

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

California Independent System                    )  
Operator Corporation                                )       Docket Nos. ER06-615-002

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION JOINT  
QUARTERLY SEAMS REPORTS FOR THE  
FIRST QUARTER OF 2007**

In compliance with the Federal Energy Regulatory Commission's ("FERC" or Commission) September 21, 2006, order directing "the CAISO and neighboring control areas to meet as needed to resolve seams between them" and to "*jointly* report on the progress of these efforts in quarterly status reports filed with the Commission within 30 days of the end of each calendar quarter,"<sup>1</sup> the California Independent System Operator Corporation ("CAISO") hereby submits joint quarterly reports with Western Area Power Administration ("Western"); Sacramento Municipal Utility District ("SMUD"); Arizona Public Service Company ("APS"); WestConnect; Los Angeles Department of Water and Power ("LADWP"); and the Nevada Power Company /Sierra Pacific Power Company ("NevPo/SPP") regarding seams-related discussions that took place during the first quarter of 2007. The joint status reports identify and, as appropriate, summarize bilateral discussions between the CAISO and neighboring control areas regarding seams issues. In addition, the CAISO also reports on additional seams-related activities and discussions facilitated by the

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<sup>1</sup> *California Independent System Operator Corp.* 116 FERC ¶ 61,274 at P 490 (emphasis in original) ("September 21 Order").

Western Electricity Coordinating Council (“WECC”) during the first quarter of 2007.

## **I. INTRODUCTION**

In an effort to continue to identify and resolve inter-control area seams issues, during the first quarter of 2007 the CAISO has met with: Western, SMUD, APS, WestConnect, LADWP, and NevPo/SPP. The CAISO is submitting joint reports with these parties as provided below in Part III, and related Attachments, of this report.

In addition, the CAISO met with representatives of the Bonneville Power Administration (“Bonneville”) and PacifiCorp in the last quarter of 2006. At the time of the CAISO’s last quarterly report for the fourth quarter of 2006, the CAISO had not yet obtained agreement from those parties to file any reports jointly. The CAISO has now obtained such agreement from Bonneville and PacifiCorp and includes the joint reports with those parties, as detailed in Part III of this report.

In the first quarter of 2007, representatives of the CAISO also met with representatives of other control areas in the Western Interconnection under the auspices of committees organized by the WECC. The purpose of these meetings is to identify and discuss any issues that might exist today or might arise with the inception of MRTU that could affect the operation of interconnected control areas as well as to discuss general seams issues in the Western Interconnection. A summary of those meetings is provided in Section IV of this report. Finally, Section V includes the CAISO’s initial preliminary assessment of,

and reaction to, certain of the Commission's directives in its April 20, 2007, Order Granting In Part and Denying In Part Requests for Clarification and Rehearing of the September 21, 2006, MRTU Order.<sup>2</sup>

## **II. JOINT QUARTERLY REPORT PROCESS**

As described further in this document, since the Commission's September 21 Order requiring the CAISO to meet with neighboring Control Areas to resolve seams issues, the CAISO has been diligently seeking to meet with its neighboring control areas to identify and resolve any seams issues. The CAISO is approaching this in a two-pronged fashion: (1) one-on-one meetings with neighboring control areas, and (2) participation in WECC committee activities on regional issues.

In an attempt to fulfill of the requirement for a joint reporting process on the meetings with neighboring control areas, the CAISO, working with neighboring control areas, proposes what it views as an administratively simple process to ensure that the parties are in mutual agreement on the reports filed with the Commission. Since this proposed process has not been discussed or vetted with all of the interested control area parties (or other stakeholders) the CAISO understands that it may require additional refinement. The CAISO will work with the other control areas to adopt any changes needed to ensure this process is reflective, to the extent practicable, of a consensus. This process consists of the following.

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<sup>2</sup> *California Independent System Operator Corp.*, 119 FERC ¶ 61,076 (2007) ("Order on Rehearing").

- 1) At the time of the meeting the parties discuss the need for a joint report filing with the Commission and agree which party will prepare the first draft of the joint meeting report.
- 2) Within fourteen (14) calendar days following the end of the calendar quarter, the applicable party prepares the first draft of the meeting report and shares this with the meeting participants.
- 3) Within twenty-one (21) calendar days following the close of the calendar quarter the parties submit responsive comments to the entity that prepared the first draft of the meeting summary. Through any required iterations of modifications, the parties reach consensus that the summary may be filed as a joint report.<sup>3</sup>
- 4) At least one (1) day prior to filing the report with the Commission the CAISO provide to all counterparties a copy of the full text of the quarterly seams report.
- 5) The CAISO then includes all joint reports in the next quarterly report to the Commission or any supplement to such quarterly report.

With respect to the WECC process, the CAISO commits to work with the chairs of the relevant committees to develop a mutually-agreeable description of WECC activities to be filed with this quarterly status report.

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<sup>3</sup> Should the CAISO and the counter party fail to reach a consensus on the summary, the CAISO shall inform the Commission of this fact in its quarterly report. In such instances, nothing shall limit a party's right to provide additional information, comments or summaries to the Commission regarding seams discussions between the CAISO and neighboring control areas.

### III. JOINT REPORT OF THE CAISO AND OTHER CONTROL AREAS

**Attachments A – F** of this filing include joint reports of the one-on-one meetings between the CAISO, certain neighboring control areas, and WestConnect. As note above, the CAISO met with the following parties during the first quarter of 2007:

Western – January 2, 2007;

SMUD – January 26, 2007;

APS – January 29, 2007;

WestConnect – February 2, 2007;

LADWP – February 13, 2007;

NevPo/SPP – March 1, 2007;

In addition, the CAISO met with representatives of the Bonneville and PacifiCorp in the last quarter of 2006. At the time of the CAISO's last quarterly report for the fourth quarter of 2006, the CAISO had not yet obtained agreement from those parties to file any reports jointly. The CAISO has now obtained such agreement from Bonneville and PacifiCorp and includes the joint reports with those parties, as detailed in **Attachments G** and **H** to this report.

Finally, meetings scheduled (and in some cases already held) for the second quarter of 2007 include: Turlock Irrigation District ("TID"), April 20, 2007; Western, April 24, 2007; WestConnect, April 12 2007 and May 9 2007. If agreed to by the parties, joint reports on those meetings will be submitted as part of the Second Quarter Seams Report.

#### **IV. WECC SEAMS ACTIVITY**

The CAISO continues to work through and with the established WECC committees to identify and discuss potential seams issues. During the first quarter of 2007, the CAISO has engaged in discussions facilitated by the WECC Seams Issues Subcommittee (“SIS”) of the WECC Market Issues Committee and the WECC Operations Committee (“OC”). The following summary of seams efforts of WECC committees and sub-committees for the first quarter of 2007 was presented to Jerry Smith, Chair of the WECC Seams Issues Subcommittee. Although this summary has not been formally adopted by the WECC SIS Mr. Smith authorized the CAISO to state that he has reviewed this summary and personally agrees with it.

##### *Summary of Seams Issues Subcommittee Activities*

The SIS held meetings on January 16-17, 2007, and on March 22, 2007. **Attachment I** includes draft notes from the January 16-17 as posted on the WECC website (<http://www.wecc.biz>). The March 22 SIS meeting notes have not been posted as of the time of this filing.

##### **January 16-17, 2007 SIS Meeting**

As summarized in the draft meeting notes, the January 16-17 meeting included discussion of two primary topics: 1) the December 2006 FERC MRTU Seams Technical Conference; and 2) the California MRTU Seams Areas Evaluation. With respect to the first item, the SIS members generally agreed that viable methods to address seams issues include the CAISO stakeholder

process, one-on-one or bilateral discussions and through regional forums such as the SIS. The SIS members acknowledged their responsibility to evaluate seams issues in the Western Interconnection and affirmed their willingness to assist in the resolution of identified seams issues.

The SIS discussions regarding California MRTU Seams Areas Evaluation included reports from the following work groups: Congestion Management; Tagging Requirements; Resource Adequacy Resources; Congestion Revenue Rights; LMP Impact on System Operations/Reliability of Others; and Parallel Operations During Cutover.

#### *Congestion Management Work Group*

The Congestion Management work group discussions focused on a review of existing congestion management practices in the WECC and review of a Seams Steering Group – Western Interconnection (“SSG-WI”) document from 2003 that addressed a possible approach to West-wide congestion management. As further detailed in the draft meeting notes, the work group discussed the use of, and impact on, the WECC Unscheduled Flow Mitigation Plan (“USMP”) once MRTU is operational. The SIS members concurred that an evaluation of congestion management practices in the WECC may be appropriate and that further coordination of data and operational information and the development of the WECC West-wide System Model are all means to address issues with the USMP. The SIS requested that the Congestion Management work group further assess: 1) where the USMP is deficient; 2) conceptual suggestions for improvement; and 3) recommended next steps.

### *Tagging Requirements Work Group*

The Tagging Requirement work group discussed tagging requirements in the context of established NERC and WECC standards and business practices and the timing of the CAISO's and the larger western bilateral market. While acknowledging that this is not an MRTU-specific problem, the work group discussed and identified for further discussion concerns regarding the timing of the CAISO's markets and the deadlines for submitting e-tags. In addition, the work group discussed CAISO requests for additional information to be submitted as part of an e-tag and referred the matter to the Interchange Scheduling and Accounting Subcommittee.

### *Resource Adequacy Resources Work Group*

The Resource Adequacy Resources work group discussed California's resource adequacy rules and requirements. While acknowledging that resource adequacy issues are not directly related to MRTU, the work group discussed the interface between California's resource adequacy requirements and the MRTU day-ahead and real-time market rules. Specifically, the work group discussed the details and likelihood of a real-time recall of CAISO export schedule that is backed by a resource adequacy resource ("RAR"). The work group identified as a key question whether the CAISO would approve an e-tag of a RAR export as a firm export and whether a resource adequacy resource-backed product can be considered "firm" and if WECC operating reserve requirements are directly impacted. The work group agreed to report back to the SIS at its next meeting.

### *Congestion Revenue Rights Work Group*

The Congestion Revenue Rights (“CRR”) work group discussed CRRs and their relationship to, and interface with, Existing Transmission Contracts (“ETC”)s) and physical transmission rights. There was not consensus among the work group members regarding the impact of MRTU and whether the new market rules would improve or worsen the existing interface issues. The work group was asked to gather more details and report at the next SIS meeting. As noted in the draft meeting summary, while efforts to identify any issues of concern continue, the work group has not yet identified a seams issue that requires resolution prior to MRTU implementation.

### *LMP Impact on System Operations/Reliability of Others/Parallel Operations During Cutover Work Groups*

The work group discussions regarding LMP impact on system operations/reliability of others and parallel operations during cutover noted that the WECC Operations Committee has created a task force to review any reliability concerns and the need for a fallback plan. The work groups concluded that the SIS will continue to coordinate with the Operations Committee on these matters. To date, the WECC Operations Committee task force has not yet considered these issues.

### **March 22, 2007 SIS Meeting**

The March 22, 2007, SIS meeting agenda included the following items: 1) Reports from each of the following MRTU work groups (Congestion Management, Tagging Requirements, Resource Adequacy Resources, and

Congestion Revenue Rights); 2) Activities of the Operations Committee Task Force on MRTU; 3) North American Electric Standards Board (“NAESB”) Seams Subcommittee Issues Matrix; 4) Discuss Potential Seams Issues for Evaluation; 5) FERC activities related to seams; 6) SIS leadership; 7) Defining “Seams Issue”; and 8) Future meetings.

#### *Congestion Management Work Group*

Consistent with the discussions at the January 16-17, 2007, SIS meeting on this topic, the SIS concurred that congestion management in the Western Connection is a legitimate seams concern that is influenced by dispatch patterns throughout the West and recommended that this topic be removed from the MRTU-specific discussions and instead addressed as a Western Interconnection-wide issue. Following up on the January 16-17, 2007, SIS discussions, the work group focused on concerns regarding the WECC Unscheduled Flow Mitigation Plan (“USMP”), including the fact that the USMP only addresses real-time operations and is applicable to only seven qualified paths in the West. The work group members reported that the WECC Unscheduled Flow Administrative Subcommittee (“UFAS”) discussed issues related to the USMP and asked the Joint Guidance Committee (“JGC”) whether there is support to revisit the USMP procedures; procedures that required many years of negotiation to finalize. While acknowledging the issues with the USMP, the JGC raised concerns that WECC members may be challenged to dedicate the resources to revisit the USMP, especially with effort involved in implementation of the new mandatory reliability standards and associated

compliance programs. The JGC acknowledged that with the anticipated implementation of new modeling and operator tools over the next few years, there may be an opportunity to review the USMP after experienced is gained on these new tools. The SIS agreed that an evaluation of Interconnection-wide congestion management practices is appropriate and within the scope of the committee. The SIS also reaffirmed the direction provided at the January SIS meeting for the work group to evaluate the USMP and recommend next steps. In addition, the SIS asked the work group to monitor flow events in the coming year, including, among other items, identifying the number of UFAS events, their causes, and loading issues with non-qualified paths.

#### *Tagging Requirements Work Group*

The Tagging Requirements work group reported that the CAISO has stated that it will adhere to all NERC and WECC standards and business practices related to scheduling and tagging of energy and that no new seams issues are identified with implementation of MRTU. Similar to the issues raised and discussed at the January 16-17, 2007, SIS meeting, the work group discussed concerns that a delay in the closing of the CAISO's day-ahead market may result in an entity missing the 15:00 deadline for submitting e-Tags. The CAISO reported that the large majority of late market closings are due to Scheduling Coordinators submitting their schedules late, but that the frequency of late submissions are decreasing over time. The CAISO also reported that the reason for most of the late submissions is the existing requirement to submit balanced schedules and that such a requirement will be eliminated once MRTU

is implemented. The SIS was reminded that the WECC Market Issues Subcommittee's Prescheduling Evaluation Task Force will undertake an evaluation and will consider the "impacts, problems and benefits" of WECC procedures and alternative methodologies. The SIS directed the work group to summarize its findings in a written report to be presented at the May 30-31, 2007, SIS meeting.

#### *Resource Adequacy Resources*

The Resource Adequacy Resources work group discussion focused on the key issue as to whether an export backed by a California Resource Adequacy Resource is subject to recall provisions inconsistent with good utility practices in the West. The work discussed a paper presented by the CAISO on the matter. The paper focused on how schedules are established in the day-ahead timeframe and how schedules are managed within the operating hour. The CAISO stated that after day-ahead schedules are finalized, all exports, whether backed by Resource Adequacy or non-Resource Adequacy Resources, are considered firm. The CAISO stated that all e-Tags will indicate the schedule is "firm," and that no schedule will be curtailed outside normal contingency operations. The work represented that it was satisfied with the statements and commitments of the CAISO and that the CAISO's management of export schedules is consistent with general operating practice in the WECC.

#### *Congestion Revenue Rights Work Group*

The Congestion Revenue Rights work group facilitated a question and answer session with the CAISO in an effort to better understand the role of CRRs

and whether they present seams issues for the SIS to further evaluate. The work group discussed, among other issues, the financial nature of CRRs, how CRRs can be used/applied in the day-ahead market and for imports, and the nature of the hedges provided by a CRR. The SIS representatives concluded that CRRs represent enough of a change from the current Firm Transmission Right market to require that market participants better understand how to effectively include CRRs in their portfolios. SIS representatives varied in their opinion on the CAISO's management of CRRs but did not find specific "seams issues" related to CRRs. The work group was directed to further review the CAISO's responses to the questions raised about CRRs and provide a written report to the SIS on its findings.

#### *Activities on Operations Committee Task Force on MRTU*

The SIS reported that there have been two contacts with the OC task force on MRTU, each with limited results. The SIS reported that the OC task force lead has reported difficulties getting volunteers for the task force, thus possibly indicating that there may not be that much concern regarding the impact of MRTU on operations, as was originally thought. The SIS chair stated that he will discuss coordination with the OC at the upcoming JGC meeting and report back to the SIS.

#### *NAESB Seams Subcommittee Issues Matrix*

The work group discussed their review of the NAESB Seams Matrix, indicating that only two issues were applicable to the WECC. The work group requested that the SIS provide direction on: 1) the necessity of developing a

coordinated secondary transmission market in the West; and 2) the development of tools to assist market entities in submitting schedules to Balancing Authorities that operate under different tariffs with varying timing and scheduling protocols. With respect to the secondary transmission market issue, the SIS determined that should the then-pending FERC order on reform of open access transmission service (Order No. 890) not address this issue, then the SIS will re-address the issue for the WECC. With respect to transaction scheduling issue, the SIS determined that this is not a current issue in the WECC. The SIS determined that it will draft a letter to NAESB reporting on its findings.

#### *Discussion on Potential Seams Issues for Evaluation*

Two issues were presented to the SIS regarding its ongoing effort to identify seams issues. The first issue pertained to inconsistencies among transmission providers regarding the use of “netting”, i.e., relying on counter-schedules or schedules in the opposite direction to increase Available Transfer Capability (“ATC”). The second issue pertains to concerns regarding over- curtailment and the allocation of transmission rights on an interface when the interface is constrained on only one side. Work group representatives were directed to provide a written description of these issues for discussion at the May 30-31, 2007, SIS meeting.

#### *FERC Activities Related to Seams*

The SIS generally discussed the FERC quarterly seams reporting process. The SIS agreed that SIS meeting notes will be made available to the CAISO for inclusion in the quarterly report. The SIS also requested that the

CAISO notify the SIS members when each quarterly report is submitted to FERC. Finally, the SIS noted that FERC will hold a technical conference on March 29, 2007, on seams issues in the Eastern Interconnection.

#### *Defining Seams Issues and Future Meetings*

The SIS discussed the need to define, in the SIS Scope Statement, what is meant by a “seams issue.” A definition will be drafted and presented at the SIS meeting to be held in May. Finally, the next two meetings of the SIS were confirmed and set for May 30-31, 2007, in Portland and August 9-10, 2007, in Boise.

#### **V. COMMISSION ORDER ON REHEARING**

On April 20, 2007, the Commission issued an Order Granting In Part and Denying In Part Requests for Clarification and Rehearing (“Order on Rehearing”) of its September 21, 2006, order on MRTU. The Order on Rehearing addressed a number of issues raised by parties on seams issues. Among other actions, the Commission’s Order on Rehearing disposed of a number of issues raised in parties’ comments, directed the CAISO to address certain issues, and imposed certain procedural requirements. The CAISO appreciates the Commission’s attention to these issues and will proactively address and implement the Commission’s directives.

While the CAISO is still in the process of assessing the Commission’s Order on Rehearing, the CAISO provides below a preliminary assessment of, and comments on, certain of the Commission’s statements and directives.

In paragraphs 159, 618, 619, and 621 of the Order on Rehearing, the Commission clarifies, and where appropriate grants rehearing, on certain issues related to treatment of both Resource Adequacy Resources and non-Resource Adequacy Resources.

**Resource Adequacy Resource Supported Exports** – In paragraphs 159 and 619, the Commission states that exports of energy provided by Resource Adequacy capacity are “non-firm opportunity sales that should be subject to curtailment to prevent or alleviate a system emergency, as is consistent with NERC and WECC guidelines.” As summarized in Section IV above, based on a presentation by the CAISO,<sup>4</sup> the WECC SIS representatives came to a different conclusion and generally agreed that all exports included in final day-ahead schedules are firm.

**MRTU Readiness** – In paragraph 188 of the Order on Rehearing the Commission encourages the CAISO to provide periodic updates to the appropriate WECC committees and subcommittees such as the SIS on the status of its readiness efforts. In addition, the Commission directs the CAISO and neighboring control areas to include in their joint quarterly reports on seams the input and comments received from WECC Committees.

The CAISO will request that it be able to provide an overview of CAISO readiness activities and criteria at the upcoming SIS meeting to be held on May 30-31 in Portland. Subsequent to that meeting, the CAISO and neighboring

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<sup>4</sup> **Attachment J** is an excerpt of a document presented by the CAISO at the March 22, 2007, SIS meeting that includes a section entitled, “Resource Adequacy Capacity and Exports Under MRTU.”

control areas can report on the input and comments received from the SIS representatives.

**E-Tagging Requirements** – In paragraphs 229 and 230 of the Order on Rehearing the Commission directs the CAISO to provide information to stakeholders on the mechanics of e-tagging interchange transactions. The Commission further states that it agrees with certain parties on the lack of clarity in the MRTU e-tagging requirements and mechanics. The Commission states that the, “Lack of clarity in transaction rules can create barriers to trade.” The Commission thus directs the CAISO to include in its readiness activities a stakeholder process to further address concerns raised by parties about e-tagging rules and include a proposal on how it will address such issues in its next quarterly report.

As the Commission stated in the Order on Rehearing, the CAISO must adhere to all NERC and WECC standards on e-tagging. Moreover, as summarized in Section IV above, the CAISO has actively engaged in the SIS work group discussions regarding e-tagging requirements and, in those discussions, committed to follow all applicable NERC and WECC e-tagging requirements. The primary issue raised with the SIS with respect to e-tagging and the CAISO’s rules has been a concern that a late market closing could result in the late submission, i.e., after 15:00, of an e-tag. The CAISO believes that it has substantially addressed that issue. Nonetheless, the CAISO is prepared to further discuss its e-tagging rules and practices in the context of either the SIS Tagging Requirements work group, the WECC Interchange Scheduling and

Accounting Subcommittee, or the WECC Market Issues Subcommittee's Prescheduling Evaluation Task Force. The CAISO will work with the appropriate WECC representatives to determine the appropriate venue and schedule a presentation and discussion of the CAISO's e-tagging requirements. Once scheduled, the CAISO will work with WECC and issue a market notice so that all interested stakeholders can attend the WECC-facilitated meeting.

**Data Exchange** – In paragraph 208 of the Order on Rehearing, the Commission stated that, "...we encourage the commenters to work through the appropriate WECC committees to identify and put in place a process for exchange of data among WECC control areas and take advantage of the West-wide System Model." In addition, the Commission stated that, "We expect the CAISO to participate fully in this process and direct it and neighboring control areas to include in their quarterly joint seams reports the status of efforts on data exchange and modeling.

As the Commission is aware, the CAISO, and all other entities subject to the Commission-approved North American Electric Reliability Corporation's National Reliability Standards, is endeavoring to ensure full compliance with the applicable standards. Among others, the Reliability Data Sharing Requirements Standard TOP-005-1 provides that Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability share with other such Balancing Authorities and Transmission Operators, upon request, the data necessary to perform operational reliability assessments and coordinate reliable operation of the interconnected system. The CAISO is currently working with its

neighboring Balancing Authorities and Transmission Operators to ensure that the CAISO provides, and is supplied, the requisite information. The CAISO will report on the status of these efforts in its next quarterly report.

## **VI. CONCLUSION**

Wherefore, the CAISO respectfully requests that the Commission accept this quarterly status report.

Respectfully submitted,

/s/Sidney Mannheim Davies  
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Dated: April 30, 2007

## Certificate of Service

I hereby certify that I have this day served a copy of this document upon all parties listed on the official service list compiled by the Secretary in the above-captioned proceedings, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated this 30th day of April, 2007 at Folsom in the State of California.

/s/ Susan Montana

Susan Montana

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION****Joint Report on Control Area Meeting Between the California ISO and  
Western Area Power Administration****April 30, 2007**

On January 22, 2007, the control area operators and other staff members of the CAISO and the Western Area Power Administration (Western) met to discuss seams issues that exist between the CAISO and Western. The purpose of the meeting was to discuss issues that might be aggravated by or might arise from the implementation of MRTU and pose difficulties for the continued efficient operation of the interconnected control areas. FERC directed the CAISO, Western and other adjacent control areas to file a joint quarterly report regarding progress on the identification and resolution of MRTU seams issues. Western began the meeting by noting that it supported the efforts of the Control Area Coalition and WestConnect to address seams issues that have a broad impact, e.g., scheduling timelines. Western believed that it was not necessary to discuss the issues raised by the Control Area Coalition and WestConnect at this meeting, because Western expected the issues would be discussed in different forums. At the January meeting, the parties discussed the following topics:

- *MRTU curtailment of firm exports from the CAISO Control Area.* Western sought assurance that its firm exports of non-Resource Adequacy (RA) resources from the CAISO would not be cut in real-time except as provided by NERC and WECC reliability provisions. Western voiced concern for the ability of the CAISO to identify the source of its energy purchases and firm exports from within the CAISO control area as being from non-RA capacity. Western also suggested that the CAISO clarify that the curtailment priority of firm exports from RA capacity will be implemented consistent with NERC and WECC standards, i.e. as a “last resort” when a CAISO Control Area firm load drop is imminent. CAISO explained that the curtailment priority of firm exports from non-RA capacity would be virtually the same as that of internal CAISO load. The CAISO further explained that it intends to develop a system by which non-RA energy can be tracked for export priority purposes. CAISO representatives explained that “exports from the non-RA portion of unit will not be cut”, as the CAISO is a net importer of energy, and an external entity could simply cut its imports in response. Western suggested that the CAISO Tariff

- should include a reference to the very high curtailment priority given to firm exports of energy from non-RA capacity, to provide assurance that “firm” exports would remain firm unless a firm CAISO load drop was imminent. The CAISO agreed to provide draft operating procedures and to consider the matter of clarifying its tariff or to provide some other type of clarification on this matter.
- *Change of pre-scheduling requirement for maintenance outages.* Western expressed concern that the CAISO’s proposed 45 day lead time for planned outages under the MRTU Tariff would impede Western’s flexibility to perform maintenance when the opportunity presents itself, *i.e.*, when weather and crew availability is favorable. Western needs flexibility for “reactive maintenance work”, so as to avoid having short lead time work labeled as a “Forced” outage. CAISO needs to define which transmission outages would not have a “significant” impact on CRR revenue adequacy and better define the term “significant”. CAISO representatives expressed willingness to try to better define “significant”, and appreciation for Western’s support of longer lead times for coordination of major maintenance work.
  - *Firmness of schedules put in after the Day-Ahead Market.* Western inquired when schedules issued after the Day-Ahead Market are considered firm. CAISO representatives explained that such schedules are considered to be firm after the results of the Integrated Forward Market and final schedules are posted - at approximately 1 PM of the day-ahead. NERC e- tags may be submitted any time thereafter, up to T – 75 minutes.
  - *Bifurcation of Western’s PACI rights under the Transmission Exchange Agreement.* Western raised concerns about the CAISO’s proposal to bifurcate Western’s PACI rights under the Transmission Exchange Agreement (TEA) into two separate components: 1) Transmission Ownership Rights (TOR) for Malin to Round Mountain, and 2) Existing Transmission Contract (ETC) rights for Round Mountain to Tracy. Western stated the TEA incorporates both the Malin to Round Mountain and the Round Mountain to Tracy elements of the PACI so as to be consistent with the original Congressional authorization of the construction of the PACI as a federal project. If Western’s rights are bifurcated into a TOR component and an “ETC-like” component, as suggested by the CAISO, it could preclude Western’s use of the PACI as intended by Congress at such time as the TEA terminates, because ETCs cannot be renewed. Western also expressed concern about how the 400 MW of TEA rights on the PACI, between Malin and Tracy, will be treated from a scheduling and settlements standpoint under MRTU. CAISO stated it will fully honor the terms and conditions of the three party (Western, PG&E, and the CAISO) TEA agreement under MRTU. CAISO explained how

various combinations of Western's use of its rights under the TEA could be scheduled using the new MRTU SIBR system, such that the proper scheduling priority and settlements treatment would be applied. CAISO committed to work with Western and PG&E in the upcoming Transmission Rights Transmission Contracts (TRTC) Instructions process to correctly define the TEA operating instructions to be administered under the MRTU construct.

- *Self-Providing ancillary services (AS) from Boulder Canyon Project.* Western inquired as to whether or not an external entity can still import self-provided ancillary services (AS) on the interties with the CAISO Control Area under MRTU. The CAISO explained that AS self-provision via imports are not explicitly accommodated under MRTU, except for under ETCs or TORs using a work around. However, there is an alternative means of "effectively accomplishing self-provision" through the submission of AS bids at a the floor of \$0/MWh of AS ("price-taker"), which would result in the same benefit for market participants that intend to meet their AS obligations for load within the CAISO Control Area. Western expressed concern that a Western customer who was a "price taker" would be reselling federal power (ancillary services). This action would violate Western's long standing prohibition against the resale of federal power, and violate the terms of Western's power sales contracts with its customers. The CAISO agreed to examine and test other functional ways that would allow Western's customers to self-schedule A/S from it Boulder Canyon Project using a dynamic schedule. Boulder Canyon Project resources are scheduled into the CAISO control area on behalf of its customers. After the CAISO completes functional testing, and if the testing is successful, the CAISO will work with Western and its customers to resolve this issue.
- *New Scheduling Coordinator Arrangements for a customer in Southern California.* Western sought confirmation of its understanding of how the arrangements for a new Scheduling Coordinator for a Western customer in southern California will work post-MRTU. The CAISO explored and presented options for Western to accomplish its objectives.
- *Development of a data sharing agreement governing the terms and conditions under which Western can provide real-time information to CAISO.* Western and the CAISO discussed the CAISO's FNM data needs, and the objective to help ensure an accurate power flow solution, that both optimizes use of the CAISO grid and improves reliability of grid operations in real time. Any such data exchanged will be proprietary and used only for reliability purposes. The CAISO explained its concept of "embedded/adjacent" control areas and need for both forward schedule data (internal generation levels, load distribution factors and Interchange), as well as the present real-time telemetry data. Both parties committed to

## ATTACHMENT A

a subsequent meeting to work out the details of the data needed, exchange mechanisms, and a contract to implement this data exchange. In a subsequent meeting on February 21, 2007, Western, CAISO and California-Mexico Reliability Coordinator discussed and outlined the type of information that should be exchanged. CAISO agreed to draft an initial agreement for Western's review.

The CAISO and Western are working to address the above items and are hopeful that a resolution of these items can be implemented before the start of MRTU.

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION****Joint Report on Control Area Meeting Between the California ISO and  
Sacramento Municipal Utility District****April 30, 2007**

On January 26, 2007, the control area operators and other staff members of the CAISO and the Sacramento Municipal Utility District (SMUD) met to discuss seams issues that exist between the CAISO and the SMUD control areas. The purpose of the meeting was to explore any issues that might exist today or might arise with the inception of MRTU that would pose difficulties for the continued operation of the interconnected control areas. FERC further directed the CAISO, SMUD and other adjacent control areas to file at FERC a joint quarterly report regarding progress on the identification and resolution of MRTU seams issues. The parties discussed the following topics:

- *MRTU Curtailment of firm exports from the CAISO - Degree of "firmness"?* SMUD representatives sought assurance that the source of firm exports from the CAISO Control Area could be identified as either resource adequacy (RA) or non-RA. SMUD voiced concern for the ability to identify the source of their energy purchases from within the CAISO and firm exports as being from non-RA capacity. SMUD asked if the CAISO RA resource list was a publicly available. SMUD suggested that the CAISO include the curtailment priority of firm exports, even from RA capacity, as a "last resort" only to be implemented in the rare event when a CAISO Control Area firm load drop is imminent. CAISO explained that the priority of RA Capacity firm exports was virtually the same as internal CAISO load. CAISO representatives noted that the provision for cuts to firm exports has been in the CAISO Tariff for some time, to be used only as a last resort to avert the increasing severity of a firm load drop. CAISO representatives stated that the CAISO would not cut non-RA capacity energy exports from a RA unit's capacity not under an RA contract. CAISO representatives further explained that the CAISO intends to develop a system by which non-RA energy can be tracked for export priority purposes. CAISO representatives explained that "exports from a non-RA portion of unit will not be cut", as the CAISO is a net importer of energy and an external entity could simply cut imports in response. Thus firm exports cuts are not practical. It is SMUD's position on this matter,

however, that the CAISO tariff incorporate such a policy to remove any ambiguity or concerns. CAISO committed to review similar provisions in other entities Open Access Transmission Tariffs, and practices around the WECC and to apprise SMUD of its findings in furtherance of this discussion.

- *Renewable Energy Credits (RECs) from SMUD's Solano Wind Facility.* SMUD expressed that the associated firm exports from that SMUD Wind Generation Park should not be curtailed and expressed strong concern for the importance placed on it receiving full REC credits for its Wind generator exports. CAISO representatives acknowledged this concern, and reiterated that it will place a high priority on firm "self-scheduled" exports.
- *Priority placed upon a firm wheel throughs the CAISO Control Area.* SMUD representatives inquired as to the "firmness" of a wheel through the CAISO Control Area. CAISO representatives explained the high priority placed upon firm wheels since the wheel must remain balanced therefore the CAISO would not unbalance the export and import associated with the wheel to meet CAISO Demand, and explained the scheduling mechanics as being very similar to today's market design. A firm "wheel" can be scheduled as a matched firm import and export, flagged as "self-scheduled" energy.
- *Tagging requirements for dynamic resources.* SMUD inquired whether under MRTU NERC Tagging is required for dynamic schedules. CAISO confirmed that it will continue to be as it is today.
- *Data Sharing.* Representatives discussed the possibility of developing a data sharing agreement governing the terms and conditions under which SMUD and the CAISO, can exchange reliability data, to better forward schedule use of their respective grids, for reliability purposes. Due to limited time, representatives agreed to hold subsequent discussions regarding such efforts.
- *Issues requiring resolution before MRTU start-up.* The parties did not utilize this meeting to discuss any additional seams issues that might require resolution prior to MRTU start-up. There will need to be follow-up and clarification from the CAISO on some of the issues discussed, however, well in advance of MRTU start-up.

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION****Joint Report on Control Area Meeting Between the California ISO and  
Arizona Public Service Company****April 30, 2007**

On January 29, 2007, the control area operators and other staff members of the CAISO and the Arizona Public Service Company (APS) met to discuss seams issues that exist between the CAISO and the APS control areas. The purpose of the meeting was to explore any issues that might exist today or might arise with the inception of MRTU that would pose difficulties for the continued operation of the interconnected control areas. FERC further directed the CAISO, APS and other adjacent control areas to file at FERC a joint quarterly report regarding progress on the identification and resolution of MRTU seams issues. The parties discussed the following topics:

- *Whether MRTU would continue to allow the CAISO to honor Transmission Ownership Rights (TOR) and Existing Transmission Contracts (ETC) rights.* The CAISO explained that both TOR and ETC rights would be honored and scheduled in a very similar manner to today. APS's Scheduling Coordinator for its Erhenberg/Cibola load will continue as the Responsible Participating Transmission Owner Agreement and would schedule this APS load into the new MRTU scheduling system. The CAISO would settle these loads with the Scheduling Coordinator consistent with the CAISO Tariff. The Scheduling Coordinator would in turn, settle its contract losses with APS directly, consistent with their ETC contract terms and conditions, just as today, based on the pre-existing bi-lateral ETC agreement between those two parties, APS and SCE. APS provided the CAISO with suggested "blue-lined" ICAOA updates, primarily focused on revisions to the sections related to defining the control area interface at the North Gila, 500/69 kV banks. This was in response to the CAISO's suggested revision language, provided in 2006.
- *Whether MRTU Full Network Model (FNM) and data exchange should be reciprocal to provide for better forward scheduling and facilitate use of their respective grids more reliably.* APS was supportive of expansion of the CAISO's FNM to include a larger portion of the Western Interconnection, and specifically several segments of the APS system, to achieve greater accuracy of the forward power flow solution. Both company representatives expressed strong support for a bi-lateral and reciprocal data exchange agreement,

governing the terms and conditions under which APS and the CAISO, can exchange reliability data, to better forward schedule use of their respective grids, for reliability purposes. APS agreed that Moenkopi – PV – Navajo 500 kV should be incorporated into the CAISO FNM. APS and the CAISO agreed with the need for data sharing of schedule and operations data, to be used by both control areas, to optimize their respective planned, real time grid operation, with the mutual objective of enhancing grid reliability. Jerry Smith of APS reported on behalf of WECC, that the WECC Market Interface Committee is committed to some form of data sharing agreement, governing the terms and conditions under which APS and the CAISO, could exchange reliability data.

- *MRTU Curtailment of firm exports from the CAISO.* APS sought assurance that the source of firm exports, would not be cut. CAISO explained that the priority of resource adequacy capacity firm exports was virtually the same on internal CAISO load. CAISO noted that the provision for cuts to firm exports has been in the CAISO Tariff for some time, to be used only as a last resort to avert the increasing severity of firm load drop. CAISO stated that it would not cut non resource adequacy capacity energy exports from resource adequacy unit's capacity not under a resource adequacy contract. CAISO further explained that it intends to develop a system by which non-resource adequacy energy can be tracked for export priority purposes. CAISO explained that its practice has been and will continue to be that its "exports from non-RA portion of unit will not be cut", as the CAISO is a net importer of energy, an external entity could simply cut our imports in response, and thus firm exports cuts are not practical.
- *WECC Electronic Tagging data requirements/timelines.* APS representatives stated that this is a not an issue for APS. CAISO reiterated its belief that the MRTU timelines, including the Integrated Forward Market actually help accelerate the close of the Day Ahead Markets, to allow for more expeditious processing of NERC E-tags.
- *Change in lead Times for outage scheduling.* APS expressed concern for the need to have "flexibility" within 96 hours, even when scheduling significant outages under the CAISO MRTU 45 day lead-time requirement. APS also is seeking further definition of "Major" outages that would be subject to this extended lead-time requirement. Major outage timing is often influenced by system conditions, weather, materials and crew availability as the actual date approaches, thus the need for flexibility within 96 hours. CAISO expressed an understanding for the need to be flexible and to better define the types of outages that would be considered substantial or "Major".
- *Unintended Consequences.* APS representatives expressed concern over the need to coordinate or develop a plan to respond to any "unintended consequences" as a result of the implementation of MRTU. APS does not presently anticipate any major system operating issues, but wants to be

prepared. CAISO representatives agreed to work with APS to better understand APS concerns and to prepare accordingly.

- *Issues requiring resolution before MRTU start-up.* The parties did not identify any seams issues that require resolution prior to implementation of MRTU if the assertions noted above are in place.

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR****Joint Report on Control Area Meeting Between the California ISO and  
WestConnect****April 30, 2007**

On February 2, 2007, the staff members of the CAISO and WestConnect met to discuss seams issues that exist between the CAISO and the WestConnect control areas. The purpose of the meeting was to explore any issues that might exist today or might arise with the inception of MRTU that would pose difficulties for the continued operation of the interconnected control areas. FERC further directed the CAISO, WestConnect and other adjacent control areas to file at FERC a joint quarterly report regarding progress on the identification and resolution of MRTU seams issues. The parties discussed the following topics:

- *General Processes for Resolution of Seams Issues.* The CAISO shared with participants its Market Initiatives Roadmap, which consists of a list of open issues which can be expanded as new issues arise. The Three Year Business Plan is being expanded to a Five Year Business Plan and is posted on the CAISO website. Parties discussed the definition of a general process to identify and resolve seams issues. Parties discussed an interest in continuing to monitor CAISO stakeholder activity in which policy issues and business processes are developed. To that end, CAISO's described its processes for identification of issues and notice to interested parties and assisted participants in locating and signing up to receive market notices.
- *Curtailment of Firm Exports from Resource Adequacy (RA) Units.* CAISO discussed its efforts to refine its treatment of the curtailment of firm exports from RA units under MRTU operations. CAISO reviewed other transmission owner tariffs in the West and has identified language in such tariffs that aligns with the language in its own tariff. Parties agreed that the intent is to provide the equivalent degree of protection and reciprocal responsibility with other control areas.
- *Identification of Possible Similarities between the Midwest ISO (MISO) and the Mid-Continent Area Power Pool (MAPP) and the CAISO and its Neighboring Control Areas (which include WestConnect members).* These

discussions took the general direction of whether similar agreements and mitigation measures -- as those between MISO/MAPP -- should also be utilized between the CAISO and other affected control areas. The primary concern of WestConnect members is how to address any unintended consequences following the implementation of MRTU, particularly in relation to the monitoring and mitigation of significant and persistent changes in electricity flow that may arise from the CAISO adoption of a new dispatch regime—as was the case in the MISO/MAPP region. WestConnect does not insist that such changes will in fact occur, however, many of its members believe it is essential to have procedures in place as a safeguard. The CAISO does not believe there will be such a change in electricity flows, however, it has agreed to continue the discussions with WestConnect. Following this discussion, WestConnect offered to draft a straw seams process proposal along these lines for circulation to the group.

- *Coordination of Quarterly Seams Reports.* WestConnect proposed and the CAISO offered to draft a straw process proposal to vet the quarterly report for stakeholder content. The proposal will be an expansion of the process identified in the Q4, 2006 report to FERC.
- *Issues requiring resolution before MRTU start-up.* The parties did not identify any seams issues that require resolution prior to implementation of MRTU if the assertions noted above are in place.

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION****Joint Report on Control Area Meeting Between the California ISO and  
Los Angeles Department of Water and Power****April 30, 2007**

On February 13, 2007, the control area operators and other staff members of the CAISO and the Los Angeles Department of Water and Power (LADWP) met to discuss seams issues that exist between the CAISO and the LADWP control areas. The purpose of the meeting was to explore any issues that might exist today or might arise with the inception of MRTU that would pose difficulties for the continued operation of the interconnected control areas. There were two separate meetings held, one for wholesale trading staff (commercial issues) and another one for grid operations (reliability issues). FERC further directed the CAISO, LADWP and other adjacent control areas to file at FERC a joint quarterly report regarding progress on the identification and resolution of MRTU seams issues. The parties discussed the following topics:

- *Commercial Issues.* LADWP stipulated that before LADWP resumes participation in the CAISO markets, LADWP will need, amongst other things, to confirm that the FERC's must-offer requirement for control areas in California has terminated. CAISO indicated that the FERC must-offer would be terminated and fully replaced with the CPUC's Resource Adequacy (RA) "must-offer" at the start-up of MRTU. Representatives discussed the participation of exports in the CAISO's RA capacity markets along with wheel-through of ancillary services on Devers-PaloVerde #1. Representatives discussed that the existing Inter Control Area Operating Agreement could be replaced by a pro-forma Balancing Authority-to-Balancing Authority agreement. The CAISO will follow-up on this proposal.
- *Long-Term Transmission Rights.* Representatives discussed the CAISO's provision of partial long-term hedging of CAISO charges for wheel-through transactions by financial rights (which hedge Day Ahead congestion only).
- *Reliability Issues.* The CAISO representatives expressed a desire that LADWP and SCE to work jointly to make sure LADWP's Existing Transmission Rights (ETC) rights are mapped correctly into the MRTU's database. Representatives discussed changes from today's dispatch and interchange patterns. At this point, LADWP reserves judgment on this issue

because LADWP still has uncertainty about the effect of MRTU on CAISO's adjacent control areas.

- *Data Exchange.* CAISO expressed its desire to recognize all physical constraints (transmission loading) in the Day Ahead Market. In order to do so, the CAISO may need certain operational data from adjacent control areas to achieve this purpose. CAISO staff stated that this data is for reliability, not for marketing purposes. LADWP representatives expressed a concern that data exchange would be problematic for LADWP until the CAISO could demonstrate that the data will not be used by CAISO for anything other than reliability uses. Representatives agreed to continue discussing the issue of data exchange.
- *Cut-Over Issues.* Parties discussed the fact that the CAISO will have two systems (the current one and MRTU) which will run parallel for several months. CAISO representatives discussed its intent to only fall back to its legacy systems in extreme circumstances and will first try to adjust MRTU rules in the event CAISO should run into trouble after the switch over to MRTU (for example, a problematic dispatch due to a software glitch).
- *Communications Issues.* CAISO and LADWP representatives recognized an improvement in communications between control areas in recent months.
- *Next Steps.* LADWP and CAISO will work together to craft a mutually agreeable joint report to be included in the next quarterly seams report to FERC. The CAISO, SCE, and LADWP should coordinate on the mapping of ETC rights into MRTU. LADWP and CAISO will hold another set of meetings (a wholesale trade issues meeting paired with a reliability issues meeting) in April 2007 to continue the discussions.
- *Issues requiring resolution before MRTU start-up.* Identification of seams issues requiring resolution prior to MRTU start-up are a priority to LADWP and the CAISO. The parties have identified for immediate action (a) evaluation of the use of the Inter Control Area Operating Agreement instead of a pro-forma Balancing-Authority-to-Balancing-Authority agreement and (b) ETC mapping. These are action items to be resolved. Not all seams issues have been identified and may not become apparent until MRTU start-up. As issues become apparent concerning MRTU implementation, the parties will work together to resolve them so that MRTU can be implemented successfully on schedule.

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION****Meeting notes of the California ISO meeting with  
Nevada Power/Sierra Pacific Power  
April 30, 2007**

On March 1, 2007 the control area operators and other staff members of the CAISO and Nevada Power/Sierra Pacific Power (NevPo/SPP) participated in a meeting to discuss seams issues that exist between the CAISO and its adjacent control areas, and between the CAISO and market participants from a trading perspective. The purpose of the meeting was to explore any issues that might exist today or might arise with the inception of MRTU that would pose difficulties for operations based on the two different market structures (a bid-based LMP in the CAISO versus a bilateral market outside of the CAISO). FERC further directed the CAISO, NevPo/SPP and other adjacent control areas to file at FERC a joint quarterly report regarding progress on the identification and resolution of MRTU seams issues. The parties discussed the following topics:

- *MRTU Contingency Plan.* NevPo/SPP representatives expressed its concern over the need for coordination or development of a plan to respond to any “contingency” upon the implementation of MRTU. NevPo/SPP is not presently aware of any major system operating issues, but wants a process in place to quickly and effectively deal with any problems that arise. The CAISO representatives agreed to work with NevPo/SPP to better understand concerns and to prepare accordingly.
- *MRTU Full Network Model and Data Exchanges.* CAISO expressed its belief that data exchanges should be reciprocal to better forward schedule use of their respective grids, for reliability purposes only. NevPo/SPP representatives were supportive of exchange of scheduling data on “Grid / Reliability side only” and insisted that data exchange must be reciprocal. The CAISO explained its role as a market and grid and its limitation in sharing market proprietary data as such data is held in confidence and not shared externally. NevPo/SPP and the CAISO representatives agreed on the need for data sharing of schedule and operations data, to be used by both control areas, to optimize their respective planned, Real Time grid operation, with the mutual objective of enhancing grid reliability.

- *LMP Studies to date and indication of external costs.* NevPo/SPP inquired as how it can access LMP studies data and evaluate potential impacts on Western power markets external to CAISO (e.g. Mid-Columbia). CAISO representatives explained that two series of LMP studies have been conducted to date and directed NevPo/SPP to the LMP study location on the CAISO website.
- *Ability to use “ISO SI Workspace” for submission of its interchange schedules.* NevPo/SPP expressed that it submits a relatively small number of power flow schedules to the CAISO, hourly and therefore, it is important that the new SIBR workspace have similar functionality, as they do not intend to build an API interface. CAISO explained that the new MRTU “SIBR” workspace, accessible through the new CAISO portal, will have very similar functionality to handle the number and nature of NevPo/SPP schedules, in a similar manner to “SI” today.
- *Laughlin Wheel – El Dorado Partners Transmission Ownership Rights or “TOR” rights scheduling.* NevPo/SPP representatives expressed concern for scheduling the use of its TOR rights on the El Dorado System, to wheel power from its Balancing Authority Area to its remote load at Laughlin through the CAISO Balancing Authority Area. CAISO explained the MRTU mechanisms for scheduling use of “TOR” rights, for the Mead to Laughlin Import/Export “wheel” through the ISO Balancing Authority. NevPo/SPP “TOR” rights will be given the same special scheduling priority and settlements treatment as is provided to TOR schedules today, under the present CAISO Market construct. CAISO explained the upcoming effort to “map” both Existing Contract rights and Transmission Ownership rights into the new MRTU systems. This will occur, in coordination with NevPo/SPP, over next 3 months.
- *ICAOA revisions to reflect use of NevPo/SPP TOR rights on the El Dorado Transmission System.* NevPo/SPP representative stated that the treatment afforded its TOR rights and scheduling processes must be documented in the NevPo/SPP – ISO ICAOA. CAISO will work with NevPo/SPP to update our mutual ICAOA and include a schedule that addresses these TOR rights.
- *Issues requiring resolution before MRTU start-up.* The parties did not identify any other seams issues that require resolution before MRTU start-up.

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION****Joint Report on Control Area Meeting Between the California ISO and  
BPA (PBL and TBL)****April 30, 2007**

On November 28, 2006, the control area operators and other staff members of the CAISO and the Bonneville Power Administration (“BPA”), Power Business Line (“PBL”) and Transmission Business Line (“TBL”), met to discuss seams issues that exist between the CAISO and the BPA control areas. The purpose of the meeting was to explore any issues that might exist today or might arise with the inception of MRTU that would pose difficulties for the continued operation of the interconnected control areas. The parties discussed the following topics:

- *Whether MRTU creates any “hindrances” to resolution of real-time congestion on Path 66, the California Oregon Intertie (“COI”) the major intertie between the two balancing authorities (control areas). BPA emphasized the need to continue current procedures for managing real-time congestion on COI through counter-schedules. The CAISO reassured BPA that there is no intention of changing the long standing real-time “controller adjustment” procedure with BPA used to mitigate overloads or loop flow at COI as a result of MRTU. This long standing, immediately responsive ISO-BPA operating procedure is unchanged by MRTU.*
- *Whether the CAISO assumes the ability for an increase in number or megawatt (MW) volume of dynamic imports to the CAISO control area as a result of MRTU that result from creation of automatic bids by CAISO from dynamically scheduled resources. BPA expressed concerns that were raised in discussions at MRTU training classes, that the Real Time Market might automatically create ancillary services awards up to the certified capability based on energy bids, which would create unexpected dynamic schedules that BPA would be unable to deliver. BPA noted that there is limited dynamic capacity available. The CAISO reassured the BPA parties that the capacity of any ancillary services bids created would be limited to the amount of the energy bid and the actual dynamic capacity available and would not exceed that amount. It was also noted that BPA would be a party to contractual changes to allow any increase of dynamic schedules.*
- *How path ATC’s are calculated under MRTU and how the BPA system is modeled in CAISO Full Network Model (“FNM”). BPA expressed concern*

that interties would be modeled as radial in the Full Network Model and noted that it was important for connected systems to have tools for predicting congestion and loop flow on interties. BPA supported a commitment to ongoing coordination between systems on these concerns. CAISO explained the potential benefits of being able to model the entire WECC system in the FNM but that it is currently faced with certain “institutional reluctance” to allow expansion of the model outside of the CAISO control area. CAISO also discussed the benefits of access to necessary Operating and Schedule Data from adjacent balancing authorities and from embedded balancing authorities that are modeled in the CAISO FNM, to improve system reliability and accuracy of power flow solutions. BPA urged support for the use of the expanded FNM with loop flow modeling as soon as possible. CAISO asserted that their approach is a more favorable alternative to the present practice in most of WECC to rely on physical scheduling rights, recognizing that such existing practices result in loop flow problems. CAISO acknowledged that, as is the case with all interconnected control areas, their internal scheduling could have impacts on the rest of the WECC system and affirmed the value of being able to model and predict these. CAISO also explained that ATCs would continue to be set by system operating conditions and system status as is the current CAISO practice and that the CAISO does not anticipate that there will be any ATC procedure changes resulting directly from implementation of MRTU.

- *Coordination of ATC and scheduling on interties.* BPA expressed concern that a lack of coordination between systems in calculating intertie ATC results in inefficient use of those interconnections in day-ahead scheduling. CAISO questioned whether ATC was the problem. BPA noted that the larger problem is timing and coordination differences between transmission markets that result in capacity being committed (and paid for) at one end of an intertie, while corresponding capacity is unavailable at the other end. This lack of ability to grant day ahead capacity pushes more transactions into the real time day. CAISO agreed that interties likely were being loaded more fully in real time operations. Both CAISO and BPA acknowledged that day-ahead commitments of intertie capacity were operationally preferable to reduce the real time commercial and reliability stress. CAISO operations staff observed that improving the day-ahead utilization of interties was consistent with other MRTU features that were designed to avoid the need for real-time adjustments. BPA noted that coordination of day-ahead intertie scheduling was clearly a seams issue, and that it was important to solve this problem, and that it could be addressed on a parallel path with MRTU implementation, but that it should be viewed as a priority even as the MRTU moves ahead.
- *Coordination of intertie curtailments.* BPA noted that past problems in coordinating intertie curtailments were not fully resolved, although some coordination was occurring through WECC. The concern was that “double cuts” could occur when intertie schedule curtailments were needed, because the required amounts of schedule reductions would be achieved at both ends

of the intertie, but using different sets of specific schedules. BPA supported continuing cooperation between systems on curtailments.

- *Forty-five day reporting requirement for significant transmission outages.* BPA (TBL) expressed strong support for the longer lead-time for planning and coordinating “significant” transmission and generation outages (45 days), as proposed by CAISO in the MRTU tariff and conditionally approved by the Commission. (The “forty five day” in this process is that all proposed outages are submitted by 45 days ahead of the month in which they will occur.)
- *West-wide FNM.* BPA expressed support for the eventual adoption of the FNM approach within the WECC area if the model included the capability to model loop flow. CAISO explained the need for embedded and adjacent balancing authority data for FNM reliability purposes, asked for BPA’s support, and explained that LMP pricing is integral to the FNM optimum power flow solution, efficient transmission usage, forward mitigation of loop flow, economic uses of resources, and thus, the reliable operation of grid. CAISO also stated that it does not and would not release sensitive market proprietary data.
- *CAISO Tariff references to ability to cut firm exports from Resource Adequacy (“RA”) Resources.* CAISO explained that it does not have the authority to cut non-RA capacity energy exports from a RA Resource’s capacity that is not under a RA contract. BPA expressed that CAISO Tariff should use the term “capacity” rather than “resources” to clarify its intent that only capacity from RA Resources under an obligation to provide energy and not all of the capacity of a RA Resource would be subject to curtailment. Further such curtailments would only occur in those rare occasions that this became absolutely necessary and with equal priority to firm load.
- *Issues requiring resolution before MRTU start-up.* The parties did not identify any seams issues that require resolution prior to implementation of MRTU if the assertions noted above are in place. BPA urged the CAISO to participate in addressing intertie ATC and transmission commitment procedures concurrently with MRTU implementation rather than afterwards.

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION****Meeting Notes of the California ISO meeting with  
PacifiCorp's Commercial and Trading****April 30, 2007**

On December 7, 2006, the control area operators and other staff members of the CAISO and PacifiCorp's Commercial and Trading participated in a meeting to discuss seams issues that exist between the CAISO and its adjacent control areas, and between the CAISO and market participants from a trading perspective. The purpose of the meeting was to explore any issues that might exist today or might arise with the inception of MRTU that would pose difficulties for operations based on the two different market structures (a bid-based LMP in the CAISO versus a bilateral market outside of the CAISO). FERC further directed the CAISO, PacifiCorp and other adjacent control areas to file at FERC a joint quarterly report regarding progress on the identification and resolution of MRTU seams issues. The parties discussed the following topics:

- *Operational differences between now and MRTU.* PacifiCorp's Commercial and Trading noted that the only operational difference they have identified at this point and have concern over is the CAISO's ability to continue to cut firm exports with MRTU implementation. CAISO explained that it does not anticipate that it will be cutting firm exports. CAISO discussed efforts to create an identifier ("flag") for non-Resource Adequacy ("non-RA") and non-Residual Unit Commitment ("non-RUC") exports and to provide such exports the same scheduling priority as internal demand. PacifiCorp's Commercial and Trading expressed their desire that the CAISO continue to study, clarify and publish the procedures regarding curtailment of firm exports in emergencies and the process the CAISO is currently developing to be able to identify non-RA and non-RUC exports.
- *Current modeling limitations in the Western interconnection.* CAISO's current proposal under MRTU is to use the Full Network Model ("FNM") only for California and model the balance of Western Interconnection as a radial line. PacifiCorp's Commercial and Trading raised several key questions on how the radial lines are modeled, what capacity is presented in the case for joint facilities and areas that operated under current

nomogram. PacifiCorp's Commercial and Trading is concerned that such modeling approach could give false congestion signal or force unanticipated redispatch in real time. The CAISO described its desire to be able to use the Full Network Model ("FNM") optimization to minimize loop flow and that this would best be accomplished through a more complete FNM of the whole west. Recognizing the current limitations in the West, the CAISO discussed its application of a radial model for adjacent balancing authorities (control areas), and the difference between its modeling of embedded balancing authorities, whose systems are actually incorporated into the CAISO FNM. CAISO will determine and further discuss with PacifiCorp's Commercial and Trading on how specific the interties, such as Palo Verde and Four Corners are modeled in the current FNM.

- *NERC E-Tagging Requirements and MRTU Market time line.* Parties discussed how the market timeline under MRTU would interplay with the NERC E-Tagging requirements. PacifiCorp's Commercial and Trading expressed concern over delayed closure of the markets because e-Tagging must be done by 1500 hours per WECC. CAISO discussed that delayed closures of the market should be reduced dramatically after MRTU is implemented, attributable to the fact that Market Participants will no longer be constrained by a requirement to provide a balanced portfolio. The present market design's requirement for a balanced set of source and sink schedules were often the cause of delayed market closure, due to the need to balance all sales and purchase with other Market Participants. Parties discussed possibility that because the Residual Unit Commitment ("RUC") process is not executed until later in the day, transmission providers may not be willing to accommodate exports that late in the day. CAISO was going to further look into the RUC process. Parties recognized that the change in the time line for the Hour-Ahead scheduling process provides some benefits but are not certain of what drawbacks may be caused by this change.
- *Relationship between tags and settlement of transactions under MRTU.* CAISO explained that e-Tags have no relationship with how energy transactions are settled in the CAISO since they are based on energy amounts, nor will e-Tags have any impact of forward congestion prices since LMPs will be based on bids submitted by Scheduling Coordinators. PacifiCorp's Commercial and Trading indicated that from their perspective the main transactional difference between today's market and the market under MRTU will be that today's prices of awarded bids submitted on the interties are bid based and cannot set the market clearing price, whereas under MRTU such bids can set and will be paid the LMP, which is the market clearing price. PacifiCorp is expecting that the Commission will remain aware of and address as necessary potential seams issues between organized markets and neighboring tariff-based bilateral markets,

and desires that the FERC speak to the issue at the technical conference on seams held by the Commission.

- *Congestion Revenue Rights.* PacifiCorp's Commercial and Trading noted that it is important to ensure that sufficient capacity is available at the interties for imports and that internal load serving entities that get preferential treatment at the interties do not hoard such capacity.
- *General discussion about features of MRTU and how the markets will work.* CAISO personnel provided an educational tutorial for PacifiCorp personnel concerning MRTU.
- *Issues requiring resolution before MRTU start-up.* The parties did not identify any other seams issues. PacifiCorp's Commercial and Trading reserved the right to raise other concerns and issues after attending the technical conference and any subsequent meetings or documents as issued by CAISO or the Commission.

## **WESTERN ELECTRICITY COORDINATING COUNCIL**

### **SEAMS ISSUES SUBCOMMITTEE**

#### **DRAFT NOTES January 16-17, 2007**

1/16 - 1300-1700 PDT  
1/17 - 0800-1200 PDT  
Doubletree Hotel San Diego Mission Valley  
7450 Hazard Drive  
San Diego, California 92108

*Please note the SIS has not approved these meeting notes and agreement regarding content has not yet been approved by the SIS.*

#### **FERC MRTU Seams Technical Conference**

The SIS discussed the FERC Technical Conference on CISO MRTU seams issues held December 14-15, 2006 in Phoenix, Arizona. Many members of the SIS were in attendance at the conference. The FERC accepted comments for 30-days following the conference and SIS reviewed the comments submitted by the WECC.

The SIS generally agreed three viable methods to address perceived seams issues are through a CISO stakeholder process, through one-on-one (bi-lateral discussions), and through regional evaluation such as through the SIS.

The SIS will continue in its responsibility to evaluate seams issues in the Western Interconnection including any related to MRTU. If the FERC should determine there is a specific role for SIS in evaluating MRTU seams issues it stands ready and willing to assist.

#### **California MRTU Seams Areas Evaluation**

##### **Congestion Management**

Work Group Members: Steve Beuning, Wendy Weathers, Ken Otto, Brenda Anderson (to get someone from BPA) and Jim Price (or someone from CAISO)

The congestion work group evaluated congestion management practices in the WECC and reviewed a SSG-WI document from 2003 which addressed congestion management possibilities.

The work group reported agreement that unscheduled flows in the WECC will change if generation dispatches are implemented that differ significantly from historical dispatches. However, the magnitude of the problem is difficult to estimate without west-wide system studies and there was a lack of consensus on the accuracy/value of studies due to widely varying scenarios. A concern is the WECC Unscheduled Flow Mitigation Plan is implemented only in real-time operations (no day-ahead evaluation) and is utilized only for seven "qualified" paths. Any transmission element that develops congestion issues as a result of an MRTU generation

dispatch must be loaded and experiencing schedule cuts for 100 hours before being eligible for the plan. While unscheduled flows are a concern to SIS there is a lack of consensus on requesting studies.

SIS agreed an evaluation of congestion management practices in the WECC may be appropriate with CISO congestion management issues included. The SIS proposes enhanced coordination of data, operational information, and development of the WECC West-wide System Model are all areas for resolving issues with the USMP. The SIS asked the work group to further develop the following in relation to the USMP:

- Where is the USMP falling short
- What are conceptual suggestions for improvement
- Report to SIS for discussion and determination of next steps including coordination with other WECC groups as warranted.

### **Tagging Requirements**

Work Group Members: Bob Schwermann and Jim Price (to get someone from the CAISO).

The CISO has stated they will adhere to all NERC and WECC standards and business practices related to scheduling and tagging of energy and no new seams issues are anticipated with implementation of MRTU.

The NERC and WECC standards and business practices do not require the use of tags for internal transactions. For a large geographical balancing area this may be problematic in assessing unscheduled flow and congestion management mitigation. However, this is the situation today and is unrelated to MRTU implementation. This topic would be part a review of congestion management – the work group will further evaluate if this is a problem including whether added details in tags may be a solution.

The timing of the CISO market differs significantly from the western bilateral markets. The CISO market accepts bids until 10:00 and final schedules are released at 13:00. In the bi-lateral markets nearly all trading is complete by 08:00 with prescheduling commencing immediately. The CISO indicated the 10:00 deadline for submitting bids is negotiable but that stakeholders have indicated a desire for the 10:00 deadline.

There are instances of the CISO market not clearing and publishing by 13:00. The deadline for preschedule e-Tags in the WECC is 15:00. When the market clears by 13:00 there are still two-hours for e-Tags to be created and submitted. To the extent the market closes later than 13:00 the already limited amount of time for other entities to create and submit e-Tags will be even less than the two-hours. This increases the likelihood of an entity missing the 15:00 deadline for preschedule e-Tags and incurring liquidated damages for failure to preschedule. This is a seam issue that warrants further evaluation and is new with Day-Ahead Market of the MRTU. Bill Kirby (PGE) and Jim Price (CISO) will further evaluate and report at the next SIS meeting.

The CISO is asking for additional information in the e-Tags by using the “Miscellaneous” field and asked if this is acceptable or do they need to request additional fields in the e-Tag spec. Note this is unrelated to MRTU implementation since it exists today. The Interchange Scheduling and Accounting Subcommittee (ISAS) leads the e-Tagging topics and NERC would be required to approve a new field. The four things the CISO requests are SC ID, CISO contract reference number for ETC, CISO product, and CISO resource ID. SIS recommended CISO work with

ISAS to determine next steps.

### **Resource Adequacy Resources**

Work Group Members: David Schiada, Jerry Smith, Brenda Anderson (to get someone from BPA), Jim Price (to get someone from the CAISO), Melissa Lyons (CHPD)

California is implementing a Resource Adequacy requirement for all Load Serving Entities. Part of the process is for generators to request and qualify to be a “Resource Adequacy Resource” (RAR) to be available to the CISO as needed. Essentially the generator receives a capacity payment to offer energy into the DA market and to be available to be called upon in the Real-Time market.

If an RAR is not committed in the DA market it would be able to sell export energy. The RAR is subject to recall and does not require an emergency for it to be re-called. Beginning with the initial phase of MRTU, the CISO indicated it will track RAR versus non-RAR from a single resource to assure that non-RAR exports are not cut when RAR resources are called.

Issue – Resource Adequacy Resources Exports

- This is not an issue with MRTU
- It is an issue with the RA requirements in California
- RAR are to be available for the DA market
- If not dispatched in the DA market, permitted to export
- RAR export is subject to recall up to the RT market
- WECC reserve requirements still include “firm” transactions

Market Perspective

- From a practical perspective, curtailments of RAR will not occur often
- RAR import may be a slight discount to a traditional firm
- RAR import should be a strong premium to “economy” non-firm energy

WECC Reserves Standard

- Firm imports reduce the receiver’s reserve requirement
- A recallable “firm” is not a firm import
- An import other than firm increases reserves requirement 1 for 1
- Classified with interruptible, good only for economic displacement

A key question is will the CISO approve an e-Tag of an RAR export as a firm export? The SIS is concerned an RAR product cannot be considered “firm” in the traditional use of the term and that WECC operating reserve requirements are directly impacted. The SIS needs to further understand the specific conditions under which an RAR export can be recalled by the CISO.

The work group will update its report with the discussion of the SIS and continue its evaluation. Brian Theaker and Ali Amirali are additional members of the work group which will report at the next SIS meeting. The principle issue is RAR exports are considered something other than “firm” in terms of WECC operating reserve requirement calculations.

### **Congestion Revenue Rights**

Work Group Members: Alan Hockenson, David Schiada, Steve Beuning and Jim Price (to get someone from the CAISO).

The SIS discussed various factors related to CRRs and their relationship to Existing Transmission Contracts (ETCs). In particular, the topics discussed included:

Possible Barriers to interregional energy flows and energy trading:

- Interface between physical transmission rights outside California vs CRRs inside California
- Stranded energy at CAISO interfaces due to scheduling/dispatching errors or inconsistencies
- Priority for use of CRRs for scheduling reserves and other ancillary services
- Possible difficulties in tying source to sink under scheduling requirements
- Inability to "wheel-through" energy across the CAISO region

Other Technical Concerns:

- Potential cost obligations associated with CRR values switching or flipping
- Calculation and allocation of Marginal Losses

Although the SIS believed that Seams Issues may exist, there was substantial debate whether such issues would be improved or solutions hindered by accepting the changes offered by MRTU. The work group was asked to gather more details and further evaluate the issues discussed, provide for competing views on whether seams or market issues exist, and report at the next SIS meeting. The work group has not yet found a seams issue that would require remedy prior to the initiation of the MRTU and continues to search any issue that should be remediated before MRTU is implemented.

### **LMP impact on System Operations/Reliability of Others**

Work Group Members: Jim McMorran, Jerry Smith, Casey Sprouse and Jim Price (to get someone from the CISO).

The OC created a task force to review any reliability concerns with MRTU and planned to address this topic. SIS agreed the OC task force should be the lead group on this area and the SIS will continue to attempt coordination.

### **Parallel Operations during Cutover**

Work Group Members: John Burnett, Jim McMorran (to get someone from SPPC), Brenda Anderson (to get someone from BPA), Jerry Smith (to get someone from APS) and Jim Price (to get someone from the CISO).

The CISO market implementation plan does not include physically dispatching generation prior to implementation of the MRTU tariff, however the plan will be further developed as the time for market testing approaches. The market simulation will include sending dispatch signals to generators but these test signals are not to be followed. The CISO market simulations will essentially test out the software and processes for operation and validation of the market and settlements systems.

The work group discussed this area with the OC task force chair that had preliminary discussion with two entities and so far they do not see the need for a fallback plan. The SIS agreed the OC task force should be the lead group on this area and the SIS will continue to attempt coordination.

### **Future SIS Meetings**

The SIS discussed whether to adjust the 2007 calendar to hold meetings the same week as the MIS and the ISAS and determined there was no inherent reason to meet the same week. The remaining 2007 SIS meets are scheduled as follows:

March 22 (Thurs) Tentatively in Las Vegas  
May 24-25 (Thurs-Fri) Location TBD  
August 9-10 (Thurs-Fri) Location TBD

Adjourn

## Excerpt of CAISO Explanation of MRTU Elements Raised by Participants in the Seams Issues Subcommittee

For discussion March 22, 2007

### A. Resource Adequacy Capacity and Exports Under MRTU

#### Overview

1. This section clarifies the relationship between Resource Adequacy (RA) capacity, non-RA capacity and the treatment of exports under MRTU. Much of the misunderstanding around this topic stems from the need to distinguish two aspects of the treatment of exports under MRTU.
  - First, what are the rules and procedures for establishing firm export schedules in the MRTU markets?
  - Second, once firm export schedules are established as part of a final day-ahead or a final hour-ahead schedule, how and under what circumstances might they be curtailed by the CAISO?

The distinction between RA and non-RA capacity is significant with regard to establishing firm export schedules in the MRTU markets, but it does not affect the firmness of export schedules once they have been established in the markets.

2. Because RA capacity is paid for by load-serving entities (LSEs) who serve load within the CAISO control area, capacity that is under contract to meet RA requirements must be available to meet CAISO control area load and operational needs through participation in the Day Ahead Market (DAM), which includes both the Integrated Forward Market (IFM) and the Residual Unit Commitment (RUC), as well as the Real Time Market (RTM) which includes the Hour Ahead Scheduling Process (HASP). This principle and the distinction between RA and non-RA capacity will affect the ability of parties to establish firm export schedules in the IFM and in the HASP. In particular, certain special provisions in MRTU allow parties additional flexibility to establish firm day-ahead and hour-ahead export schedules that explicitly rely on non-RA capacity.
3. Once the DAM has concluded and day-ahead export schedules are established, however, such export schedules are firm in the usual sense of the word regardless of whether they are supported by RA capacity or non-RA capacity. That is, the CAISO carries reserves to support them, and they are afforded the highest priority in the subsequent RTM/HASP market processes. Similarly, once the HASP has concluded and hour-ahead export schedules are established, such export schedules are firm without regard to their reliance on RA or non-RA capacity, and they are supported by CAISO-procured reserves.

#### Background on Bid Submission: Economic Bids and Self Schedules

4. A "bid" is the generic name for the template that each Scheduling Coordinator (SC) submits to the CAISO – on a daily basis for the Day Ahead Market (DAM) and on an hourly basis for the Real Time Market (RTM) and Hour Ahead Scheduling Process (HASP).

5. Within a bid there are two main ways that energy supply (generation and imports) and demand (load and exports) can be submitted: (1) as an “economic bid” – having MWh quantities and a bid price associated with each quantity, or (2) as a “self-schedule” – having MWh quantities without any prices associated.<sup>1</sup> In the RTM and HASP parties cannot submit self-schedule changes for internal load, so their actual RT load deviation (from DA schedule) is deemed to correspond to any self-scheduled supply changes in HASP.
6. The self-schedule provision was designed into MRTU to allow for the preference of some participants to serve their demand using their own resources or bilateral contracts, without buying or selling energy in the CAISO markets.
  - Under MRTU – in contrast to today’s CAISO markets – there is no requirement for submitted self-schedules to be balanced. Moreover, in almost all cases the market optimization does not recognize any linkage between the supply bids or self-schedules and the demand bids or self-schedules submitted by an SC. Rather, the optimization looks at the entire set of submitted bids and self-schedules for supply and demand, and clears the market as a whole and calculates energy prices at each grid location (LMPs) that are used for settlement. (One special case, of course, is the special treatment available for exports discussed in the next section.)
  - Even if an SC does submit balanced supply and demand self-schedules, such schedules are still using the CAISO grid and must settle for the costs of congestion and losses, even though they are not transacting energy in the markets. For an accepted self-schedule that has balanced quantities of supply and demand, settlement based on the LMP differential between the supply and demand locations will reflect the costs of congestion and losses. (See the separate presentation for detailed examples of how this works.)
7. When the market optimization runs, it will try to “clear the market” – that is, balance supply against demand plus losses for the system without violating any transmission constraints – using only the economic bids, that is, by treating all the submitted self-schedules as effectively fixed<sup>2</sup> and not making any adjustments to them.
8. If it is not possible to clear the market using only economic bids, then the optimization will make “non-economic” adjustments to submitted self-schedules in order to balance the system and eliminate congestion. When such adjustments are necessary, two rules apply:
  - a. First, the optimization follows a “scheduling priority” sequence among self-schedules. Starting with the LAST ones to be adjusted (that is, the highest scheduling priority), the order in the DAM is as follows:
    - Reliability Must Run (RMR);
    - Transmission Ownership Rights (TOR);
    - Existing Transmission Contracts and Converted Rights (ETC and CVR);
    - Regulatory Must Run and Regulatory Must Take; and

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<sup>1</sup> The same two options also apply to Ancillary Services – each service can be offered with economic capacity bids (MW quantities and prices per MW of capacity) or as A/S self-provision (MW quantities without any prices). For the purposes of this paper we focus on energy and do not discuss A/S.

<sup>2</sup> The submitted self-schedules are effectively fixed relative to economic bids by using extremely high-priced extensions to form a bid curve around the self-schedule, to ensure that economic bid adjustments are made prior to non-economic adjustments to self-schedules.

- “Generic” energy self-schedules, the first to be adjusted. (See filed Tariff Sec. 31.4. Priority sequence for RTM/HASP is a little different; see Sec. 33.3.)
- b. Second, within each priority level, the optimization will usually adjust the most effective self-schedules first in order to minimize the total MW amount of submitted self-schedules that are reduced.
9. Because self-schedules do not indicate the prices they are willing to accept for supply or the prices they are willing to pay for demand, accepted self-schedules are settled as price takers. As noted above, for an SC whose accepted self-schedule features a balanced quantity of supply and demand, the settlement based on the LMP differential between the supply and demand locations will reflect only the costs of congestion and losses.

### **Resource Adequacy (RA) Capacity and Exports in the DAM**

10. In general, exports submitted as self-schedules in the DAM are “generic” self-schedules with respect to the scheduling priorities listed above.
11. Within the class of generic self-schedules, generic export self-schedules usually have lower scheduling priority than generic internal demand self-schedules. This means that if the market optimization cannot clear the market using only economic bids, because the amount of available supply in the market is not sufficient to cover both self-scheduled internal demand and self-scheduled exports, the self-scheduled exports will be reduced first.
12. The reason for establishing this priority is because LSEs serving load within the CAISO were required to procure RA capacity to meet a specified planning reserve requirement, and this capacity must be offered into the DAM. In the extreme situations where such capacity is not enough to meet self-scheduled internal demand, the LSEs who paid for the RA capacity get the first opportunity to utilize the associated energy in the DAM.
13. There are two ways for a party to submit self-scheduled exports and receive scheduling priority in the DAM that is equal to the scheduling priority of generic internal demand.
- a. Submit a wheeling schedule, in which the MW of self-scheduled exports are matched with equal MW of self-scheduled imports. The optimization will see the two sides of this self-schedule as matched and either will not adjust them at all or will adjust them in a balanced manner. Moreover, any such adjustment would only occur as a result of congestion, not for a supply-demand imbalance. The reason is that adjusting a wheeling schedule would always adjust supply and demand in equal quantities and thus would have no effect on relieving a supply-demand imbalance.
  - b. Submit an export self-schedule linked to an equal MW quantity of non-RA capacity that is offered – with either a self-schedule or economic bids – into the DAM (which may be used in the IFM or the RUC), and into the RTM if the unit is physically capable. In this case the market optimization might not even schedule energy from the non-RA capacity, but the fact that it was offered is sufficient to obtain scheduling priority for the self-scheduled export that is equal to the priority for self-scheduled internal load.
14. Once an export that is registered in the Master File as firm clears the DAM and is part of a final DA schedule, it is a firm schedule consistent with the conventional meaning of that term. Under current WECC MORC, this means the CAISO as the sending Control Area will ensure sufficient operating reserves are procured to support the firm export. In doing so, the CAISO expects such firm export to be tagged accordingly. Moreover, as a firm schedule that has cleared the DAM, the export also has the highest priority against any subsequent curtailment in the RTM/HASP processes, as described below.

**RA Capacity and Exports in the HASP**

15. Bids are submitted no later than T-75 to be used in the HASP and RTM processes.<sup>3</sup> In the HASP, all of the economically bid and self-scheduled supplies (generation and imports) are cleared against the CAISO's forecast of internal RT demand plus all the economically bid and self-scheduled exports.
16. As in the DAM, the market optimization tries to clear the market using only economic bids, treating all the submitted self-schedules as fixed. In this optimization, the final DA schedule is also treated as fixed and cannot be adjusted. If economic bids are not sufficient to clear the market in the HASP, then "non-economic" adjustments are applied to newly-submitted self-schedules in a manner analogous to the DAM, following the sequence of scheduling priorities.
17. Analogous to the DAM rule for "generic" self-schedules, export self-schedules in HASP have lower priority than the CAISO forecast of internal demand, which means that if there is not enough supply to meet the internal demand forecast, export self-schedules will be reduced.
18. As in the DAM, a party wishing to submit an export self-schedule in the HASP and receive equal scheduling priority to the internal demand forecast can submit either a wheeling self-schedule, or an export self-schedule that is linked to an equal MW quantity – that is offered into the RTM – of non-RA capacity or even to RA capacity that was not scheduled in the DAM (IFM or RUC).
19. As in the DAM, once an export clears the HASP and is part of a final HASP schedule, it is a firm schedule consistent with the conventional meaning of that term. Under current WECC MORC, this means the CAISO as the sending Control Area will ensure sufficient operating reserves are procured to support the firm export. In doing so, the CAISO expects such firm export to be tagged accordingly.

**RA Capacity and Exports in the Real Time Operating Time Frame**

20. Although the CAISO has tariff and operating provisions that allow it in principle to curtail exports in RT under contingency conditions, in practice the CAISO has consistently avoided such action because it is not viewed as an effective way to manage contingencies. That is, CAISO operators fully expect that any RT curtailment of exports would be promptly offset by a comparable curtailment of our imports, resulting in zero net impact.
21. The CAISO believes that its emergency provisions allowing curtailment of exports in RT are fully equivalent to the capabilities all western control area operators or balancing authorities have available to them to manage emergencies, and therefore should not be viewed as in any way degrading the firmness of established DAM or HASP export schedules.

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<sup>3</sup> Actually, the HASP is one of the several market processes that comprise the RTM. The best way to think about HASP is as the MRTU equivalent – with some additional functionality – of today's Real Time Pre-dispatch by which the CAISO procures Supplemental Energy from imports.