

**CALIFORNIA INDEPENDENT SYSTEM
OPERATOR CORPORATION**

AND

CITY AND COUNTY OF SAN FRANCISCO

**SECOND AMENDED AND RESTATED
OPERATING AGREEMENT**



SECOND AMENDED AND RESTATED OPERATING AGREEMENT

THIS AGREEMENT is made this 2nd day of July, 2015 and is entered into, by and between:

- (1) The San Francisco Public Utilities Commission, a department of the **City and County of San Francisco**, a municipal corporation, operating under the laws of the State of California ("CCSF");

and

- (2) **California Independent System Operator Corporation**, a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate (the "CAISO"), hereinafter sometimes referred to collectively as "Parties" and individually as a "Party."

Whereas:

- A.** CCSF owns and operates a number of Generating Units associated with its Hetch Hetchy Project ("Hetch Hetchy Units") interconnected to the transmission facilities of Pacific Gas and Electric Company ("PG&E"), Modesto Irrigation District ("MID"), and Turlock Irrigation District ("TID") through CCSF's 115 kV and 230 kV transmission facilities. The Hetch Hetchy Project is maintained and operated in compliance with the Raker Act. CCSF's 115 kV and 230 kV transmission facilities are an integral part of the Hetch Hetchy Project and are not part of the CAISO Controlled Grid. CCSF has not executed the Transmission Control Agreement ("TCA") with the CAISO and therefore retains all rights and obligations associated with ownership and operation of its transmission facilities.
- B.** CCSF operates under an Interconnection Agreement with PG&E, Federal Energy Regulatory Commission ("FERC") Rate Schedule FERC No. 114, ("1987 IA") which PG&E has filed notice to terminate, and which notice of termination FERC has accepted effective June 30, 2015, subject to refund and hearing. PG&E has filed a replacement transmission interconnection agreement, FERC Electric Tariff Volume No. 5, Service Agreement No. 284 ("Replacement IA"), which FERC has accepted effective July 1, 2015, subject to refund and hearing ("CCSF IA" refers to the IA in effect at the relevant time).



- C.** PG&E has executed the Transmission Control Agreement, thereby turning over Operational Control of its transmission facilities to the CAISO.
- D.** As of December 1, 2005, TID has operated within its own Balancing Authority Area and MID operates within the Balancing Authority Area of Northern California (“BANC”); and
- E.** CCSF’s Electric System remains within the CAISO Balancing Authority Area.
- F.** CCSF and the CAISO desire to (i) establish the operational and Settlement requirements under which the Parties will coordinate and exchange information on schedules that do not use the CAISO Controlled Grid (for example CCSF’s transactions with TID and MID); (ii) establish provisions relating to telemetry and revenue metering data applicable to CCSF’s facilities; and (iii) establish provisions for scheduling and Settlement of CCSF’s non-CAISO Controlled Grid transactions in accordance with the Raker Act and respecting CCSF’s Transmission Ownership Rights of non-CAISO Controlled Grid facilities. This Agreement is not intended to affect the scheduling, operation, assessment of charges or any other element of transactions that are currently performed using the 1987 IA, whether the transactions are scheduled by CCSF or some other entity acting as Scheduling Coordinator for CCSF.
- G.** This Agreement does not specify any special terms for the scheduling of CCSF transactions over CAISO Controlled Grid facilities; all transactions by CCSF that use the CAISO Controlled Grid shall be scheduled in accordance with the CAISO Tariff.
- H.** This Agreement recognizes that CCSF is a Non-Participating Transmission Owner in that CCSF owns and operates the 115kV and 230kV transmission facilities and has not executed the Transmission Control Agreement transferring Operational Control of those facilities to the CAISO. As such, the CAISO Tariff provides that the rights and obligations of a Non-Participating Transmission Owner with respect to its own facilities are characterized as “Transmission Ownership Rights” (“TORs”). This Agreement is intended to form the bilateral agreement contemplated under the CAISO Tariff to uphold CCSF’s TORs and to ensure reliable and economic operation of CCSF’s transmission facilities within the CAISO Balancing Authority Area in conjunction with reliable and economic operation of the CAISO Controlled Grid.
- I.** The CAISO has executed an Adjacent Balancing Authority Area Operating Agreement (“ABAOA”) with BANC, and has executed an Interconnected Control Area Operating Agreement (“ICAOA”) with TID.



- J.** CCSF has the right to provide Ancillary Services to, and to procure Ancillary Services from, entities with rights at the Standiford Interconnection and the Oakdale Interconnection.
- K.** CCSF's transmission system is interconnected with the CAISO Controlled Grid at the point where PG&E's 230 kV transmission facilities physically connect with the 230 kV transmission facilities of CCSF's Warnerville Substation and the point where CCSF's 115 kV transmission facilities physically connect with PG&E's Newark Substation. These points are hereinafter referred to as the "CCSF-PG&E Interconnection."
- L.** CCSF has not executed the Transmission Control Agreement; thus the 115 kV transmission lines between CCSF's Hetch Hetchy Units and the Standiford and Oakdale Substations and the 115 kV and 230 kV lines between CCSF's Hetch Hetchy Units and the CCSF-PG&E Interconnection are resident within the CAISO Balancing Authority Area but are not part of the CAISO Controlled Grid (CCSF's Transmission Ownership Rights pertain to these facilities).
- M.** One point of interconnection exists between CCSF's Electric System and the BANC Balancing Authority Area, the Standiford Interconnection, and one point of interconnection exists between CCSF's Electric System and the TID Balancing Authority Area, the Oakdale Interconnection.
- N.** The CAISO is registered with NERC as a Transmission Operator and a Planning Authority ("Planning Coordinator").
- O.** CCSF is registered with NERC as a Transmission Owner, Transmission Operator, and Transmission Planner.¹
- P.** CCSF and CAISO have entered into a Planning Coordinator Agreement to address how they interact as, respectively, Transmission Planner and Planning Coordinator.
- Q.** CCSF plans and operates its Electric System in accordance with the NERC Reliability Standards applicable to a Transmission Owner, a Transmission Operator and Transmission Planner and is subject to the requirements of the CCSF IA.

¹ CCSF is registered as Hetch Hetchy Water and Power.



- R.** The Parties desire certainty to ensure that power transactions between CCSF's Hetch Hetchy Project Generating Units in the CAISO Balancing Authority Area and the Standiford and Oakdale Substations in the BANC and TID Balancing Authority Areas, respectively, are operated and scheduled in a reliable manner, and that, where applicable, charges herein are appropriately settled with the CAISO.

NOW, THEREFORE, in consideration of the mutual covenants set forth herein,

THE PARTIES AGREE as follows:

1. DEFINITIONS AND INTERPRETATION

1.1 Master Definitions Supplement. Except as otherwise defined in Section 1.3 of this Agreement or elsewhere in this Agreement, all terms and expressions used in this Agreement with initial capitalization shall have the same meaning as those contained in the Master Definitions Supplement to the CAISO Tariff.

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

- (a) if and to the extent a matter is specifically addressed by a provision of this Agreement, the provision of this Agreement shall govern notwithstanding any inconsistent provisions of the CAISO Tariff;
- (b) 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;
- (c) the singular shall include the plural and vice versa;
- (d) the masculine shall include the feminine and neutral and vice versa;
- (e) "includes" or "including" shall mean "including without limitation";
- (f) references to a Section or Schedule shall mean a Section or a Schedule of this Agreement, as the case may be, unless the context otherwise requires;
- (g) a reference to a given agreement or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented or restated through the date as of which such reference is made;
- (h) 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;

- (i) 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;
- (j) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;
- (k) any reference to a day, week, month or year is to a calendar day, week, month or year; and
- (l) 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.

1.3 Special Agreement Definitions. In addition to terms defined in the beginning of this Agreement and in Section 1.1 of this Agreement, for purposes of this Agreement the following terms shall have the meanings set forth below.

“Applicable NERC/WECC Reliability Requirements” means those reliability standards and associated reliability requirements applicable to CAISO in its role as Transmission Operator for the transmission facilities under its operational control and its role as Planning Coordinator for the bulk electric system facilities within its Planning Coordinator Area, and to CCSF as Transmission Owner, Transmission Operator and Transmission Planner for its bulk electric system facilities.

"Balancing Authority" means the responsible entity that integrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports Interconnection frequency in real time.

"Balancing Authority Area" means the collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.

"CAISO Tariff" means the transmission tariff of the CAISO on file with the Federal Energy Regulatory Commission as it may be amended from time to time.

“Electric System” means all physically connected properties and other assets, now or hereafter existing, owned or controlled by a single entity, and used for, or pertaining to, the generation, transmission, transformation, distribution, or sale of electric power and energy, including all additions, extensions, expansions, and improvements, but excluding subsidiaries and their properties and assets. To the extent that an entity is

not the sole owner of an asset or property, only that entity's ownership interest in such asset or property shall be considered to be part of its Electric System.

“Hetch Hetchy Project” means the hydroelectric generating facilities in the Tuolumne River watershed and associated transmission facilities owned by CCSF, as now developed or as may be developed in the future, which are subject to the Raker Act.

“Hetch Hetchy Project Transmission Ownership Rights” or “HH TOR” represents CCSF's transmission capacity on the Hetch Hetchy Project transmission facilities as detailed in Schedule 1, and all other attendant ownership rights including but not limited to the rights of CCSF to exercise operational control over its facilities and to determine the manner in which its facilities are planned, modified and used.

“Oakdale Interconnection” means the interconnection of the TID and CAISO Balancing Authority Areas, which consists of a physical point of interconnection at the points where CCSF's Moccasin-Newark 115 kV Lines #3 and #4 interconnect with the TID 115 kV taps at the Oakdale Switchyard as shown in Service Schedule 1 to the CAISO-TID ICAOA.

“Raker Act” means that act of Congress, 38 Stat. 242 (1913), which, in part, grants CCSF the rights to own and operate the Hetch Hetchy Project.

“Standiford Interconnection” means the interconnection of the BANC and CAISO Balancing Authority Areas which consists of a physical point of interconnection at disconnect switches 907C, 903C, 904C and 908C at the Standiford Substation, as shown in Service Schedule A to the CAISO-BANC ABAOA. Breakers 903 and 904 are and will be open breakers, and if this configuration is proposed to be changed, the CAISO, CCSF, and BANC will confer and agree on any change to the Interconnection point in advance of the change in this configuration.

“Transmission Control Agreement” (“TCA”) means the agreement between the CAISO and Participating TOs establishing the terms and conditions under which transmission owners will become Participating TOs and how the CAISO and each Participating TO will discharge their respective duties and responsibilities, as may be modified from time to time.



2. SCOPE OF AGREEMENT

This Agreement governs the operational relationship between the CAISO and CCSF with respect to CCSF's power transactions that are delivered to the CCSF-PG&E Interconnection, that are delivered to, or received from, the BANC Balancing Authority Area at the Standiford Interconnection and that are delivered to, or received from, the TID Balancing Authority Area at the Oakdale Interconnection over transmission facilities that are not part of the CAISO Controlled Grid, as detailed in Schedule 1, under the CAISO Tariff. For reliable operation of the CAISO Balancing Authority Area, the CAISO requires a Scheduling Coordinator to provide Bids or Self-Schedules to the CAISO, and CCSF shall ensure the utilization of a Scheduling Coordinator for this function.

3. TERM AND TERMINATION

3.1 Term. This Agreement shall be effective as of the later of i) July 1, 2015, or ii) the date this Agreement is accepted for filing and made effective by FERC and shall continue in effect until terminated.

3.2 Termination. This Agreement will terminate at the earliest of:

- (a) March 1, 2018.
- (b) The date CCSF becomes a Participating Transmission Owner;
- (c) CCSF becomes a Metered Subsystem, provided that the CAISO has been provided with 45 days advance written notice;
- (d) CCSF's Electric System is resident in a Balancing Authority Area other than that of the CAISO, provided the CAISO has been provided with 45 days advance written notice; or
- (e) Six months after mutual agreement of the Parties.

With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement was filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if the filing of the notice of termination is made after the preconditions for termination have been met or the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if filed with FERC, or thirty (30) days after the date of the CAISO's notice of termination, if terminated in accordance with the



requirements of FERC Order No. 2001 and related FERC orders. Any termination by CCSF upon 45 days prior notice to the CAISO shall relieve CCSF of its obligation and cause CCSF to forego its rights herein as of the termination effective date, regardless of action or inaction by the CAISO or FERC, provided that CCSF shall cease taking any service provided under this Agreement by the CAISO as of the effective date of its termination. Any outstanding charges or settlements that arose under this Agreement shall survive until they are satisfied.

4. OPERATING REQUIREMENTS

4.1 CCSF Transactions Directly with Other Balancing Authority Areas.

Hetch Hetchy Project's associated transmission facilities will be used to export Energy and/or Ancillary Services to, and import Energy and/or Ancillary Services from the BANC and TID Balancing Authority Areas. For Settlement treatment in accordance with Section 6.3 of this Agreement, the following transactions are delivered to MID at the Standiford Interconnection and to TID at the Oakdale Interconnection and do not use the CAISO Controlled Grid:

4.1.1 Transactions from the Hetch Hetchy Units to MID. CCSF shall schedule in the CAISO's scheduling system ("SIBR") and the CAISO will implement the scheduling of all Energy transactions from CCSF's Hetch Hetchy Units to MID in the BANC Balancing Authority Area using CCSF's transmission facilities; provided, however, interchange schedules may be adjusted in real time by direct communication between the CAISO and BANC real time schedulers, as necessary to coordinate dispatch of energy on the Standiford Interconnection, associated with the Ancillary Services in Section 4.1.3 below.

4.1.2 Transactions from the Hetch Hetchy Units to TID. CCSF shall schedule in the CAISO's scheduling system ("SIBR") and the CAISO will implement the scheduling of all Energy transactions from CCSF's Hetch Hetchy Units to the TID Balancing Authority Area using CCSF's transmission facilities; provided, however, interchange schedules may be adjusted in real time by direct communication between the CAISO and TID real time schedulers, as necessary to coordinate dispatch of energy on the Oakdale Interconnection, associated with the Ancillary Services in Section 4.1.3 below.

4.1.3 Exports of Ancillary Services. CAISO will accommodate CCSF's export of Ancillary Services to MID and TID through implementation of a manual process, if necessary, provided the CAISO continues to receive information from CCSF, MID and TID as reasonably necessary to do so.



4.1.4 Imports from MID at Standiford. CCSF shall schedule in the CAISO's scheduling system ("SIBR") and the CAISO will implement the scheduling of all Energy and Ancillary Services imports at the Standiford Interconnection using CCSF's Transmission Ownership Rights, subject to Section 7.3 of this Agreement.

4.1.5 Imports from TID at Oakdale. CCSF shall schedule in the CAISO's scheduling system ("SIBR") and the CAISO will implement the scheduling of all Energy and Ancillary Services imports at the Oakdale Interconnection using CCSF's Transmission Ownership Rights, subject to Section 7.3 of this Agreement.

4.2 Emergencies.

The CAISO shall in the event of, and for the duration of, a System Emergency or as a result of Uncontrollable Force, take such immediate action in accordance with Good Utility Practice as the CAISO determines necessary to mitigate or eliminate the System Emergency or Uncontrollable Force, subject to Section 4.2.1 of this Agreement. Such action may include or result in, without limitation, curtailments in accordance with the CAISO Tariff as limited by Section 4.2.1 of this Agreement. CCSF shall be compensated by the CAISO for Energy provided pursuant to this Section 4.2 as described in Section 4.2.2 of this Agreement.

4.2.1 Energy Dispatch. Hetch Hetchy Project Generating Units shall not be dispatched to provide Energy unless: (1) a system contingency occurs that requires the Dispatch of Energy from Hetch Hetchy Project Generating Units Operating Reserves to meet applicable WECC Minimum Contingency Reserves per BAL-002-WECC-2; or (2) a Stage Three System Emergency is imminent, thereby requiring the Dispatch of Hetch Hetchy Project Generating Units to prevent involuntary Load curtailments. Hetch Hetchy Project Generating Units shall be dispatched under these circumstances only after the CAISO has made best efforts to dispatch all other sources of Operating Reserves. Further, any Dispatch of Hetch Hetchy Project Generating Units will be subject to the Hetch Hetchy Project's electrical supply, water supply, water quality, and operational constraints.

4.2.2 Compensation. CCSF will be compensated for the Energy pursuant to Section 4.2.1 for each Settlement Interval at the higher of: 1) the Resource-Specific Settlement Interval LMP, 2) the Energy Bid price, if applicable, or 3) the "Negotiated Opportunity Cost Proxy Price" described below.



Unless and until superseded by implementation of the Negotiated Rate Option for the Hetch Hetchy Project Generating Units pursuant to Section 39.7.1.3 of the CAISO Tariff, the Negotiated Opportunity Cost Proxy Price is the product of a heat rate of 15,000 MMBTU/MWh and the Applicable Fuel Price for the Trading Day, plus \$5/MWh for variable operations and maintenance (“O&M”) costs. For each emergency Dispatch pursuant to Section 4.2.1, CAISO shall pay to CCSF \$1,100 to cover administrative costs related to providing emergency assistance to the CAISO. The Applicable Fuel Price shall be the same for each hour of a given day and is calculated as the Commodity Price (\$/MMBTU) plus Intrastate Transportation Rate (\$/MMBTU), where the Commodity Price shall be the product of 1.02 and the Gas Daily, PG&E Citygate Index (midpoint). The index to be used for each Settlement Interval in a given day is shown in the table below. Where more than one day’s index is shown for a Trading Day, the average of the two daily indices shall be used. If an applicable index for a day, which is used to compute the index average for a Trading Day, is not published, then that index will not be used to compute the Commodity Price for that trading day. If no index for a day is published, then the average of applicable index on the Index Publication Date preceding and the Index Publication Date following such day will be substituted for the Index Publication Date index for that day in the table below. In the event that an index ceases to be published, Parties shall agree on a replacement index. The Intrastate Transportation Rate shall be the PG&E intrastate transportation rate charge stated in PG&E Rate Schedule G-EG, or any successor rate for electric generation service divided by one minus the applicable in-kind shrinkage allowance, if any.

Natural Gas Price Index

<u>Trading Day</u>	<u>Index Publication Date*</u> <u>Gas Daily **</u>
Tuesday	Tuesday/Wednesday
Wednesday	Wednesday/Thursday
Thursday	Thursday/Friday
Friday	Friday/Monday
Saturday	Monday/Tuesday



Sunday

Monday/Tuesday

Monday

Monday/Tuesday

- * *The Index Publication Date is the date of the publication which contains the prices for the applicable Trading Day.*
- ** *Where more than one day's index is shown for a Trading Day, the average of the two daily indices should be used. The "Flow Date(s)" column should match the Trading Day.*

4.3 Coordinated Operations

The Parties will operate in accordance with Applicable NERC/WECC Reliability Requirements and the requirements of this section. In addition, CCSF is subject to the requirements of the CCSF IA.

- 4.3.1 Interconnections and Flows.** Each Party shall be responsible for operation and maintenance of its respective facilities in accordance with Good Utility Practice. Each Party shall take action as necessary to address System Emergencies or in response to an Uncontrollable Force. Interconnections shall be operated reliably with no detrimental flows on either system caused by the other's system and each Party shall mitigate the adverse effects of any detrimental flows on the other Party.
- 4.3.2 Reporting.** Each Party shall report significant system operating events to the other pursuant to Applicable NERC/WECC Reliability Requirements.
- 4.3.3 Hetch Hetchy Units Generation Dispatch.** CAISO may dispatch Hetch Hetchy Project Generating Units only in accordance with Section 4.2.
- 4.3.4 Voltage Control and Reactive Support.** CCSF or its operating agent shall make available the necessary status and telemetry information to the CAISO consistent with the requirements of the CCSF IA and operate the associated voltage control and reactive facilities on its portion of CCSF's Electric System to meet voltage control standards under the CCSF IA. The CAISO shall coordinate and direct the use of the available voltage control and reactive support devices to maintain the reliable operation of the CCSF Electric System and the CAISO Balancing Authority Area in accordance with Good Utility Practice.
- 4.3.5 Outage Coordination:** CCSF is subject to the operational requirements of the CCSF IA, including Outage coordination.
- 4.3.6 Load Shedding and Load Restoration** CCSF is subject to the Load Shedding and Load Restoration requirements of the CCSF IA.



- 4.3.7 Telemetry and Revenue Metering.** CCSF agrees to provide telemetry and revenue metering data from the Hetch Hetchy Project Generating Units to the CAISO in accordance with this Section 4.3. CCSF agrees to maintain in effect telemetry from the Hetch Hetchy Project to the CAISO's EMS system to provide real-time data from the Hetch Hetchy bulk electric system facilities to the CAISO pursuant to Applicable NERC/WECC Reliability Requirements, provided that the specific nature and extent of the telemetry arrangements and real-time data points will be as mutually agreed by CAISO and CCSF representatives consistent with the telemetry arrangements in place on the effective date of this Agreement. The rights and obligations of the Parties with respect to revenue metering for the Hetch Hetchy Project Generating Units shall be subject to the provisions of the CAISO Tariff applicable to the Scheduling Coordinator for CCSF's transactions as an SC Metered Entity, taking into account the provisions of Section 6.4 of this Agreement. CCSF shall have the ability to aggregate the Hetch Hetchy Project Generating Units as a single unit, or in a manner agreed between CCSF and the CAISO for purposes of scheduling and the provision of revenue metering data.
- 4.4 Real Time Operating Limits.** The real time operating limits for the CCSF-PG&E Interconnection, the Oakdale Interconnection and the Standiford Interconnection will be specified in the Transmission Rights and Transmission Curtailment ("TRTC") Instructions provided by CCSF to the CAISO, and may be updated as necessary by CCSF via its facility rating updates pursuant to FAC-008 and via the Peak Reliability Coordination Seasonal System Operating Limits Coordination Process². CCSF may schedule or have scheduled up to the total Intertie operating limits between the CAISO Balancing Authority Area and the BANC and TID Balancing Authority Areas at the Standiford Interconnection and the Oakdale Interconnection, respectively, as those limits are determined from time to time in accordance FAC-008 and the Peak Reliability Coordination Seasonal System Operating Limits Coordination Process and with applicable agreements as described below. While the 1987 IA remains in effect, any disagreement related to TRTC Instructions using CCSF's Existing Contract transmission rights at the CCSF-PG&E Interconnection will be resolved pursuant to the 1987 IA as an Existing Contract in accordance with the CAISO Tariff. Any disagreement related to TRTC Instructions with respect to real time operating limits for the Standiford Interconnection and the Oakdale Interconnection will be resolved in accordance with this Agreement, the ABAOA between the CAISO and

²

<https://www.peakrc.com/SOLDocs/Peak%20RC%20Seasonal%20SOL%20Coordination%20Process%20v1.0.pdf>



BANC, the ICAOA between the CAISO and TID, and the CCSF TRTC Instructions.

4.5 Transmission Rights and Transmission Curtailment Instructions.

CCSF shall provide TRTC Instructions to the CAISO for its Hetch Hetchy Project facilities pursuant to Section 17.1 of the CAISO Tariff. The CAISO will honor the TRTC Instructions provided by CCSF consistent with the HH TOR rights described and referenced in this Agreement and Section 17.1 of the CAISO Tariff.

4.5.1 Treatment of Losses. As contemplated by Section 17.3.3(2) of the CAISO Tariff, CCSF may in the future propose a specific loss percentage for the Hetch Hetchy Project. In the event the CAISO does not agree with CCSF's specific loss percentage, the Parties shall negotiate in good faith for a period of up to ninety (90) days in an effort to reach resolution. If the Parties are unable to reach resolution on the specific loss percentage, the matter shall be resolved in accordance with Section 8 of this Agreement. Nothing in this Section 4.7 shall be considered a waiver of CCSF's objections filed with FERC regarding the assessment or allocation of losses to transactions occurring under this Agreement, or to any of FERC's orders on such objections.

5. RELIABILITY STANDARDS

5.1 Reliability Standards Compliance. The Parties are subject to the Applicable NERC/WECC Reliability Requirements. This Agreement will not alter, enlarge, enhance or otherwise modify any CAISO right (if such right now exists) to enforce such requirements against or upon CCSF beyond such right as CAISO may currently possess outside this Agreement, or which it may receive from WECC in future. Unless expressly provided otherwise by written agreement between the CAISO and CCSF, the sanctioned Party will be responsible for payment directly to the WECC of any monetary sanction legally assessed by the WECC with respect to the sanctioned Party's compliance with the NERC/WECC reliability standards.

6. COSTS, CHARGES AND PAYMENT

6.1 Operating and Maintenance Costs. Each Party shall be responsible for all its costs incurred in connection with operating and maintaining its Electric System. Except as provided in Section 4.3.1, neither Party shall be responsible for paying any operating and maintenance charges incurred by the other Party.



6.2 Charges Not Generally Affected. Nothing in this Agreement is intended to affect the rates and charges paid by transmission service customers of the CAISO for use of the CAISO Controlled Grid. Customers of the CAISO using the CAISO's markets or the CAISO Controlled Grid shall pay rates and charges in accordance with the CAISO Tariff.

6.3 Deleted

6.4 Charges for Transmission Ownership Rights. If a Scheduling Coordinator for CCSF transactions from the Hetch Hetchy Project Generating Units submits Bids, or Self-Schedules, for transactions from the CAISO Balancing Authority Area which do not use the CAISO Controlled Grid, then that Scheduling Coordinator shall be responsible for procuring or self-providing: (1) Ancillary Services consistent with the requirements of the CAISO Tariff; (2) Imbalance Energy; and (3) losses consistent with the requirements of the CAISO Tariff and this Agreement. For the transactions using Transmission Ownership Rights submitted as Self-Schedules under this Agreement, the CAISO shall: apply charges for Ancillary Services, Imbalance Energy and Transmission Losses only to the extent they are not self-provided; and will not assess charges for neutrality, UFE, transmission Access Charges, Minimum Load Costs or other charges that might otherwise be applicable to the Demand or exports served solely over CCSF's HH TOR. In addition, the CAISO will charge the Grid Management Charge to these transactions in accordance with the CAISO Tariff. CCSF reserves the right to address cost causation issues in the CAISO filing required to determine the Grid Management Charge. The CAISO shall not charge the responsible Scheduling Coordinator for any other Charge Codes outside of this Section 6.4, if such transactions do not use the CAISO Controlled Grid.

6.5 Deleted

6.6 Payment. All payments to the CAISO or CCSF will be made by or to CCSF's Scheduling Coordinator in accordance with the Scheduling Coordinator Agreement, this Agreement, and Section 11 of the CAISO Tariff. Nothing in this Section 6.6 shall be construed to limit CCSF's Scheduling Coordinator's obligations under its Scheduling Coordinator Agreement with the CAISO.

7. SCHEDULING

7.1 Scheduling. CCSF or its designee shall act as the Scheduling Coordinator for CCSF's rights described in this Agreement. Scheduling of all transactions using CCSF's rights in this Agreement shall be performed by CCSF's Scheduling Coordinator, including TOR Self-Schedules, in accordance with the Scheduling Coordinator Agreement and the bidding



and scheduling provisions of the CAISO Tariff; provided, however, CCSF's Scheduling Coordinator shall be entitled to all related rights under this Agreement, and CCSF shall have post-HASP scheduling rights on the two non-CAISO Controlled Grid Interties at the Standiford Interconnection and the Oakdale Interconnection associated with CCSF's Hetch Hetchy Transmission Ownership Rights...

- 7.2 Scheduling Points.** The CAISO will maintain Scheduling Points and PNodes at the Oakdale Interconnection and the Standiford Interconnection, as well as PNodes at the CCSF-PG&E Interconnection, for transactions using CCSF's rights under this Agreement and operating limits identified pursuant to Section 4.4 of this Agreement.
- 7.3 No Use of CCSF Facilities by Others:** Nothing in this Agreement will allow use of CCSF-owned facilities not turned over to CAISO Operational Control by any other entity, without the express consent of CCSF. The CAISO will only accept Bids or Self-Schedules at the Oakdale Interconnection, the Standiford Interconnection, or the CCSF-PG&E Interconnection from CCSF's designated Scheduling Coordinator or from the designated Scheduling Coordinator of either MID or TID. Nothing in this provision is intended to alter, modify, enlarge, reduce, or otherwise affect any rights MID or TID may have pursuant to other agreements or arrangements to schedule across the CCSF-PG&E Interconnection. CCSF's ETC rights to schedule across the CCSF-PGE Interconnection are identified in the 1987 IA.
- 8. DISPUTE RESOLUTION**
- 8.1 Dispute Resolution.** The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that any reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to CCSF and references to the CAISO Tariff shall be read as references to this Agreement.
- 9. LIABILITY**
- 9.1 Liability.** The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to the Scheduling Coordinator for CCSF and references to the CAISO Tariff shall be read as references to this Agreement.



10. UNCONTROLLABLE FORCES

10.1 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 CCSF and references to the CAISO Tariff shall be read as references to this Agreement.

11. NO DEDICATION OF FACILITIES

11.1 No Dedication of Facilities. Any undertaking by a Party under any provision of this Agreement is rendered strictly as an accommodation and shall not constitute the dedication of CCSF's facilities or any portion thereof by the undertaking Party to the public, to any other Party or to any third party, and any such undertaking by a Party shall cease upon the termination of such Party's obligations under this Agreement. CCSF's facilities shall at all times be, and remain, in the exclusive ownership, possession, and control of CCSF or such other entity as CCSF, in its sole judgment, may specify, and nothing in this Agreement shall be construed to give any other Party any right of ownership, possession or control of such Electric System.

12. REGULATORY AUTHORITY

12.1 FERC Jurisdiction. This Agreement is subject to acceptance for filing by, and with respect to the CAISO, the regulatory jurisdiction of, FERC.

12.2 Changes in Rates. Nothing contained herein shall be construed as affecting in any way the right of a Party furnishing services in accordance with this Agreement unilaterally to make application to FERC for a change in rates presently included in Sections 6.3 and 6.4 of this Agreement, under Section 205 of the Federal Power Act and pursuant to the FERC's Rules and Regulations promulgated thereunder, nor shall it affect the right of any Party taking service under this Agreement to file a complaint under Section 206 of the Federal Power Act. The standard of review FERC shall apply when acting on proposed modifications of the rates included in Section 6.3 and 6.4 of this Agreement, either on FERC's own motion or on behalf of a signatory or non-signatory, shall be the "just and reasonable" standard of review rather than the "public interest" standard of review. The term "rates" as used herein shall mean a statement of electric services provided in accordance with the CAISO Tariff, rates and charges for, or in accordance with, those services, and all classifications, practices, rules, regulations, or contracts which in any manner affect or relate to such services, rates and charges; provided, however, the definition of "rates" shall not, for this purpose, include additions to the list of CAISO Tariff charges specifically set forth in Sections 6.3 and 6.4 of this



Agreement, which list of CAISO Tariff charges shall be considered a term or condition of this Agreement. Nothing contained herein shall be construed as affecting in any way the right of the CAISO unilaterally to make application for an amendment to the CAISO Tariff to the Federal Energy Regulatory Commission under Section 205 of the Federal Power Act and pursuant to FERC's Rules and Regulations promulgated thereunder.

13. MISCELLANEOUS

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

13.2 Notices. Any notice, demand or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff, provided that any reference therein to the CAISO Tariff or to Market Participant shall be understood to mean this Agreement or CCSF, respectively, and unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 4. A Party must update the information in Schedule 4 of this Agreement as information changes. Such changes shall not constitute an amendment to this Agreement.

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

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



- 13.5 Consistency with Federal Laws and Regulations.** This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.
- 13.6 Merger.** This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.
- 13.7 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.
- 13.8 Amendments.** This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective.
- 13.9 Settlement.** Nothing in this Agreement shall be construed as waiving, modifying or withdrawing any position taken to date by either Party in any FERC docket related to the rates, terms and conditions of the CAISO Tariff or the CCSF IA, whether before FERC or in any petition for review of such FERC orders by a court. Each Party remains free to pursue such positions as it deems appropriate.
- 13.10 Counterparts.** This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.



IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their respective authorized officials.

California Independent System Operator Corporation:

By: ^{DocuSigned by:} Eric Schmitt
 Name: Eric Schmitt
 Title: VP, Operations
 Date: 6/26/2015

City and County of San Francisco:

By: _____
 Name: Harlan L. Kelly, Jr.
 Title: General Manager, San Francisco Public Utilities Commission
 Date: _____

APPROVED AS TO FORM:

DENNIS J. HERRERA
CITY ATTORNEY

Deputy City Attorney



SECOND AMENDED AND RESTATED OPERATING AGREEMENT

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their respective authorized officials.

California Independent System Operator Corporation:

DocuSigned by:
 By: Eric Schmitt
 Name: Eric Schmitt
 Title: VP, Operations
 Date: 6/26/2015

City and County of San Francisco:

By: Harlan L. Kelly, Jr.
 Name: Harlan L. Kelly, Jr.
 Title: General Manager, San Francisco Public Utilities Commission
 Date: 7/2/15

APPROVED AS TO FORM:

DENNIS J. HERRERA
CITY ATTORNEY

Jeannette Cole
 Deputy City Attorney

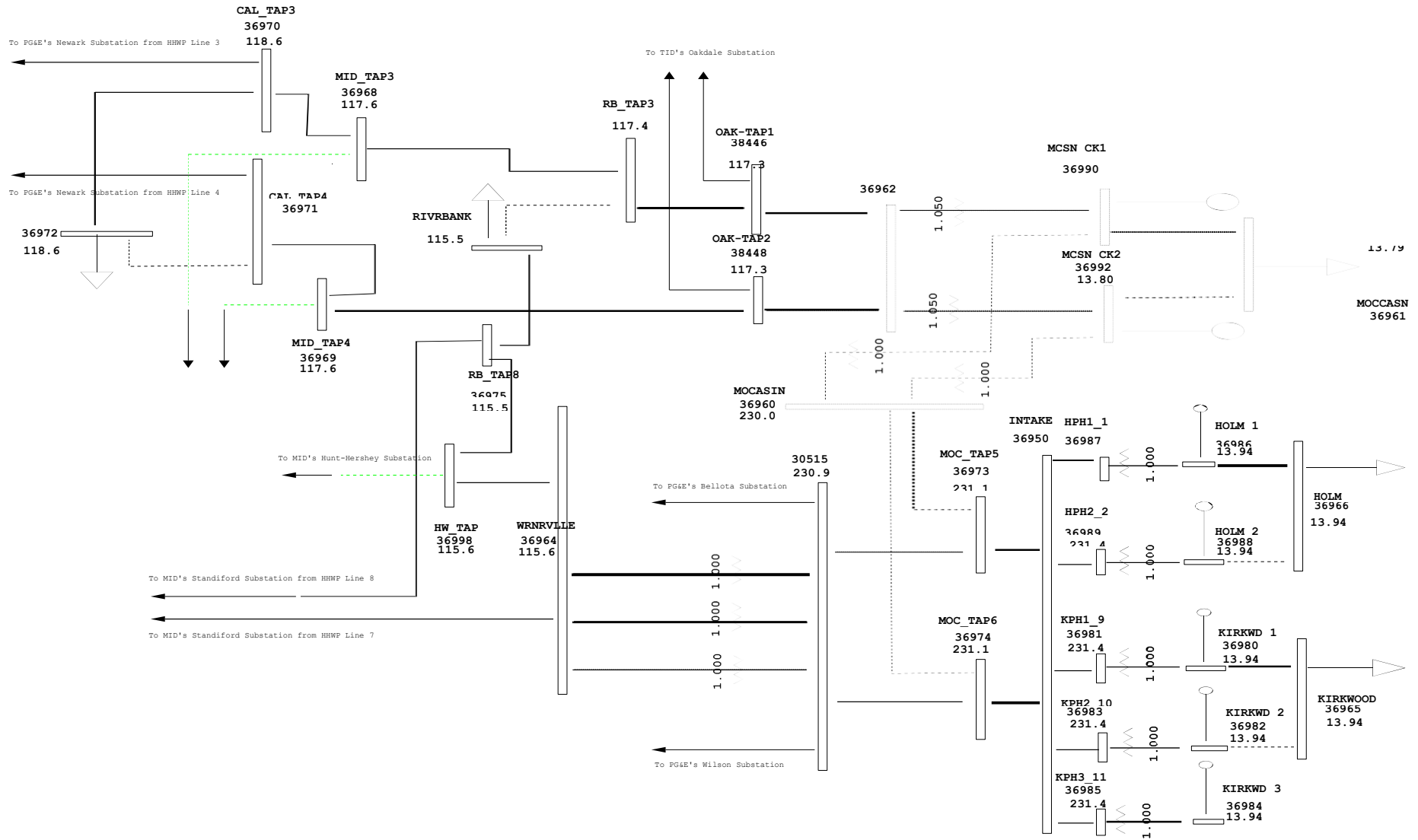


SCHEDULE 1

CCSF's Hetch Hetchy Project Facilities

[See following page]

Hetch Hetchy Water & Power (HHWP) System





SCHEDULE 2

Not used

NOTICES**[Section 13.2]****CCSF**

Name of Primary

Representative: Sunita Jones
Title: Scheduling and Settlements Manager
Address: 525 Golden Gate Avenue, 7th Floor
City/State/Zip Code: San Francisco, CA 94103
Email Address: PowerScheduler@swater.org,
skjones@swater.org
Phone: (415) 554-1575

Name of Alternative

Representative: Randi Brito
Title: Utility Specialist
Address: 525 Golden Gate Avenue, 7th Floor
City/State/Zip Code: San Francisco, California 94103
Email Address: rbrito@swater.org
Phone: (415) 5542491



CAISO

Name of Primary

Representative: Regulatory Contracts
Title: N/A
Address: 250 Outcropping Way
City/State/Zip Code: Folsom, CA 95630
Email Address: RegulatoryContracts@caiso.com
Phone: 916) 351-4400
Fax No: 916) 608-5063

Name of Alternative

Representative: Christopher Sibley
Title: Manger, Regulatory Contract
Address: 250 Outcropping Way
City/State/Zip Code: Folsom, CA 95630
Email Address: csibley@caiso.com
Phone: (916) 608-7030
Fax No: (916) 608-5063