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September 30, 2005

The Honorable Magalie Roman Salas
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Re: California Independent System Operator Corporation
Docket No. ER05-____-000

Dear Secretary Salas:

Pursuant to Section 205 of the Federal Power Act ("FPA"), 16 U.S.C. § 824d, the California Independent System Operator Corporation ("ISO")[1] submits for Commission filing and acceptance Amendment No. 4 ("Amendment No. 4") to the Interconnected Control Area Operating Agreement ("ICAOA") between the ISO and the Sacramento Municipal Utility District ("SMUD"). The purpose of the amendment is to facilitate the transfer of the system of the Modesto Irrigation District ("MID") and the 500 kV California-Oregon Transmission Project ("COTP") transmission line from the ISO Control Area to the SMUD Control Area, as requested by MID and the participants in the COTP, and to facilitate the implementation of a pilot Pseudo Tie of a Generating Unit currently in the SMUD Control Area to the ISO Control Area. These transfers and Pseudo Tie pilot are among several planned modifications to the current ISO Control Area footprint that are scheduled to occur on December 1, 2005.[2] The ISO requests that this filing be made effective December 1, 2005.

The original ICAOA was filed with the Commission on April 26, 2002, in Docket No. ER02-1641-000 and was designated as ISO Rate Schedule FERC No. 42. The

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1 Capitalized terms not otherwise defined herein have the meanings set forth in the Master Definitions Supplement, Appendix A to the ISO Tariff, and in the ICAOA, as amended.

2 The planned modifications are described further below.

Commission accepted that filing by letter order issued on June 24, 2002. The ISO submitted Amendment No. 1 to the ICAOA on August 1, 2003, in Docket No. ER03-1155-000, and it was accepted by Commission letter order issued Sept. 26, 2003. The ISO submitted Amendment No. 2 to the ICAOA on November 1, 2004, in Docket No. ER05-149-000, and it was accepted, subject to modification, in *California Independent System Operator Corporation*, 109 FERC ¶ 61,391, at Ordering Paragraphs (B) and (C) (2004), *reh'g denied*, 111 FERC ¶ 61,363 (2005), effective January 1, 2005. The ISO submitted the required modification on January 31, 2005, in Docket No. ER05-149-002, and the Commission accepted it by letter order issued April 8, 2005. The ISO submitted Amendment No. 3 to the ICAOA on September 29, 2005, in Docket No. ER05-____-000. The Commission has not yet acted on that amendment.

I. Background Concerning Modifications to the ISO Control Area Footprint

As described above, the transfer of the MID system and the 500 kV COTP transmission line from the ISO Control Area to the SMUD Control Area and the implementation of a pilot Pseudo Tie of a Generating Unit currently in the SMUD Control Area to the ISO Control Area are among several planned modifications to the current ISO Control Area footprint that are scheduled to occur on December 1, 2005. In addition to that transfer, the following modifications to the current footprint will occur:

- The Turlock Irrigation District will, as it has requested, become an independent Control Area.

- As requested by the Plumas-Sierra Rural Electric Cooperative and the Northern California Power Agency, a new intertie will be created at the Plumas-Sierra Marble Substation, between the ISO Control Area and the Control Area of the Sierra Pacific Power Company.

To minimize the impact of these modifications on customers, the ISO proposes to implement them in a single, new scheduling applications network model, called "C1."[3] None of the modifications requires any changes to the ISO Tariff.

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[3] On September 14 and 16, 2005, the ISO issued market notices concerning the implementation of the C1 network model, and explained that the technical information file and associated Master File modifications for the C1 network model had been posted on the ISO's website, to become effective on December 1. The ISO held a conference call with stakeholders about the C1 network model on September 20, 2005. The C1 network model also includes changes that are beyond the scope of those discussed in this transmittal letter, which will remain "off" until the ISO reaches agreement with the interested party(ies) and the agreement(s) are filed with the Commission. The ISO mentions these changes here only to indicate the ISO's intention to request expedited approval in an effort to have as many agreed-to changes made effective as of December 1, 2005, should the ISO be unable to reach agreement with the interested party(ies) prior to October 1, 2005.

In addition, the ISO is exploring how to recover or offset the one-time costs to the ISO's customers that will result from the changes to ISO systems and the ISO Control Area footprint caused by these transfers – particularly the transfers of systems and facilities out of the ISO Control Area.

II. Amendment No. 4

A. Purpose of the Amendment

The ICAOA is designed to assist the ISO and SMUD in coordinating the operation and maintenance of their interconnected Control Areas, in a manner consistent with North American Electric Reliability Council Criteria, Western Electricity Coordinating Council ("WECC") Minimum Operating Reliability Criteria, and Good Utility Practice. The purpose of Amendment No. 4 is to facilitate the transfer of the MID system and the 500 kV COTP transmission line from the ISO Control Area to the SMUD Control Area and the implementation of a pilot Pseudo Tie of a Generating Unit currently in the SMUD Control Area to the ISO Control Area.

B. Changes Contained in this Amendment No. 4

Amendment No. 4 contains the following revisions and additions to the ICAOA:[4]

- ICAA 1.3.4 has been added to provide that the ISO and SMUD will coordinate with all entities with ownership rights in the Interconnection facilities in advance of implementation of the boundary change between the Control Areas of the ISO and SMUD to ensure that all reliability issues are addressed.

- ICAA 2.2 has been revised to add definitions of the terms COTP Interconnection Point, COTP Interconnection Rate Schedule, COTP Terminus, and Path Operator of COI [California-Oregon Intertie].

- ICAA 3.2.3.1 has been revised to delete the provisions for interchangeability of schedules at Olinda and Tracy, as these former Control Area Interconnection points are connections to the COTP – which is now moving to be entirely within the SMUD Control Area.

- ICAA 3.3 has been added to state special provisions related to the COTP Terminus.

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[4] The revisions and additions contained in this Amendment No. 4 are to the currently effective ICAOA as modified by Amendment No. 3 to the ICAOA.

- ICAA 3.3.1 has been added to set forth the relationship between the COTP Interconnection Point and the COTP Terminus.

- ICAA 3.3.2 has been added to provide for the coordination of outages and maintenance of the COTP Terminus.

- ICAA 4.2 has been deleted in its entirety, as provisions for allocation of WECC Reliability Management System sanctions have been moved to the new COI Control Area Operating Agreement.[5]

- ICAA 5.6 has been added to provide for a pilot Pseudo Tie of a Generating Unit currently in the SMUD Control Area to the ISO Control Area, and to reference a similar reciprocal arrangement.[6]

- ICAA 7.6 has been revised to increase the SMUD Control Area share of the percentage allocation of the co-mitigation of COI derates by the ISO and SMUD and to delete certain penalty provisions and other provisions, as this is the subject of inter-Control Area reliability criteria and standards.

- Service Schedules 1, 2, 4, and 6 have been revised to reflect the transfer of the MID system and the 500 kV COTP transmission line from the ISO Control Area to the SMUD Control Area, effective December 1, 2005, and to make other minor clarifications.

III. Expenses

No expense or cost associated with this filing has been alleged or judged in any judicial or administrative proceeding to be illegal, duplicative, unnecessary, or demonstratively the product of discriminatory employment practices.

IV. Service

Copies of this filing have been served on SMUD, the California Public Utilities Commission, the California Electricity Oversight Board, and all entities that are on the official service lists for Docket Nos. ER02-1641, ER03-1155, and ER05-149. In addition, the filing has been posted on the ISO's website.

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[5] The COI Control Area Operating Agreement is being filed, in a separate docket, on the same date as this Amendment No. 4 to the ICAOA.

[6] Provisions concerning a Pseudo Tie pilot program from a resource in the ISO Control Area to the SMUD Control Area were contained in Amendment No. 3 to the ICAOA.

Enclosed for filing are six copies of each of the following:

(1) this letter of transmittal;

(2) the executed Amendment No. 4 (Attachment A);

(3) the rate schedule sheets in the ICAOA that are revised by Amendment No. 4 (Attachment B); and

(4) a black-lined document showing the changes to the currently effective ICAOA, as modified by Amendment No. 3 to the ICAOA, contained in Amendment No. 4 (Attachment C).

Also enclosed are two additional copies of this filing to be date-stamped and returned to our messenger.

V. Correspondence

The ISO requests that all correspondence, pleadings and other communications concerning this filing be served upon the following:

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Respectfully submitted,

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ATTACHMENT A

CALIFORNIA INDEPENDENT SYSTEM OPERATOR AND SACRAMENTO MUNICIPAL UTILITY DISTRICT

AMENDMENT NO. 4 TO THE INTERCONNECTED CONTROL AREA OPERATING AGREEMENT

THIS AMENDMENT NO. 4 is dated this 28th day of September, 2005 and is entered into, by and between:

(1) **Sacramento Municipal Utility District** ("SMUD"), having its registered and principal executive office at 6201 S Street, Sacramento, California 95817;

and

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

SMUD and the ISO are hereinafter referred to as the "Parties."

Whereas:

A. The Parties are signatories to an Interconnected Control Area Operating Agreement dated April 24, 2002 (the "Operating Agreement"), which Operating Agreement FERC accepted for filing effective June 13, 2002, the date SMUD was certified as a Control Area operator.

B. The Parties are signatories to Amendment No. 1 of the Operating Agreement dated July 7, 2003 ("Amendment No. 1"), which FERC accepted for filing September 26, 2003.

C. The Parties are signatories to Amendment No. 2 of the Operating Agreement dated October 30, 2004 ("Amendment No. 2"), which was filed with FERC on November 1, 2004 and which FERC accepted for filing by an order issued on December 30, 2004, effective as of January 1, 2005, as revised by a compliance filing filed by the ISO with FERC on January 31, 2005 ("the Compliance Filing").

D. The Parties are signatories to Amendment No. 3 of the Operating Agreement dated September 28, 2005 ("Amendment No. 3"), which was filed with FERC on September 29, 2005 and which FERC has not yet accepted for filing.

E. The California-Oregon Transmission Project ("COTP") Participants have elected to transfer the COTP to the Expanded SMUD Control Area.

F. The Parties and the COTP Participants have agreed that the optimal Interconnection point between the ISO and Expanded SMUD Control Areas related to the COTP is at the Tracy 500-kV Substation.

G. The Parties recognize that interconnecting at the above-referenced point will cause a portion of the COTP, from the Tracy Substation to the COTP Terminus, to physically remain in the ISO Control Area.

H. Neither the ISO nor SMUD nor the COTP Participants want to be adversely affected financially or operationally by leaving the COTP Terminus in the ISO Control Area.

I. The COTP Participants retain existing transmission rights and obligations for deliveries to/from the COTP Terminus associated with COTP and SOTP transmission.

J. The Parties desire to further amend the Operating Agreement to (i) modify the boundaries of their respective Control Areas to incorporate the COTP and the Modesto Irrigation District ("MID"); (ii) modify the specification of the points of Interconnection of their respective Control Areas; (iii) address certain operational and financial arrangements with respect to the COTP Terminus, (iv) provide for a pilot program for a Pseudo Tie of a resource currently in the Expanded SMUD Control Area to the ISO Control Area and recognize the pilot program previously established for a Pseudo Tie of a resource currently in the ISO Control Area to the Expanded SMUD Control Area; and (v) clarify, correct, and update descriptions of technical matters in the Service Schedules of the Operating Agreement.

K. In all other respects, the Parties intend that the Operating Agreement, incorporating Amendments No. 1, No. 2, as revised by the Compliance Filing, and No. 3 remain in full force and effect in accordance with its terms.

NOW THEREFORE, **THE PARTIES AGREE** as follows:

1. **Effective Date.** This Amendment No. 4 shall be effective on the date made effective by FERC.

2. **Termination.** This Amendment No. 4 shall remain in full force and effect until the termination of the Operating Agreement.

3. **Amendment to the Operating Agreement.** The Operating Agreement shall be amended as follows:

3.1 Existing Section ICAA 1.3.4 "Termination" is renumbered to Section ICAA 1.3.5 and a new Section ICAA 1.3.4 "Implementation of Additional Subsequent Change of Control Area Boundaries" is added as follows:

ICAA 1.3.4 Implementation of Additional Subsequent Change of Control Area Boundaries

SMUD and the ISO shall coordinate with all entities with ownership rights to the Interconnection facilities in advance of implementation of the boundary change between the control areas of SMUD and the ISO to ensure that all reliability issues are addressed. The ISO and SMUD are working diligently to achieve a December 1, 2005 change of the Control Area boundaries between the Parties to include the COTP and the Modesto Irrigation District (MID) system. In addition before the change of Control Area boundaries is effectuated, the Parties will confirm that Western, PG&E, MID, and Turlock Irrigation District (TID) are operationally ready for commencement of the change to the Control Area boundaries. The Parties recognize that the WECC is the authority responsible for re-certifying SMUD in its expanded footprint as a Control Area. Once that certification is granted, NERC, upon notification from WECC, will authorize SMUD to begin Control Area operation as the Expanded SMUD Control Area and announce a date for commencement of such operation. The ISO will cooperate by advising NERC as to the state of its readiness to implement directly interconnected Control Area operation with the Expanded SMUD Control Area. Operation of the Expanded SMUD Control Area shall commence upon SMUD's receipt of NERC/WECC re-certification and no earlier than a NERC/WECC-established and announced date for commencement of such operation.

3.2 The following definitions are added in alphabetical order and Section ICAA 2.2 is renumbered accordingly:

COTP Interconnection Point: The point of Interconnection between the ISO Control Area and the Expanded SMUD Control Area related to the COTP at the Tracy 500 kV substation, described in more detail in Service Schedule 1 as the Tracy 500 kV Interconnection.

COTP Terminus: The point of interconnection between the PG&E electric system and the COTP, located at the eastern boundary of the existing right-of-way of PG&E's Tesla-Los Banos No. 2 500 kV line, at which the COTP's conductors extending from the Tracy Substation

Expansion meet PG&E's conductors extending from PG&E's Tesla-Los Banos No. 2 500 kV line.

COTP Interconnection Rate Schedule: The pre-existing contract between PG&E as a Participating Transmission Owner and the COTP Participants described in Service Schedule 2 as PG&E Rate Schedule for the Interconnection of the COTP and the PG&E Electric System – FERC Rate Schedule #144.

Path Operator of COI: The path operator of COI as established pursuant to the California-Oregon Intertie Path Operator Agreement.

3.3 Section ICAA 3.2.3.1 "Real Time Operating Limits Established Jointly" shall be deleted in its entirety and replaced with the following:

ICAA 3.2.3.1 Real Time Operating Limits Established Jointly

The ISO and SMUD, in consultation with the Transmission Owner(s), have established the base Real Time Operating Limits of the Interconnection. These established base operating limits are specified in Service Schedule 6.

The base Real Time Operating Limits shall be adjusted as needed based on the given real time conditions, current operating conditions, current operating criteria, and established Nomograms, graphs, and charts specific to the transfer paths within the SMUD and ISO Control Areas. The ISO and SMUD, and, where possible, in conjunction with Western and PG&E, shall continue to use the Sacramento Valley Study Group or its successor Sacramento area reliability coordination organization (SVSG) as the forum for establishing such Real Time Operating Limits in the Sacramento area after the implementation of the Expanded SMUD Control Area. The limits established by SVSG shall be reflected in the SMUD and ISO operating procedures that implement such limits, in a manner consistent with their establishment. Schedules at the Lake and Rancho Seco interconnections are interchangeable pursuant to existing contracts with PG&E.

3.4 Section ICAA 3.3 is added as follows:

ICAA 3.3 Special Provisions Related to COTP Terminus

The Parties agree that the interconnection point for the COTP between the ISO Control Area and the Expanded SMUD Control Area shall be at the COTP Interconnection Point. The provisions of this ICAA 3.3 shall apply so long as the COTP Interconnection Rate Schedule remains in effect. So long as the COTP

Interconnection Rate Schedule remains in effect, the COTP Interconnection Point shall be treated as a single branch group, and the COTP Terminus will physically remain in the ISO Control Area.

3.5 Section ICAA 3.3.1 is added as follows:

ICAA 3.3.1 Relationship Between COTP Interconnection Point and COTP Terminus

The Parties agree that the location of the COTP Interconnection Point is a scheduling convenience and mutually benefits both Parties. The COTP Interconnection Point and the COTP Terminus are deemed to be the same scheduling point for purposes of scheduling and metering, in accordance with ICAA 5 and Service Schedules 1, 2, 4, 5, and 11. Neither Party will charge the other Party or any of the COTP Participants for any charges, costs, fees related to any transactions across the line segments between the COTP Interconnection Point and the COTP Terminus, including, without limitation, any congestion charges, scheduling charges, charges for losses, must-offer charges, or any load-based charges, provided, however, that (1) imports into the ISO Control Area at the COTP Interconnection Point that use the ISO Controlled Grid beyond the COTP Terminus shall pay all applicable ISO Tariff based charges; and (2) exports from the ISO Control Area at the COTP Interconnection Point that use the ISO Controlled Grid shall pay all applicable ISO Tariff based charges.

The COTP Participants shall retain existing transmission rights and obligations for deliveries to or from the COTP Terminus pursuant to pre-existing contracts with PG&E for COTP or SOTP transmission as specified in operating instructions provided to the ISO by PG&E in accordance with ICAA 3.1.2. The contractual basis for such treatment related to the COTP Terminus is summarized in Service Schedule 2.

3.6 Section ICAA 3.3.2 is added as follows:

ICAA 3.3.2 Coordinated Outages and Maintenance of COTP Terminus

The ISO and SMUD recognize and agree that Western is the operating and maintenance agent for the COTP. The ISO shall coordinate outages of the COTP Terminus with SMUD and Western in accordance with ICAA 6 and Service Schedule 12. The ISO shall coordinate with SMUD and Western the removal from, and restoration to, service for any facilities within the ISO Control

Area that affect available system transfer capability at the COI in accordance with ICAA 3.2, 6, and 7 and Service Schedules 4, 5, 8, 12, and 15. The ISO shall initiate requests for, or implement as appropriate, emergency response procedures to isolate inoperable components of the COTP Terminus and to restore the available electric system facilities to service without delay in accordance with ICAA 3.2, 6, and 7 and Service Schedules 4, 5, 8, 12, and 15. The ISO agrees that Western and SMUD, acting in coordination with the ISO, may remove from service, and following an outage may restore to service, all or part of the COTP Terminus facilities in accordance with ICAA 3.2, 6, and 7 and Service Schedules 4, 5, 8, 12, and 15.

3.7 Section ICAA 4.2 "WECC Reliability Management System" shall be deleted in its entirety.

3.8 Section ICAA 5.6 is added as follows:

ICAA 5.6 Pilot Programs for Pseudo Ties

The ISO and SMUD shall develop provisions for a pilot program (1) authorizing a Pseudo Tie of an entire single resource in the Expanded SMUD Control Area to the ISO Control Area to be implemented as of December 1, 2005; and (2) authorizing a Pseudo Tie of an entire single resource in the ISO Control Area to the Expanded SMUD Control Area to be implemented in accordance with the timeline and other conditions set forth in Section ICAA 5.5.

3.9 Section ICAA 7.6 "Co-Mitigation of California-Oregon Derates" shall be deleted in its entirety and replaced with the following:

ICAA 7.6 Co-Mitigation of California-Oregon Intertie Derates

The ISO and SMUD as Control Area operators will implement the COI Power Flow Reduction Measures, as directed by the Path Operator of COI provided the COI owners provide resources to, or accept curtailments from, (in the event that the COI Power Flow Reduction Measures allow) their respective Control Area operator to facilitate management of COI overloads by the Path Operator of COI. These obligations (79% ISO, 21% SMUD as of the effective date of Amendment No. 4 to this Operating Agreement) are established and quantified in the operating procedures pursuant to the California-Oregon Intertie Path Operator Agreement. The Expanded SMUD Control Area and the ISO Control Area shall provide the total Energy or the total curtailment (in the event that the COI Power Flow Reduction Measures allow) necessary to

implement COI Power Flow Reduction Measures as determined by the Path Operator of COI and implemented by means of automatic adjustment signal.

3.10 Service Schedule 1 specifying the "Interconnection" is deleted in its entirety and the Service Schedule 1 attached to this Amendment No. 4 is substituted in its place.

3.11 Service Schedule 2 specifying "Pre-Existing Contracts: Provisions and Information" is deleted in its entirety and the Service Schedule 2 attached to this Amendment No. 4 is substituted in its place.

3.12 Service Schedule 4 specifying the "Respective Jurisdiction for Operational Control of Interconnection" is deleted in its entirety and the Service Schedule 4 attached to this Amendment No. 4 is substituted in its place.

3.13 Service Schedule 6 specifying the "Real-Time Operating Limits" is deleted in its entirety and the Service Schedule 6 attached to this Amendment No. 4 is substituted in its place.

4. This Amendment No. 4 constitutes the complete and final agreement of the Parties with respect to the purpose of this Amendment No. 4 as described in the Recitals hereto and supersedes all prior understandings, whether written or oral, with respect to such subject matter.

5. Except as expressly modified in this Amendment No.4, the Operating Agreement, as previously amended, shall remain in full force and effect in accordance with its terms, and the unmodified provisions of the Operating Agreement shall apply to any new rights and/or obligations established by this Amendment No. 4.

6. This Amendment No. 4 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 Amendment No. 4 to be duly executed by and through their respective authorized representatives as of the date hereinabove written.

California Independent System Operator Corporation

By: _____

Name: JAMES N DETMERS

Title: VP OPERATIONS

Date: 9/28/05

Sacramento Municipal Utility District

By: _____

Name: James R. Shetler

Title: Assistant General Manager, Energy Supply

Date: 9/28/05

(as revised)

SERVICE SCHEDULE 1

INTERCONNECTION

[Section 2.2.10]

The Interconnection between the ISO and Expanded SMUD Control Areas consists of the following Interconnection points. Most Interconnection points are normally operated closed and are capable of transferring power in both directions.

- **Rancho Seco Interconnection**
  (Rancho Seco – Bellota #1 and #2 230 kV Lines)

  This Interconnection point is comprised of a 27-mile double circuit 230 kV transmission line strung on a 500 kV tower. The transmission lines connect SMUD's Rancho Seco Substation in southern Sacramento to PG&E's Bellota Substation in the eastern Stockton area. The physical points of interconnection are disconnect switches 357 and 317 at the Rancho Seco Substation.

- **Lake Interconnection**
  (Lake – Gold Hill 230 kV Line)

  This Interconnection point is comprised of a single very short (<0.25 mile) 230 kV transmission line connecting SMUD's Lake Substation to PG&E's Gold Hill Substation. The two substations are adjacent and located in Folsom, California. This Interconnection point utilizes a 55-ohm series reactor to provide additional electrical distance. The physical point of interconnection is PG&E's 230 kV line termination structure at Gold Hill Substation.

- **Cottonwood Interconnection**
  ("G" 230 kV Bus Tie)

  This Interconnection point is comprised of two 230 kV breakers connecting Western's bus with PG&E's bus. Cottonwood Substation is located in Cottonwood, California. The physical point of interconnection is disconnect switch 471 on the "G" 230 kV bus 1 and disconnect switch 481 on the "G" 230 kV bus 2 bus at Cottonwood Substation.

- **LLNL Interconnection**
  (LLNL 115 kV Bus Tie)

  Western is interconnected to PG&E through line disconnect switch 455 at Western's Lawrence Livermore National Laboratory ("LLNL") U-424 Substation. One PG&E 115 kV line enters and one Western 115 kV line leaves the LLNL U-424 Substation. LLNL U-424 Substation is located southeast of Sacramento in

Livermore, California. The physical point of interconnection is line disconnect switch 455 at LLNL U-424 Substation.

- **Round Mountain Interconnection**
  (Round Mountain - Cottonwood 230 kV Bus Tie)

  Western is interconnected to the PG&E system through breaker 242 at PG&E's Round Mountain Substation. One Western and one PG&E 500 kV line enters and two PG&E 500 kV and one Western 230 kV lines leave the Round Mountain Substation. Round Mountain Substation is located in Round Mountain, California. The physical points of interconnection are disconnect switches 243 and 245 at the Round Mountain Substation.

- **Tracy 500 kV Interconnection**
  (Tracy-Tesla and Tracy-Los Banos 500 kV Lines)

  This Interconnection point is comprised of a double circuit 500 kV line with one circuit connecting Tracy Substation to Tesla Substation and the other connecting Tracy Substation to Los Banos Substation. COTP is interconnected to the PG&E system through breakers 2192, 2096, 1192 and 1096 at Western's Tracy Substation. The physical point of interconnection is Tower 36, approximately eight miles outside the Tracy Substation connecting COTP lines with PG&E's lines originating from Tesla and Los Banos.

- **Tracy-Tesla 230 kV Interconnection**
  (Tracy-Tesla 230 kV Lines)

  This Interconnection point is comprised of two 230 kV lines connecting Tracy Substation to Tesla Substation. Western is interconnected to the PG&E system through breakers 382 and 582 at Western's Tracy Substation. The physical point of interconnection are disconnect switches 381, 385, 581, and 585 at the Tracy Substation.

- **Herdlyn Interconnection**
  (Herdlyn 69 kV Bus Tie)

  The Western system is connected to the PG&E system at the disconnect switch on the Tracy-Herdlyn 69 kV line that is located within the Tracy Substation and is owned and operated by Western. Although a physical interconnection exists between the Expanded SMUD Control Area and the ISO Control Area at the disconnect switch on the Tracy-Herdlyn line, the Parties agree it will not be considered a scheduling point.

- **Westley Interconnection (Westley-Tesla 230 kV Tie)**

  This Interconnection point is comprised of a single 230 kV line connecting Westley Substation to Tesla Substation. MID is interconnected to the PG&E system through breakers 2355 and 2356 at MID's Westley Substation. The physical point of interconnection is the Westley Junction located approximately one half mile west of the Westley Substation.

- **Standiford Interconnection (Standiford-Warnerville #7 & #8, Standiford-Newark/Moccasin #3 & #4 115 kV Lines)**

  This Interconnection point is comprised of four 115 kV lines connecting Standiford Substation to Warnerville, Newark, Oakdale and Moccasin Substations. MID is interconnected to the CCSF systems through breakers 907, 903, 904, and 908 at MID's Standiford Substation. The physical points of interconnection are disconnect switches 907C, 903C, 904C and 908C at the Standiford Substation. Breakers 903 and 904 are and will be open breakers, and if this configuration is proposed to be changed, the Parties will confer and agree on any change to the Interconnection point in advance of the change in this configuration.

A set of single-line diagrams showing each of the points of Interconnection is attached to this Service Schedule 1.

REVENUE METERING AND TELEMETRY AT INTERCONNECTION POINTS

SMUD has in service revenue quality metering at all Interconnections points. This metering shall meet the standards as mutually agreed upon by SMUD and the ISO. Meters are inspected and tested per existing agreements between SMUD and the respective Transmission Owner. The ISO shall be entitled to witness annual testing of the Interconnection metering. Any change or modification to such metering equipment by SMUD or any other entity shall be coordinated with the ISO. SMUD shall program the Interconnection revenue metering to record data at five minute intervals and shall provide for ISO polling of that metering.

SMUD and the ISO shall maintain arrangements that ensure that both Parties shall have access to real-time data from all of the points of Control Area Interconnection. SMUD understands that the ISO wants to directly poll MW and MVAR data from interconnection metering and/or data recorders, which may include RTUs, at all points of Control Area Interconnection, including SMUD and Western substations. SMUD agrees to allow the ISO to directly poll real-time data from SMUD substations and will work with the ISO and Western to facilitate ISO direct polling of real-time data from Western substations in a timely manner. In the event that a second communication port of the RTU is not available for direct polling by the ISO's EMS, the ISO shall have

the option to provide an RTU to the substation owner for the purpose of establishing a communication port available for direct polling by the ISO EMS.

- **LAKE INTERCONNECTION**

An Interconnection point to PG&E is metered at Lake Substation. The substation has primary and backup metering arrangements. The primary meter is a Transdata model 30EMS7460M2 and the backup meter is a Scientific Columbus JEM-1 meter model 603P-11. This is a bi-directional meter with the accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located at the line side. All P.T.s and C.T.s are rated for 0.3% accuracy class with CT ratio of 800:5 and PT ratio of 1200:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by SMUD's MV90 system via dial-up telephone lines on a daily basis.

- **RANCHO SECO INTERCONNECTION**

The primary and backup revenue metering equipment is installed at the Rancho Seco end of the Rancho Seco-Bellota 230 kV lines #1 and #2. The primary meter is a Scientific Columbus JEM-1 model 603P-E and the backup meter is a Scientific Columbus JEM-1 model 603-J-MM ; both are bi-directional meters with an accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located on the line side. All P.T.s and C.T.s are rated at 0.3% accuracy class with CT ratio of 400:1 and PT ratio of 1200:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by SMUD's MV90 system via dial-up telephone lines on a daily basis.

- **COTTONWOOD INTERCONNECTION**

The Interconnection point with the Western system is metered on the 230 kV G Section at Cottonwood Substation. The meter is currently a Quad-4 that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with the accuracy rating of 0.3 %. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 230 kV switchyard at the Interconnection point of the 230 kV bus. All P.T.s and C.T.s are rated at 0.3 % accuracy class with CT ratio of 320:1 and PT ratio 1200:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs

are also stored in internal data recorders for MV90 use. The meters are polled by Western's / SMUD's MV90 system via dial-up telephone lines on a daily basis.

- **LLNL INTERCONNECTION**

The Interconnection point with the Western system is metered on PG&E's Tesla-LLNL 115 kV line at LLNL U-424 Substation. The meter is currently a Quad-4 that has the capability of metering Watthours and Varhours. The meters are located in the 115 kV yard. This is a bi-directional meter with the accuracy rating of 0.3 %. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 115 kV switchyard at the Interconnection point of the 115 kV bus. All P.T.s and C.T.s are rated at 0.3 % accuracy class with CT ratio of 60:1 and PT ratio of 600:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western's / SMUD's MV90 system via dial-up telephone lines on a daily basis.

- **ROUND MOUNTAIN INTERCONNECTION**

The Interconnection point with the Western system is metered on the Round Mountain Cottonwood 230 kV line at Round Mountain Substation. The meter is currently a Quad-4 that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with the accuracy rating of 0.3 %. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 230 kV switchyard at the Interconnection point of the Cottonwood 230 kV bus. All P.T.s and C.T.s are rated at 0.3 % accuracy class with CT ratio of 120:1 and PT ratio 160:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western's / SMUD's MV90 system via dial-up telephone lines on a daily basis.

- **TRACY-TESLA 230 KV INTERCONNECTION**

The Interconnection point with the Western system is metered on 230 kV at Tracy Substation. The meter is currently a Quad-4 that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with the accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 230 kV switchyard at the Interconnection point of the 230 kV bus. All P.T.s and C.T.s are rated at 0.3 % accuracy class with CT ratio of 400:1 and PT ratio 1200:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western's / SMUD's MV90 system via dial-up telephone lines on a daily basis.

- **HERDLYN INTERCONNECTION**

The Interconnection point with the Western system is metered on the Herdlyn-Tracy 69 kV line at Tracy Substation. The meter is currently a Quad-4 that has the capability of metering Watthours and Varhours. The meters are located in the 69 kV yard. This is a bi-directional meter with the accuracy rating of 0.3 %. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 69 kV switchyard at the Interconnection point of the 69 kV bus. All P.T.s and C.T.s are rated at 0.3 % accuracy class with CT ratio of 240:1 and PT ratio of 320:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western's / SMUD's MV90 system via dial-up telephone lines on a daily basis.

Although a physical interconnection exists between the Expanded SMUD Control Area and the ISO Control Area at Herdlyn, the Parties agree it will not be considered a scheduling point.

- **TRACY 500 KV INTERCONNECTION**

The Interconnection point with the Western system is metered on the Tracy–Tesla 500 kV line at Tracy Substation. The meter is currently a Quad-4+ that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 500 kV switchyard at the Interconnection point of the 500 kV bus. All P.T.s and C.T.s are rated at 0.3% accuracy class with CT ratio of 2000/5 and PT ratio of 2500/1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western/SMUD MV90 system via dial-up telephone lines on a daily basis.

The Interconnection point with the Western system is also metered on the Tracy–Los Banos 500 kV line at Tracy Substation. The meter is currently a Quad-4+ that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with the accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 500 kV switchyard at the Interconnection point of the 500 kV bus. All P.T.s and C.T.s are rated at 0.3% accuracy class with CT ratio of 2000/5 and PT ratio of 2500/1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western/SMUD MV90 system via dial-up telephone lines on a daily basis.

- **WESTLEY INTERCONNECTION**

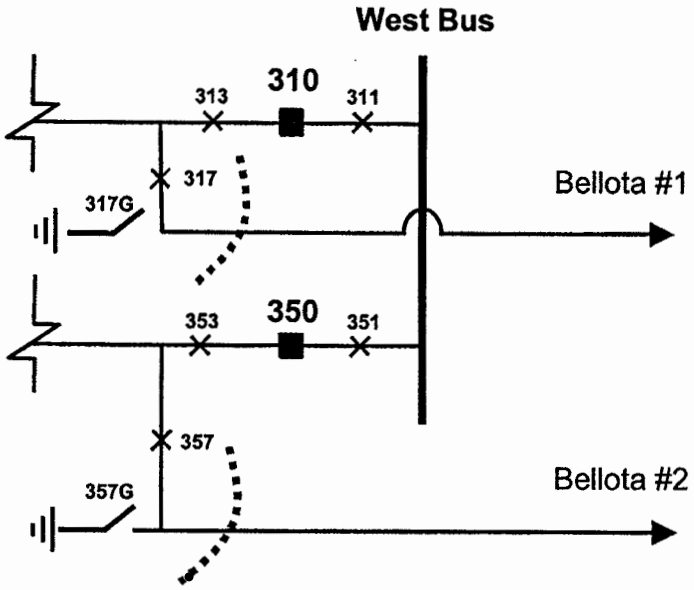
The Interconnection point with the MID system on the Westley–Tesla 230 kV line is metered at Westley Substation. The meter is currently a Schlumberger SP4SM that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with the accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 230 kV switchyard, on the Westley-Tesla 230 kV line. All P.T.s and C.T.s are rated at 0.3% accuracy class with CT ratio of 1000/5 and PT ratio of 1200/1. The meter's MW and MVar DNP3.0 serial digital outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by TID/MID/SMUD MV90 system via dial-up telephone lines on a daily basis.

For settlement purposes, it is important to note that TID and ISO have an interconnection on the Westley–Los Banos 230 kV line that is metered at Westley Substation. The meter is currently a Schlumberger SP4SM that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with the accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 230 kV switchyard on the Westley-Los Banos 230 kV line. All P.T.s and C.T.s are rated at 0.3% accuracy class with CT ratio of 1000/5 and PT ratio of 1200/1. The meter's MW and MVar DNP3.0 serial digital outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by TID/MID/SMUD MV90 system via dial-up telephone lines on a daily basis.

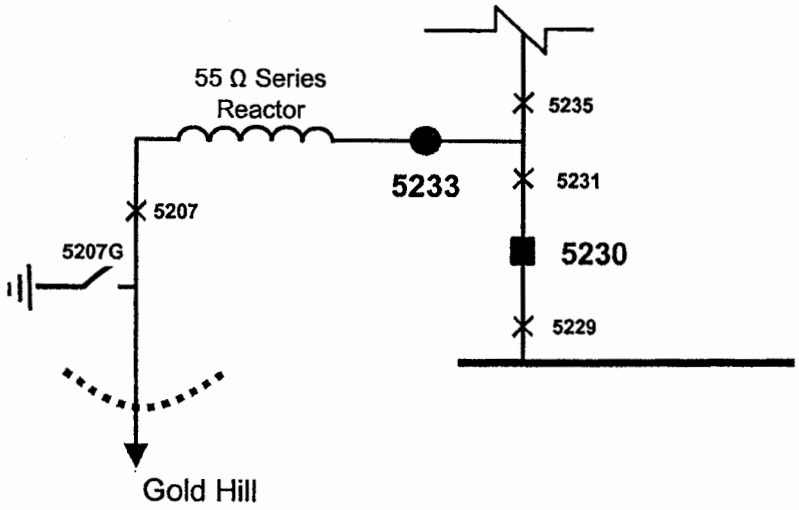
- **STANDIFORD INTERCONNECTION**

The Interconnection point with the MID system is metered on the Standiford 115 kV towers #1 & #2 at Standiford Substation. The meters are currently Schlumberger SP4SM that have the capability of metering Watthours and Varhours. The meters are located in the 115kV yard. This is a bi-directional meter with the accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 115 kV switchyard at the interconnection point of the 115 kV bus. All P.T.s and C.T.s are rated at 0.3% accuracy class with CT ratio of 800/5 and PT ratio of 600/1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by MID/SMUD MV90 system via dial-up telephone lines on a daily basis.

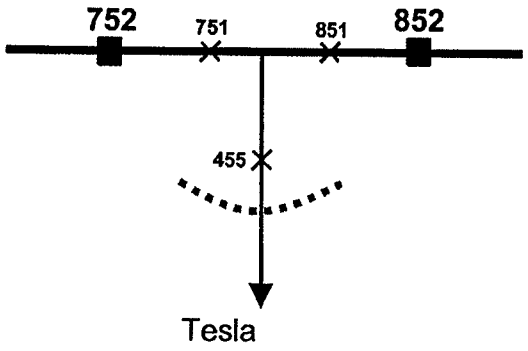
Rancho Seco



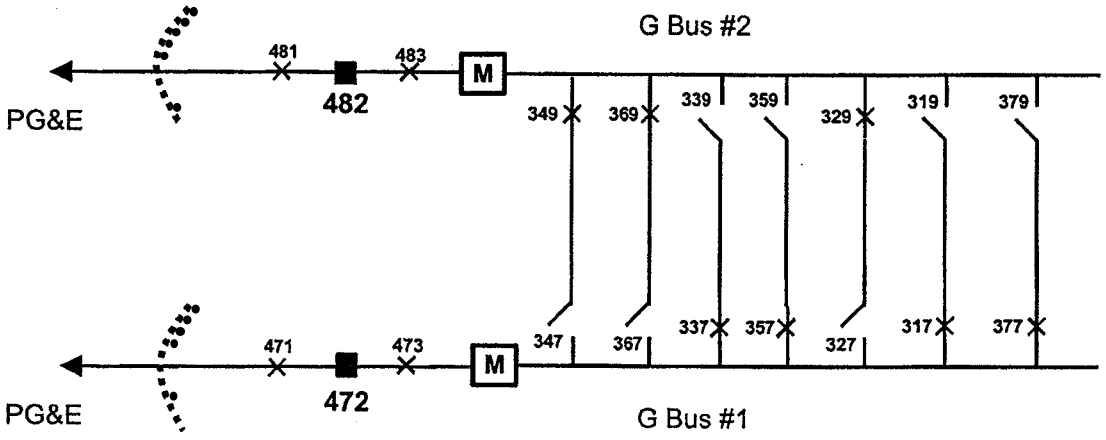
Lake



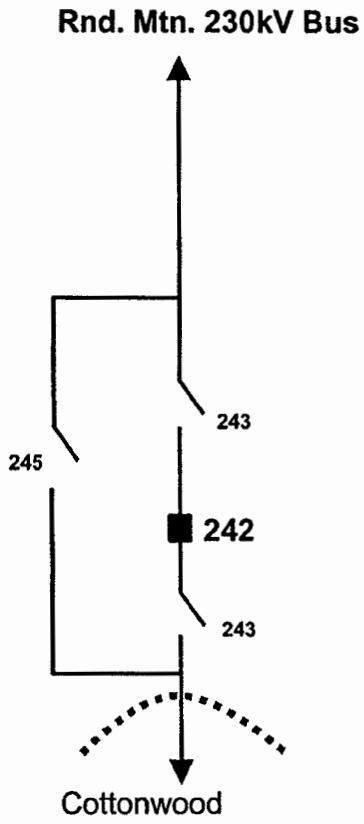
LLNL



Cottonwood



Round Mountain



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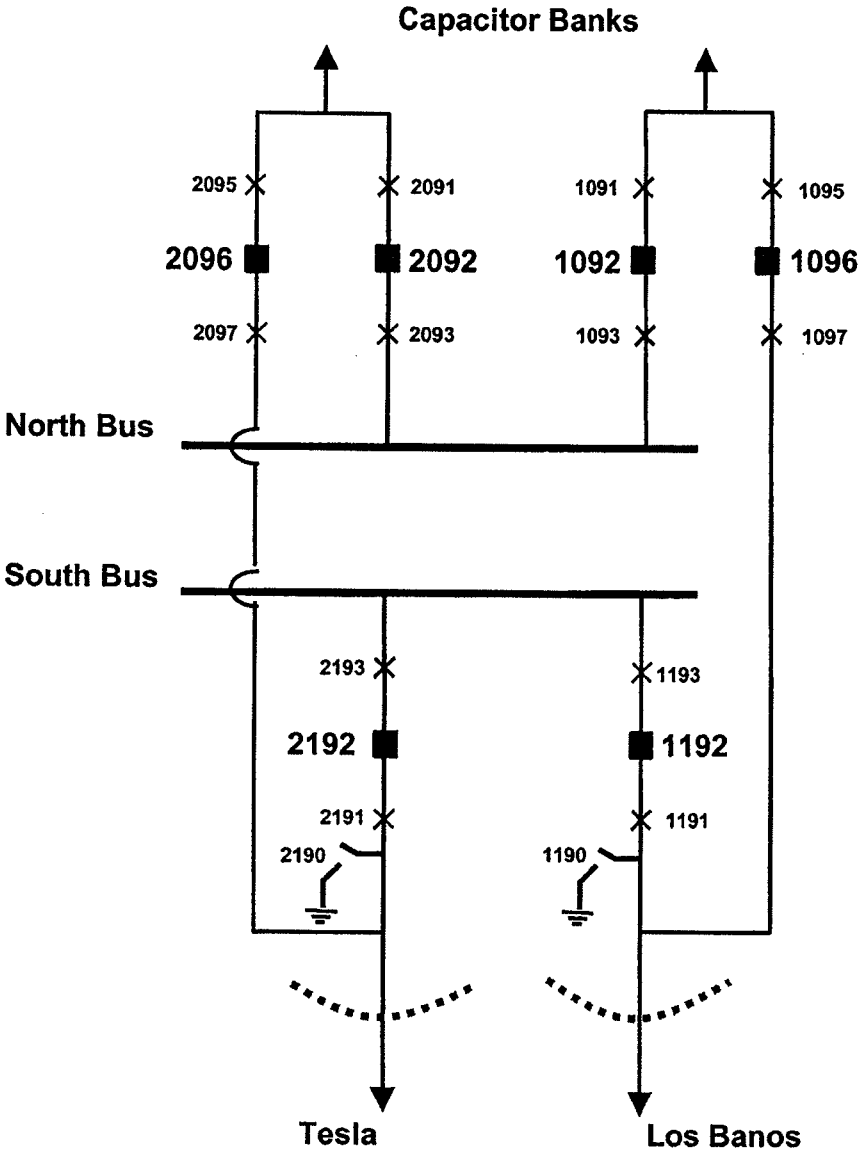
Capacitor Banks
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1096
2097
2093
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1097
North Bus
South Bus
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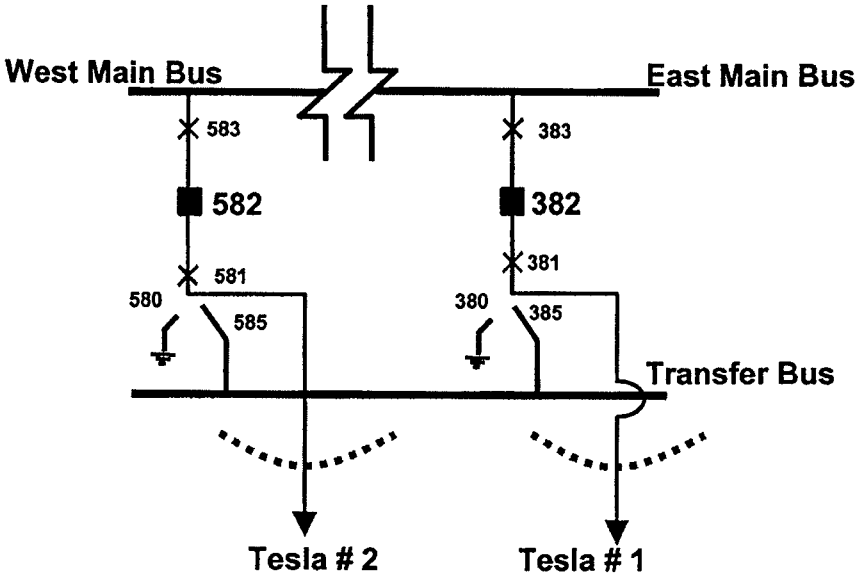
1193
2192
1192
2191
1191
2190
1190
Tesla
Los Banos

Tracy 230kV



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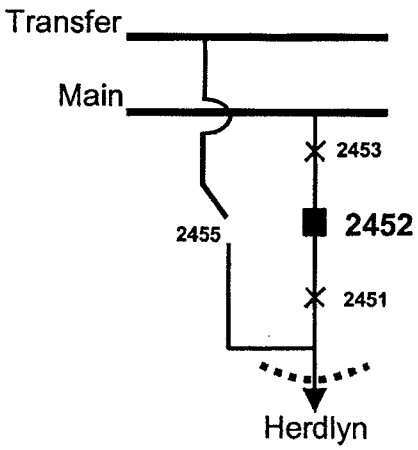

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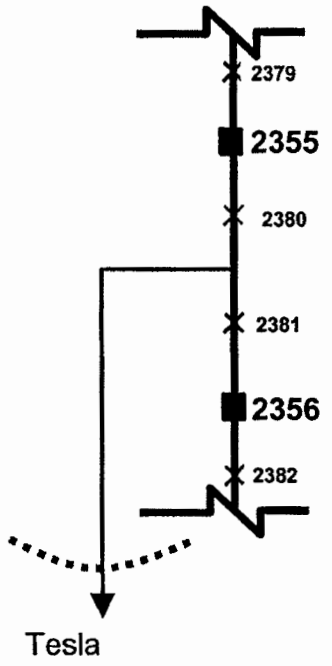

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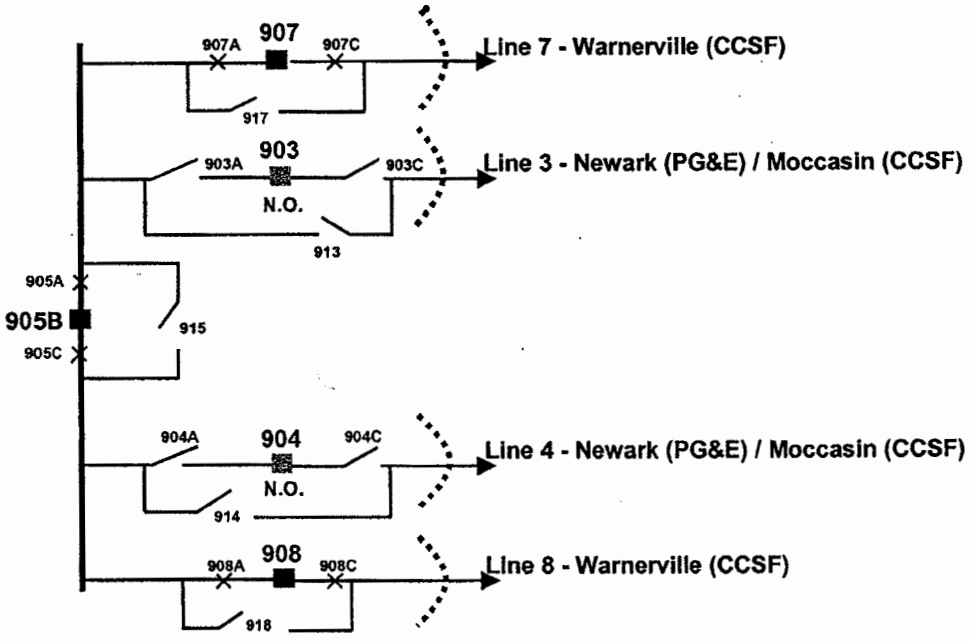


SERVICE SCHEDULE 2

Pre-Existing Contracts: Provisions and Information

[Sections 3.1.2 and 3.3]

As set forth in ICAA 3.1.2 and ICAA 3.3, the ISO and SMUD will operate in accordance with pre-existing transmission service contract rights.

All power flows over ISO Controlled Grid facilities pursuant to pre-existing transmission service contracts shall be scheduled and settled in accordance with the ISO Tariff by a Scheduling Coordinator.

Pre-Existing Transmission Service Contracts

The following contracts have been identified by SMUD, the ISO, and PG&E as pre-existing transmission service contracts that currently affect the operation of the Interconnection.

PG&E – SMUD Pre-Existing Transmission Contracts

CONTRACT #1. EHV Transmission Agreement – FERC Rate Schedule #37 - PG&E previously provided SMUD 200 MW bi-directional firm transmission between Malin and Rancho Seco and Lake Substation 230kV busses. PG&E sought FERC approval to terminate service provided under this Contract effective January 1, 2005. The FERC approved PG&E's request to terminate service provided under this Contract effective January 1, 2005. SMUD has appealed the FERC order terminating service to the District of Columbia Court of Appeals. The Parties shall modify this Operating Agreement in the event that the FERC order terminating service is reversed on appeal, and PG&E is required to continue to provide service under the Contract.

CONTRACT #2. Midway Transmission Service/South of Tesla Principles – FERC Rate Schedule #143 - PG&E provides SMUD via TANC 46 MW of bi-directional firm service between Rancho Seco and Lake Substation 230 kV busses and Midway with a transaction point at the COTP Terminus.

CONTRACT #3. Camp Far West Transmission Agreement – FERC Rate Schedule # 91 - PG&E provides SMUD 7.9 MW of firm transmission service from Camp Far West Power Plant in Yuba County to Rancho Seco and Lake substation 230 kV busses

CONTRACT #4. Interconnection Agreement – FERC Rate Schedule #136 - PG&E provides SMUD 16 MW of non-firm transmission from the Russell Wind Plant in Solano County to Rancho Seco and Lake 230 kV busses. PG&E will be filing with FERC an

amendment to this agreement to provide SMUD with up to 100 MW of transmission service with a requested effective date of January 1, 2006.

CONTRACT #5. Slab Creek Transmission Agreement – FERC Rate Schedule # 88 - PG&E provides SMUD 0.420 MW of firm transmission from Slab Creek Power Plant in El Dorado County to Rancho Seco and Lake 230 kV busses.

The following is a summary of operational information on the above contracts:

SMUD – PG&E

Contract Title	Contract Reference Number	Points of Receipt and Delivery	MW Amount of Transfer	Scheduling Timelines	Curtailment[1]	Current Scheduling Coordinator	Trans-mission Owner
Midway Transmission – South of Tesla	TBD by ISO	Midway - Rancho Seco/Lake 230 kV busses	46 MW bi-directional	no later than the lesser of 135 minutes in advance of the delivery hour or the deadline for submitting Preferred Hour-Ahead schedules to the ISO's Hour-Ahead Market, whichever occurs closer to the delivery hour; during active hour in emergencies	Per Path 15 Operating Instructions for ZP26-NP15, pro rata for Tesla to SMUD POI limitations	PG&E acts as Path 15 facilitator for Path 15 transfer to/from APX	PG&E
Camp Far West (CFW) Transmission Agreement	TBD by ISO	CFW Plant - Rancho Seco/Lake 230 kV busses	7.9 MW generation to load	no later than the lesser of 135 minutes in advance of the delivery hour or the deadline for submitting Preferred Hour-Ahead schedules to the ISO's Hour-Ahead Market, whichever occurs closer to the delivery hour; during	Pro rata based on maximum capability of affected facility, or as needed to avoid control area jeopardy	APX	PG&E

[1] In the event that ISO-SMUD transfer capability limits the ability to transfer the total amount of the existing transfers between SMUD and PG&E to less than the 1271 MW maximum PG&E-SMUD transfer limit, SMUD will provide the ISO a determination of which of the transmission services it will reduce to limit its total existing contract transfers to the constrained transfer limit.

				active hour in emergencies			
Solano Wind – Interconnection Agreement	TBD by ISO	Russell substation - Rancho Seco/Lake 230 kV busses	16 MW generation to load; anticipated to increase to 100 MW effective 1/1/06	no later than the lesser of 135 minutes in advance of the delivery hour or the deadline for submitting Preferred Hour-Ahead schedules to the ISO's Hour-Ahead Market, whichever occurs closer to the delivery hour; during active hour in emergencies	Curtailed first off for Russell to SMUD POI limitations	APX	PG&E
Slab Creek Transmission Agreement	TBD by ISO	Slab Creek Plant - Rancho Seco/Lake 230 kV busses	0.420 MW generation to load	no later than the lesser of 135 minutes in advance of the delivery hour or the deadline for submitting Preferred Hour-Ahead schedules to the ISO's Hour-Ahead Market, whichever occurs closer to the delivery hour; during active hour in emergencies	Pro rata based on maximum capability of affected facility, or as needed to avoid control area jeopardy	APX	PG&E

Additional Third Party Contract with Delivery Rights at Rancho Seco and Lake 230 kV Busses

The following information is provided regarding a contract of the California Department of Water Resources (CDWR) that has delivery rights at the Interconnection between the ISO and Expanded SMUD Control Areas:

CDWR Comprehen-sive	TBD by ISO	Rancho Seco/Lake 230 kV	Up to 500 MW for SMUD-	As per CDWR-ISO Scheduling	Pro rata based on maximum OTC of	CDWR	PG&E

Agreement		busses	CDWR transfer, subject to CDWR request, and not to exceed 1355 MW total on PG&E backbone	Coordinator agreement	constrained path		

PG&E Pre-Existing Transmission Contracts Related to the COTP Terminus

CONTRACT #1. PG&E Rate Schedule for the Interconnection of the COTP and the PG&E Electric System – FERC Rate Schedule #144 - PG&E and the COTP Participants. This contract establishes the terms for interconnection of the COTP with the PG&E electric system, and provides that neither party will charge the other party any fees, losses, or other charges for use of the Tesla Bypass section of the COTP between the Tracy Substation and the Southern Terminus. For purposes of interchange at the ISO-SMUD Control Area boundary at the Tracy 500-kV bus, including service under the SOTP, that boundary is deemed to be equivalent to the COTP Terminus.

CONTRACT #2. Midway Transmission Service/South of Tesla Principles (SOTP) – FERC Rate Schedule #143 - PG&E provides TANC 46 MW of bi-directional firm service between SMUD's connections to the PG&E backbone (i.e. Rancho Seco and Lake Substation 230 kV busses) and Midway with a transaction point at the COTP Terminus. SOTP service includes transmission from Midway Substation to COTP Terminus and separate service from COTP Terminus to Midway Substation. For purposes of interchange at the ISO-SMUD Control Area boundary at the Tracy 500-kV bus, including service under the SOTP, that boundary is deemed to be equivalent to the COTP Terminus. Service under the SOTP cannot be used for TANC member-to-TANC member trades within the ISO Control Area.

CONTRACT #3. Owners Coordinated Rate Schedule -- FERC Rate Schedule #229 – PG&E and the other owners establish the coordinated operation, curtailment sharing, system protection, and other protocols required to operate the COTP and the PACI as an coordinated three line system.

The descriptions provided in this Service Schedule 2 do not modify the terms of contracts between the ISO or SMUD and third parties, nor do these provisions provide any basis for any pre-existing contract interpretation or implementation contrary to instructions provided by PG&E to the ISO. In case of any conflicts in interpretation, the terms of the contracts shall prevail.

This Service Schedule may be modified upon mutual agreement of the Parties.

SERVICE SCHEDULE 4
RESPECTIVE JURISDICTION FOR OPERATIONAL CONTROL OF INTERCONNECTION
[Section 3.2.1]

- **Rancho Seco Interconnection**
  (Rancho Seco – Bellota #1 and #2 230 kV Lines)

  PG&E has ownership and maintenance, switching and clearance jurisdiction of both lines and all its associated facilities from Bellota Substation up to but not including disconnect switches 357 and 317 at Rancho Seco Substation. The ISO has operational control of Bellota Substation and the lines up to but not including switches 357 and 317, and will be involved in coordination of switching.

  SMUD has operational control, ownership, maintenance, switching and clearance jurisdiction of all facilities at Rancho Seco Substation up to and including disconnect switches 357 and 317.

  Common point of Tie Line Control Metering: Rancho Seco Substation.

- **Lake Interconnection**
  (Lake – Gold Hill 230 kV Line)

  SMUD has operational control, ownership and maintenance, switching and clearance jurisdiction of the line and all its associated facilities from Lake Substation to Gold Hill Substation up to but not including the termination structure at Gold Hill Substation.

  PG&E has ownership and maintenance, switching and clearance jurisdiction of all facilities at Gold Hill Substation beginning at the termination structure. The ISO has the operational control of Gold Hill Substation, including disconnect switches 233 and 235 and will be involved in coordination of switching.

  Common point of Tie Line Control Metering: Lake Substation.

- **Cottonwood Interconnection**
  ("G" 230 kV Bus Tie)

  PG&E owns the 230 kV busses, which use common meters that are switched with the energized bus.

Western has operational control, and PG&E has ownership, maintenance, switching and clearance jurisdiction of both "G" Section busses and all of its associated facilities including disconnect switches 471 and 473 (PCB 472) on the 230 kV bus #1 and disconnect switches 481 and 483 (PCB 482) on the 230 kV bus #2 which control shall be exercised consistent with directions when issued by SMUD as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate.

PG&E has ownership, maintenance, switching and clearance jurisdiction of its lines and all its associated facilities at the Cottonwood Substation. The ISO has the operational control of the PG&E lines at this facility and will be involved in coordination of switching, except to the extent that operational control has been delegated to Western in the Transmission Exchange Agreement.

Common point of Tie Line Control Metering: Cottonwood Substation

- **LLNL Interconnection**
  (LLNL 115 kV Bus Tie)
  Western and PG&E share 115 kV busses at adjacent substations, which use common meters that are switched with the energized bus. LLNL has operational control, ownership, maintenance, switching and clearance jurisdiction of the busses and all its associated facilities up to and including disconnect switch 455, which control will be exercised consistent with directions when issued by SMUD as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate.

  Common point of Tie Line Control Metering: LLNL U-424 Substation

- **Round Mountain Interconnection**
  (Round Mountain – Cottonwood 230 kV Bus Tie)

  PG&E operates 230 kV and 500 kV busses at the Round Mountain Substation.

  Western has operational control, ownership, maintenance, switching and clearance jurisdiction of the Cottonwood-Round Mountain 230 kV line and all of its associated facilities up to but not including disconnect switches 243 and 245 (PCB 242), which control will be exercised consistent with directions when issued by SMUD as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate.

PG&E has ownership and maintenance, switching and clearance jurisdiction of its lines and all its associated facilities at Round Mountain Substation. The ISO has the operational control of this facility and will be involved in coordination of switching.

Common point of Tie Line Control Metering: Round Mountain Substation

- **Tracy 500 kV Interconnection**
  (Tracy-Tesla & Tracy-Los Banos 500 kV Lines)

  The COTP Participants have ownership and Western has operational control, maintenance, switching and clearance jurisdiction of the Tracy 500 kV bus and all its associated facilities including (Tracy-Tesla) disconnect switches 2191 (PCB 2192) and 2097 (PCB 2096), and (Tracy-Los Banos) disconnect switches 1191 (PCB 1192) and 1097 (PCB 1096) which control will be exercised consistent with directions when issued by SMUD as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate.

  PG&E has ownership, maintenance, switching and clearance jurisdiction of all its facilities at Tesla and Los Banos Substations. The ISO has the operational control of this facility and will be involved in coordination of switching, which control will be exercised consistent with directions when issued by the ISO as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate.

  The COTP Participants own the lines exiting Tracy Substation and spanning approximately eight miles until they interconnect with the PG&E lines originating from Tesla and Los Banos at Tower 36. The lines between Tracy 500 and Tower 36 will be operated as part of the ISO Control Area in accordance with the provisions of Section ICAA 3.3. Ownership will remain with the COTP Participants. Maintenance, switching, and clearance jurisdiction will remain with Western which control will be exercised consistent with directions when issued by the ISO as Control Area operator in coordination with SMUD as the immediately adjacent Control Area operator as necessary and appropriate.

  Common point of Tie Line Control Metering: Tracy Substation

- **Tracy-Tesla 230 kV Interconnection**
  (Tracy-Tesla 230 kV Lines)
  Western has operational control, ownership, maintenance, switching and clearance jurisdiction of the Tracy 230 kV bus and all its associated facilities including disconnect switches 381 and 385 (PCB 382) and 581 and 585 (PCB

582), which control will be exercised consistent with directions when issued by SMUD as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate.

PG&E has ownership, maintenance, switching and clearance jurisdiction of the line and all its associated facilities at Tesla Substation. The ISO has the operational control of this facility and will be involved in coordination of switching, which control will be exercised consistent with directions when issued by SMUD as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate.

Common point of Tie Line Control Metering: Tracy Substation

- **Herdlyn Interconnection**
  (Herdlyn 69 kV Bus Tie)

Western and ISO share 69 kV busses at adjacent substations, which use common meters that are switched with the energized bus.

Western has operational control, ownership, maintenance, switching and clearance jurisdiction of the Tracy 69 kV bus and all its associated facilities including disconnect switches 2451 and 2453 (PCB 2452) and 2455 on the Tracy 69 kV bus, which control will be exercised consistent with directions when issued by SMUD as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate.

PG&E has ownership, maintenance, switching and clearance jurisdiction of the line and all its associated facilities, including disconnect switch 79, at Herdlyn Substation. The ISO has the operational control of this facility and will be involved in coordination of switching. SMUD will have operational control of this facility and will be involved in coordination of switching.

Common point of Tie Line Control Metering: Tracy Substation

Although a physical interconnection exists between the Expanded SMUD Control Area and the ISO Control Area at Herdlyn, the Parties agree it will not be considered a scheduling point.

Special Operating Condition: Because ISO Control Area load exists on the 69 kV Herdlyn line that extends from the Western side of the Tracy Substation into the ISO Control Area that is served by PG&E, and the connection between the 69 kV Herdlyn line and Tracy Substation is not being operated as a Control Area scheduling point, the Parties have agreed that

Tracy meter values will be adjusted to remove the Herdlyn line load from the Expanded SMUD Control Area and add it to the ISO Control Area. The Parties shall amend this Agreement to the extent that the Herdlyn line load becomes subject to any policy and provisions for pseudo ties to the ISO Control Area, provided that such policy and provisions shall be consistent with WECC and NERC business practices and criteria.

- **Westley Interconnection**
  (Westley-Tesla 230 kV Tie)

  MID and TID have joint ownership and MID has operational control, maintenance, switching and clearance jurisdiction of the Westley 230 kV Substation and all its associated facilities including disconnect switches 2380 and 2381 (PCB 2355 and 2356) up to but not including the Westley Junction, which control will be exercised consistent with directions when issued by SMUD as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate.

  PG&E has ownership, maintenance, switching and clearance jurisdiction of the 230 kV line and all its associated facilities originating from the Tesla Substation up to and including the Westley Junction, located approximately on half mile outside of the Westley Substation. PG&E control will be exercised consistent with directions when issued by the ISO as Control Area operator and in coordination with SMUD as the immediately adjacent Control Area operator as necessary and appropriate.

  Common point of Tie Line Control Metering: Westley Junction

- **Standiford Interconnection**
  (Standiford-Warnerville lines #7 and #8, and Standiford-Newark/Moccasin #3 & #4 115 kV Lines)
  MID has operational control, ownership, maintenance, switching and clearance jurisdiction of the Standiford substation and all associated facilities including disconnect switches 907C, 903 C, 904C, and 908C (PCB 907, 903, 904, 908) which control will be exercised consistent with directions when issued by SMUD as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate. Circuit breakers #903 and #904 are and will be operated in the open position, and if this configuration is proposed to be changed, the Parties shall confer and agree on any change to the Interconnection point in advance of the change in this configuration.

  CCSF has ownership, maintenance, switching and clearance jurisdiction of the four 115 kV lines from Warnerville, Moccasin, and Newark substations up to but not including the disconnect switches within the Standiford Substation. Control of these lines will be exercised consistent with directions when issued

by the ISO as Control Area operator and in coordination with SMUD as the immediately adjacent Control Area operator as necessary and appropriate.

Common point of Tie Line Control Metering: Standiford Substation

SERVICE SCHEDULE 6
REAL – TIME OPERATING LIMITS

Service Schedule 6

SMUD-CAISO Control Area Tie Points

Points of Interconnection/Control Area Tie Points

Substation	Adjacent Control Area	Breaker and/or Disconnect	Limiting Criteria of Transfer Capability	SUMMER RATING					WINTER RATING					Control Area Tie	
				NORMAL		EMERGENCY			NORMAL		EMERGENCY				
				MVA	Amps	MVA	Amps		MVA	Amps	MVA	Amps			
Cottonwood	CAISO														
230kV "G" Bus 1		PCB 472	Thermal	797	2000	797	2000	n/a	797	2000	797	2000	n/a	X	
230kV "G" Bus 2		PCB 482	Thermal	797	2000	797	2000	n/a	797	2000	797	2000	n/a	X	
Lawrence Livermore (LLNL)	CAISO														
115 kV Tesla Line 1		PCB 752 & PCB 852	Thermal	164	825	194	975		256	1262	274	1350		X	
Round Mountain	CAISO														
230kV Cottonwood Line		PCB 242 / Disc 245	Thermal	320	800	320	800	n/a	370	930	370	930	n/a	X	
Tracy (COTP Southern Terminus)	CAISO														
500kV Tesla Line		PCB 2192 & PCB 2096	Thermal	2253	2478	2683	2951	30 min	2253	2478	2683	2951	30 min	X	
500kV Los Banos Line		PCB 1192 & PCB 1096	Thermal	2253	2478	2683	2951	30 min	2253	2478	2683	2951	30 min	X	
230kV Tesla Line 1		PCB 382	Thermal	683	1714	683	1714	n/a	746	1873	746	1873	n/a	X	
230kV Tesla Line 2		PCB 582	Thermal	683	1714	683	1714	n/a	746	1873	746	1873	n/a	X	
69kV Herdlyn Line		PCB 2452	Thermal	95	800	95	800	n/a	95	800	95	800	n/a	X	n/a
Rancho Seco*	CAISO														
230kV Bellota Line 1		PCB 210 & PCB 310	Contractual	494	1239	590	1482	100h	789	1981	847	2127	100h	X	
230kV Bellota Line 2		PCB 250 & PCB 350	Contractual	494	1239	590	1482	lifetime	789	1981	847	2127	lifetime	X	
Lake*	CAISO														
230kV Gold Hill Line		PCB 5230 & PCB 5236	Contractual	303	760	351	880	30 min	426	1070	474	1190	30 min	X	
Standiford	CAISO														
115-kV CCSF #3 Line (Standiford-Moccasin&Newark)		PCB 903/Disc 903-C	Thermal	87	438	87	438	n/a	133	666	133	666	n/a	X	
115 kV CCSF #4 Line (Standiford-Moccasin&Newark)		PCB 904/Disc 904-C	Thermal	87	438	87	438	n/a	133	666	133	666	n/a	X	
115-kV CCSF#7Line (Standiford-Warnerville)		PCB 907/Disc 907-C	Thermal	158	792	158	792	n/a	223	1122	223	1122	n/a	X	
115-kV CCSF #8 Line (Standiford-Warnerville)		PCB 908/Disc 908-C	Thermal	158	792	158	792	n/a	223	1122	223	1122	n/a	X	
Westley															
230-kV Westley-Tesla Line*	CAISO	PCB 2355/DISC 2380 & PCB 2356/DISC 2381	Thermal	599	1504	637	1600	30 m	637	1600	637	1600	30 m	X	

NOTES:

* Control Area Boundary at Westley Junction See operating procedures for MID/TID imports.

****Rancho Seco & Lake total scheduling limited by contract to 1,271 MW, otherwise individually thermally limited

Summer and Winter periods defined by WECC OTC Policy Committee

All limits shown are the maximum based on the most limiting element at the identified location.

Transfer limits may be less than the amounts shown at the tie-points above based on an established path rating or due to power flows exceeding limit on another system element.

COTP Ratings from TANC

The Parties shall each maintain and have in service and operational at all times an automatic under frequency load shedding program and associated equipment designed and implemented in accordance with WECC Coordinated Off-Nominal Frequency Load Shedding and Restoration Plan (Final Report, November 25,1997, revised December 5, 2003). In addition, during a system emergency, the ISO and SMUD shall take actions appropriate for the prevalent condition or situation, upon which the Parties shall mutually agree and in accordance with Good Utility Practice as defined in ICAA 2.2.7, such that neither Party will cause an operational burden on the other Party. Such actions shall be as identified in operating procedures and/or agreements that shall be mutually agreed upon by the Parties prior to the implementation of the Expanded SMUD Control Area.

Nomograms for simultaneous import limits into the Expanded SMUD Control Area will continue to be established by the SVSG and updated on an annual, or as required, basis. SMUD and all other SVSG members have committed to continue participation in the SVSG after SMUD expands its Control Area. SVSG Nomograms shall establish simultaneous import limits into the Expanded SMUD Control Area under specific transmission contingencies as well as with all lines at the Interconnection in service. SMUD shall at all times make such simultaneous import limits, as calculated in real time from the pertinent SVSG Nomogram, electronically available to the ISO. SMUD shall comply with import limits in all circumstances by managing SMUD loads and resources to maintain total imports at or below the simultaneous limit by limiting flows at each Interconnection point to the lower of the contract or thermal limit at that Interconnection point. Operating instructions will be prepared for the ISO and Expanded SMUD Control Areas to implement the SVSG Nomograms in their respective coordinated operating procedures.

ATTACHMENT B

CALIFORNIA INDEPENDENT SYSTEM OPERATOR

AND

SACRAMENTO MUNICIPAL UTILITY DISTRICT

INTERCONNECTED CONTROL AREA OPERATING AGREEMENT

Incorporating Amendment No. 4

Issued by: Charles F. Robinson, Vice President and General Counsel
Issued on: September 30, 2005 Effective: December 1, 2005

Area boundaries. The Parties recognize that the WECC is the authority responsible for re-certifying SMUD in its expanded footprint as a Control Area. Once that certification is granted, NERC, upon notification from WECC, will authorize SMUD to begin Control Area operation as the Expanded SMUD Control Area and announce a date for commencement of such operation. The ISO will cooperate by advising NERC as to the state of its readiness to implement directly interconnected Control Area operation with the Expanded SMUD Control Area. Operation of the Expanded SMUD Control Area shall commence upon SMUD's receipt of NERC/WECC re-certification and no earlier than a NERC/WECC-established and announced date for commencement of such operation.

ICAA 1.3.4 Implementation of Additional Subsequent Change of Control Area Boundaries

SMUD and the ISO shall coordinate with all entities with ownership rights to the Interconnection facilities in advance of implementation of the boundary change between the control areas of SMUD and the ISO to ensure that all reliability issues are addressed. The ISO and SMUD are working diligently to achieve a December 1, 2005 change of the Control Area boundaries between the Parties to include the COTP and the Modesto Irrigation District (MID) system. In addition before the change of Control Area boundaries is effectuated, the Parties will confirm that Western, PG&E, MID, and Turlock Irrigation District (TID) are operationally ready for commencement of the change to the Control Area boundaries. The Parties recognize that the WECC is the authority responsible for re-certifying SMUD in its expanded footprint as a Control Area. Once that certification is granted, NERC, upon notification from WECC, will authorize SMUD to begin Control Area operation as the Expanded SMUD Control Area and announce a date for commencement of such operation. The ISO will cooperate by advising NERC as to the state of its readiness to implement directly interconnected Control Area operation with the Expanded SMUD Control Area. Operation of the Expanded SMUD Control Area shall commence upon SMUD's receipt of NERC/WECC re-certification and no earlier than a NERC/WECC-established and announced date for commencement of such operation.

ICAA 1.3.5 Termination

This Operating Agreement may be terminated by either Party upon two years written notice to the other Party or upon mutual consent of both Parties. For entities subject to FERC jurisdiction, termination will be effective upon acceptance by FERC of notice of termination. The ISO shall timely file any notice of termination with FERC. The filing of the notice of termination by the ISO will be considered timely if: (1) the request to file a notice of termination is made after the preconditions for termination have been met, and (2) the ISO files the notice of termination within 30 days of receipt of such request.

ICAA 2 DEFINITIONS

ICAA 2.1 WECC Definitions

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

ICAA 2.2 Specific Definitions

ICAA 2.2.1 **California-Oregon Intertie ("COI"):** The two 500-kV transmission lines between Malin Substation and Round Mountain Substation and the one 500-kV transmission line between Captain Jack Substation and Olinda Substation.

ICAA 2.2.2 **California-Oregon Intertie Path Operator Agreement:** The agreement among Southern California Edison Company, San Diego Gas & Electric Company, PG&E, the COTP Participants, Western and the ISO that, together with the Owner's Coordinated Operating Agreement, governs the COI path operation.

ICAA 2.2.3 **California-Oregon Transmission Project ("COTP"):** A 500-kV transmission line and associated facilities between Captain Jack Substation near the California-Oregon border and the eastern boundary of the existing right-of-way of the Tesla-Tracy 500 kV transmission line.

ICAA 2.2.4 **COTP Interconnection Point:** The point of Interconnection between the ISO Control Area and the Expanded SMUD Control Area related to the COTP at the Tracy 500 kV substation, described in more detail in Service Schedule 1 as the Tracy 500 kV Interconnection.

ICAA 2.2.5 **COTP Interconnection Rate Schedule:** The pre-existing contract between PG&E as a Participating Transmission Owner and the COTP Participants described in Service Schedule 2 as PG&E Rate Schedule for the Interconnection of the COTP and the PG&E Electric System – FERC Rate Schedule #144.

ICAA 2.2.6 **COTP Participants:** Western, Transmission Agency of Northern California, California Department of Water Resources, Shasta Dam Area Public Utility District, Carmichael Water District, the City of Vernon, California, PG&E, San Juan Suburban Water District, and their successors and assigns.

ICAA 2.2.7 **COTP Terminus:** The point of interconnection between the PG&E electric system and the COTP, located at the eastern boundary of the existing right-of-way of PG&E's Tesla-Los Banos No. 2 500 kV line, at which the COTP's conductors extending from the Tracy Substation Expansion

ICAA 2.2.8 **Expanded SMUD Control Area:** The area for which SMUD has reliability responsibility pursuant to WECC and NERC guidelines and requirements.

ICAA 2.2.9 **Forced Outage:** An Outage for which sufficient notice cannot be given to allow the Outage to be factored into the preschedule processes and the established Outage coordination principles of the Parties.

ICAA 2.2.10 **Good Utility Practice:** Any of the practices, methods, and acts engaged in or approved by a significant portion of the electric utility industry in the WECC region during the relevant time period, or any of the practices, methods, and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety, and expedition. Good Utility Practice is not intended to be any one of a number of the optimum practices, methods, or acts to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region.

ICAA 2.2.11 **Interconnection:** Transmission facilities that connect one control area to another control area. The Interconnection for this Operating Agreement is described in Service Schedule 1.

ICAA 2.2.12 **ISO:** The California Independent System Operator Corporation, a state chartered, nonprofit corporation that controls the transmission facilities of all Participating Transmission Owners, dispatches certain generating units and loads, and is a control area operator.

ICAA 2.2.13 **ISO Control Area:** The electric power system for which the ISO has reliability responsibility pursuant to NERC and WECC requirements.

ICAA 2.2.14 **ISO Controlled Grid:** The system of transmission lines and associated facilities of the Participating Transmission Owners that have been placed under the ISO's operational control.

ICAA 2.2.15 **ISO Tariff:** ISO Operating Agreement, Protocols, and Tariff as amended from time to time, together with any appendices or attachments thereto.

ICAA 2.2.16 **Nomogram:** A set of operating or scheduling rules which are used to ensure that simultaneous operating limits are respected, in order to meet NERC and WECC operating criteria.

ICAA 2.2.17 **Outage:** Disconnection or separation, planned or forced, of one or more elements of an electric system.

ICAA 2.2.18 **Participating Transmission Owner:** An owner of transmission that has executed the Transmission Control Agreement and placed its transmission assets and entitlements under the ISO's operational control.

ICAA 2.2.19 **Path Operator of COI:** The path operator of COI as established pursuant to the California-Oregon Intertie Path Operator Agreement.

ICAA 2.2.20 **Planned Outage:** An Outage for which sufficient notice has been given to allow the Outage to be factored into the processes and the established Outage coordination principles of the Parties.

ICAA 2.2.21 **Points of Contact:** 1) Operations Contact: A person or entity having the authority to receive and act upon scheduling or dispatch communications from the other control area operator and available through a communications device mutually agreed upon on a 24-hour, 7-day basis; 2) Contact for Notices: A person(s) designated by the Parties for the receipt of official notices.

ICAA 2.2.22 **Power Flow Reduction Measures:** Actions taken to promptly and rapidly reduce power flow, including but not limited to: the circulation of power on the PDCI, the increase of generation within the control area through changes initiated by a Control Area Operator that create counter flow, and Curtailments that result in immediate responses from the parties to scheduled transactions to change the amount of generation or load accordingly.

ICAA 2.2.23 **Pseudo Tie:** A telemetered reading or value that is updated in real time and used as a "virtual" tie line flow in the AGC/ACE equation but for which no physical tie or energy metering actually exists. The integrated value is used as a metered MWh value for interchange accounting purposes.

ICAA 2.2.24 **Real Time Operating Limits:** The rated transfer capability less reductions during any hour caused by, but not limited to, physical limitations beyond the control of the control area operators, and operational limitations resulting from transmission line Outages, equipment Outages, stability limits and loop flow.

ICAA 2.2.25 **Scheduling Coordinator:** An entity certified by the ISO for the purposes of undertaking the functions of: submitting schedules for energy, generation, transmission losses, and ancillary services; coordinating generation; tracking, billing, and settling trades with other Scheduling Coordinators; submitting forecast information; paying the ISO's charges; and ensuring compliance with ISO protocols.

ICAA 2.2.26 **SMUD Control Area:** The electric system owned and operated by SMUD for which SMUD has operational control and reliability responsibility pursuant to WECC and NERC guidelines and requirements.

ICAA 2.2.27 **Transmission Owner:** An entity owning transmission facilities or having firm contractual rights to use transmission facilities at the Interconnection.

ICAA 2.2.28 **WECC Reliability Coordinator:** One of the area control centers assigned by the WECC to proactively anticipate and mitigate potential problems, facilitate notification, and coordinate restoration following a disturbance.

ICAA 2.2.29 **WECC RMS:** The WECC established reliability program for WECC members that are governed by the WECC Reliability Management System Agreement and the WECC Reliability Criteria Agreement that provides sanctions to its members.

ICAA 3.2.2 Switching Operations

Operations on the Interconnection shall be coordinated through the ISO and SMUD except as otherwise indicated in ICAA 7.3. Specific switching responsibilities are identified in Service Schedules 4 and 5.

ICAA 3.2.3 Real Time Operating Limits

ICAA 3.2.3.1 Real Time Operating Limits Established Jointly

The ISO and SMUD, in consultation with the Transmission Owner(s), have established the base Real Time Operating Limits of the Interconnection. These established base operating limits are specified in Service Schedule 6.

The base Real Time Operating Limits shall be adjusted as needed based on the given real time conditions, current operating conditions, current operating criteria, and established Nomograms, graphs, and charts specific to the transfer paths within the SMUD and ISO Control Areas. The ISO and SMUD, and, where possible, in conjunction with Western and PG&E, shall continue to use the Sacramento Valley Study Group or its successor Sacramento area reliability coordination organization (SVSG) as the forum for establishing such Real Time Operating Limits in the Sacramento area after the implementation of the Expanded SMUD Control Area. The limits established by SVSG shall be reflected in the SMUD and ISO operating procedures that implement such limits, in a manner consistent with their establishment. Schedules at the Lake and Rancho Seco interconnections are interchangeable pursuant to existing contracts with PG&E.

ICAA 3.2.3.2 Real Time Operating Limits Exceeded

If a Real Time Operating Limit is exceeded or the operation of either the Expanded SMUD Control Area or the ISO Control Area is jeopardized, the ISO and SMUD shall communicate and coordinate actions to return the Interconnection and the affected control area(s) to Real Time Operating Limits. In compliance with WECC MORC, the ISO and SMUD will make coordinated adjustments to energy flows between the two control areas such that stability limited facilities are returned to Real Time Operating Limits within 20 minutes after the exceedance of the limit and thermally limited facilities are returned to Real Time Operating Limits within 30 minutes after the exceedance of the limit, or as otherwise established and mandated by WECC.

ICAA 3.2.4 Relay Action

The ISO and SMUD shall provide pertinent relay data including targets, fault records, fault information, related equipment condition, and operational information concerning the Interconnection to each other as soon as practicable after the occurrence of any relay action on

ICAA 3.2.6 Information Exchange

The ISO and SMUD shall coordinate directly the exchange of any information concerning the reliable operation of the Interconnection facilities and the status of the control areas. Such information shall be communicated through mutually acceptable methods. Procedures and forms for the exchange of emergency information shall be jointly developed and are contained in Service Schedule 8.

ICAA 3.2.6.1 Information Required to be Provided

Details regarding the information necessary to the reliable operation of the Interconnection shall be included in Service Schedule 9.

ICAA 3.2.7 Joint Operating Procedures

Procedures for coordinating the reliable operation of the Interconnection will be jointly administered by the ISO, SMUD, and the Transmission Owners. Such procedures are described in more detail in Service Schedule 10.

ICAA 3.3 Special Provisions Related to COTP Terminus

The Parties agree that the interconnection point for the COTP between the ISO Control Area and the Expanded SMUD Control Area shall be at the COTP Interconnection Point. The provisions of this ICAA 3.3 shall apply so long as the COTP Interconnection Rate Schedule remains in effect. So long as the COTP Interconnection Rate Schedule remains in effect, the COTP Interconnection Point shall be treated as a single branch group, and the COTP Terminus will physically remain in the ISO Control Area.

ICAA 3.3.1 Relationship Between COTP Interconnection Point and COTP Terminus

The Parties agree that the location of the COTP Interconnection Point is a scheduling convenience and mutually benefits both Parties. The COTP Interconnection Point and the COTP Terminus are deemed to be the same scheduling point for purposes of scheduling and metering, in accordance with ICAA 5 and Service Schedules 1, 2, 4, 5, and 11. Neither Party will charge the other Party or any of the COTP Participants for any charges, costs, fees related to any transactions across the line segments between the COTP Interconnection Point and the COTP Terminus, including, without limitation, any congestion charges, scheduling charges, charges for losses, must-offer charges,

or any load-based charges, provided, however, that (1) imports into the ISO Control Area at the COTP Interconnection Point that use the ISO Controlled Grid beyond the COTP Terminus shall pay all applicable ISO Tariff based charges; and (2) exports from the ISO Controlled Area at the COTP Interconnection Point that use the ISO Controlled Grid shall pay all applicable ISO Tariff based charges.

The COTP Participants shall retain existing transmission rights and obligations for deliveries to or from the COTP Terminus pursuant to pre-existing contracts with PG&E for COTP or SOTP transmission as specified in operating instructions provided to the ISO by PG&E in accordance with ICAA 3.1.2. The contractual basis for such treatment related to the COTP Terminus is summarized in Service Schedule 2.

ICAA 3.3.2 Coordinated Outages and Maintenance of COTP Terminus

The ISO and SMUD recognize and agree that Western is the operating and maintenance agent for the COTP. The ISO shall coordinate outages of the COTP Terminus with SMUD and Western in accordance with ICAA 6 and Service Schedule 12. The ISO shall coordinate with SMUD and Western the removal from, and restoration to, service for any facilities within the ISO Control Area that affect available system transfer capability at the COI in accordance with ICAA 3.2, 6, and 7 and Service Schedules 4, 5, 8, 12, and 15. The ISO shall initiate requests for, or implement as appropriate, emergency response procedures to isolate inoperable components of the COTP Terminus and to restore the available electric system facilities to service without delay in accordance with ICAA 3.2, 6, and 7 and Service Schedules 4, 5, 8, 12, and 15. The ISO agrees that Western and SMUD, acting in coordination with the ISO, may remove from service, and following an outage may restore to service, all or part of the COTP Terminus facilities in accordance with ICAA 3.2, 6, and 7 and Service Schedules 4, 5, 8, 12, and 15.

ICAA 4 RELIABILITY COORDINATION

ICAA 4.1 WECC Reliability Coordinator

The ISO has been designated the WECC Reliability Coordinator for WECC's California-Mexico Subregion.

ICAA 5.4 Import of Regulation Service by ISO

The ISO and SMUD shall allow for the import of regulation service from the Expanded SMUD Control Area to the ISO Control Area in accordance with the provisions of Service Schedule 16. SMUD shall be under no obligation to supplement the import of regulation service contracted by third parties to be delivered to the ISO Control Area from resources in the Expanded SMUD Control Area and shall have the right to terminate Service Schedule 16 without prior ISO approval, upon thirty (30) days advance written notice to the ISO.

ICAA 5.5 Pilot Program for Pseudo Tie to Expanded SMUD Control Area

The ISO shall develop provisions for a pilot program authorizing a Pseudo Tie of an entire single resource in the ISO Control Area to the Expanded SMUD Control Area, subject to pre-existing contract rights for transmission between the ISO Control Area and the Expanded SMUD Control Area, to be implemented within eight (8) months after SMUD identifies a specific resource in the ISO Control Area that it intends to establish as a pilot Pseudo Tie, provided that the ISO shall not be obligated to implement such a pilot program prior to July 1, 2006 or between October 1, 2006 and sixty (60) days after the implementation of "Release 1" of the ISO's Market Redesign and Technology Upgrade project. The ISO will use reasonable efforts to undertake implementation of such a pilot program during other periods if practical, if requested by SMUD. If the pilot program is successful, the ISO shall, subject to approval of the ISO Governing Board, file at FERC for approval a permanent program for the establishment of Pseudo Ties, and shall implement it when approved.

ICAA 5.6 Pilot Programs for Pseudo Ties

The ISO and SMUD shall develop provisions for a pilot program (1) authorizing a Pseudo Tie of an entire single resource in the Expanded SMUD Control Area to the ISO Control Area to be implemented as of December 1, 2005; and (2) authorizing a Pseudo Tie of an entire single resource in the ISO Control Area to the Expanded SMUD Control Area to be implemented in accordance with the timeline and other conditions set forth in Section ICAA 5.5.

reasonably practicable. The ISO and SMUD shall, where practicable, keep operators in affected control areas and the appropriate WECC Reliability Coordinators informed as to the nature and extent of the system emergency.

ICAA 7.3 Operations Exercised Independently

Emergency operation in response to unforeseen system occurrences that may jeopardize the safety of personnel and the general public and/or system stability may be performed independently by SMUD or the ISO. SMUD shall forward the outcomes of its emergency operation to the ISO Control Center as soon as practicable after the occurrence. The ISO shall forward the outcomes of the emergency operation to which it is a party to the Expanded SMUD Control Center as soon as practicable after the occurrence. The duties and responsibilities for the ISO Control Center and the Expanded SMUD Control Center under the foregoing circumstances are described in more detail in Service Schedule 14.

ICAA 7.4 Restoration Coordination

The ISO and SMUD shall coordinate restoration on the facilities affecting the Interconnection, and shall take necessary restoration measures on facilities affecting the Interconnection in their respective control areas following an interruption, including coordinating the restarting of either or both systems from a black start, if requested. The ISO and SMUD shall develop restoration procedures, as described in more detail in Service Schedule 15.

ICAA 7.5 Voltage Collapse

The ISO and SMUD shall take measures within their respective control areas to arrest collapsing voltage that affects the Interconnection.

ICAA 7.6 Co-Mitigation of California-Oregon Intertie Derates

The ISO and SMUD as Control Area operators will implement the COI Power Flow Reduction Measures, as directed by the Path Operator of COI provided the COI owner's provide resources to, or accept curtailments from (in the event that the COI Power Flow Reduction Measures allow) their respective Control Area Operator to facilitate

management of COI overloads by the Path Operator of COI. These obligations (79% ISO, 21% SMUD as of the effective date of Amendment No. 4 to this Operating Agreement) are established and quantified in the operating procedures pursuant to the California-Oregon Intertie Path Operator Agreement. The Expanded SMUD Control Area and the ISO Control Area shall provide the total Energy or the total curtailment (in the event that the COI Power Flow Reduction Measures allow) necessary to implement COI Power Flow Reduction Measures as determined by the Path Operator of COI and implemented by means of automatic adjustment signal.

ICAA 8 LIABILITY

ICAA 8.1 Uncontrollable Forces

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

SERVICE SCHEDULE 1

INTERCONNECTION

[Section 2.2.3]

The Interconnection between the ISO and Expanded SMUD Control Areas consists of the following Interconnection points. All Interconnection points are normally operated closed and are capable of transferring power in both directions.

- **Rancho Seco Interconnection**
  (Rancho Seco – Bellota #1 and #2 230 kV Lines)

  This Interconnection point is comprised of a 27-mile double circuit 230 kV transmission line strung on a 500 kV tower. The transmission lines connect SMUD's Rancho Seco Substation in southern Sacramento to PG&E's Bellota Substation in the eastern Stockton area. The physical point of interconnection is disconnect switches 357 and 317 at Rancho Seco Substation.

- **Lake Interconnection**
  (Lake – Gold Hill 230 kV Line)

  This Interconnection point is comprised of a single very short (<0.25 mile) 230 kV transmission line connecting SMUD's Lake Substation to PG&E's Gold Hill Substation. The two substations are adjacent and located in Folsom, California. This Interconnection point utilizes a 55-ohm series reactor to provide additional electrical distance. The physical point of interconnection is PG&E's 230 kV line termination structure at Gold Hill Substation.

- **Cottonwood Interconnection**
  ("G" 230 kV Bus Tie)

  This Interconnection point is comprised of two 230 kV breakers connecting Western's bus with PG&E's bus. Cottonwood Substation is located in Cottonwood, California. The physical point of interconnection is disconnect switch 471 on the "G" 230 kV bus 1 and disconnect switch 481 on the "G" 230 kV bus 2 bus at Cottonwood Substation.

- **LLNL Interconnection**
  (LLNL 115 kV Bus Tie)

  Western is interconnected to PG&E through line disconnect switch 455 at Western's Lawrence Livermore National Laboratory ("LLNL") U-424 Substation. One PG&E 115 kV line enters and one Western 115 kV line leaves the LLNL U-424 Substation. LLNL U-424 Substation is located southeast of Sacramento in Livermore, California. The physical point of interconnection is line disconnect switch 455 at LLNL U-424 Substation.

- **Round Mountain Interconnection**
  (Round Mountain - Cottonwood 230 kV Bus Tie)

  Western is interconnected to the PG&E system through breaker 242 at PG&E's Round Mountain Substation. One Western and one PG&E 500 kV line enters and two PG&E 500 kV and one Western 230 kV lines leave the Round Mountain Substation. Round Mountain Substation is located in Round Mountain, California. The physical points of interconnection are disconnect switches 243 and 245 at the Round Mountain Substation.

- **Tracy 500 kV Interconnection**
  (Tracy-Tesla and Tracy-Los Banos 500 kV Lines)

  This Interconnection point is comprised of a double circuit 500 kV line with one circuit connecting Tracy Substation to Tesla Substation and the other connecting Tracy Substation to Los Banos Substation. COTP is interconnected to the PG&E system through breakers 2192, 2096, 1192 and 1096 at Western's Tracy Substation. The physical point of interconnection is Tower 36, approximately eight miles outside the Tracy Substation connecting COTP lines with PG&E's lines originating from Tesla and Los Banos.

- **Tracy-Tesla 230 kV Interconnection**
  (Tracy-Tesla 230 kV Lines)

  This Interconnection point is comprised of two 230 kV lines connecting Tracy Substation to Tesla Substation. Western is interconnected to the ISO system through breakers 382 and 582 at Western's Tracy Substation. The physical point of interconnection are disconnect switches 381, 385, 581, and 585 at the Tracy Substation.

- **Herdlyn Interconnection**
  (Herdlyn 69 kV Bus Tie)

  The Western system is connected to the PG&E system at the disconnect switch on the Tracy-Herdlyn 69 kV line that is located within the Tracy Substation and is owned and operated by Western. Although a physical interconnection exists between the Expanded SMUD Control Area and the ISO Control Area at the disconnect switch on the Tracy-Herdlyn line, the Parties agree it will not be considered a scheduling point.

- **Westley Interconnection**
  (Westley-Tesla 230 kV Tie)

  This Interconnection point is comprised of a single 230 kV line connecting Westley Substation to Tesla Substation. MID is interconnected to the PG&E system through breakers 2355 and 2356 at MID's Westley Substation. The physical point of interconnection is the Westley Junction located approximately one half mile west of the Westley Substation.

- **Standiford Interconnection**
  (Standiford-Warnerville #7 & #8, Standiford-Newark/Moccasin #3 & #4 115 kV Lines)

  This Interconnection point is comprised of four 115 kV lines connecting Standiford Substation to Warnerville, Newark, Oakdale and Moccasin Substations. MID is interconnected to the CCSF systems through breakers 907, 903, 904, and 908 at MID's Standiford Substation. The physical points of interconnection are disconnect switches 907C, 903C, 904C and 908C at the Standiford Substation. Breakers 903 and 904 are and will be open breakers, and if this configuration is proposed to be changed, the Parties will confer and agree on any change to the Interconnection point in advance of the change in this configuration.

A set of single-line diagrams showing each of the points of Interconnection is attached to this Service Schedule 1.

REVENUE METERING AND TELEMETRY AT INTERCONNECTION POINTS

SMUD has in service revenue quality metering at all Interconnections points. This metering shall meet the standards as mutually agreed upon by SMUD and the ISO. Meters are inspected and tested per existing agreements between SMUD and the respective Transmission Owner. The ISO shall be entitled to witness annual testing of the Interconnection metering. Any change or modification to such metering equipment

by SMUD or any other entity shall be coordinated with the ISO. SMUD shall program the Interconnection revenue metering to record data at five minute intervals and shall provide for ISO polling of that metering.

SMUD and the ISO shall maintain arrangements that ensure that both Parties shall have access to real-time data from all of the points of Control Area Interconnection. SMUD understands that the ISO wants to directly poll MW and MVAR data from interconnection metering and/or data recorders, which may include RTUs, at all points of Control Area Interconnection, including SMUD and Western substations. SMUD agrees to allow the ISO to directly poll real-time data from SMUD substations and will work with the ISO and Western to facilitate ISO direct polling of real-time data from Western substations in a timely manner. In the event that a second communication port of the RTU is not available for direct polling by the ISO's EMS, the ISO shall have the option to provide an RTU to the substation owner for the purpose of establishing a communication port available for direct polling by the ISO EMS.

- **LAKE INTERCONNECTION**

An Interconnection point to PG&E is metered at Lake Substation. The substation has primary and backup metering arrangements. The primary meter is a Transdata model 30EMS7460M2 and the backup meter is a Scientific Columbus JEM-1 meter model 603P-11. This is a bi-directional meter with the accuracy rating of 0.3%. The

instrument transformers (C.T.s and P.T.s) for revenue meters are located at the line side. All P.T.s and C.T.s are rated for 0.3% accuracy class with CT ratio of 800:5 and PT ratio of 1200:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by SMUD's MV90 system via dial-up telephone lines on a daily basis.

- **RANCHO SECO INTERCONNECTION**

The primary and backup revenue metering equipment is installed at the Rancho Seco end of the Rancho Seco-Bellota 230 kV lines #1 and #2. The primary meter is a Scientific Columbus JEM-1 model 603P-E and the backup meter is a Scientific Columbus JEM-1 model 603-J-MM ; both are bi-directional meters with an accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located on the line side. All P.T.s and C.T.s are rated at 0.3% accuracy class with CT ratio of 400:1 and PT ratio of 1200:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by SMUD's MV90 system via dial-up telephone lines on a daily basis.

meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western's / SMUD's MV90 system via dial-up telephone lines on a daily basis.

- **TRACY-TESLA 230 KV INTERCONNECTION**

The Interconnection point with the Western system is metered on 230 kV at Tracy Substation. The meter is currently a Quad-4 that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with the accuracy rating of 0.3 %. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 230 kV switchyard at the Interconnection point of the 230 kV bus. All P.T.s and C.T.s are rated at 0.3 % accuracy class with CT ratio of 400:1 and PT ratio of 1200:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western's / SMUD's MV90 system via dial-up telephone lines on a daily basis.

- **TRACY-TESLA INTERCONNECTION**

The Interconnection point with the Western system is metered on 230 kV at Tracy Substation. The meter is currently a Quad-4 that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with the accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 230 kV switchyard at the Interconnection point of the 230 kV bus. All P.T.s and C.T.s are rated at 0.3 % accuracy class with CT ratio of 400:1 and PT ratio 1200:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western's / SMUD's MV90 system via dial-up telephone lines on a daily basis.

- **HERDLYN INTERCONNECTION**

The Interconnection point with the Western system is metered on the Herdlyn-Tracy 69 kV line at Tracy Substation. The meter is currently a Quad-4 that has the capability of metering Watthours and Varhours. The meters are located in the 69 kV yard. This is a bi-directional meter with the accuracy rating of 0.3 %. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 69 kV switchyard at the Interconnection point of the 69 kV bus. All P.T.s and C.T.s are rated at 0.3 % accuracy class with CT ratio of 240:1 and PT ratio of 320:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western's / SMUD's MV90 system via dial-up telephone lines on a daily basis.

Although a physical interconnection exists between the Expanded SMUD Control Area and the ISO Control Area at Herdlyn, the Parties agree it will not be considered a scheduling point.

- **TRACY 500 KV INTERCONNECTION**

The Interconnection point with the Western system is metered on the Tracy–Tesla 500 kV line at Tracy Substation. The meter is currently a Quad-4+ that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 500 kV switchyard at the Interconnection point of the 500 kV bus. All P.T.s and C.T.s are rated at 0.3% accuracy class with CT ratio of 2000/5 and PT ratio of 2500/1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western/SMUD MV90 system via dial-up telephone lines on a daily basis.

The Interconnection point with the Western system is also metered on the Tracy–Los Banos 500 kV line at Tracy Substation. The meter is currently a Quad-4+ that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with the accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 500 kV switchyard at the Interconnection point of the 500 kV bus. All P.T.s and C.T.s are rated at 0.3% accuracy class with CT ratio of 2000/5 and PT ratio of 2500/1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western/SMUD MV90 system via dial-up telephone lines on a daily basis.

- **WESTLEY INTERCONNECTION**

The Interconnection point with the MID system on the Westley–Tesla 230 kV line is metered at Westley Substation. The meter is currently a Schlumberger SP4SM that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with the accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 230 kV switchyard, on the Westley-Tesla 230 kV line. All P.T.s and C.T.s are rated at 0.3% accuracy class with CT ratio of 1000/5 and PT ratio of 1200/1. The meter's MW and MVar DNP3.0 serial digital outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by TID/MID/SMUD MV90 system via dial-up telephone lines on a daily basis.

For settlement purposes, it is important to note that TID and ISO have an interconnection on the Westley–Los Banos 230 kV line that is metered at Westley Substation. The meter is currently a Schlumberger SP4SM that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with the accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 230 kV switchyard on the Westley-Los Banos 230 kV line. All P.T.s and C.T.s are rated at 0.3% accuracy class with CT ratio of 1000/5 and PT ratio of 1200/1. The meter's MW and MVar DNP3.0 serial digital outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by TID/MID/SMUD MV90 system via dial-up telephone lines on a daily basis.

- **STANDIFORD INTERCONNECTION**

The Interconnection point with the MID system is metered on the Standiford 115 kV towers #1 & #2 at Standiford Substation. The meters are currently Schlumberger SP4SM that have the capability of metering Watthours and Varhours. The meters are located in the 115kV yard. This is a bi-directional meter with the accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 115 kV switchyard at the interconnection point of the 115 kV bus. All P.T.s and C.T.s are rated at 0.3% accuracy class with CT ratio of 800/5 and PT ratio of 600/1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by MID/SMUD MV90 system via dial-up telephone lines on a daily basis.

ATTACHMENT C

CALIFORNIA INDEPENDENT SYSTEM OPERATOR

AND

SACRAMENTO MUNICIPAL UTILITY DISTRICT

INTERCONNECTED CONTROL AREA OPERATING AGREEMENT

Incorporating Amendment No. ~~3~~4

INTERCONNECTED CONTROL AREA

OPERATING AGREEMENT

ICAA 1 STANDARD OPERATING AGREEMENT

Interconnected Control Area Operating Agreement

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

Sacramento Municipal Utility District (SMUD), having its registered and principal executive office at 6201 S Street, Sacramento, California 95817,

and

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

SMUD and the ISO may also respectively be referred to as "Party" or the "Parties".

Whereas: [Recitals are in the amendment.]

1. SMUD is forming its own control area and becoming a recognized control area operator pursuant to North American Electric Reliability Council or its successor (NERC) and Western Electricity Coordinating Council or its successor (WECC) requirements.
2. Upon SMUD's formation of the SMUD Control Area, the ISO will continue to operate the ISO Control Area, excluding the SMUD Control Area.
3. Upon SMUD's formation of the SMUD Control Area, the Parties will operate interconnected control areas.

4. The Parties wish to coordinate operation and maintenance of the Interconnection to satisfy NERC criteria, WECC Minimum Operating Reliability Criteria (MORC), and Good Utility Practice.
5. The ISO has certain Federal Energy Regulatory Commission (FERC) tariff obligations and statutory obligations under California law to maintain power system reliability.

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

ICAA 1.2 Purpose and Intent

ICAA 1.2.1 Purpose

The purpose of this Operating Agreement is to establish the rights and obligations of the ISO and SMUD with respect to the operation, maintenance, and control of the Interconnection. This Operating Agreement is based upon the ISO Tariff, WECC and NERC policies, guidelines, and requirements, contracts between and among SMUD, Western Area Power Administration - Sierra Nevada Region (Western), and third parties, and established operating procedures. This Operating Agreement acknowledges that other Transmission Owners may have certain concurrent responsibilities.

ICAA 1.2.2 Intent

The intent of this Operating Agreement is to acknowledge rights, acknowledge requirements, establish procedures, and designate responsibilities for the operation and management of the Interconnection. It is not the intent of this Operating Agreement to abrogate or alter the rights and obligations under pre-existing contracts pertaining to the subject of Interconnection.

ICAA 1.3 Term, Implementation, and Termination

ICAA 1.3.1 Effective Date

This Operating Agreement shall be effective as of the later of the date this Operating Agreement is accepted for filing and made effective by FERC or the date that the WECC and NERC provide final certification of SMUD as a control area operator and authorize SMUD to operate the SMUD Control Area, and shall continue in effect until terminated.

ICAA 1.3.2 Initial Implementation of Change of Control Area Boundaries

SMUD and the ISO shall coordinate with all entities with ownership rights to the Interconnection facilities in advance of implementation of the SMUD Control Area to ensure that all reliability issues are addressed. SMUD and the ISO recognize that Western, Pacific Gas and Electric Company (PG&E), and the City of Roseville have confirmed in writing that they do not anticipate any operational problems or issues associated with the prospective implementation of the SMUD Control Area. The ISO is working diligently to assist SMUD achieve a June 1, 2002 startup of the SMUD Control Area. In addition, the Parties will confirm that Western, PG&E, and the City of Roseville are operationally ready for commencement of SMUD Control Area operation. The Parties recognize that the WECC is the authority responsible for certifying SMUD as a Control Area. Once that certification is granted, NERC, upon notification from WECC, will authorize SMUD to begin Control Area operation and announce a date for commencement of such operation. The ISO will cooperate by advising NERC as to the state of its readiness to implement directly interconnected Control Area operation with SMUD. Operation of the SMUD Control Area shall commence upon SMUD's receipt of NERC authorization and no earlier than a NERC-established and announced date for commencement of such operation.

ICAA 1.3.3 Implementation of Subsequent Change of Control Area Boundaries

SMUD and the ISO shall coordinate with all entities with ownership rights to the Interconnection facilities in advance of implementation of the boundary change between the control areas of SMUD and the ISO to ensure that all reliability issues are addressed. The ISO and SMUD are working diligently to achieve a January 1, 2005 change of the Control Area boundaries between the Parties to include certain Western loads, generation and transmission facilities at 230 kV and below that are directly connected to the Western system. In addition before the change of Control Area boundaries is effectuated, the Parties will confirm that Western, PG&E, and the City of Roseville are operationally ready for commencement of the change to the Control

Area boundaries. The Parties recognize that the WECC is the authority responsible for re-certifying SMUD in its expanded footprint as a Control Area. Once that certification is granted, NERC, upon notification from WECC, will authorize SMUD to begin Control Area operation as the Expanded SMUD Control Area and announce a date for commencement of such operation. The ISO will cooperate by advising NERC as to the state of its readiness to implement directly interconnected Control Area operation with the Expanded SMUD Control Area. Operation of the Expanded SMUD Control Area shall commence upon SMUD's receipt of NERC/WECC re-certification and no earlier than a NERC/WECC-established and announced date for commencement of such operation.

ICAA 1.3.4 Implementation of Additional Subsequent Change of Control Area Boundaries

SMUD and the ISO shall coordinate with all entities with ownership rights to the Interconnection facilities in advance of implementation of the boundary change between the control areas of SMUD and the ISO to ensure that all reliability issues are addressed. The ISO and SMUD are working diligently to achieve a December 1, 2005 change of the Control Area boundaries between the Parties to include the COTP and the Modesto Irrigation District (MID) system. In addition before the change of Control Area boundaries is effectuated, the Parties will confirm that Western, PG&E, MID, and Turlock Irrigation District (TID) are operationally ready for commencement of the change to the Control Area boundaries. The Parties recognize that the WECC is the authority responsible for re-certifying SMUD in its expanded footprint as a Control Area. Once that certification is granted, NERC, upon notification from WECC, will authorize SMUD to begin Control Area operation as the Expanded SMUD Control Area and announce a date for commencement of such operation. The ISO will cooperate by advising NERC as to the state of its readiness to implement directly interconnected Control Area operation with the Expanded SMUD Control Area. Operation of the Expanded SMUD Control Area shall commence upon SMUD's receipt of NERC/WECC re-certification and no earlier than a NERC/WECC-established and announced date for commencement of such operation.

~~ICAA 1.3.4~~ICAA 1.3.5 Termination

This Operating Agreement may be terminated by either Party upon two years written notice to the other Party or upon mutual consent of both Parties. For entities subject to FERC jurisdiction, termination will be effective upon acceptance by FERC of notice of termination. The ISO shall timely file any notice of termination with FERC. The filing of the notice of termination by the ISO will be considered timely if: (1) the

request to file a notice of termination is made after the preconditions for termination have been met, and (2) the ISO files the notice of termination within 30 days of receipt of such request.

ICAA 2 DEFINITIONS

ICAA 2.1 WECC Definitions

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

ICAA 2.2 Specific Definitions

ICAA 2.2.1 **California-Oregon Intertie ("COI"):** The two 500-kV transmission lines between Malin Substation and Round Mountain Substation and the one 500-kV transmission line between Captain Jack Substation and Olinda Substation.

ICAA 2.2.2 **California-Oregon Intertie Path Operator Agreement:** The agreement among Southern California Edison Company, San Diego Gas & Electric Company, PG&E, the COTP Participants, Western and the ISO that, together with the Owner's Coordinated Operating Agreement, governs the COI path operation.

ICAA 2.2.3 **California-Oregon Transmission Project ("COTP"):** A 500-kV transmission line and associated facilities between Captain Jack Substation near the California-Oregon border and the eastern boundary of the existing right-of-way of the Tesla-Tracy 500 kV transmission line.

ICAA 2.2.4 **COTP Interconnection Point:** The point of Interconnection between the ISO Control Area and the Expanded SMUD Control Area related to the COTP at the Tracy 500 kV substation, described in more detail in Service Schedule 1 as the Tracy 500 kV Interconnection.

ICAA 2.2.5 **COTP Interconnection Rate Schedule:** The pre-existing contract between PG&E as a Participating Transmission Owner and the COTP Participants described in Service Schedule 2 as PG&E Rate Schedule for the Interconnection of the COTP and the PG&E Electric System – FERC Rate Schedule #144.

~~ICAA 2.2.4~~**ICAA 2.2.6** **COTP Participants:** Western, Transmission Agency of Northern California, California Department of Water Resources, Shasta Dam Area Public Utility District, Carmichael Water District, the City of

Vernon, California, PG&E, San Juan Suburban Water District, and their successors and assigns.

ICAA 2.2.7 **COTP Terminus:** The point of interconnection between the PG&E electric system and the COTP, located at the eastern boundary of the existing right-of-way of PG&E's Tesla-Los Banos No. 2 500 kV line, at which the COTP's conductors extending from the Tracy Substation Expansion

~~ICAA 2.2.5~~ICAA 2.2.8 **Expanded SMUD Control Area:** The area for which SMUD has reliability responsibility pursuant to WECC and NERC guidelines and requirements.

~~ICAA 2.2.6~~ICAA 2.2.9 **Forced Outage:** An Outage for which sufficient notice cannot be given to allow the Outage to be factored into the preschedule processes and the established Outage coordination principles of the Parties.

~~ICAA 2.2.7~~ICAA 2.2.10 **Good Utility Practice:** Any of the practices, methods, and acts engaged in or approved by a significant portion of the electric utility industry in the WECC region during the relevant time period, or any of the practices, methods, and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety, and expedition. Good Utility Practice is not intended to be any one of a number of the optimum practices, methods, or acts to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region.

~~ICAA 2.2.8~~ICAA 2.2.11 **Interconnection:** Transmission facilities that connect one control area to another control area. The Interconnection for this Operating Agreement is described in Service Schedule 1.

~~ICAA 2.2.9~~ICAA 2.2.12 **ISO:** The California Independent System Operator Corporation, a state chartered, nonprofit corporation that controls the transmission facilities of all Participating Transmission Owners, dispatches certain generating units and loads, and is a control area operator.

~~ICAA 2.2.10~~ICAA 2.2.13 **ISO Control Area:** The electric power system for which the ISO has reliability responsibility pursuant to NERC and WECC requirements.

~~ICAA 2.2.11~~ICAA 2.2.14 **ISO Controlled Grid:** The system of transmission lines and associated facilities of the Participating Transmission Owners that have been placed under the ISO's operational control.

~~ICAA 2.2.12~~ICAA 2.2.15 **ISO Tariff:** ISO Operating Agreement, Protocols, and Tariff as amended from time to time, together with any appendices or attachments thereto.

~~ICAA 2.2.13~~ICAA 2.2.16 **Nomogram:** A set of operating or scheduling rules which are used to ensure that simultaneous operating limits are respected, in order to meet NERC and WECC operating criteria.

~~ICAA 2.2.14~~ICAA 2.2.17 **Outage:** Disconnection or separation, planned or forced, of one or more elements of an electric system.

~~ICAA 2.2.15~~ICAA 2.2.18 **Participating Transmission Owner:** An owner of transmission that has executed the Transmission Control Agreement and placed its transmission assets and entitlements under the ISO's operational control.

ICAA 2.2.19 **Path Operator of COI:** The path operator of COI as established pursuant to the California-Oregon Intertie Path Operator Agreement.

~~ICAA 2.2.16~~ICAA 2.2.20 **Planned Outage:** An Outage for which sufficient notice has been given to allow the Outage to be factored into the processes and the established Outage coordination principles of the Parties.

~~ICAA 2.2.17~~ICAA 2.2.21 **Points of Contact:** 1) Operations Contact: A person or entity having the authority to receive and act upon scheduling or dispatch communications from the other control area operator and available through a communications device mutually agreed upon on a 24-hour, 7-day basis; 2) Contact for Notices: A person(s) designated by the Parties for the receipt of official notices.

~~ICAA 2.2.18~~ICAA 2.2.22 **Power Flow Reduction Measures:** Actions taken to promptly and rapidly reduce power flow, including but not limited to: the circulation of power on the PDCI, the increase of generation within the control area through changes initiated by a Control Area Operator that create counter flow, and Curtailments that result in immediate responses from the parties to scheduled transactions to change the amount of generation or load accordingly.

~~ICAA 2.2.19~~ICAA 2.2.23 **Pseudo Tie:** A telemetered reading or value that is updated in real time and used as a "virtual" tie line flow in the AGC/ACE equation but for which no physical tie or energy metering actually exists. The integrated value is used as a metered MWh value for interchange accounting purposes.

~~ICAA 2.2.20~~ICAA 2.2.24 **Real Time Operating Limits:** The rated transfer capability less reductions during any hour caused by, but not limited to, physical limitations beyond the control of the control area operators, and

operational limitations resulting from transmission line Outages, equipment Outages, stability limits and loop flow.

~~ICAA 2.2.21~~ICAA 2.2.25 **Scheduling Coordinator:** An entity certified by the ISO for the purposes of undertaking the functions of: submitting schedules for energy, generation, transmission losses, and ancillary services; coordinating generation; tracking, billing, and settling trades with other Scheduling Coordinators; submitting forecast information; paying the ISO's charges; and ensuring compliance with ISO protocols.

~~ICAA 2.2.22~~ICAA 2.2.26 **SMUD Control Area:** The electric system owned and operated by SMUD for which SMUD has operational control and reliability responsibility pursuant to WECC and NERC guidelines and requirements.

~~ICAA 2.2.23~~ICAA 2.2.27 **Transmission Owner:** An entity owning transmission facilities or having firm contractual rights to use transmission facilities at the Interconnection.

~~ICAA 2.2.24~~ICAA 2.2.28 **WECC Reliability Coordinator:** One of the area control centers assigned by the WECC to proactively anticipate and mitigate potential problems, facilitate notification, and coordinate restoration following a disturbance.

~~ICAA 2.2.25~~ICAA 2.2.29 **WECC RMS:** The WECC established reliability program for WECC members that are governed by the WECC Reliability Management System Agreement and the WECC Reliability Criteria Agreement that provides sanctions to its members.

ICAA 3 OPERATIONAL RESPONSIBILITIES

ICAA 3.1 General Requirements

ICAA 3.1.1 Standards to Be Met

Both the ISO and SMUD shall plan and operate the Interconnection in conformance with NERC standards and policies, WECC MORC, and Good Utility Practice. The Parties agree that, notwithstanding the applicable NERC and WECC requirements, as a consequence of their direct interconnection, any changes in or to the scope of their system control affecting the Interconnection shall be coordinated.

ICAA 3.1.2 Pre-Existing Contracts

The ISO currently operates parts of the ISO Controlled Grid subject to certain rights in pre-existing contracts, operating agreements, and procedures between SMUD and PG&E as a Participating Transmission

Owner. In addition, there are certain agreements between Western and PG&E. These contracts involve transactions which shall be scheduled across the Interconnection. The ISO will rely on the specific operating instructions provided by PG&E, where available, for pre-existing contracts. Service Schedule 2 contains contract informational summaries for PG&E pre-existing contracts with SMUD

The Parties understand that Western and PG&E have indicated they are committed to participate in any required additional tagging of schedules between the ISO and Expanded SMUD Control Areas pursuant to NERC requirements.

ICAA 3.1.3 Communication

The ISO and SMUD shall each operate and maintain a 24-hour, 7-day control center with real time scheduling and control functions. Appropriate control center staff will be provided by each Party who shall be responsible for operational communications and who shall have sufficient authority to commit and bind that Party.

The ISO and SMUD shall jointly develop communication procedures necessary to support scheduling and dispatch functions. The Points of Contact and the procedures for insuring reliable communication are identified in Service Schedule 3.

ICAA 3.2 Grid Operation

ICAA 3.2.1 Responsibility

SMUD has NERC and WECC delegated control area responsibility for all electric transmission facilities within the Expanded SMUD Control Area. The ISO has NERC and WECC delegated control area responsibility for all electric transmission facilities in its control area. Parties shall coordinate efforts consistent with NERC and WECC policies, standards, and criteria as well as Good Utility Practice to mitigate any adverse conditions that may occur at the Interconnection. The Parties note that currently, in terms of operational control, the ISO is responsible for exercising operational control over the ISO Controlled Grid; SMUD will continue to be responsible for exercising operational control over its facilities in the Expanded SMUD Control Area; and Western exercises operational control over its facilities, which control shall be exercised consistent with directions when issued by SMUD as Control Area Operator. SMUD and the ISO shall not exercise operational control over any part of the Interconnection facilities operated by the other Control Area. The respective jurisdictions for operational control by the ISO and SMUD over the Interconnection facilities are identified in Service Schedule 4.

ICAA 3.2.2 Switching Operations

Operations on the Interconnection shall be coordinated through the ISO and SMUD except as otherwise indicated in ICAA 7.3. Specific switching responsibilities are identified in Service Schedules 4 and 5.

ICAA 3.2.3 Real Time Operating Limits

ICAA 3.2.3.1 Real Time Operating Limits Established Jointly

The ISO and SMUD, in consultation with the Transmission Owner(s), have established the base Real Time Operating Limits of the Interconnection. These established base operating limits are specified in Service Schedule 6.

The base Real Time Operating Limits shall be adjusted as needed based on the given real time conditions, current operating conditions, current operating criteria, and established Nomograms, graphs, and charts specific to the transfer paths within the SMUD and ISO Control Areas. The ISO and SMUD, and, where possible, in conjunction with Western and PG&E, shall continue to use the Sacramento Valley Study Group or its successor Sacramento area reliability coordination organization (SVSG) as the forum for establishing such Real Time Operating Limits in the Sacramento area after the implementation of the Expanded SMUD Control Area. The limits established by SVSG shall be reflected in the SMUD and ISO operating procedures that implement such limits, in a manner consistent with their establishment. Schedules at the Lake and Rancho Seco interconnections are interchangeable pursuant to existing contracts with PG&E.

~~Schedules at Olinda and Tracy are interchangeable pursuant to the ownership rights of COTP participants and to operating procedures provided to the ISO. Interchangeable means that if after the close of the Hour-Ahead Market, SMUD or the ISO has a transmission contingency on any of its interconnections that either curtails or completely forces out of service an interconnection, a Control Area interconnection, then SMUD and the ISO shall make best effort to agree to move an interchange schedule to a remaining interconnection~~

~~in real time provided 1) there is sufficient transfer capability and scheduling capacity; 2) the schedule cannot be more than the interconnection is rated, even if the actual flow is less at the interconnection, in accordance with WECC; 3) the change in schedule cannot jeopardize the reliability of either system; and 4) both SMUD and the ISO agree to the schedule change in real-time. If SMUD and the ISO agree to change a schedule in real-time due to a contingency, the schedules will be moved for the current operating hour and subsequent hours, as necessary, until the first opportunity exists for SMUD to revise the schedules in the ISO's Hour-Ahead Market.~~

~~SMUD and the ISO further agree that the procedure will be revised, if necessary, when the ISO implements LMP to address settlements issues related to nodal pricing. To the extent mutual agreement cannot be reached regarding the implementation of these procedures in an LMP market the practice will be terminated.~~

ICAA 3.2.3.2 Real Time Operating Limits Exceeded

If a Real Time Operating Limit is exceeded or the operation of either the Expanded SMUD Control Area or the ISO Control Area is jeopardized, the ISO and SMUD shall communicate and coordinate actions to return the Interconnection and the affected control area(s) to Real Time Operating Limits. In compliance with WECC MORC, the ISO and SMUD will make coordinated adjustments to energy flows between the two control areas such that stability limited facilities are returned to Real Time Operating Limits within 20 minutes after the exceedance of the limit and thermally limited facilities are returned to Real Time Operating Limits within 30 minutes after the exceedance of the limit, or as otherwise established and mandated by WECC.

ICAA 3.2.4 Relay Action

The ISO and SMUD shall provide pertinent relay data including targets, fault records, fault information, related equipment condition, and operational information concerning the Interconnection to each other as soon as practicable after the occurrence of any relay action on

Interconnection equipment, including, as it becomes available, additional information regarding cause, condition, effects, and expected corrective action. Notwithstanding the foregoing, the ISO and SMUD shall agree upon corrective action and the procedure for returning to normal or adjusted operation.

ICAA 3.2.5 Voltage Control

The ISO and SMUD shall coordinate the use of voltage control equipment to maintain transmission voltages and reactive flows at mutually agreed upon levels to ensure system stability within the operating range of electrical equipment and in accordance with WECC MORC. The ISO and SMUD shall operate the facilities at the Interconnection at reactive reserve margins that are adequate to maintain minimum acceptable voltage limits under facility Outage conditions. Agreed upon voltage schedule limits and reactive flows are specified in Service Schedule 7.

SVSG shall be also used as the forum for establishing the appropriate Interconnection voltage control measures between the ISO Control Area and the Sacramento load area portion of the Expanded SMUD Control Area. SVSG, or another subsequent group or forum agreed to by SMUD, the ISO and Western, may review, study, design, and recommend measures and procedures for safe operation of all transmission facilities comprising the ISO-SMUD Interconnections. The measures established by SVSG, or a subsequently agreed upon group or forum, shall be reflected in the SMUD and ISO operating procedures that implement such measures, in a manner consistent with their establishment.

The ISO, SMUD, and other entities operating electric systems in the Sacramento area have established and will continue to refine coordinated procedures, based on the SVSG-developed measures, delineating responsibilities and corrective actions to be taken in order to maintain sufficient reactive support at the Interconnection. SMUD and the ISO have received commitments that the other entities operating interconnected electric systems in the Sacramento area have acknowledged their concurrence and participation in such coordinated, SVSG-derived, procedures, which are to be effective after the implementation of the Expanded SMUD Control Area. Upon the implementation of the Expanded SMUD Control Area, the ISO and SMUD shall operate in accordance with those jointly established and acknowledged procedures.

ICAA 3.2.6 Information Exchange

The ISO and SMUD shall coordinate directly the exchange of any information concerning the reliable operation of the Interconnection facilities and the status of the control areas. Such information shall be communicated through mutually acceptable methods. Procedures and forms for the exchange of emergency information shall be jointly developed and are contained in Service Schedule 8.

ICAA 3.2.6.1 Information Required to be Provided

Details regarding the information necessary to the reliable operation of the Interconnection shall be included in Service Schedule 9.

ICAA 3.2.7 Joint Operating Procedures

Procedures for coordinating the reliable operation of the Interconnection will be jointly administered by the ISO, SMUD, and the Transmission Owners. Such procedures are described in more detail in Service Schedule 10.

ICAA 3.3 Special Provisions Related to COTP Terminus

The Parties agree that the interconnection point for the COTP between the ISO Control Area and the Expanded SMUD Control Area shall be at the COTP Interconnection Point. The provisions of this ICAA 3.3 shall apply so long as the COTP Interconnection Rate Schedule remains in effect. So long as the COTP Interconnection Rate Schedule remains in effect, the COTP Interconnection Point shall be treated as a single branch group, and the COTP Terminus will physically remain in the ISO Control Area.

ICAA 3.3.1 Relationship Between COTP Interconnection Point and COTP Terminus

The Parties agree that the location of the COTP Interconnection Point is a scheduling convenience and mutually benefits both Parties. The COTP Interconnection Point and the COTP Terminus are deemed to be the same scheduling point for purposes of scheduling and metering, in accordance with ICAA 5 and Service Schedules 1, 2, 4, 5, and 11. Neither Party will charge the other Party or any of the COTP Participants for any charges, costs, fees related to any transactions across the line segments between the COTP Interconnection Point and the COTP Terminus, including, without limitation, any congestion charges, scheduling charges, charges for losses, must-offer charges, or any load-based charges, provided, however, that (1) imports into the ISO Control Area at the COTP Interconnection Point that use the ISO Controlled Grid beyond the COTP Terminus shall pay all applicable ISO Tariff based charges; and (2) exports from the ISO Controlled

Area at the COTP Interconnection Point that use the ISO Controlled Grid shall pay all applicable ISO Tariff based charges.

The COTP Participants shall retain existing transmission rights and obligations for deliveries to or from the COTP Terminus pursuant to pre-existing contracts with PG&E for COTP or SOTP transmission as specified in operating instructions provided to the ISO by PG&E in accordance with ICAA 3.1.2. The contractual basis for such treatment related to the COTP Terminus is summarized in Service Schedule 2.

ICAA 3.3.2 Coordinated Outages and Maintenance of COTP Terminus

The ISO and SMUD recognize and agree that Western is the operating and maintenance agent for the COTP. The ISO shall coordinate outages of the COTP Terminus with SMUD and Western in accordance with ICAA 6 and Service Schedule 12. The ISO shall coordinate with SMUD and Western the removal from, and restoration to, service for any facilities within the ISO Control Area that affect available system transfer capability at the COI in accordance with ICAA 3.2, 6, and 7 and Service Schedules 4, 5, 8, 12, and 15. The ISO shall initiate requests for, or implement as appropriate, emergency response procedures to isolate inoperable components of the COTP Terminus and to restore the available electric system facilities to service without delay in accordance with ICAA 3.2, 6, and 7 and Service Schedules 4, 5, 8, 12, and 15. The ISO agrees that Western and SMUD, acting in coordination with the ISO, may remove from service, and following an outage may restore to service, all or part of the COTP Terminus facilities in accordance with ICAA 3.2, 6, and 7 and Service Schedules 4, 5, 8, 12, and 15.

ICAA 4 RELIABILITY COORDINATION

ICAA 4.1 WECC Reliability Coordinator

The ISO has been designated the WECC Reliability Coordinator for WECC's California-Mexico Subregion.

~~ICAA 4.2WECC Reliability Management System~~

~~The ISO and SMUD have each executed the WECC RMS and are subject to the agreements comprising the program. If the COTP operates within the ISO Control Area, and sanctions are received by the ISO for operation of the COI, such sanctions shall be applied as follows: (i) to the extent the cause of the sanction is determined, then the sanction shall be applied to the Control Area that caused the sanction; or (ii) to the extent the cause of the sanction can not be~~

~~determined, then the sanction shall be applied to the ISO and Expanded SMUD Control Areas based on the proportional equation for sharing such obligations consistent with the Path Operator Agreement.~~

ICAA 5 SCHEDULING AND DISPATCH

ICAA 5.1 Coordination and Exchange of Information

The ISO and SMUD shall coordinate and exchange information on schedules and control area checkouts at the Interconnection. All schedules at the Interconnection shall match. In accordance with WECC MORC, the ISO and SMUD shall verify, at mutually acceptable times, the actual and scheduled interchange numbers for past hours as well as scheduled interchange numbers for current and future hours. Except as provided elsewhere in this agreement, all energy and/or capacity schedules, as well as any transmission reservation(s) to or from the ISO Control Area, over any facilities within the ISO Control Area shall be submitted via the ISO scheduling system as described in the ISO Tariff. The ISO and SMUD shall jointly develop control area to control area methods and details for coordinating scheduling procedures, information exchange, and notifications in normal, emergency, and curtailment conditions. These methods and details are included in Service Schedule 11.

ICAA 5.2 Notifications

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

ICAA 5.3 Dynamically Scheduled Energy and Non-Regulation Ancillary Services

The ISO and SMUD shall allow for the import of dynamically scheduled energy and non-regulation ancillary services from the Expanded SMUD Control Area to the ISO Control Area in accordance with the provisions of Service Schedule 17. The Parties further agree that the ISO will initiate a pilot program as expeditiously as possible to allow for the import of dynamically scheduled energy and non-regulation ancillary services from the ISO Control Area to the Expanded SMUD Control Area.

ICAA 5.4 Import of Regulation Service by ISO

The ISO and SMUD shall allow for the import of regulation service from the Expanded SMUD Control Area to the ISO Control Area in accordance with the provisions of Service Schedule 16. SMUD shall be under no obligation to supplement the import of regulation service contracted by third parties to be delivered to the ISO Control Area from resources in the Expanded SMUD Control Area and shall have the right to terminate Service Schedule 16 without prior ISO approval, upon thirty (30) days advance written notice to the ISO.

ICAA 5.5 Pilot Program for Pseudo Tie to Expanded SMUD Control Area

The ISO shall develop provisions for a pilot program authorizing a Pseudo Tie of an entire single resource in the ISO Control Area to the Expanded SMUD Control Area, subject to pre-existing contract rights for transmission between the ISO Control Area and the Expanded SMUD Control Area, to be implemented within eight (8) months after SMUD identifies a specific resource in the ISO Control Area that it intends to establish as a pilot Pseudo Tie, provided that the ISO shall not be obligated to implement such a pilot program prior to July 1, 2006 or between October 1, 2006 and sixty (60) days after the implementation of "Release 1" of the ISO's Market Redesign and Technology Upgrade project. The ISO will use reasonable efforts to undertake implementation of such a pilot program during other periods if practical, if requested by SMUD. If the pilot program is successful, the ISO shall, subject to approval of the ISO Governing Board, file at FERC for approval a permanent program for the establishment of Pseudo Ties, and shall implement it when approved.

ICAA 5.6 Pilot Programs for Pseudo Ties

The ISO and SMUD shall develop provisions for a pilot program (1) authorizing a Pseudo Tie of an entire single resource in the Expanded SMUD Control Area to the ISO Control Area to be implemented as of December 1, 2005; and (2) authorizing a Pseudo Tie of an entire single resource in the ISO Control Area to the Expanded SMUD Control Area to be implemented in accordance with the timeline and other conditions set forth in Section ICAA 5.5.

ICAA 6 OUTAGE COORDINATION

ICAA 6.1 Maintenance Coordination

Outages of facilities affecting the Interconnection shall be jointly coordinated with the ISO, SMUD, and the Transmission Owner(s) to minimize a reduction and the duration of such reduction to the operating limits of the Interconnection. The ISO and SMUD shall provide each other reasonable notice of Planned Outages and scheduled maintenance affecting the Interconnection in advance.

The ISO and SMUD shall review Planned Outages and scheduled maintenance to determine the feasibility of initiating the switching process. If, given the current or anticipated system conditions at the time, the ISO and SMUD jointly determine that system reliability may be impaired, the Outage may be canceled.

Outage coordination procedures will be jointly developed by the ISO and SMUD and included in Service Schedule 12.

ICAA 6.2 Forced Outages

The ISO and SMUD shall coordinate and implement operational changes necessary to accommodate Forced Outages, emergencies, or curtailments. All notifications of Forced Outages, emergencies, or curtailments shall be communicated between the ISO and SMUD control centers as soon as possible. If notice prior to a Forced Outage, emergency, or curtailment cannot be given, the ISO or SMUD shall notify the other Party of the event immediately after it occurs.

All Forced Outage notifications shall be communicated by both control centers to other control area operators likely to be affected by the Forced Outage.

ICAA 7 EMERGENCY OPERATION

ICAA 7.1 Emergency Assistance Arrangements

Service Schedule 13 details emergency assistance arrangements.

ICAA 7.2 Emergency Action

In the event of a system emergency, the ISO and SMUD shall take coordinated action, as they consider necessary and prudent, to preserve or restore stable operation of the interconnected grid and to preserve or restore reliable, safe, and efficient service as quickly as

reasonably practicable. The ISO and SMUD shall, where practicable, keep operators in affected control areas and the appropriate WECC Reliability Coordinators informed as to the nature and extent of the system emergency.

ICAA 7.3 Operations Exercised Independently

Emergency operation in response to unforeseen system occurrences that may jeopardize the safety of personnel and the general public and/or system stability may be performed independently by SMUD or the ISO. SMUD shall forward the outcomes of its emergency operation to the ISO Control Center as soon as practicable after the occurrence. The ISO shall forward the outcomes of the emergency operation to which it is a party to the Expanded SMUD Control Center as soon as practicable after the occurrence. The duties and responsibilities for the ISO Control Center and the Expanded SMUD Control Center under the foregoing circumstances are described in more detail in Service Schedule 14.

ICAA 7.4 Restoration Coordination

The ISO and SMUD shall coordinate restoration on the facilities affecting the Interconnection, and shall take necessary restoration measures on facilities affecting the Interconnection in their respective control areas following an interruption, including coordinating the restarting of either or both systems from a black start, if requested. The ISO and SMUD shall develop restoration procedures, as described in more detail in Service Schedule 15.

ICAA 7.5 Voltage Collapse

The ISO and SMUD shall take measures within their respective control areas to arrest collapsing voltage that affects the Interconnection.

ICAA 7.6 Co-Mitigation of California-Oregon Intertie Derates

The ISO and SMUD as Control Area ~~O~~operators will implement the COI Power Flow Reduction Measures, as directed by the Path Operator of COI provided the COI owner's provide resources to, or accept curtailments from, (in the event that the COI Power Flow Reduction Measures allow) their respective Control Area ~~O~~operator to facilitate management of COI overloads by the Path Operator of COI. These obligations (~~86~~79% ISO, ~~14~~21% SMUD as of the effective date of Amendment No. ~~2~~4 to this Operating Agreement) are established and quantified in the operating procedures pursuant to the California-Oregon Intertie Path Operator Agreement. The Expanded SMUD Control Area and the ISO Control Area shall provide the total Energy or

the total curtailment (in the event that the COI Power Flow Reduction Measures allow) necessary to implement COI Power Flow Reduction Measures as determined by the Path Operator of COI and implemented by means of automatic adjustment signal. ~~If the ISO Control Area does not provide such Energy in the agreed upon time period and SMUD provides the Energy on the ISO's behalf, then the ISO shall pay SMUD 150% of the Zonal Settlement Interval Ex Post Price for the Energy that SMUD provided. Payment by the ISO for such service will be made in accordance with SMUD Settlement Protocols as limited by the ISO Tariff and Protocol provisions. If the Expanded SMUD Control Area does not provide such Energy in the agreed upon time period and the ISO provides the Energy on SMUD's behalf, then SMUD shall pay the ISO 150% of the Zonal Settlement Interval Ex Post Price for the Energy that the ISO provided. Payment to the ISO for such service will be made in accordance with the settlement process, billing cycle, and payment time lines set forth in the ISO Tariff and Protocol provisions.~~

ICAA 8 LIABILITY

ICAA 8.1 Uncontrollable Forces

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

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

In the event of the occurrence of an Uncontrollable Force, which prevents either the ISO or SMUD from performing any obligations under this Operating Agreement, the affected entity shall not be entitled to suspend performance of its obligations in any greater scope or for any longer duration than is required by the Uncontrollable Force. The ISO and SMUD shall each use its best efforts to mitigate the effects of such Uncontrollable Force, remedy its inability to perform, and resume full performance of its obligations hereunder.

ICAA 8.2 Liability To Third Parties

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

ICAA 8.3 Liability Between the Parties

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

ICAA 8.4 Liability For Electric Disturbance and Interruptions

The ISO and SMUD shall plan, operate, and maintain their respective systems, consistent with Good Utility Practice, to minimize or avoid electric disturbances that may interfere with the system of the other Party. The limits of responsibility for the ISO and SMUD shall each be for protecting its respective system from possible damage by reason of electric disturbance or faults caused by the operation, faulty operation, or non-operation of its facilities.

Neither Party shall be liable to the other Party for any claim, demand, liability, loss, or damage, whether direct, indirect, or consequential, incurred by the Parties or their respective customers, which results from the separation of the systems in an emergency or interruption.

If a customer within the control area of a Party makes a claim or brings an action against the other Party for any death, injury, loss, or damage arising out of or in connection with electric service to such customer and caused by the operation or failure of operation of the other Party's control area or any portion thereof, the first Party shall indemnify and hold harmless the other Party, its directors, officers, and employees from and against any liability for such injury, loss, or damage.

ICAA 9 SERVICE SCHEDULES

ICAA 10 MISCELLANEOUS

SERVICE SCHEDULE 1

INTERCONNECTION

[Section 2.2.3]

The Interconnection between the ISO and Expanded SMUD Control Areas consists of the following Interconnection points. All Interconnection points are normally operated closed and are capable of transferring power in both directions.

- **Rancho Seco Interconnection**
  (Rancho Seco – Bellota #1 and #2 230 kV Lines)

  This Interconnection point is comprised of a 27-mile double circuit 230 kV transmission line strung on a 500 kV tower. The transmission lines connect SMUD's Rancho Seco Substation in southern Sacramento to PG&E's Bellota Substation in the eastern Stockton area. The physical point of interconnection is disconnect switches 357 and 317 at Rancho Seco Substation.

- **Lake Interconnection**
  (Lake – Gold Hill 230 kV Line)

  This Interconnection point is comprised of a single very short (<0.25 mile) 230 kV transmission line connecting SMUD's Lake Substation to PG&E's Gold Hill Substation. The two substations are adjacent and located in Folsom, California. This Interconnection point utilizes a 55-ohm series reactor to provide additional electrical distance. The physical point of interconnection is PG&E's 230 kV line termination structure at Gold Hill Substation.

- ~~**Olinda Interconnection**~~
  ~~**(KT1A 525/230/34.5 kV Bus Tie)**~~

  ~~This Interconnection point is on the 230 kV side of the 500/230 kV transformer bank at Olinda Substation. The physical point of interconnection is switch 487 at Western's Olinda Substation.~~

- **Cottonwood Interconnection**
  ("G" 230 kV Bus Tie)

  This Interconnection point is comprised of two 230 kV breakers connecting Western's bus with PG&E's bus. Cottonwood Substation is located in Cottonwood, California. The physical point of interconnection is disconnect switch 471 on the "G" 230 kV bus 1 and disconnect switch 481 on the "G" 230 kV bus 2 bus at Cottonwood Substation.

- **LLNL Interconnection**
  (LLNL 115 kV Bus Tie)

  Western is interconnected to PG&E~~the ISO system~~ through line disconnect switch 455 at Western's Lawrence Livermore National Laboratory ("LLNL") U-424 Substation. One PG&E 115 kV lines enters and one Western 115 kV lines leaves the LLNL U-424 Substation. LLNL U-424 Substation is located southeast of Sacramento in Livermore, California. The physical point of interconnection is line disconnect switch 455 at LLNL U-424 Substation.

- **Round Mountain Interconnection**
  (Round Mountain - Cottonwood 230 kV Bus Tie)

  Western is interconnected to the ~~ISO~~PG&E system through breaker 242 at PG&E's Round Mountain Substation. One Western and one PG&E 500 kV line enters and two PG&E 500 kV and one Western 230 kV lines leave the Round Mountain Substation. Round Mountain Substation is located in Round Mountain, California. The physical points of interconnection ~~is~~are disconnect switches 243 and 245 at the Round Mountain Substation.

~~•Tracy 230 Interconnection~~
~~(Tracy 230 kV Bus Tie to Tracy 230/500 kV Transformers)~~

~~Western is interconnected to the ISO system through breakers 482 and 1782 at Western's Tracy Substation. The physical point of interconnection is disconnect switches 481, 485, 1781, and 1785 at Tracy Substation.~~

~~•Tracy-Westley Interconnection~~
~~(Tracy-Westley 230 kV Bus Tie)~~

~~Western is interconnected to the ISO system through breakers 2354 and 2351 at MID/TID Westley Substation. The physical point of interconnection is disconnect switches 2377 and 2371 at the Westley Substation.~~

- **Tracy 500 kV Interconnection**
  (Tracy-Tesla and Tracy-Los Banos 500 kV Lines)

  This Interconnection point is comprised of a double circuit 500 kV line with one circuit connecting Tracy Substation to Tesla Substation and the other connecting Tracy Substation to Los Banos Substation. COTP is interconnected to the PG&E system through breakers 2192, 2096, 1192 and 1096 at Western's Tracy Substation. The physical point of interconnection is Tower 36, approximately eight miles outside the Tracy Substation connecting COTP lines with PG&E's lines originating from Tesla and Los Banos.

- **Tracy-Tesla 230 kV Interconnection**
  (Tracy-Tesla 230 kV ~~Bus Tie~~Lines)

This Interconnection point is comprised of two 230 kV lines connecting Tracy Substation to Tesla Substation. Western is interconnected to the ISO system through breakers 382 and 582 at Western's Tracy Substation. The physical point of interconnection ~~is~~are disconnect switches 381, 385, 581, and 585 at the Tracy Substation.

- **Herdlyn ~~69~~ Interconnection (Herdlyn 69 kV Bus Tie)**

  The ~~Expanded SMUD Control Area~~Western system is connected to the ~~ISO Control Area~~PG&E system at the disconnect switch on the Tracy-Herdlyn 69 kV line that is located within the Tracy Substation and is owned and operated by Western. Although a physical interconnection exists between the Expanded SMUD Control Area and the ISO Control Area at the disconnect switch on the Tracy-Herdlyn line, the Parties agree it will not be considered a scheduling point.

- **Westley Interconnection (Westley-Tesla 230 kV Tie)**

  This Interconnection point is comprised of a single 230 kV line connecting Westley Substation to Tesla Substation. MID is interconnected to the PG&E system through breakers 2355 and 2356 at MID's Westley Substation. The physical point of interconnection is the Westley Junction located approximately one half mile west of the Westley Substation.

- **Standiford Interconnection (Standiford-Warnerville #7 & #8, Standiford-Newark/Moccasin #3 & #4 115 kV Lines)**

  This Interconnection point is comprised of four 115 kV lines connecting Standiford Substation to Warnerville, Newark, Oakdale and Moccasin Substations. MID is interconnected to the CCSF systems through breakers 907, 903, 904, and 908 at MID's Standiford Substation. The physical points of interconnection are disconnect switches 907C, 903C, 904C and 908C at the Standiford Substation. Breakers 903 and 904 are and will be open breakers, and if this configuration is proposed to be changed, the Parties will confer and agree on any change to the Interconnection point in advance of the change in this configuration.

A set of single-line diagrams showing each of the points of Interconnection is attached to this Service Schedule 1.

REVENUE METERING AND TELEMETRY AT INTERCONNECTION POINTS

SMUD has in service revenue quality metering at all Interconnections points. This metering shall meet the standards as mutually agreed upon by SMUD and the ISO. Meters are inspected and tested per existing agreements between SMUD and the respective Transmission Owner. The ISO shall be entitled to witness annual testing of

the Interconnection metering. Any change or modification to such metering equipment by SMUD or any other entity shall be coordinated with the ISO. SMUD shall program the Interconnection revenue metering to record data at five minute intervals and shall provide for ISO polling of that metering.

SMUD and the ISO shall maintain arrangements that ensure that both Parties shall have access to real-time data from all of the points of Control Area Interconnection. SMUD understands that the ISO wants to directly poll MW and MVAR data from interconnection metering and/or data recorders, which may include RTUs, at all points of Control Area Interconnection, including SMUD and Western substations. SMUD agrees to allow the ISO to directly poll real-time data from SMUD substations and will work with the ISO and Western to facilitate ISO direct polling of real-time data from Western substations in a timely manner. In the event that a second communication port of the RTU is not available for direct polling by the ISO's EMS, the ISO shall have the option to provide an RTU to the substation owner for the purpose of establishing a communication port available for direct polling by the ISO EMS.

- **LAKE INTERCONNECTION**

An Interconnection point to PG&E is metered at Lake Substation. The substation has primary and backup metering arrangements. The primary meter is a Transdata model 30EMS7460M2 and the backup meter is a Scientific Columbus JEM-1 meter model 603P-11. This is a bi-directional meter with the accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located at the line side. All P.T.s and C.T.s are rated for 0.3% accuracy class with CT ratio of 800:5 and PT ratio of 1200:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by SMUD's MV90 system via dial-up telephone lines on a daily basis.

- **RANCHO SECO INTERCONNECTION**

The primary and backup revenue metering equipment is installed at the Rancho Seco end of the Rancho Seco-Bellota 230 kV lines #1 and #2. The primary meter is a Scientific Columbus JEM-1 model 603P-E and the backup meter is a Scientific Columbus JEM-1 model 603-J-MM ; both are bi-directional meters with an accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located on the line side. All P.T.s and C.T.s are rated at 0.3% accuracy class with CT ratio of 400:1 and PT ratio of 1200:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by SMUD's MV90 system via dial-up telephone lines on a daily basis.

~~•OLINDA INTERCONNECTION~~

~~The Interconnection point with the Western system is metered on the 230 kV bus at Olinda Substation. The meter is currently a Quad-4 meter that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with the accuracy rating of 0.3 %. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 230 kV switchyard at the Interconnection point of the 230 kV bus. All P.T.s and C.T.s are rated at 0.3 % accuracy class with CT ratio of 800:1 and PT ratio of 1200:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western's / SMUD's MV90 system via dial-up telephone lines on a daily basis.~~

- **COTTONWOOD INTERCONNECTION**

The Interconnection point with the Western system is metered on the 230 kV G Section at Cottonwood Substation. The meter is currently a Quad-4 that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with the accuracy rating of 0.3 %. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 230 kV switchyard at the Interconnection point of the 230 kV bus. All P.T.s and C.T.s are rated at 0.3 % accuracy class with CT ratio of 320:1 and PT ratio 1200:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western's / SMUD's MV90 system via dial-up telephone lines on a daily basis.

- **LLNL INTERCONNECTION**

The Interconnection point with the Western system is metered on PG&E's Tesla-LLNL 115 kV line at LLNL U-424 Substation. The meter is currently a Quad-4 that has the capability of metering Watthours and Varhours. The meters are located in the 115 kV yard. This is a bi-directional meter with the accuracy rating of 0.3 %. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 115 kV switchyard at the Interconnection point of the 115 kV bus. All P.T.s and C.T.s are rated at 0.3 % accuracy class with CT ratio of 60:1 and PT ratio of 600:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western's / SMUD's MV90 system via dial-up telephone lines on a daily basis.

- **ROUND MOUNTAIN INTERCONNECTION**

The Interconnection point with the Western system is metered on the Round Mountain Cottonwood 230 kV line at Round Mountain Substation. The meter is currently a Quad-4 that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with the accuracy rating of 0.3 %. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 230 kV switchyard at the Interconnection point of the Cottonwood 230 kV bus. All P.T.s and C.T.s are rated at 0.3 % accuracy class with CT ratio of 120:1 and PT ratio 160:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western's / SMUD's MV90 system via dial-up telephone lines on a daily basis.

- **TRACY-TESLA 230 KV INTERCONNECTION**

The Interconnection point with the Western system is metered on ~~the 525/~~230~~/34.5~~ kV ~~transformers KT1A and KT2A~~ at Tracy Substation. The meter is currently a Quad-4 that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with the accuracy rating of 0.3 %. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 230 kV switchyard at the Interconnection point of the 230 kV bus. All P.T.s and C.T.s are rated at 0.3 % accuracy class with CT ratio of 400:1 and PT ratio of 1200:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western's / SMUD's MV90 system via dial-up telephone lines on a daily basis.

~~•TRACY-WESTLEY INTERCONNECTION~~

~~The Interconnection point with the Western system is metered on 230 kV at Tracy Substation. The meter shall be compensated to reflect the difference between the ISO Control Area boundary and the Westley end of the line by incorporating the losses associated with the actual flows across the transmission line. In addition, the telemetered MW and MVar values should be compensated. The meter is currently a Quad-4 that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with the accuracy rating of 0.3 %. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 230 kV switchyard at the Interconnection point of the 230 kV bus. All P.T.s and C.T.s are rated at 0.3 % accuracy class with CT ratio of 400:1 and PT ratio of 1200:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western's / SMUD's MV90 system via dial-up telephone lines on a daily basis.~~

~~•TRACY-TESLA INTERCONNECTION~~

~~The Interconnection point with the Western system is metered on 230 kV at Tracy Substation. The meter is currently a Quad-4 that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with the accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 230 kV switchyard at the Interconnection point of the 230 kV bus. All P.T.s and C.T.s are rated at 0.3 % accuracy class with CT ratio of 400:1 and PT ratio 1200:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western's / SMUD's MV90 system via dial-up telephone lines on a daily basis.~~

- **HERDLYN ~~69~~ INTERCONNECTION**

The Interconnection point with the Western system is metered on the Herdlyn-Tracy 69 kV line at Tracy Substation. The meter is currently a Quad-4 that has the capability of metering Watthours and Varhours. The meters are located in the 69 kV yard. This is a bi-directional meter with the accuracy rating of 0.3 %. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 69 kV switchyard at the Interconnection point of the 69 kV bus. All P.T.s and C.T.s are rated at 0.3 % accuracy class with CT ratio of 240:1 and PT ratio of 320:1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western's / SMUD's MV90 system via dial-up telephone lines on a daily basis.

Although a physical interconnection exists between the Expanded SMUD Control Area and the ISO Control Area at Herdlyn, the Parties agree it will not be considered a scheduling point.

- **TRACY 500 KV INTERCONNECTION**

The Interconnection point with the Western system is metered on the Tracy–Tesla 500 kV line at Tracy Substation. The meter is currently a Quad-4+ that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 500 kV switchyard at the Interconnection point of the 500 kV bus. All P.T.s and C.T.s are rated at 0.3% accuracy class with CT ratio of 2000/5 and PT ratio of 2500/1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western/SMUD MV90 system via dial-up telephone lines on a daily basis.

The Interconnection point with the Western system is also metered on the Tracy–Los Banos 500 kV line at Tracy Substation. The meter is currently a Quad-4+ that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with the accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 500 kV switchyard at the Interconnection point of the 500 kV bus. All P.T.s and C.T.s are rated at 0.3% accuracy class with CT ratio of 2000/5 and PT ratio of 2500/1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by Western/SMUD MV90 system via dial-up telephone lines on a daily basis.

- **WESTLEY INTERCONNECTION**

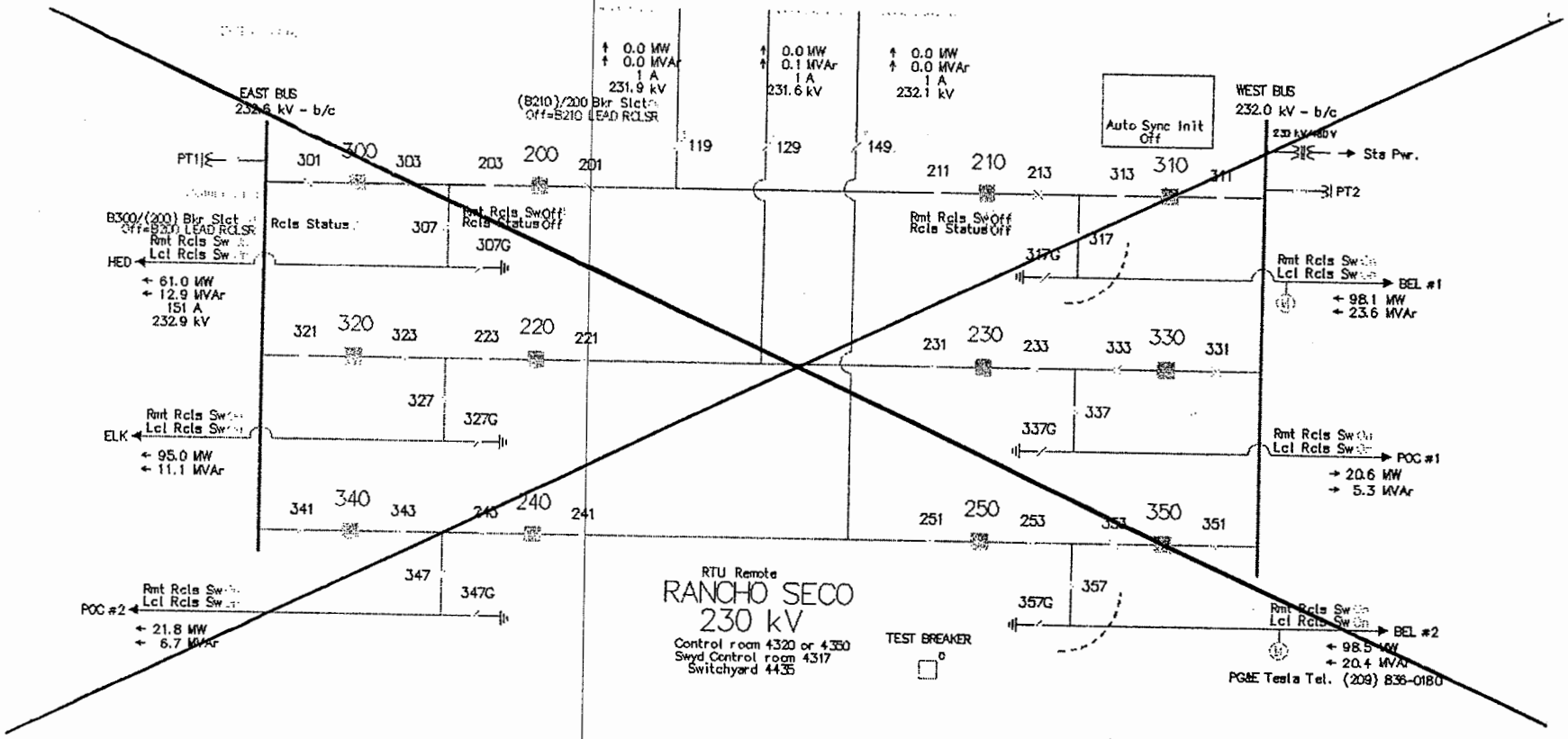
The Interconnection point with the MID system on the Westley–Tesla 230 kV line is metered at Westley Substation. The meter is currently a Schlumberger SP4SM that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with the accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 230 kV switchyard, on the Westley-Tesla 230 kV line. All P.T.s and C.T.s are rated at 0.3% accuracy class with CT ratio of 1000/5 and PT ratio of 1200/1. The meter's MW and MVar DNP3.0 serial digital outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by TID/MID/SMUD MV90 system via dial-up telephone lines on a daily basis.

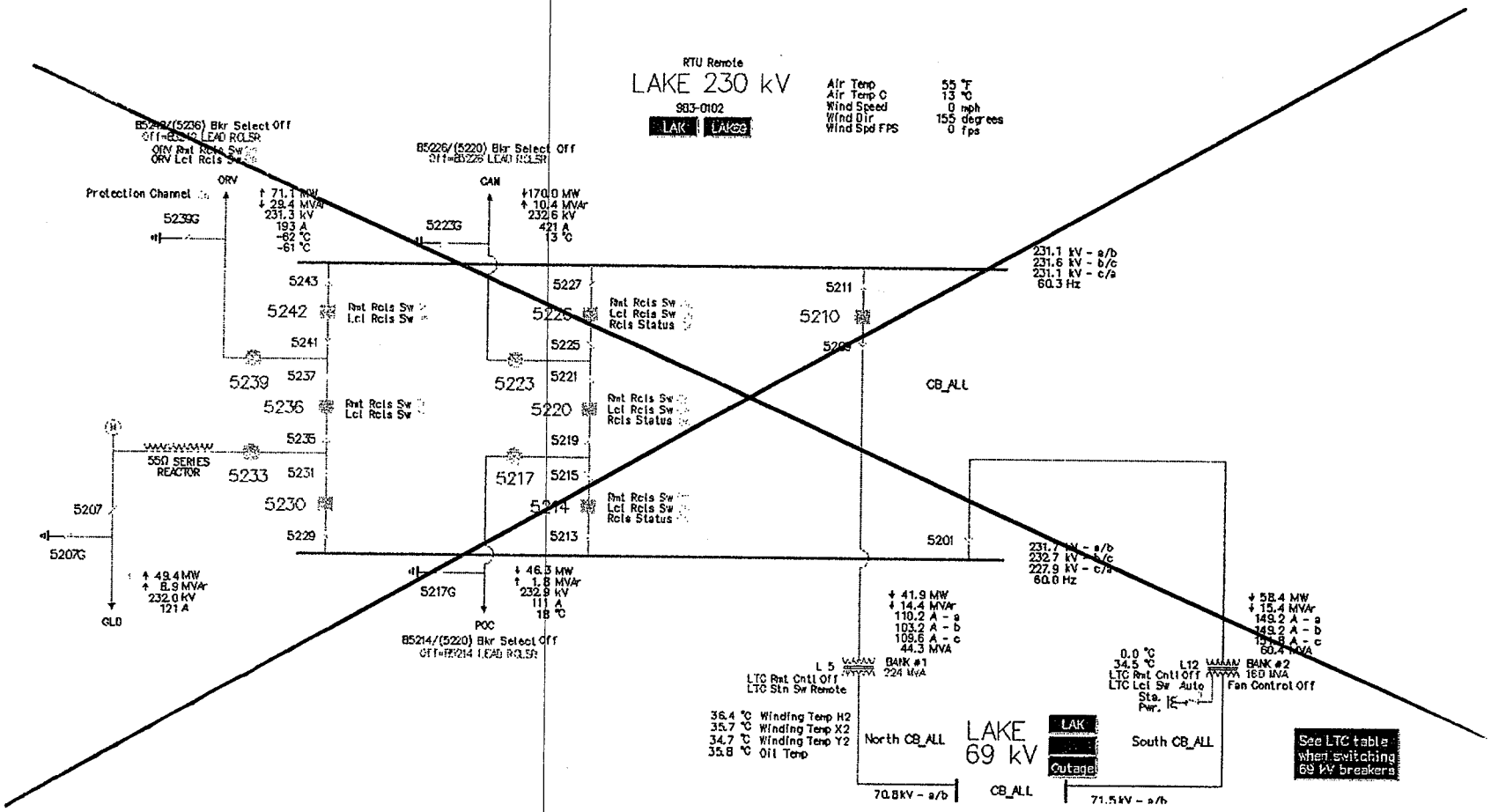
For settlement purposes, it is important to note that TID and ISO have an interconnection on the Westley–Los Banos 230 kV line that is metered at Westley Substation. The meter is currently a Schlumberger SP4SM that has the capability of metering Watthours and Varhours. The meters are located in the 230 kV yard. This is a bi-directional meter with the accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 230 kV switchyard on the Westley-Los Banos 230 kV line. All P.T.s and C.T.s are rated at 0.3% accuracy class with CT ratio of 1000/5 and PT ratio of 1200/1. The meter's MW and MVar DNP3.0 serial digital outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by TID/MID/SMUD MV90 system via dial-up telephone lines on a daily basis.

- **STANDIFORD INTERCONNECTION**

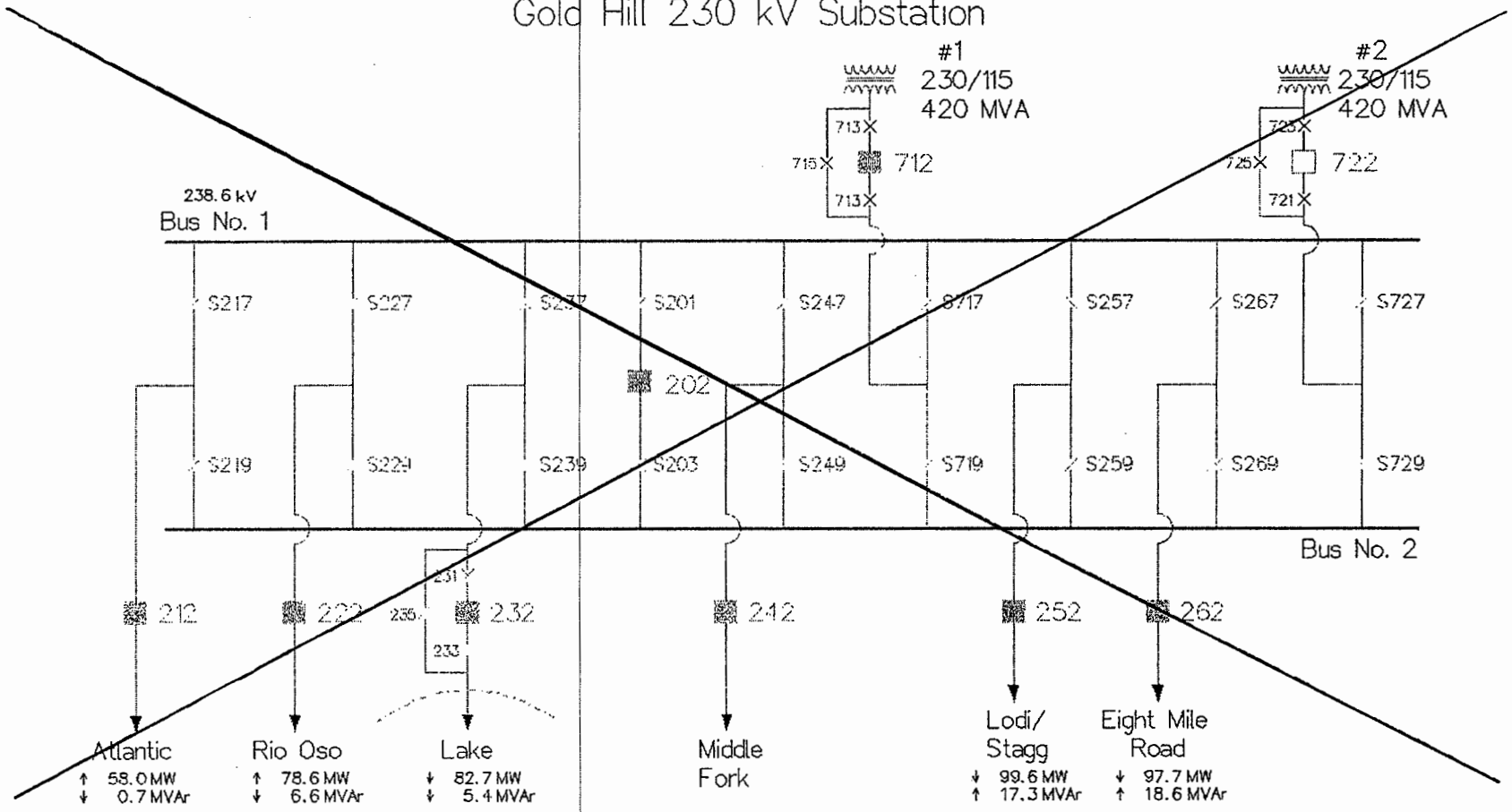
The Interconnection point with the MID system is metered on the Standiford 115 kV towers #1 & #2 at Standiford Substation. The meters are currently Schlumberger SP4SM that have the capability of metering Watthours and Varhours. The meters are located in the 115kV yard. This is a bi-directional meter with the accuracy rating of 0.3%. The instrument transformers (C.T.s and P.T.s) for revenue meters are located in the 115

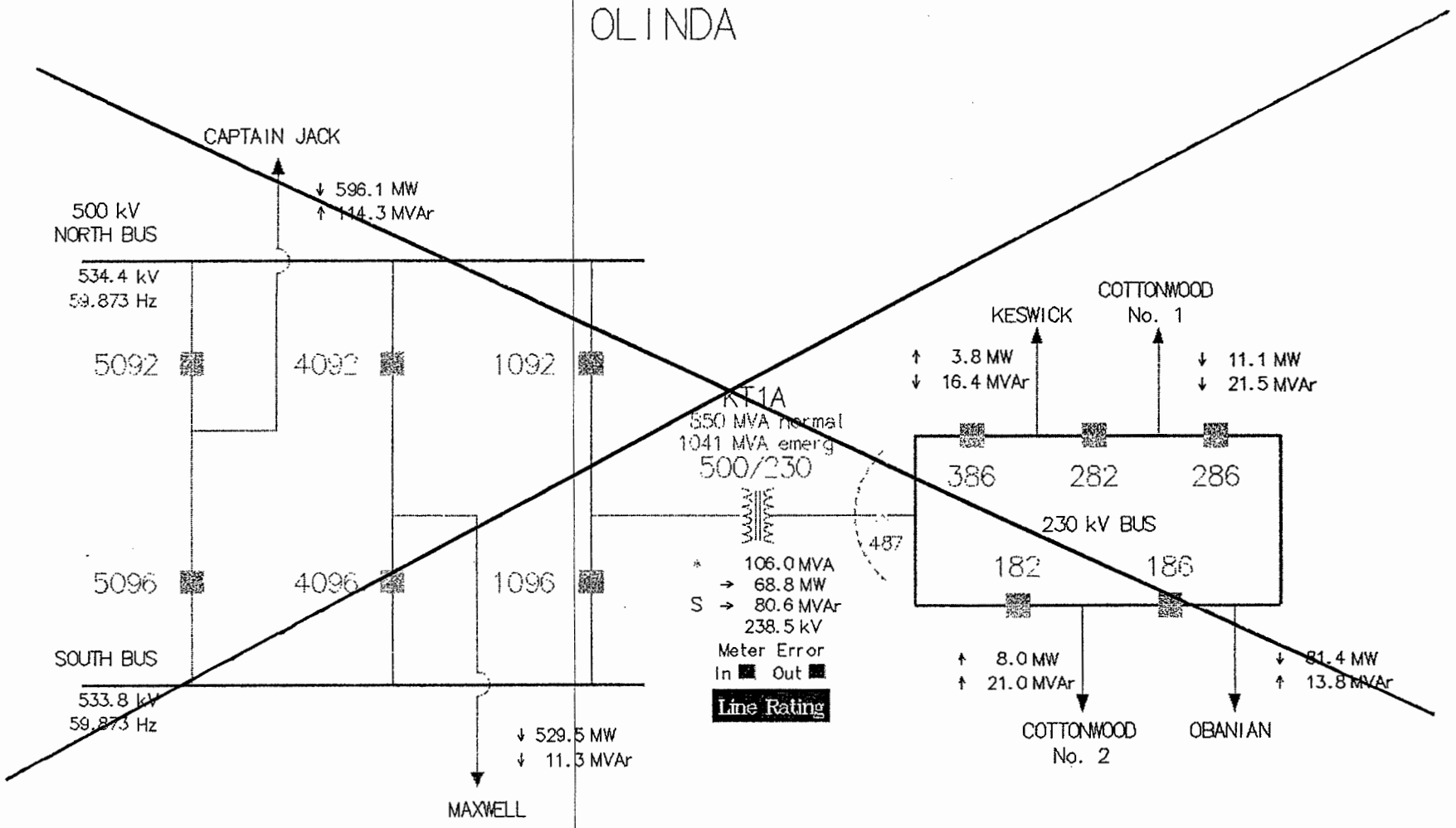
kV switchyard at the interconnection point of the 115 kV bus. All P.T.s and C.T.s are rated at 0.3% accuracy class with CT ratio of 800/5 and PT ratio of 600/1. The meter's MW and MVar milliamp analog outputs (bi-directional) and the MWh and MVarh pulse outputs are provided to the ISO's EMS RTU. The MWh and MVarh pulse (bi-directional) outputs are also stored in internal data recorders for MV90 use. The meters are polled by MID/SMUD MV90 system via dial-up telephone lines on a daily basis.


EAST BUS
232.6 kV - b/c
WEST BUS
232.0 kV - b/c
Auto Sync Init
Off
0.0 MW
0.0 MVAr
1 A
231.9 kV
0.0 MW
0.1 MVAr
1 A
231.6 kV
0.0 MW
0.0 MVAr
1 A
232.1 kV
(B210)/200 Bkr Slct
Off=B210 LEAD RCLSR
B300/(200) Bkr Slct
Off=B210 LEAD RCLSR
Rmt Rcls Sw
Lcl Rcls Sw
Rcls Status
Rmt Rcls Sw Off
Rcls Status Off
PT1
PT2
Sta Pwr.
HED
61.0 MW
12.9 MVAr
151 A
232.9 kV
ELK
95.0 MW
11.1 MVAr
POC #2
21.8 MW
6.7 MVAr
BEL #1
98.1 MW
23.6 MVAr
POC #1
20.6 MW
5.3 MVAr
BEL #2
98.5 MW
20.4 MVAr
RTU Remote
RANCHO SECO
230 kV
Control room 4320 or 4350
Swyd Control room 4317
Switchyard 4435
TEST BREAKER
PG&E Tesla Tel. (209) 836-0180

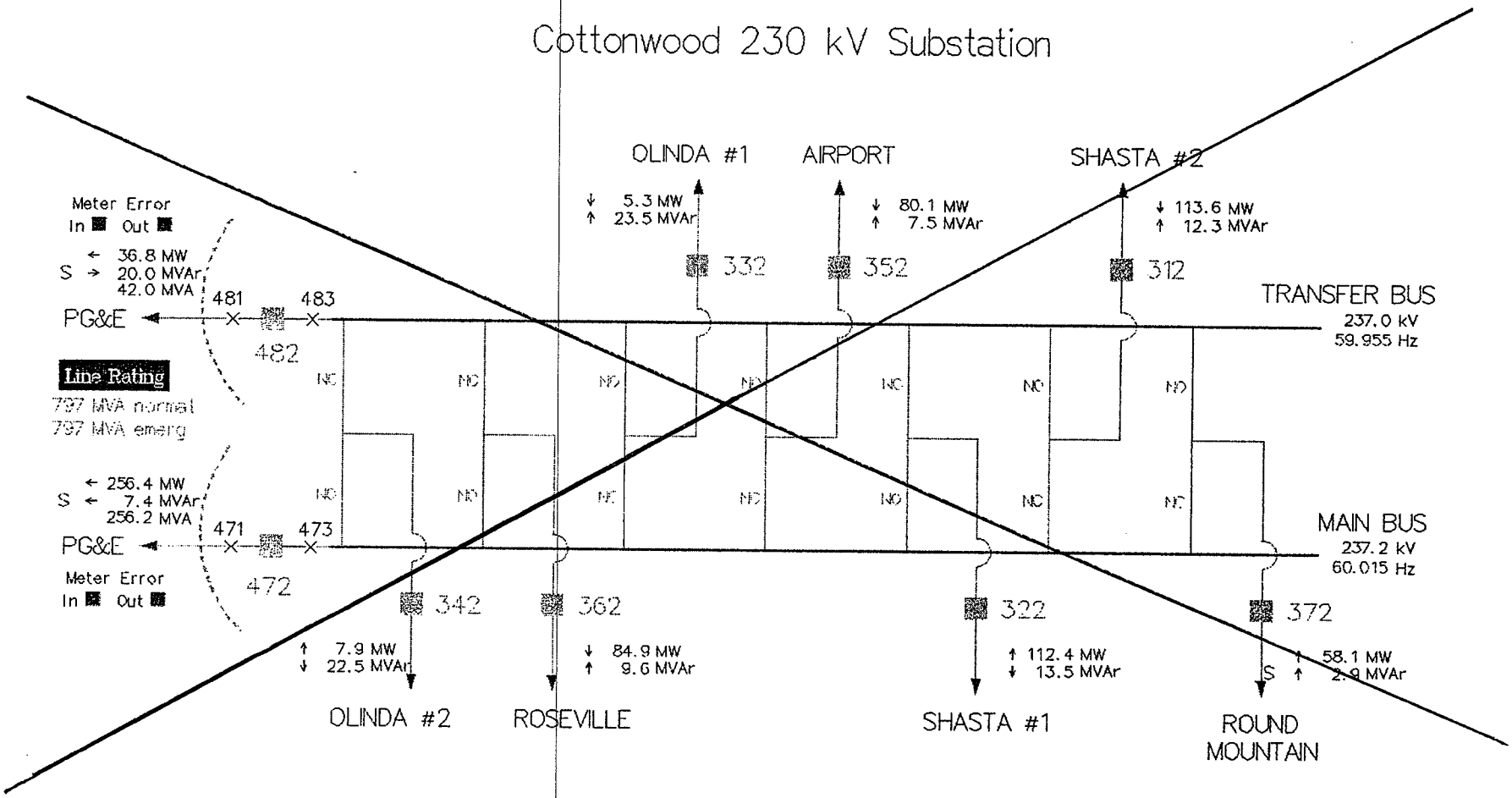

RTU Remote
LAKE 230 kV
983-0102
LAK
LAKGe
Air Temp 55 °F
Air Temp C 13 °C
Wind Speed 0 mph
Wind Dir 155 degrees
Wind Spd FPS 0 fps
B5239/(5236) Bkr Select Off
B5226/(5220) Bkr Select Off
ORV
CAN
Protection Channel
5239G
5223G
↑ 71.1 MW
↓ 29.4 MVAr
231.3 kV
193 A
-62 °C
-61 °C
↓170.0 MW
↑ 10.4 MVAr
232.6 kV
421 A
13 °C
231.1 kV - a/b
231.6 kV - b/c
231.1 kV - c/a
60.3 Hz
5243
5242
5241
5239
5237
5236
5235
5233
5231
5230
5229
5227
5226
5225
5223
5221
5220
5219
5217
5215
5214
5213
5211
5210
5209
5201
Rmt Rcls Sw
Lcl Rcls Sw
Rcls Status
CB_ALL
55Ω SERIES REACTOR
5207
5207G
↑ 49.4 MW
↑ 8.9 MVAr
232.0 kV
121 A
GLO
5217G
↓ 46.3 MW
↑ 1.8 MVAr
232.9 kV
111 A
18 °C
POC
B5214/(5220) Bkr Select Off
231.7 kV - a/b
232.7 kV - b/c
227.9 kV - c/a
60.0 Hz
↓ 41.9 MW
↓ 14.4 MVAr
110.2 A - a
103.2 A - b
109.6 A - c
44.3 MVA
L 5
BANK #1
224 MVA
LTC Rmt Cntl Off
LTC Stn Sw Remote
36.4 °C Winding Temp H2
35.7 °C Winding Temp X2
34.7 °C Winding Temp Y2
35.8 °C Oil Temp
North CB_ALL
LAKE
69 kV
LAK
Outage
South CB_ALL
70.8kV - a/b
CB_ALL
71.5kV - a/b
0.0 °C
34.5 °C
L12
BANK #2
160 MVA
LTC Rmt Cntl Off
LTC Lcl Sw Auto
Sta. Pwr.
Fan Control Off
↓ 58.4 MW
↓ 15.4 MVAr
149.2 A - a
149.2 A - b
60.4 MVA
See LTC table when switching 69 kV breakers

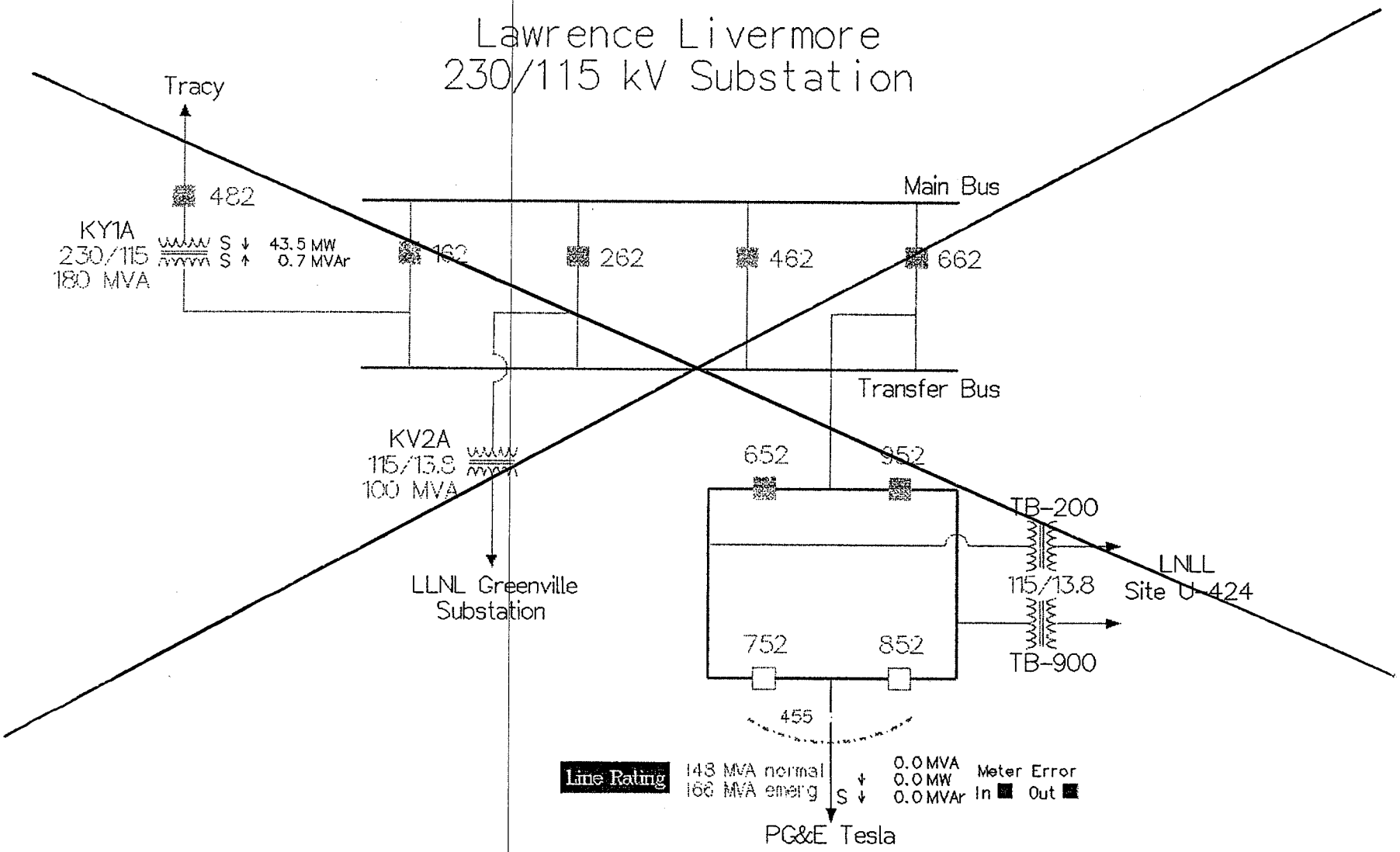
Gold Hill 230 kV Substation

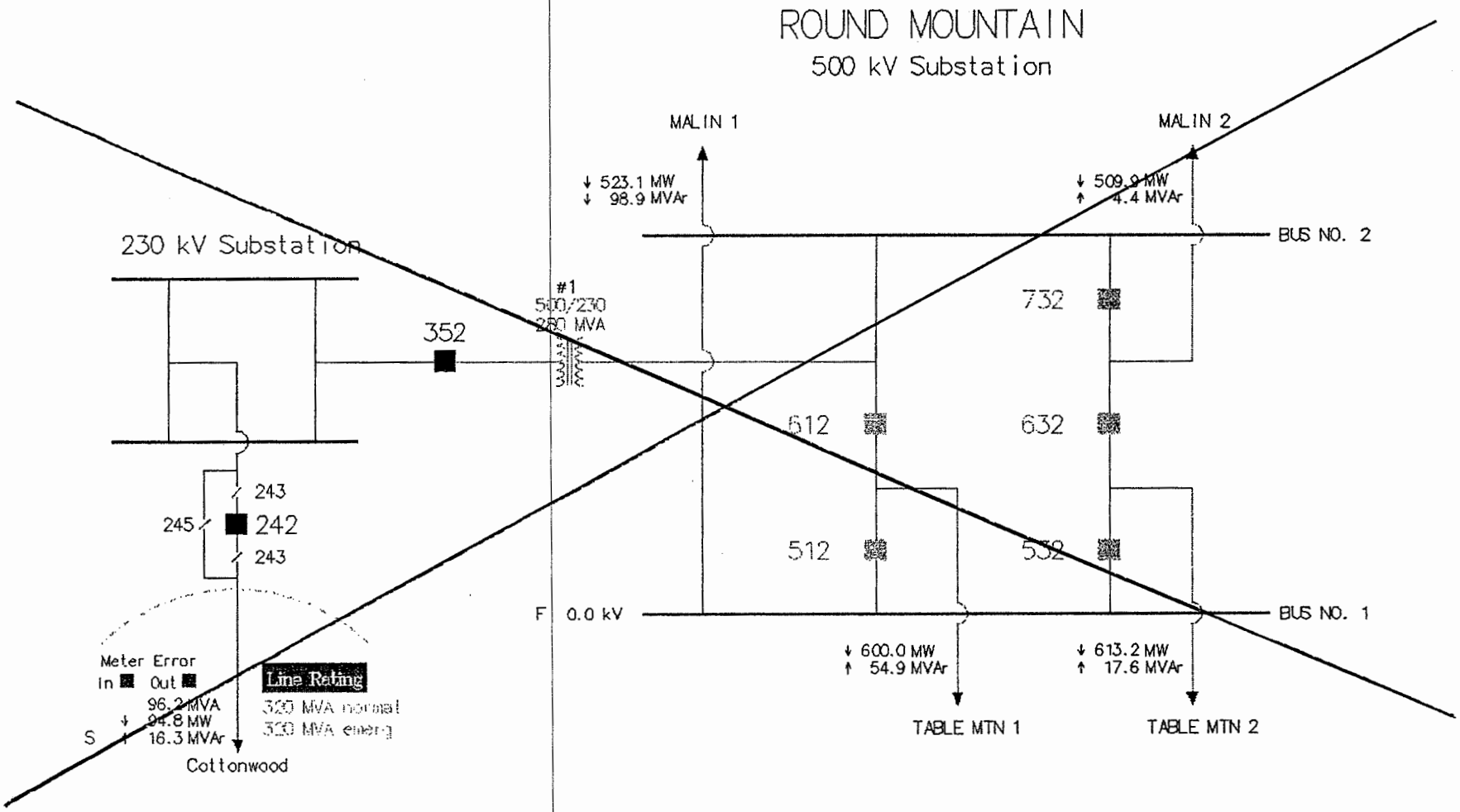


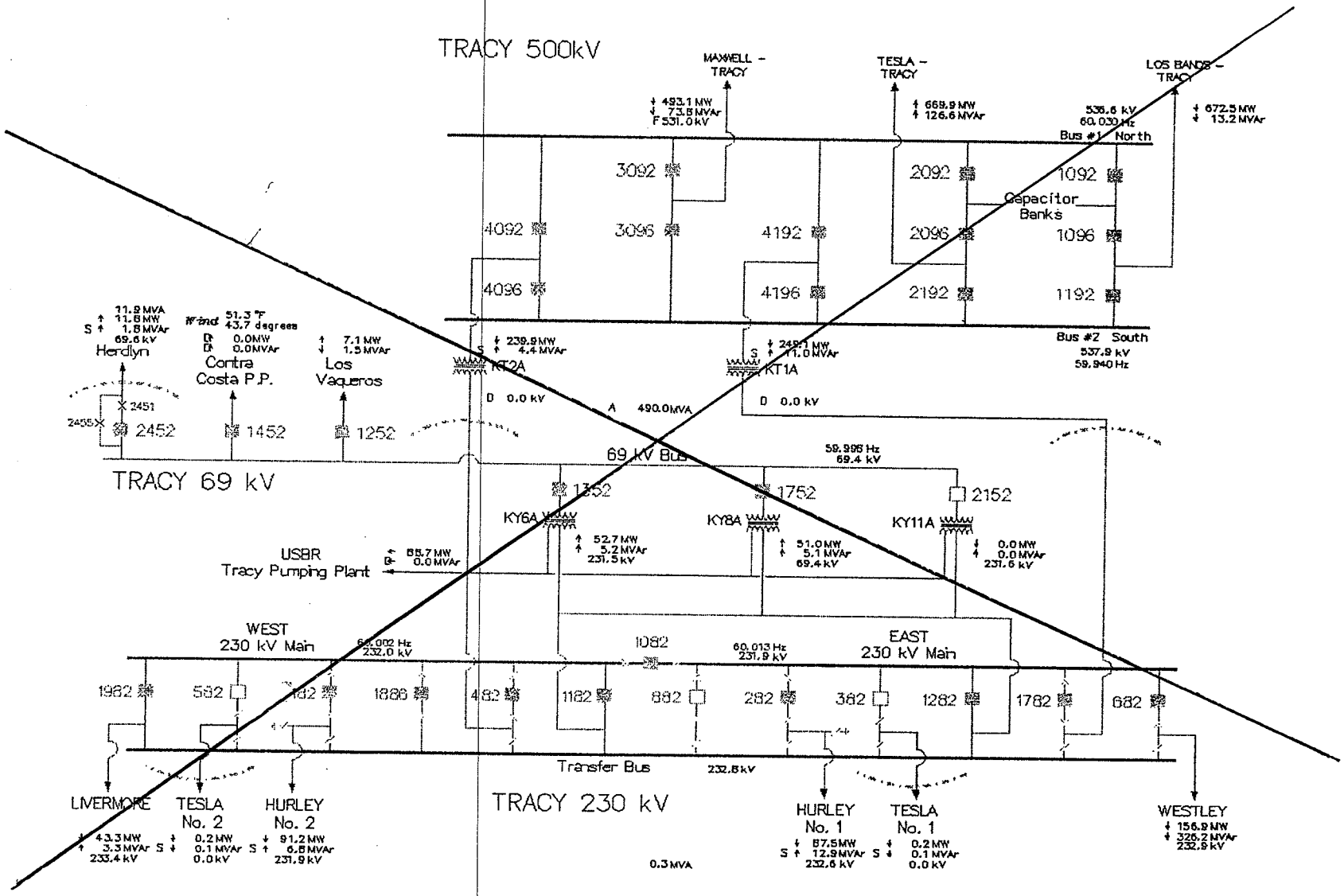

OLINDA
CAPTAIN JACK
↓ 596.1 MW
↑ 114.3 MVAr
500 kV
NORTH BUS
534.4 kV
59.873 Hz
5092
4092
1092
5096
4096
1096
SOUTH BUS
533.8 kV
59.873 Hz
↓ 529.5 MW
↓ 11.3 MVAr
MAXWELL
KT1A
550 MVA normal
1041 MVA emerg
500/230
* 106.0 MVA
→ 68.8 MW
S → 80.6 MVAr
238.5 kV
Meter Error
In ■ Out ■
Line Rating
487
KESWICK
↑ 3.8 MW
↓ 16.4 MVAr
COTTONWOOD
No. 1
↓ 11.1 MW
↓ 21.5 MVAr
386
282
286
230 kV BUS
182
186
↑ 8.0 MW
↑ 21.0 MVAr
COTTONWOOD
No. 2
↓ 81.4 MW
↑ 13.8 MVAr
OBANIAN

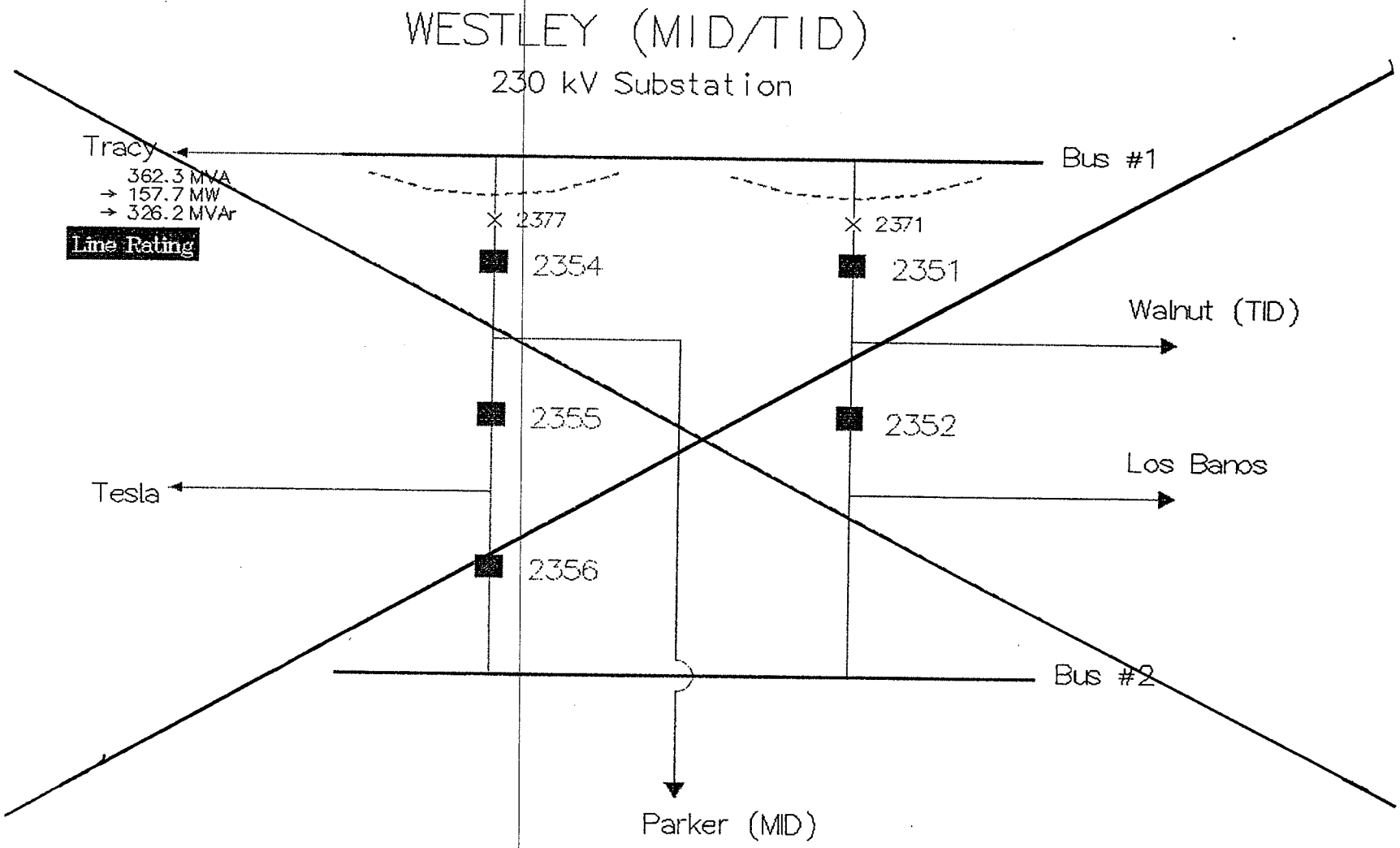
Cottonwood 230 kV Substation



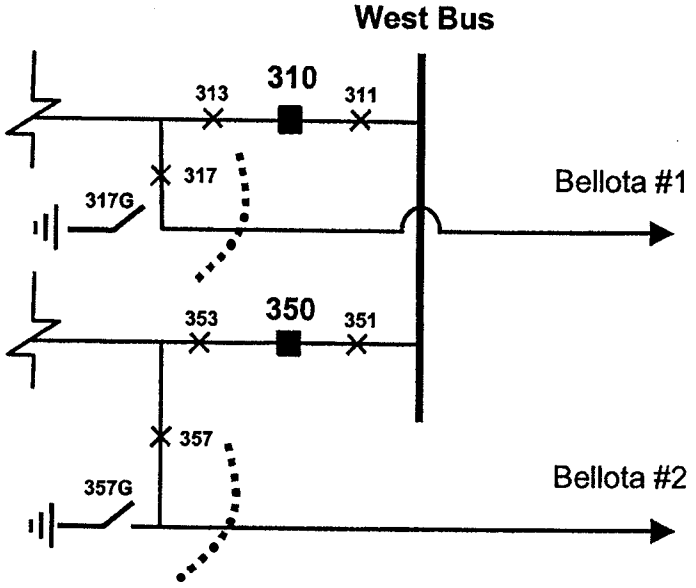

Lawrence Livermore
230/115 kV Substation
Tracy
482
KY1A
230/115
180 MVA
S ↓ 43.5 MW
S ↑ 0.7 MVAr
Main Bus
162
262
462
662
Transfer Bus
KV2A
115/13.8
100 MVA
652
952
TB-200
LNLL
Site 424
115/13.8
LLNL Greenville
Substation
752
852
TB-900
455
Line Rating
148 MVA normal
166 MVA emerg
S ↓
0.0 MVA
0.0 MW
0.0 MVAr
Meter Error
In
Out
PG&E Tesla


ROUND MOUNTAIN
500 kV Substation
MALIN 1
MALIN 2
↓ 523.1 MW
↓ 98.9 MVAr
↓ 509.9 MW
↑ 4.4 MVAr
BUS NO. 2
230 kV Substation
#1
500/230
352
732
612
632
512
532
243
245
242
243
F 0.0 kV
BUS NO. 1
Meter Error
In
Out
Line Rating
96.2 MVA
S ↓ 94.8 MW
↑ 16.3 MVAr
320 MVA normal
320 MVA emerg
Cottonwood
↓ 600.0 MW
↑ 54.9 MVAr
↓ 613.2 MW
↑ 17.6 MVAr
TABLE MTN 1
TABLE MTN 2

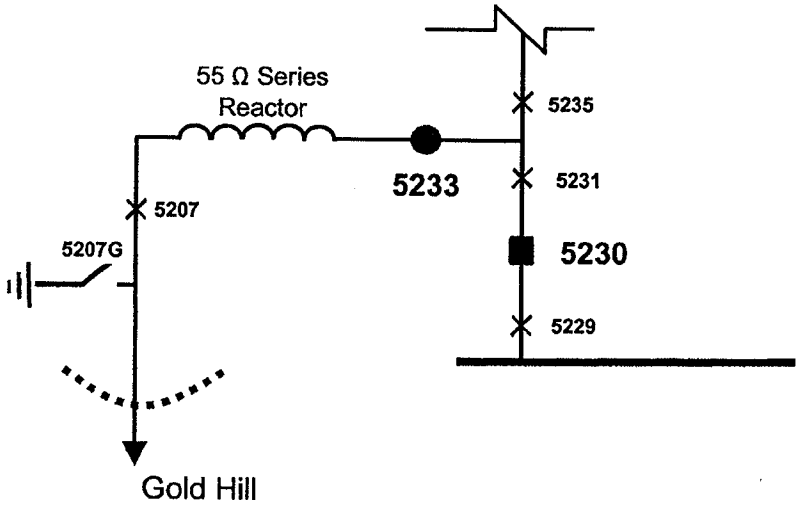

TRACY 500kV
MAXWELL - TRACY
TESLA - TRACY
LOS BANOS - TRACY
493.1 MW
73.8 MVAr
F 531.0 kV
668.9 MW
126.6 MVAr
672.5 MW
13.2 MVAr
536.6 kV
60.030 Hz
Bus #1 North
3092
2092
1092
Capacitor Banks
4092
3096
4192
2096
1096
4096
4196
2192
1192
Bus #2 South
537.9 kV
59.940 Hz
11.8 MVA
11.8 MW
1.8 MVAr
69.6 kV
Herdlyn
Wind 51.3 °F 43.7 degrees
0.0MW
0.0MVAr
Contra Costa P.P.
7.1 MW
1.5 MVAr
Los Vaqueros
239.8 MW
4.4 MVAr
KT2A
249.1 MW
11.0 MVAr
KT1A
D 0.0 kV
A 490.0MVA
D 0.0 kV
2451
2455
2452
1452
1252
69 kV Bus
59.986 Hz
69.4 kV
TRACY 69 kV
1352
1752
2152
KY6A
KY8A
KY11A
52.7 MW
5.2 MVAr
231.5 kV
51.0 MW
5.1 MVAr
69.4 kV
0.0 MW
0.0 MVAr
231.6 kV
USBR
Tracy Pumping Plant
65.7 MW
0.0 MVAr
WEST 230 kV Main
60.002 Hz
232.0 kV
1082
60.013 Hz
231.9 kV
EAST 230 kV Main
1982
582
782
1886
482
1182
882
282
382
1282
1782
682
Transfer Bus
232.8 kV
TRACY 230 kV
LIVERMORE
43.3 MW
3.3 MVAr
233.4 kV
TESLA No. 2
0.2 MW
0.1 MVAr
0.0 kV
HURLEY No. 2
91.2 MW
6.8 MVAr
231.9 kV
0.3 MVA
HURLEY No. 1
87.5 MW
12.9 MVAr
232.6 kV
TESLA No. 1
0.2 MW
0.1 MVAr
0.0 kV
WESTLEY
156.9 MW
326.2 MVAr
232.9 kV


WESTLEY (MID/TID)
230 kV Substation
Tracy
362.3 MVA
→ 157.7 MW
→ 326.2 MVAr
Line Rating
Bus #1
2377
2371
2354
2351
Walnut (TID)
2355
2352
Tesla
Los Banos
2356
Bus #2
Parker (MID)

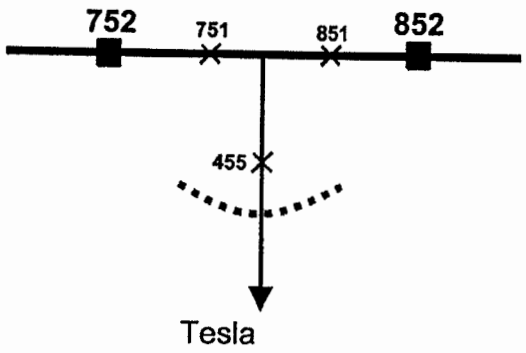
Rancho Seco



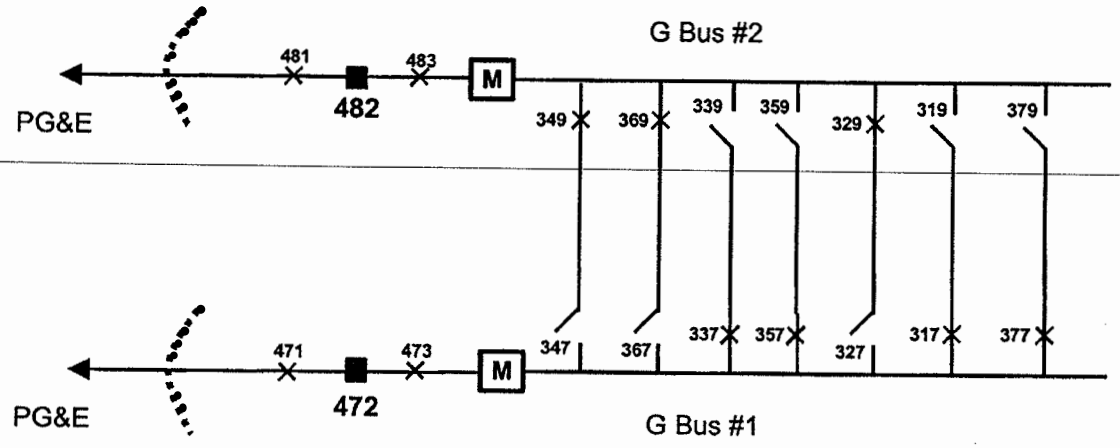
Lake

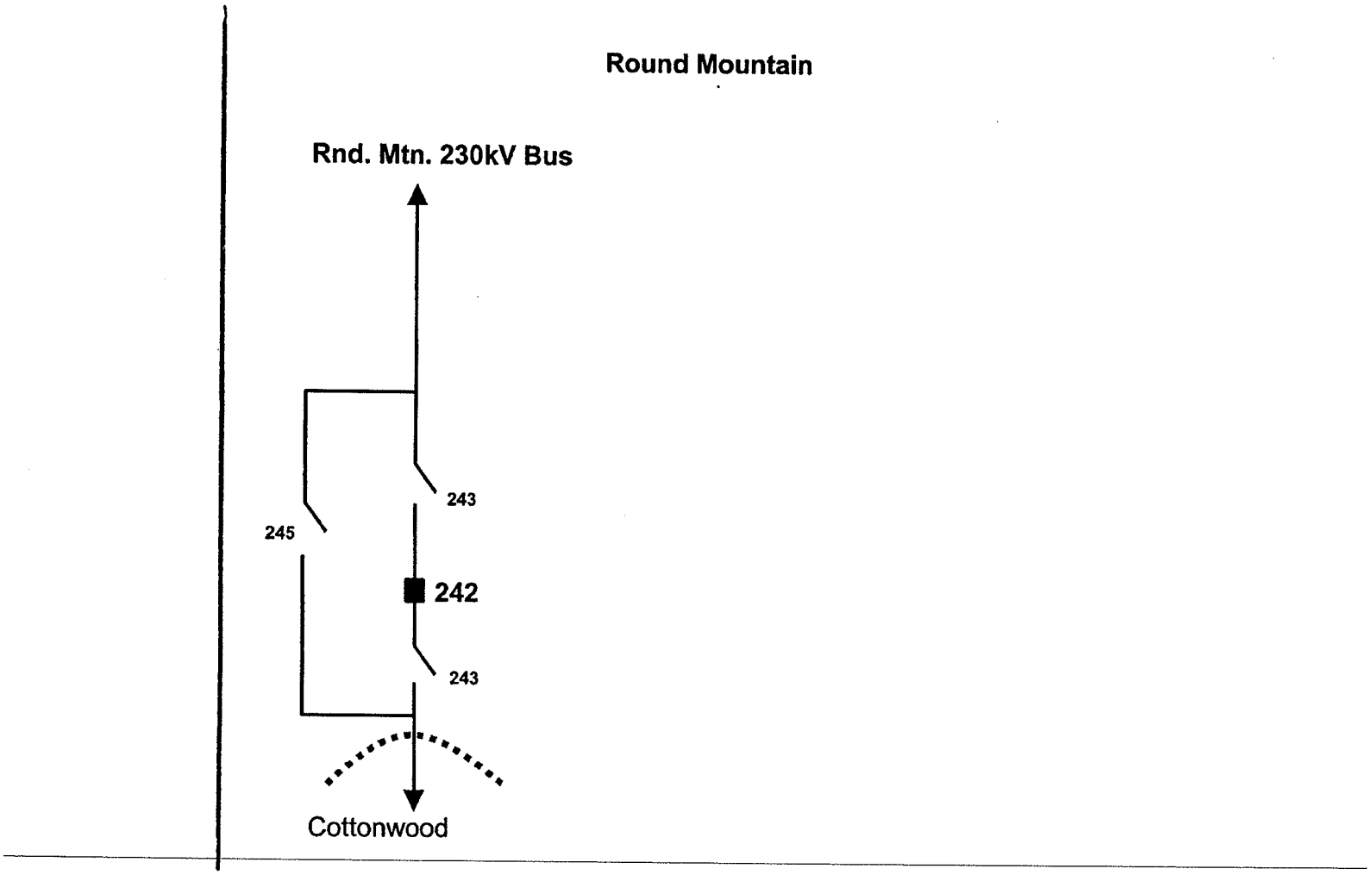


LLNL

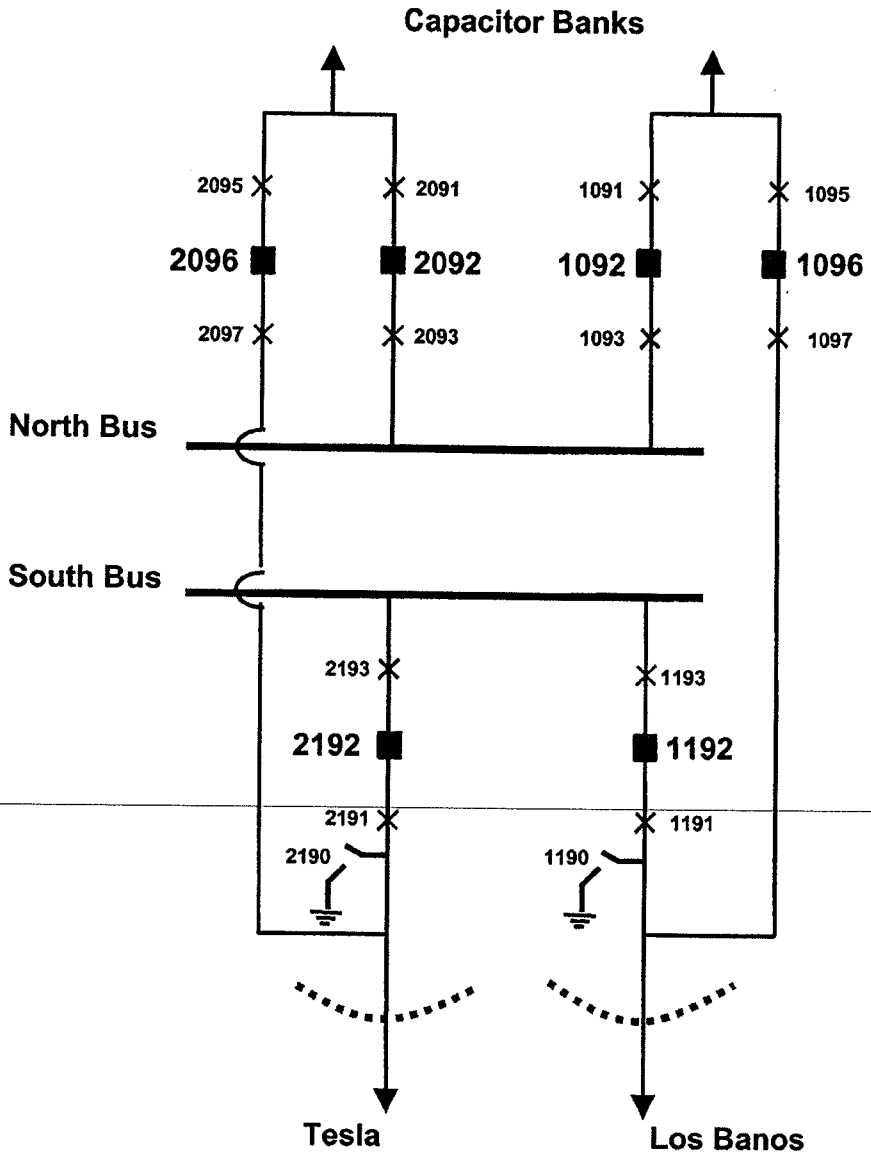


Cottonwood

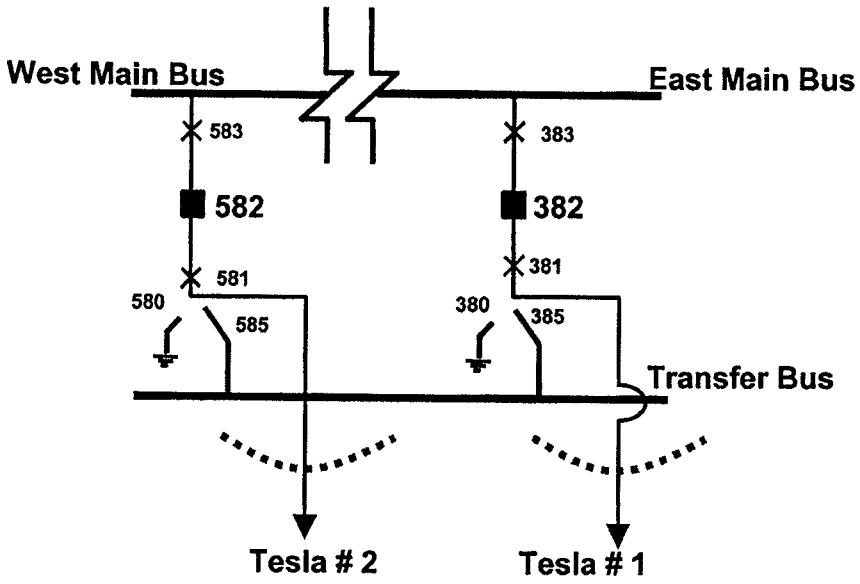



Round Mountain
Rnd. Mtn. 230kV Bus
243
245
242
243
Cottonwood

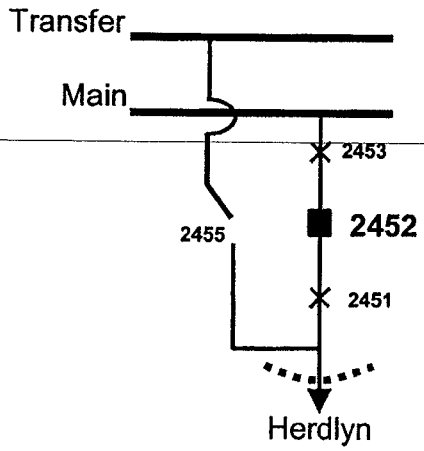
Tracy 500kV


Capacitor Banks
2095
2091
1091
1095
2096
2092
1092
1096
2097
2093
1093
1097
North Bus
South Bus
2193
1193
2192
1192
2191
1191
2190
1190
Tesla
Los Banos

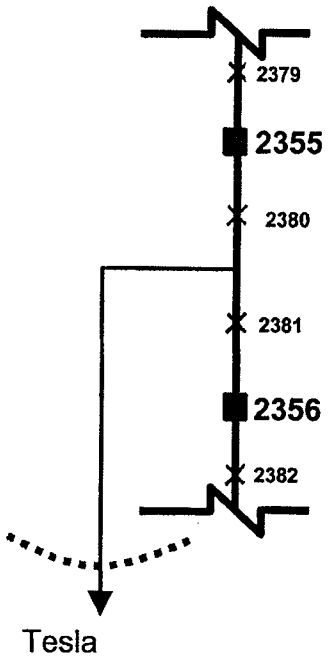
Tracy 230kV



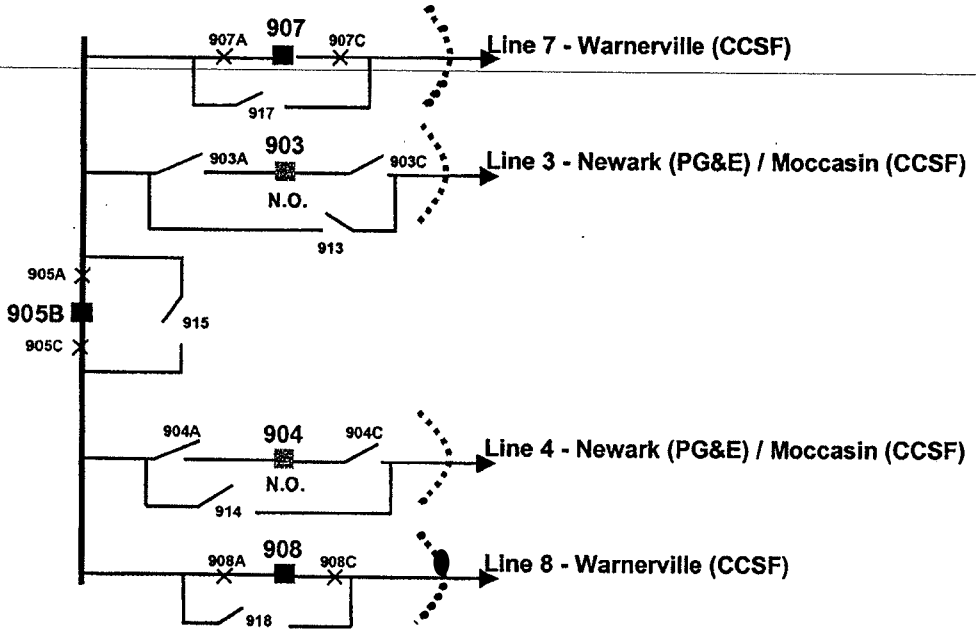
Tracy 69kV



Westley



Standiford



SERVICE SCHEDULE 2

Pre-Existing Contracts: Provisions and Information

[Section 3.1.2]

As set forth in ICAA 3.1.2 and ICAA 3.3, the ISO and SMUD will operate in accordance with pre-existing transmission service contract rights.

All power flows over ISO Controlled Grid facilities pursuant to pre-existing transmission service contracts shall be scheduled and settled in accordance with the ISO Tariff by a Scheduling Coordinator.

Pre-Existing Transmission Service Contracts

The following contracts have been identified by SMUD, the ISO, and PG&E as pre-existing transmission service contracts that currently affect the operation of the Interconnection.

PG&E – SMUD Pre-Existing Transmission Contracts

CONTRACT #1. EHV Transmission Agreement – FERC Rate Schedule #37 - PG&E ~~provides~~previously provided SMUD 200 MW bi-directional firm transmission between Malin and Rancho Seco and Lake Substation 230kV busses. PG&E ~~has~~ sought FERC approval to terminate service provided under this Contract effective January 1, 2005. ~~To the extent that FERC approves termination of this Contract, the Parties shall modify this Service Schedule.~~ The FERC approved PG&E's request to terminate service provided under this Contract effective January 1, 2005. SMUD has appealed the FERC order terminating service to the District of Columbia Court of Appeals. The Parties shall modify this Operating Agreement in the event that the FERC order terminating service is reversed on appeal, and PG&E is required to continue to provide service under the Contract.

CONTRACT #2. Midway Transmission Service/South of Tesla Principles – FERC Rate Schedule #143 - PG&E provides SMUD via TANC 46 MW of bi-directional firm service between Rancho Seco and Lake Substation 230 kV busses and Midway with a transaction point at the COTP southern terminus.

CONTRACT #3. Camp Far West Transmission Agreement – FERC Rate Schedule # 91 - PG&E provides SMUD 7.9 MW of firm transmission service from Camp Far West Power Plant in Yuba County to Rancho Seco and Lake substation 230 kV busses

CONTRACT #4. Interconnection Agreement – FERC Rate Schedule #136 - PG&E provides SMUD 16 MW of non-firm transmission from the Russell Wind Plant in Solano County to Rancho Seco and Lake 230 kV busses. PG&E will be filing with FERC an

amendment to this agreement to provide SMUD with up to 100 MW of transmission service with a requested effective date of January 1, 2006.

CONTRACT #5. Slab Creek Transmission Agreement – FERC Rate Schedule # 88 - PG&E provides SMUD 0.420 MW of firm transmission from Slab Creek Power Plant in El Dorado County to Rancho Seco and Lake 230 kV busses.

The following is a summary of operational information on the above contracts:

SMUD – PG&E

Contract Title	Contract Reference Number	Points of Receipt and Delivery	MW Amount of Transfer	Scheduling Timelines	Curtailment[1]	Current Scheduling Coordinator	Trans-mission Owner
EHV Transmission Agreement	TBD by ISO	Malin – Rancho Seco/Lake 230 kV busses	200 MW bi-directional	up to 20 minutes before active hour; during active hour in emergencies	Per prior EHV instruction for SMUD due to COI limits or pro rata for Tracy to SMUD POI limitations	APX	PG&E
Midway Transmission – South of Tesla	TBD by ISO	Midway – Rancho Seco/Lake 230 kV busses	46 MW bi-directional	up to 20 minutes before active hour; during active hour in emergencies	Per Path 15 Operating Instructions for ZP26-NP15, pro rata for Tesla to SMUD POI limitations	PG&E acts as Path 15 facilitator for Path 15 transfer to/from APX	PG&E
Camp Far West (CFW) Transmission Agreement	TBD by ISO	CFW Plant – Rancho Seco/Lake 230 kV busses	7.9 MW generation to load	up to 20 minutes before active hour; during active hour in emergencies	Pro rata based on maximum capability of affected facility, or as needed to avoid control area jeopardy	APX	PG&E
Solano Wind – Interconnection Agreement	TBD by ISO	Russell substation – Rancho Seco/Lake 230 kV busses	6 MW generation to load	up to 20 minutes before active hour; during active hour in emergencies	Curtailed first off for Russell to SMUD POI limitations	APX	PG&E
Slab Creek Transmission Agreement	TBD by ISO	Slab Creek Plant – Rancho Seco/Lake 230 kV busses	0.420 MW generation to load	up to 20 minutes before active hour; during active hour in emergencies	Pro rata based on maximum capability of affected facility, or as needed to avoid control area jeopardy	APX	PG&E

[1] In the event that ISO-SMUD transfer capability limits the ability to transfer the total amount of the existing transfers between SMUD and PG&E to less than the 1271 MW maximum PG&E-SMUD transfer limit, SMUD will provide the ISO a determination of which of the transmission services it will reduce to limit its total existing contract transfers to the constrained transfer limit.

SMUD – PG&E

Contract Title	Contract Reference Number	Points of Receipt and Delivery	MW Amount of Transfer	Scheduling Timelines	Curtailment[2]	Current Scheduling Coordinator	Trans-mission Owner
Midway Transmission – South of Tesla	TBD by ISO	Midway - Rancho Seco/Lake 230 kV busses	46 MW bi-directional	no later than the lesser of 135 minutes in advance of the delivery hour or the deadline for submitting Preferred Hour-Ahead schedules to the ISO's Hour-Ahead Market, whichever occurs closer to the delivery hour; during active hour in emergencies	Per Path 15 Operating Instructions for ZP26-NP15, pro rata for Tesla to SMUD POI limitations	PG&E acts as Path 15 facilitator for Path 15 transfer to/from APX	PG&E
Camp Far West (CFW) Transmission Agreement	TBD by ISO	CFW Plant - Rancho Seco/Lake 230 kV busses	7.9 MW generation to load	no later than the lesser of 135 minutes in advance of the delivery hour or the deadline for submitting Preferred Hour-Ahead schedules to the ISO's Hour-Ahead Market, whichever occurs closer to the delivery hour; during active hour in emergencies	Pro rata based on maximum capability of affected facility, or as needed to avoid control area jeopardy	APX	PG&E

[2] In the event that ISO-SMUD transfer capability limits the ability to transfer the total amount of the existing transfers between SMUD and PG&E to less than the 1271 MW maximum PG&E-SMUD transfer limit, SMUD will provide the ISO a determination of which of the transmission services it will reduce to limit its total existing contract transfers to the constrained transfer limit.

Solano Wind – Interconnection Agreement	TBD by ISO	Russell substation - Rancho Seco/Lake 230 kV busses	16 MW generation to load; anticipated to increase to 100 MW effective 1/1/06	no later than the lesser of 135 minutes in advance of the delivery hour or the deadline for submitting Preferred Hour-Ahead schedules to the ISO's Hour-Ahead Market, whichever occurs closer to the delivery hour; during active hour in emergencies	Curtailed first off for Russell to SMUD POI limitations	APX	PG&E
Slab Creek Transmission Agreement	TBD by ISO	Slab Creek Plant - Rancho Seco/Lake 230 kV busses	0.420 MW generation to load	no later than the lesser of 135 minutes in advance of the delivery hour or the deadline for submitting Preferred Hour-Ahead schedules to the ISO's Hour-Ahead Market, whichever occurs closer to the delivery hour; during active hour in emergencies	Pro rata based on maximum capability of affected facility, or as needed to avoid control area jeopardy	APX	PG&E

Additional Third Party Contract with Delivery Rights at Rancho Seco and Lake 230 kV Busses

The following information is provided regarding a contract of the California Department of Water Resources (CDWR) that has delivery rights at the Interconnection between the ISO and Expanded SMUD Control Areas:

CDWR Comprehen-sive Agreement	TBD by ISO	Rancho Seco/Lake 230 kV busses	Up to 500 MW for SMUD-CDWR transfer, subject to CDWR request, and not to exceed 1355 MW total on PG&E backbone	As per CDWR-ISO Scheduling Coordinator agreement	Pro rata based on maximum OTC of constrained path	CDWR	PG&E

PG&E Pre-Existing Transmission Contracts Related to the COTP Terminus

CONTRACT #1. PG&E Rate Schedule for the Interconnection of the COTP and the PG&E Electric System – FERC Rate Schedule #144 - PG&E and the COTP Participants. This contract establishes the terms for interconnection of the COTP with the PG&E electric system, and provides that neither party will charge the other party any fees, losses, or other charges for use of the Tesla Bypass section of the COTP between the Tracy Substation and the Southern Terminus. For purposes of interchange at the ISO-SMUD Control Area boundary at the Tracy 500-kV bus, including service under the SOTP, that boundary is deemed to be equivalent to the COTP Terminus.

CONTRACT #2. Midway Transmission Service/South of Tesla Principles (SOTP) – FERC Rate Schedule #143 - PG&E provides TANC 46 MW of bi-directional firm service between SMUD's connections to the PG&E backbone (i.e. Rancho Seco and Lake Substation 230 kV busses) and Midway with a transaction point at the COTP Terminus. SOTP service includes transmission from Midway Substation to COTP Terminus and separate service from COTP Terminus to Midway Substation. For purposes of interchange at the ISO-SMUD Control Area boundary at the Tracy 500-kV bus, including service under the SOTP, that boundary is deemed to be equivalent to the COTP Terminus. Service under the SOTP cannot be used for TANC member-to-TANC member trades within the ISO Control Area.

CONTRACT #3. Owners Coordinated Rate Schedule -- FERC Rate Schedule #229 – PG&E and the other owners establish the coordinated operation, curtailment sharing,

system protection, and other protocols required to operate the COTP and the PACI as an coordinated three line system.

The descriptions provided in this Service Schedule 2 do not modify the terms of contracts between the ISO or SMUD and third parties, nor do these provisions provide any basis for any pre-existing contract interpretation or implementation contrary to instructions provided by PG&E to the ISO. In case of any conflicts in interpretation, the terms of the contracts shall prevail.

This Service Schedule may be modified upon mutual agreement of the Parties.

SERVICE SCHEDULE 4

RESPECTIVE JURISDICTION FOR OPERATIONAL CONTROL OF INTERCONNECTION

[Section 3.2.1]

- **Rancho Seco Interconnection**
  (Rancho Seco – Bellota #1 and #2-230 kV Lines)

  PG&E has ownership and maintenance, switching and clearance jurisdiction of both lines and all its associated facilities from Bellota Substation up to but not including disconnect switches 357 and 317 at Rancho Seco Substation. The ISO has ~~the~~ operational control of Bellota Substation and the lines up to but not including switches 357 and 317, and will be involved in coordination of switching.

  SMUD has operational control, ownership, ~~and~~ maintenance, switching and clearance jurisdiction of all facilities at Rancho Seco Substation up to and including disconnect switches 357 and 317.

  Common point of Tie Line Control Metering: Rancho Seco Substation.

- **Lake Interconnection**
  (Lake – Gold Hill 230 kV Line)

  SMUD has operational control, ownership and maintenance, switching and clearance jurisdiction of the line and all its associated facilities from Lake Substation to Gold Hill Substation up to but not including the termination structure at Gold Hill Substation.

  PG&E has ownership and maintenance, switching and clearance jurisdiction of all facilities at Gold Hill Substation beginning at the termination structure. The ISO has the operational control of Gold Hill Substation, including disconnect switches 233 and 235 and will be involved in coordination of switching.

  Common point of Tie Line Control Metering: Lake Substation.

- ~~**Olinda Interconnection**~~
  ~~**(KT1A 525/230/34.5 kV Bus Tie)**~~

  ~~Western and TANC systems interconnect at the 500/230 kV transformers of the Olinda substation.~~

~~Western has operational control, ownership, maintenance, switching and clearance jurisdiction of all facilities, both 500 and 230 kV including disconnect switch 487 on the 230 kV bus. SMUD will provide operational direction from the 230 kV side up to and including disconnect switch 487. The ISO will provide operational direction from the 500 kV side down to, but not including, switch 487.~~

~~Common point of Tie Line Control Metering: Olinda Substation~~

- **Cottonwood Interconnection**
  ("G" 230 kV Bus Tie)

  PG&E owns the 230 kV busses, which use common meters that are switched with the energized bus.

  Western has operational control, and PG&E has ownership, maintenance, switching and clearance jurisdiction of both "G" Section busses and all of its associated facilities including disconnect switches 471 and 473 (PCB 472) on the 230 kV bus #1 and disconnect switches 481 and 483 (PCB 482) on the 230 kV bus #2 which control shall be exercised consistent with directions when issued by SMUD as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate.

  PG&E has ownership, maintenance, switching and clearance jurisdiction of its lines and all its associated facilities at the Cottonwood Substation. The ISO has the ~~O~~operational ~~C~~control of the PG&E lines at this facility and will be involved in coordination of switching, except to the extent that operational control has been delegated to Western in the Transmission Exchange Agreement.

  Common point of Tie Line Control Metering: Cottonwood Substation

- **LLNL ~~U-424~~ Interconnection**
  (LLNL 115 kV Bus Tie)

  Western and PG&E share 115 kV busses at adjacent substations, which use common meters that are switched with the energized bus. LLNL has operational control, ownership, maintenance, switching and clearance jurisdiction of the busses and all its associated facilities up to and including disconnect switch 455, which control will be exercised consistent with directions when issued by SMUD as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate.

  Common point of Tie Line Control Metering: LLNL U-424 Substation

- **Round Mountain Interconnection**
  (Round Mountain – Cottonwood 230 kV Bus Tie)

  PG&E operates 230 kV and 500 kV busses at the Round Mountain Substation.

  Western has operational control, ownership, maintenance, switching and clearance jurisdiction of the Cottonwood-Round Mountain 230 kV line and all of its associated facilities up to but not including disconnect switches 243 and 245 (PCB 242), which control will be exercised consistent with directions when issued by SMUD as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate.

  PG&E has ownership and maintenance, switching and clearance jurisdiction of its lines and all its associated facilities at Round Mountain Substation. The ISO has the operational control of this facility and will be involved in coordination of switching.

  Common point of Tie Line Control Metering: Round Mountain Substation

- **Tracy 500 kV Interconnection**
  (Tracy-Tesla & Tracy-Los Banos 500 kV Lines)

  The COTP Participants have ownership and Western has operational control, maintenance, switching and clearance jurisdiction of the Tracy 500 kV bus and all its associated facilities including (Tracy-Tesla) disconnect switches 2191 (PCB 2192) and 2097 (PCB 2096), and (Tracy-Los Banos) disconnect switches 1191 (PCB 1192) and 1097 (PCB 1096) which control will be exercised consistent with directions when issued by SMUD as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate.

  PG&E has ownership, maintenance, switching and clearance jurisdiction of all its facilities at Tesla and Los Banos Substations. The ISO has the operational control of this facility and will be involved in coordination of switching, which control will be exercised consistent with directions when issued by the ISO as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate.

  The COTP Participants own the lines exiting Tracy Substation and spanning approximately eight miles until they interconnect with the PG&E lines originating from Tesla and Los Banos at Tower 36. The lines between Tracy 500 and Tower 36 will be operated as part of the ISO Control Area in accordance with the provisions of Section ICAA 3.3. Ownership will remain with the COTP Participants. Maintenance, switching, and clearance

jurisdiction will remain with Western which control will be exercised consistent with directions when issued by the ISO as Control Area operator in coordination with SMUD as the immediately adjacent Control Area operator as necessary and appropriate.

Common point of Tie Line Control Metering: Tracy Substation

~~•Tracy 230 to Tracy 500 kV Interconnection~~
~~(Tracy 230 kV Bus Tie to Tracy 230/500 kV Transformers)~~

~~Western owns and operates the 230 kV bus at the Tracy substation, which use common meters that are switched with the energized bus.~~

~~Western has operational control, ownership, maintenance, switching and clearance jurisdiction of the Tracy 230 kV bus and all its associated facilities including disconnect switches 481 and 485 (PCB 482) and 1781 and 1785 (PCB 1782) on the 230 kV bus, which control will be exercised consistent with directions when issued by SMUD as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate.~~

~~Common point of Tie Line Control Metering: Tracy Substation~~

- **Tracy-Tesla 230 kV Interconnection**
  (Tracy-Tesla 230 kV Lines)

  Western has operational control, ownership, maintenance, switching and clearance jurisdiction of the Tracy 230 kV bus and all its associated facilities including disconnect switches 381 and 385 (PCB 382) and 581 and 585 (PCB 582), which control will be exercised consistent with directions when issued

by SMUD as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate.

PG&E has ownership, maintenance, switching and clearance jurisdiction of the line and all its associated facilities at Tesla Substation. The ISO has the operational control of this facility and will be involved in coordination of switching, which control will be exercised consistent with directions when issued by SMUD as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate.

Common point of Tie Line Control Metering: Tracy Substation

~~•Tracy-Westley Interconnection~~
~~(Tracy-Westley 230 kV Bus Tie~~

~~Western has operational control, ownership, maintenance, switching and clearance jurisdiction of the Tracy 230 kV bus and all its associated facilities up to and including disconnect switches 681 and 685 (PCB 682), which control will be exercised consistent with directions when issued by SMUD as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate.~~

~~MID/TID has ownership, maintenance, switching and clearance jurisdiction of the line and all its associated facilities at Westley Substation. MID/TID has the operational control of the line and associated disconnect switches 2377 and 2371 (PCB #2351 and #2354) at Westley and will be involved in coordination of switching, which control will be exercised consistent with directions when issued by the ISO as Control Area operator and in coordination with SMUD as the immediately adjacent Control Area operator as necessary and appropriate.~~

~~Common point of Tie Line Control Metering: Westley Substation~~

- **Herdlyn ~~69~~ Interconnection**
  (Herdlyn 69 kV Bus Tie)

Western and ISO share 69 kV busses at adjacent substations, which use common meters that are switched with the energized bus.

Western has operational control, ownership, maintenance, switching and clearance jurisdiction of the Tracy 69 kV bus and all its associated facilities including disconnect switches 2451 and 2453 (PCB 2452) and 2455 on the

Tracy 69 kV bus, which control will be exercised consistent with directions when issued by SMUD as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate.

PG&E has ownership, maintenance, switching and clearance jurisdiction of the line and all its associated facilities, including disconnect switch 79, at Herdlyn Substation. The ISO has the operational control of this facility and will be involved in coordination of switching. SMUD will have operational control of this facility and will be involved in coordination of switching.

Common point of Tie Line Control Metering: Tracy~~Herdlyn~~ Substation

Although a physical interconnection exists between the Expanded SMUD Control Area and the ISO Control Area at Herdlyn, the Parties agree it will not be considered a scheduling point.

Special Operating Condition: Because ISO Control Area load exists on the 69 kV Herdlyn line that extends from the Western side of the Tracy Substation into the ISO Control Area that is served by PG&E, and the connection between the 69 kV Herdlyn line and Tracy Substation is not being operated as a Control Area scheduling point, the Parties have agreed that Tracy meter values will be adjusted to remove the Herdlyn line load from the Expanded SMUD Control Area and add it to the ISO Control Area. The Parties shall amend this Agreement to the extent that the Herdlyn line load becomes subject to any policy and provisions for pseudo ties to the ISO Control Area, provided that such policy and provisions shall be consistent with WECC and NERC business practices and criteria.

- **Westley Interconnection**
  (Westley-Tesla 230 kV Tie)

  MID and TID have joint ownership and MID has operational control, maintenance, switching and clearance jurisdiction of the Westley 230 kV Substation and all its associated facilities including disconnect switches 2380 and 2381 (PCB 2355 and 2356) up to but not including the Westley Junction, which control will be exercised consistent with directions when issued by SMUD as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate.

  PG&E has ownership, maintenance, switching and clearance jurisdiction of the 230 kV line and all its associated facilities originating from the Tesla Substation up to and including the Westley Junction, located approximately on half mile outside of the Westley Substation. PG&E control will be exercised consistent with directions when issued by the ISO as Control Area

operator and in coordination with SMUD as the immediately adjacent Control Area operator as necessary and appropriate.

Common point of Tie Line Control Metering: Westley Junction

- **Standiford Interconnection (Standiford-Warnerville lines #7 and #8, and Standiford-Newark/Moccasin #3 & #4 115 kV Lines)**

  MID has operational control, ownership, maintenance, switching and clearance jurisdiction of the Standiford substation and all associated facilities including disconnect switches 907C, 903 C, 904C, and 908C (PCB 907, 903, 904, 908) which control will be exercised consistent with directions when issued by SMUD as Control Area operator and in coordination with the ISO as the immediately adjacent Control Area operator as necessary and appropriate. Circuit breakers #903 and #904 are and will be operated in the open position, and if this configuration is proposed to be changed, the Parties shall confer and agree on any change to the Interconnection point in advance of the change in this configuration.

  CCSF has ownership, maintenance, switching and clearance jurisdiction of the four 115 kV lines from Warnerville, Moccasin, and Newark substations up to but not including the disconnect switches within the Standiford Substation. Control of these lines will be exercised consistent with directions when issued by the ISO as Control Area operator and in coordination with SMUD as the immediately adjacent Control Area operator as necessary and appropriate.

  Common point of Tie Line Control Metering: Standiford Substation

SERVICE SCHEDULE 6

REAL – TIME OPERATING LIMITS

[Section 3.2.3.1]

SMUD -WAPA Control Area

Points of Interconnection/Control Area Tie Points/Branch Groups

Rating

		Summer					Winter						
		NORMAL		*EMERGENCY*			*NORMAL*		*EMERGENCY*			SMUD CA Ties	
		MVA	Amps	MVA	Amps		MVA	Amps	MVA	Amps			
Olinda													
KT1A 525/230/34.5	PCB 182 & 386	850		1041		4h	850		1041		4h	1	
Cottonwood													
230kV "G" Bus 1	PCB 472	797	2000	797	2000	n/a	797	2000	797	2000	n/a	2	
230kV "G" Bus 2	PCB 482	797	2000	797	2000	n/a	797	2000	797	2000	n/a		
Lawrence Livermore													
115 kV Tesla Line 1	PCB 752 & PCB 852	164	825	194	975		256	1262	274	1350		3	
Round Mountain													
230kV Cottonwood Line	PCB 242	320	800	320	800	n/a	370	930	370	930	n/a	4	
Tracy													
KT1A 525/230/34.5	PCB 1782	850		1041		4 h	850		1041		4 h	5	
KT2A 525/230/34.5	PCB 482	850		1041		4 h	850		1041		4 h		
230kV Tesla Line 1	PCB 382	683	1715	683	1715	n/a	746	1873	746	1873	n/a	6	
230kV Tesla Line 2	PCB 582	683	1715	683	1715	n/a	746	1873	746	1873	n/a		
69kV Herdlyn Line	PCB 2452	95	800	95	800	n/a	95	800	95	800	n/a	7	
Westley													
230kV Tracy Line	PCB 2351 & PCB 2354	650	1632	747	1878	30 m	650	1632	747	1878	30 m	8	
Rancho Seco													
230kV Bellota Line 1	PCB 210 & PCB 310	494	1239	590	1482	100 h	789	1981	847	2127	100 h	9	
230kV Bellota Line 2	PCB 250 & PCB 350	494	1239	590	1482	lifetime	789	1981	847	2127	lifetime		
Lake													
230kV Gold Hill Line	PCB 5230 & PCB 5236	303	760	351	880	30 m	426	1070	474	1190	30 m	10	

NOTES:

Summer and Winter Periods Defined by WECC OTC Policy Committee

All limits shown are the maximum based on the most limiting element at the identified location.

Transfer limits may be less than the amounts shown at the tie-points above based on an established path rating,

or due to power flows exceeding limit on another system element.

Rancho Seco & Lake total scheduling limited by contract to 1,271 MW, otherwise individually thermally limited

Herdlyn - Tracy meter values will be adjusted to remove Herdlyn line load from the SMUD CA and add it to the ISO CA. Herdlyn loads will not be scheduled.

Update 5/31/05

SERVICE SCHEDULE 6

Real – Time Operating Limits

Service Schedule 6

SMUD-CAISO Control Area Tie Points

Points of Interconnection/Control Area Tie Points

Substation	Adjacent Control Area	Breaker and/or Disconnect	Limiting Criteria of Transfer Capability	SUMMER RATING					WINTER RATING					Control Area Tie	
				NORMAL		EMERGENCY			NORMAL		EMERGENCY				
				MVA	Amps	MVA	Amps		MVA	Amps	MVA	Amps			
Cottonwood	CAISO														
230kV "G" Bus 1		PCB 472	Thermal	797	2000	797	2000	n/a	797	2000	797	2000	n/a	X	
230kV "G" Bus 2		PCB 482	Thermal	797	2000	797	2000	n/a	797	2000	797	2000	n/a	X	
Lawrence Livermore (LLNL)	CAISO														
115 kV Tesla Line 1		PCB 752 & PCB 852	Thermal	164	825	194	975		256	1262	274	1350		X	
Round Mountain	CAISO														
230kV Cottonwood Line		PCB 242 / Disc 245	Thermal	320	800	320	800	n/a	370	930	370	930	n/a	X	
Tracy (COTP Southern Terminus)	CAISO														
500kV Tesla Line		PCB 2192 & PCB 2096	Thermal	2253	2478	2683	2951	30 min	2253	2478	2683	2951	30 min	X	
500kV Los Banos Line		PCB 1192 & PCB 1096	Thermal	2253	2478	2683	2951	30 min	2253	2478	2683	2951	30 min	X	
230kV Tesla Line 1		PCB 382	Thermal	683	1714	683	1714	n/a	746	1873	746	1873	n/a	X	
230kV Tesla Line 2		PCB 582	Thermal	683	1714	683	1714	n/a	746	1873	746	1873	n/a	X	
69kV Herdlyn Line		PCB 2452	Thermal	95	800	95	800	n/a	95	800	95	800	n/a	X	n/a
Rancho Seco*	CAISO														
230kV Bellota Line 1		PCB 210 & PCB 310	Contractual	494	1239	590	1482	100h	789	1981	847	2127	100h	X	
230kV Bellota Line 2		PCB 250 & PCB 350	Contractual	494	1239	590	1482	lifetime	789	1981	847	2127	lifetime	X	
Lake*	CAISO														
230kV Gold Hill Line		PCB 5230 & PCB 5236	Contractual	303	760	351	880	30 min	426	1070	474	1190	30 min	X	
Standiford	CAISO														
115-kV CCSF #3 Line (Standiford-Moccasin&Newark)		PCB 903/Disc 903-C	Thermal	87	438	87	438	n/a	133	666	133	666	n/a	X	
115 kV CCSF #4 Line (Standiford-Moccasin&Newark)		PCB 904/Disc 904-C	Thermal	87	438	87	438	n/a	133	666	133	666	n/a	X	
115-kV CCSF#7Line (Standiford-Warnerville)		PCB 907/Disc 907-C	Thermal	158	792	158	792	n/a	223	1122	223	1122	n/a	X	
115-kV CCSF #8 Line (Standiford-Warnerville)		PCB 908/Disc 908-C	Thermal	158	792	158	792	n/a	223	1122	223	1122	n/a	X	
Westley															
230-kV Westley-Tesla Line*	CAISO	PCB 2355/DISC 2380 & PCB 2356/DISC 2381	Thermal	599	1504	637	1600	30 m	637	1600	637	1600	30 m	X	

NOTES:

* Control Area Boundary at Westley Junction See operating procedures for MID/TID imports.

****Rancho Seco & Lake total scheduling limited by contract to 1,271 MW, otherwise individually thermally limited

Summer and Winter periods defined by WECC OTC Policy Committee

All limits shown are the maximum based on the most limiting element at the identified location.

Transfer limits may be less than the amounts shown at the tie-points above based on an established path rating or due to power flows exceeding limit on another system element.

COTP Ratings from TANC

The Parties shall each maintain and have in service and operational at all times an automatic under frequency load shedding program and associated equipment designed and implemented in accordance with WECC Coordinated Off-Nominal Frequency Load Shedding and Restoration Plan (Final Report, November 25,1997, revised December 5, 2003). In addition, during a system emergency, the ISO and SMUD shall take actions appropriate for the prevalent condition or situation, upon which the Parties shall mutually agree and in accordance with Good Utility Practice as defined in ICAA 2.2.7, such that neither Party will cause an operational burden on the other Party. Such actions shall be as identified in operating procedures and/or agreements that shall be mutually agreed upon by the Parties prior to the implementation of the Expanded SMUD Control Area.

Nomograms for simultaneous import limits into the Expanded SMUD Control Area will continue to be established by the SVSG and updated on an annual, or as required, basis. SMUD and all other SVSG members have committed to continue participation in the SVSG after SMUD ~~forms a~~expands its Control Area~~ as before~~. SVSG Nomograms shall establish simultaneous import limits into the Expanded SMUD Control Area under specific transmission contingencies as well as with all lines at the Interconnection in service. SMUD shall at all times make such simultaneous import limits, as calculated in real time from the pertinent SVSG Nomogram, electronically available to the ISO. SMUD shall comply with import limits in all circumstances by managing SMUD loads and resources to maintain total imports at or below the simultaneous limit by limiting flows at each Interconnection point to the lower of the contract or thermal limit at that Interconnection point. Operating instructions will be prepared for the ISO and Expanded SMUD Control Areas to implement the SVSG Nomograms in their respective coordinated operating procedures.

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing documents as described in those documents, in accordance with Rule 2010 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 835.2010.

Dated at Folsom, California, on this 30th day of September, 2005.

John Anders BRM

John Anders