

Memorandum

To: Board of Governors
From: Charles A. King, P.E., Vice President, Market Development and Program Management
Date: January 18, 2007
Re: *Update on Seams Issues*

This memorandum is for information only and does not require Board action.

EXECUTIVE SUMMARY

In the FERC docket to consider the CAISO's February 9, 2007 filing of tariff language to implement the Market Redesign and Technology Upgrade project ("MRTU Tariff"), a number of parties expressed concerns about "seams issues" which they argued would be created or exacerbated by the CAISO's implementation of the MRTU markets. In response FERC convened a Technical Conference on December 14-15 to facilitate clear specification and open discussion of these seams issues from a variety of perspectives, and to identify potential solutions.

In summary, the following were the salient outcomes of the Technical Conference:

- No seams issues were identified that require resolution as a condition for MRTU start-up. To the contrary, most speakers highlighted the benefits of MRTU and expressed support for timely start-up.
- CAISO Management committed to, and FERC expressed support for continuing a two-fold approach for working on seams issues with other Western parties:
 - First, we are continuing the process begun last fall to hold one-on-one meetings with neighboring control areas to identify and find solutions for operational and commercial issues across our common boundaries. Outcomes of these meetings may be formalized, where appropriate, in the bilateral Inter Control Area Operating Agreements (ICAOAs) between the CAISO and each of these entities.
 - Second, we are participating in WECC-sponsored activities, such as the Seams Issues Subcommittee, in which Western parties are working collaboratively to develop enhancements to West-wide markets and system operation.

The rest of this memorandum provides a more detailed update on seams issues, with a primary focus on the FERC Technical Conference and the activities the CAISO is currently engaged in to address seams issues.

THE FERC TECHNICAL CONFERENCE

FERC's October 24 "Notice of Technical Conference" stated:

The technical conference will be a forum for participants to identify specific alleged seams issues they will face upon MRTU implementation and to offer solutions to remedy those seams. Participants should be prepared to discuss technical and operational issues. Participants are encouraged to file comments with the Commission on or before November 15, 2006 that identify specific alleged operational seams issues (particularly quantitative examples) and possible solutions for discussion at the conference.

Four FERC Commissioners attended the Technical Conference and conducted two half-day panel sessions on (a) Operational Seams Between CAISO and Other Systems, and (b) Commercial, Contractual and Financial Issues. In these panels the Commissioners asked focused questions which required speakers to be specific in describing the rationale for their concerns. Panel speakers included representatives of WECC, Bonneville Power Administration, Idaho Power, Salt River Project, Northwest Independent Power Producers Coalition, FPL Energy, Public Service Company of New Mexico, Public Power Council, Western Power Trading Forum, SMUD, Southern California Edison, CPUC, and CAISO.

The principal outcomes of these panel sessions were as follows:

1. Although some parties expressed concern about potential adverse impacts of MRTU, none of the speakers identified a seams issue that required resolution as a requirement for implementing MRTU. To the contrary, the majority of speakers – both inside and outside of California – emphasized the expected benefits of MRTU and urged that implementation proceed without delay.
2. Although no party could identify a specific adverse impact of MRTU, some parties expressed concern about the possibility that major changes in the CAISO's markets could result in significant and unpredictable changes to today's power flow patterns, with adverse impacts on their systems. These were concerns about possibilities only; there was no evidence or logic presented to demonstrate the likelihood of adverse impacts. In response to these expressed uncertainties the CAISO affirmed that MRTU would not change today's practices with respect to observance of WECC path ratings in scheduling, inter-control area checkout prior to each operating hour, and WECC unscheduled flow mitigation procedures.
3. All parties acknowledged that seams issues unrelated to MRTU exist today in the West and have existed even prior to the start-up of the CAISO. Seams issues arise when the transmission systems of separate control areas are interconnected, and energy and capacity transactions are conducted across the interconnections.
4. Parties generally agreed that we should not expect the West ever to become a totally "seamless" market. At the same time, there are opportunities to reduce the barriers to trade created by seams and achieve operational and commercial benefits through the collaborative efforts of the Western parties.
5. Two generic approaches for further effort were identified and endorsed by the Commission as having the greatest potential to reduce seams issues:
 - One-on-one meetings between neighboring control areas, particularly between the CAISO and each of its neighbors, accompanied by the revision of existing Inter Control Area Operating Agreements (ICAOAs); and

- West-wide activities organized under the WECC to address matters of broad interest across the West.
6. One concern expressed most frequently had to do with unscheduled loop flows, whose already hard-to-predict patterns might change in unpredictable ways under MRTU. Parties generally agreed that unscheduled flows are a long-standing problem in the West which cannot be solved by individual control areas acting independently. Rather, many parties pointed to the need for the various Western control areas to utilize a common West-wide network model (such as the one being developed under a current WECC project), and to exchange day-ahead scheduling data indicating the locations of loads and generating resources, as a means to predict and then take actions to reduce unscheduled flows on a day-ahead basis. This topic is one of the major work group efforts being undertaken this year by the Seams Issues Subcommittee of WECC.
 7. There were several areas where parties had concerns as a result of misunderstanding or incomplete knowledge of the MRTU design, and clarification by the CAISO was able to allay such concerns. For example, many parties thought that the CAISO would not continue to follow WECC unscheduled flow mitigation procedures under MRTU. As noted above, our commitment to continue to adhere to this and other established reliability practices reduced the general level of concern.

ACTIVITIES TO ADDRESS SEAMS ISSUES

Last year, prior to the FERC Technical Conference, CAISO Management initiated a two-fold approach for working with other western parties on seams issues. This approach, which was endorsed by FERC Commissioners and most parties at the Technical Conference, will be continued this year and beyond. This section provides some details on these efforts.

One-on-one meetings with neighboring control areas

Starting last November teams of CAISO staff began a series of one-on-one meetings with each of the neighboring control areas. Before the end of the year meetings were held with Bonneville Power Administration, Imperial Irrigation District, and Pacificorp. Meetings with the other neighboring control areas are now being scheduled and will begin in the last part of January.

Attending these meetings for the CAISO were senior operations staff, subject matter experts on MRTU, and external affairs representatives. Most meetings had two segments, one with the operations side and another with the marketing and regulatory side of each organization. The main outcomes of these meetings were as follows:

- Many of the concerns parties had were due to misunderstandings about the MRTU design, which CAISO staff were able to clear up. Examples include: procedures for managing real-time congestion on the interties due to unscheduled loop flows; provisions for curtailing exports from Resource Adequacy capacity in real-time; some details of the Full Network Model; and, treatment of Transmission Ownership Rights. Parties expressed interest in additional meetings of an educational nature to better understand MRTU.
- There was substantial support for the idea of using a West-wide network model day-ahead for the purpose of sharing scheduling information and reducing unscheduled loop flows, and expressed willingness to work with other parties in the West to develop such procedures.

- There are several areas where further discussions are needed, in some instances possibly leading to changes to existing Inter Control Area Operating Agreements (ICAOAs). These areas include: dynamic imports and exports; outage coordination and transmission curtailments; calculation of Available Transfer Capacity (ATC) on interties.

Involvement in WECC-sponsored efforts

The most active of the WECC activities on seams issues, and the most relevant for this update, is the Seams Issues Subcommittee (SIS), whose chair (Jerry Smith of Arizona Public Service) was a panelist at the Technical Conference where he described the work groups being formed within SIS to address seams issues. At the November 2006 meeting of SIS the following areas were identified for work group effort over the coming year:

1. Congestion management at the regional level, using West-wide network model, to reduce unscheduled flows
2. Revisions to tagging requirements, in terms of both data requirements and timelines
3. Resource Adequacy capacity – how it relates to commercial import export transactions and emergency provisions
4. Congestion Revenue Rights
5. Locational Marginal Pricing
6. Parallel operations during cutover to MRTU
7. "Other Issues" including outage coordination, unaccounted for energy, and marginal losses.

Management believes that topics 1 and 2 in particular are areas where collaborative effort across the West could yield significant benefits for all parties involved. Based on discussions at the Technical Conference and at earlier meetings of the SIS, there is a lot of interest among Western parties to make substantive progress in both areas. The other areas 3-7 involve numerous questions the external parties have about the MRTU design, how it will work in practice, and the CAISO's readiness process leading up to start-up of the MRTU markets. CAISO staff will be attending a SIS meeting on January 16-17 where all seven topics will be discussed and the development of work plans will be initiated. Management will have a better idea after this meeting whether topics 3-7 involve only an education on MRTU or identify issues that require further collaborative effort.