CALIFORNIA ISO

California Independent
System Operator

Memorandum

To: The ISO Board of Governors

From: Frank A. Wolak, Chairman, Market Surveillance Committee of ISO

cc: Charlie Robinson, VP and General Counsel

Date: January 19, 2005

Re: ***Summary of the Market Surveillance Committee Meeting of January 18, 2005***

This is only a status report. No Board action is requested.

The Market Surveillance Committee (MSC) held a public meeting on January 18, 2005 at the California ISO. All MSC members were present. Brad Barber called the meeting to order and asked for public comment. There was no public comment.

Market Update

Doug Bergman, Economist, Market Monitoring Unit of the Department of Market Analysis, updated the MSC on the performance of the ISO's markets during the months of November and December of 2004. The major highlights were: (1) average load growth between 2003 and 2004 of approximately 4%, (2) real-time market price spikes during the evening ramp period due to the new real-time market design, (3) limited amounts of zonal procurement of ancillary services during December 2004. Bergman also summarized the three major transmission upgrades put in place during November and December of 2004: (1) Path 15 upgrades completed and it was re-rated from 3900 MW to 5400 MW, (2) the Pacific DC intertie maintenance completed and it was re-rated from 1300 MW to 2000 MW, and (3) the Miguel substation upgrades completed and it was re-rated from 1100 MW to 1200 MW.

Consistent with the increased import capability of the California transmission network, Bergman showed the net imports into California in December 2004 were higher than any other month of 2003 or 2004. However, interzonal congestion costs in November and December were significantly higher in 2004 than the same two months in 2003 because of transmission outages and the planned maintenance outage of the San Onofre Nuclear Generation Station Unit 3 (SONGS). The real-time market was primarily a decremental energy market during these two months. Intrazonal congestion costs in November and December of 2004 remained at levels observed in September and October of 2004 and were significantly higher than the levels in November and December of 2003. This was due primarily to the SCIT nomogram and Miguel congestion caused in large part by the SONGS outage. The improved grid conditions due to transmission upgrades also reduced the amount of zonal splitting of ancillary services procurement in December 2004, relative to earlier months. This resulted in lower upward regulation prices and operating reserve prices in December 2004 relative to November 2004.

The price spikes (real-time prices in excess of $100/MWh) during the ramping hours took two forms. The first type occurred in the first two 5-minute intervals of the ramping hours of the day. The second type of price spikes occurred during these same hours and other hours, but for longer durations. These price spikes were due primarily due to Miguel, the SCIT nomogram, and other contingencies. There was some discussion among the MSC and staff of the Department of Market Analysis (DMA) about the cost of these price spikes to California consumers and why importers did not dynamically schedule to take advantage of these higher prices. Greg Cook, Manager of Market Monitoring, stated that although he had not yet completed a rigorous analysis of this question, his view was that the additional revenues available to importers from these price spikes were not sufficient to justify the investment in the equipment necessary for importers to dynamically schedule into the ISO markets.

Virtual Bidding

Frank Wolak, Chairman of the Market Surveillance Committee, gave a presentation on the benefits and costs of virtual bidding. Wolak argued that there were two major benefits of virtual bidding. The first is that virtual bidders provide strong incentives for day-ahead and real-time prices to equal one another and for any differences in these prices to be unpredictable. This reduces the incentives for generation unit owners and load-serving entities (LSEs) to distort their scheduling behavior to sell or buy energy at the real-time (versus day-ahead price) because they are confident that no systematic profits are possible from this sort of scheduling strategy. Consequently, suppliers and LSEs will focus on scheduling in a least-cost manner, which should result in a more reliable transmission network and lower wholesale electricity prices. Allowing explicit virtual bidding also reduces the barriers to entry into exploiting price differences between the day-ahead and real-time markets. Currently, only LSEs and generation unit owners can effectively engage in virtual bidding by submitting bids that cause them to sell more or less than their expected production or consumption of electricity in the day-ahead market. With explicit virtual bidding, market participants that do not serve load or own generation can also attempt to exploit price differences across the day-ahead and real-time market.

Wolak stated that the costs of virtual bidding are the result of a market participant taking very large virtual positions. Specifically, a large virtual position by a supplier or LSE could cause this market participant to attempt to raise or lower the real-time price. However, given the current levels of forward contracting in the California market, Wolak did not believe that this was a significant concern. Wolak also noted that if virtual bidding was allowed at every node in the network, a large virtual position across nodes in the network could create incentives for a market participant to attempt to cause congestion to realize profits from their financial transmission rights (FTR) holdings. For this reason, Wolak suggested that imposing limits on the maximum hourly amount of virtual bids that a market participant could submit would address these concerns. He argued that many market participants, each providing a small quantity of virtual bids, would enhance the efficiency of the ISO's energy markets. Wolak then summarized a number of implementation details that the ISO would have to work out before moving forward with virtual bidding.

Joseph Yan of Southern California Edison (SCE) reiterated SCE's opposition to explicit virtual bidding. In response, Brad Barber of the Market Surveillance Committee argued that lessons from financial markets argue for the desirability of virtual bidding in wholesale electricity market. He noted that financial markets typically work best when barriers to arbitrage are very small. He also noted that corners of commodity or financial markets are more likely when there are large buyers facing little competition, as would be the case in California without explicit virtual bidding. Finally, Barber also argued that position limits are an important part of ensuring this market outcome from explicit virtual bidding.

Besides the implementation issues identified by Frank Wolak, Joseph Yan argued that an important implementation issue is how virtual bidding profits by SCE might be treated by the California Public Utilities Commission (CPUC). He also argued that there was a role for Commodity Futures Trading Commission (CFTC) in regulating virtual

bidding that should be clarified. These and other implementation issues were discussed by Yan, members of the MSC, and staff of the DMA.

Resource Adequacy

Eric Hildebrandt, Manager, Market Investigations of the Department of Market Analysis updated the MSC on the Resource Adequacy process. He noted that the CPUC order requires that each LSE meet capacity obligations only during hours of the month when its load forecast is greater than 90% of its monthly peak. Several members of the MSC discussed potential problems with this approach to capacity adequacy. Hildebrandt also presented a discussion of the ISO-New England demand curve approach to procuring installed capacity. Several MSC members reiterated their desire for a contract adequacy approach to resource adequacy, rather a focus of constructing generation facilities. This resource adequacy process would procure firm energy contracts far in advance of delivery, leaving the decision of how much reserve capacity to hold to suppliers that sold these firm energy contracts.

Eric Leuze, Director of Compliance, discussed a number of outstanding issues associated with monitoring a capacity adequacy process. Several MSC members pointed out that an advantage their contract adequacy approach that focuses on purchasing in energy in the forward market is that it significantly streamlines the compliance process.

Palo Verde Devers Number 2 Transmission Line Upgrade

Jeff Miller, Manager Grid Planning gave an overview of the process used by the ISO to assess a number of potential alternative transmission upgrades to the proposed Palo Verde Devers Number 2 (PVD2) transmission line upgrade. He presented transmission line flow duration curves that measure the frequency cumulative distribution of flow levels before and after the proposed upgrade was implemented. He considered three upgrades: (1) the East of River (EOR) 9000 project, (2) upgrading the Moenkopi-Eldorado series capacitors and (3) the PVD2 upgrades. Miller reported benefits associated with each of these three upgrades individually and sequentially in the sense that each upgrade achieved benefits both with and without the existence of the other two upgrades in terms of transmission line flow duration curves.

Anjali Sheffrin, Director, Department of Market Analysis, then presented results from the economic evaluation of the PVD2 upgrade using the ISO's Transmission Evaluation Assessment Methodology (TEAM). She found significant economic benefits for the EOR 9000 upgrade, on the order of $30 million for the Western Electricity Coordinating Council (WECC) for 2008. Conditional on the EOR 9000 upgrade reported significant benefits from the PVD2 upgrade for 2008, in the range of $7 million to $140 million annually, depending on system conditions. She estimated total benefits from the upgrade in the range of $60 to $90 million in 2008.

Several MSC members had questions about a number of modeling assumptions and other aspects of the analysis and the direction of potential bias in the benefit estimates that would occur as a result. The general consensus from these discussions was that the TEAM methodology assumptions typically biased against a finding of significant benefits from the upgrade, and in that sense are very conservative.

The public meeting was adjourned by Brad Barber at 4:00 pm. The MSC met until 5:30 pm to deal with scheduling and other administrative details.