiates that from CAISO Instructed Imbalance Energy.
- Regulation Energy is the integrated expected energy which is calculated and provided in Real-Time due to CAISO Regulation Up and Regulation Down signals.
- Final Imports and Exports in to and out of the MSS Aggregation, including System Resources and Resource Specific System Resources listed in Schedule 14(a), are as Scheduled Day-Ahead or in HASP, or Operational

Adjustments as Scheduled up to 30-minutes before the active hour pursuant to ETC and TOR scheduling rights as expressed in Schedule 13, and includes all Operational Adjustments to System Resources and Resource Specific System Resources listed in Schedule 14(a).

- Marble Final Imports in to the MSS Aggregation are scheduled using the Plumas-Sierra Rural Electric Cooperative Transmission Rights up to Marble Substation Intertie, as described in Schedule 13.
- Non-Marble Final Imports in to the MSS Aggregation are all scheduled imports other than Marble Final Imports in to the MSS Aggregation.
- Inter-SC Trades in to and out of the MSS Aggregation are as Scheduled Day-Ahead or in HASP.
- Bilateral Trades are trades that are arranged by contract with a Third Party in the Day-Ahead or HASP time-frame that are not Scheduled with the CAISO as an Inter-SC Trade.
- MSSA External Generation and MSSA External Demand are Day-Ahead scheduled values only, as changes to these Schedules after the Day-Ahead market cannot be used to balance Gross MSS Demand, and as such are distinct and separate from Final Imports and Exports Scheduled in to and out of the MSS Aggregation.
- Real-Time Grizzly Delivery means the energy deliveries arranged after the close of HASP, but in accordance with the Grizzly Development and Mokelumne Settlement Agreement.
- RT CAISO Sale (+)/Purchase (-) means the quantity of Imbalance Energy purchased or sold in the CAISO Real-Time Market resulting from a Forced Outage of MSSA Internal Generation, MSS Internal Generation or MSS Demand in the MSS Aggregation. RT CAISO Sale (+)/Purchase (-) quantities are calculated and included in the RT NCPA MSS Trade for the minimum period of a) the duration of the Forced Outage of MSSA Internal Generation, MSS Internal Generation or MSSA Demand, or b) until NCPA acquires replacement supply, or restores demand, in or prior to the next available CAISO Day-Ahead Market. All Forced Outages on MSSA Internal and External Generation must be reported to the CAISO in accordance with Section 9 of the CAISO Tariff.

RT NCPA MSS Trade is calculated by NCPA and provided to the CAISO, and will be used by the CAISO in combination with the other data described in the Deviation Energy equation above to calculate Deviation Energy.

RESOLUTION NO. 2011-170

A RESOLUTION OF THE LODI CITY COUNCIL APPROVING  
THE THIRD AMENDED AND RESTATED NORTHERN  
CALIFORNIA POWER AGENCY METERED SUBSYSTEM  
AGGREGATOR AGREEMENT AND AUTHORIZING EXECUTION  
BY THE CITY MANAGER WITH ADMINISTRATION BY THE  
ELECTRIC UTILITY DIRECTOR

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WHEREAS, Lodi currently operates in the California Independent System Operator (CAISO) balancing authority area as a load following metered subsystem in accordance with the Second Amended and Restated Northern California Power Agency (NCPA) Metered Subsystem Aggregator (MSSA) Agreement (previously MSSA Agreement) and the CAISO Tariff; and

WHEREAS, the previous MSSA Agreement contained terms and conditions under which Lodi operated, scheduled, and settled transactions in the CAISO markets; and

WHEREAS, Lodi staff, working with NCPA and CAISO staff, has developed the Third Amended and Restated NCPA MSSA Agreement (Amended Agreement) to enhance certain settlement provisions in the agreement and to amend various sections of the previous agreement to be consistent with current market rules and business requirements; and

WHEREAS, the Amended Agreement will benefit Lodi by further enhancing its ability to perform load following, streamline the process for updating the Agreement, and ensure the Agreement remains consistent with current business practices; and

WHEREAS, the Amended Agreement will enable NCPA to act on behalf of Lodi to execute any future amendments to the schedules of the Amended Agreement by approval of the NCPA Commission, will update various schedules in the previous agreement to be consistent with current business practices, adds a new resource to Schedule **14** of the Amended Agreement, includes language in the Amended Agreement to clarify the classification of load following energy, and implements certain revisions to the MSSA load following deviation energy formula documented in Schedule **19** of the Amended Agreement; and

WHEREAS, work associated with the development of the Amended Agreement has been undertaken pursuant to approved budget categories; and

NOW, THEREFORE, BE IT RESOLVED that the Lodi City Council does hereby approve the Third Amended and Restated Northern California Power Agency Metered Subsystem Aggregator Agreement and authorize execution by the City Manager with administration by the Electric Utility Director.

Dated: November 2, 2011

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I hereby certify that Resolution No. 2011-170 was passed and adopted by the City Council of the City of Lodi in a regular meeting held November 2, 2011, by the following vote:

AYES: COUNCIL MEMBERS – Hansen, Katzakian, Mounce, Nakanishi,  
and Mayor Johnson

NOES: COUNCIL MEMBERS – None

ABSENT: COUNCIL MEMBERS – None

ABSTAIN: COUNCIL MEMBERS – None



RANDI JOHL  
City Clerk