

Technical Bulletin

2011-06-01

**Q2 2011 Convergence Bid
Reference Price**

Market Issue

June 9, 2011

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Table of Contents

| | | |
|-----|---|---|
| 1 | Rejected Bids Due to Missing Reference Prices | 3 |
| 1.1 | Background | 3 |
| 1.2 | Root Cause..... | 3 |
| 1.3 | Business Impact | 4 |
| 1.4 | Issue Resolution | 4 |
| 2 | Incomplete Set of Reference Prices Posted for Q2 2011 | 5 |
| 2.1 | Background | 5 |
| 2.2 | Root Cause..... | 5 |
| 2.3 | Business Impact | 5 |
| 2.4 | Issue Resolution | 5 |

Executive Summary

On March 31, 2011, the ISO learned, from a market participant inquiry, that virtual bids from market participants with sufficient available credit had their virtual bids rejected at four PNode locations on this date. The ISO determined this issue was related to missing second quarter virtual bid reference prices on these four PNodes. Because the ISO learned of this problem just prior to the close of the Day Ahead (DA) Market and did not have time to identify the problem, those affected market participants did not have time to resubmit their bids. During the course of investigating this problem, the ISO also discovered that only a partial set of Q2 convergence bid reference prices were successfully posted on OASIS. The partial posting of Q2 reference prices did not result in any virtual bid rejection. Rather, credit requirements for virtual bids were validated using Q2 reference prices. Both issues have been resolved and long term solutions have been identified to prevent these problems from reoccurring and are currently planned for a Q3 2011 implementation. This Technical Bulletin provides a summary of each issue, its root cause, potential business impact and resolution.

1 Rejected Bids Due to Missing Reference Prices

1.1 Background

Reference price information for the following 4 nodes for Q2 2011 (4/1/2011-6/30/2011) was missing in the Credit Tracking System (CTS). CTS is the ISO system that accepts or rejects bids based on a market participant's available credit. The missing reference price information resulted in CTS rejecting all bids associated with these nodes for trade date 4/1/2011.

- PEORIA_1_LN001
- SMDH_ASR-APND
- SOUTHBAY_1_N001
- SOUTHBAY_6_N001

ISO tariff section 12.8.1.2 provides that in the event the financial exposure of scheduling coordinators cannot be determined with a reasonable degree of accuracy due to factors such as software or system failures, the ISO may temporarily suspend virtual bidding. The lack of reference prices at these four locations inadvertently caused a temporary suspension of virtual bidding at these four locations for the 4/1/2011 trade date due to the inability of CTS to calculate financial exposure of virtual bids.

1.2 Root Cause

Q2 2011 reference prices and system-wide proxy reference price is calculated by CTS based on historic OASIS price data for the same reference period (Q2 2010). CTS calculates a system-wide proxy reference price by taking a simple average of reference prices for all eligible locations (generation and demand PNodes and inter-ties). The ISO calculates four system-wide proxy reference prices per quarter: a supply and demand system-wide proxy reference price for internal PNodes and a supply and demand system-wide proxy reference price for inter-ties. These system-wide proxy reference prices are calculated using the available reference price calculations for PNodes and interties. In the event that a reference price is not calculated for any eligible location or is missing for any reason, the applicable system-wide proxy reference price will be used in its place. Since CTS does not have historic data for 2010, all the reference price calculations for 2011 were done outside of CTS and copied into the system. The Q2 2011 reference prices were calculated for all nodes that were active during the time when CTS went

live in November 2010. Later, some nodes, including the above nodes, were not included as of November 2010, but were added in January 2011. The application is designed to use the applicable proxy reference price as the reference price for any location that has been added or changed.

In January 2011, the ISO initiated a process to make an unrelated trading hub price correction. During this process, the reference prices for the new nodes for Q1 2011 were inadvertently copied over manually from the system that was used to calculate the 2011 reference prices. Had these reference prices for the new nodes not been copied over, the system would have detected these as “new nodes” and Q2 reference prices for these nodes would have defaulted to the proxy reference prices for these locations. Instead, the system detected these as “existing nodes” for Q1 and assumed that Q2 reference prices would have been populated the normal way (by copying from the same quarter for the previous year). Consequently, because Q2 2011 reference prices were not available for these four locations, CTS rejected the batch of bids associated with these nodes.

1.3 Business Impact

Virtual bids associated with these nodes were rejected even though there was sufficient available credit for the bids. As per design, when CTS encounters an issue within a batch of submitted bids, it will reject the entire batch expecting the market participants to resubmit the batch after fixing the issue. The market participant submitted this batch and reported the issue shortly before the close of the DA market on 3/31/2011 for trade date 4/1/2011. CAISO did not have enough time to remediate the issue in time for the market participant to resubmit before the close of the market.

1.4 Issue Resolution

Short Term:

A workaround was identified to fix this issue immediately. The missing reference prices were manually populated in the reference price table by using proxy reference price. This was completed on 3/31/2011 at 2:15 PM PST.

Long Term:

- (a) More robust application monitoring needs to be put in place to specifically check for nodes that have bids without a reference price and send out an alert in a timely manner. This enhancement is planned to be implemented during Q3 2011.
- (b) As an enhancement, the ISO is considering using proxy reference price (supply and demand) in the liability calculation, in case the process of populating reference price has an issue, resulting in null reference prices. This enhancement is planned to be implemented during Q3 2011.
- (c) If sufficient time exists before the close of the DA market for the ISO to determine that virtual bids are being rejected for market participants having sufficient available credit, the ISO will request that the DA market remain open until 10:15 am allowing market participants to resubmit their bids.

2 Incomplete Set of Reference Prices Posted for Q2 2011

2.1 Background

OASIS showed the reference prices for only 16 nodes for Q2 2011 during the start of Q2 2011. Typically, there are about 2580 nodes displayed. ISO tariff section 6.5.2.3.6 provides that the ISO will publish virtual bid reference prices prior to the applicable reference period, i.e. all 2011 Q2 reference prices should have been published prior to April 1, 2011.

2.2 Root Cause

Under normal circumstances, CTS automatically calculates reference prices for the same quarter of the following year eight days after the quarter for the current year ends. For example, Q1 2012 reference prices will be calculated on 4/8/2011, which is 8 days after Q1 2011 ends. Once the reference prices are calculated, the payload gets generated and broadcast to OASIS. Since CTS does not have historic data for 2010, the reference prices for all 4 quarters of 2011 (Q1, Q2, Q3 and Q4) were calculated outside CTS as part of go-live activities and inserted into the system. The flag to publish the Q2 2011 data to OASIS was not set correctly when the manual process to create these records was executed. Hence, the records for all the nodes that were created outside of CTS and copied into the system were not picked up for the broadcast to OASIS. There were 16 nodes that became active in Q1 2011 for which the system utilized the proxy reference price. The flag for the system generated records was set correctly and reference prices only for these 16 nodes were sent to OASIS.

2.3 Business Impact

For market participants who did not see their Q2 reference price on OASIS, there may have been an impact on their validation of bid liability calculations. Since it is only a reference price, market participants were still able to use reference price values from the previous quarter or their own estimated price to check the bid liability before submitting bids. There is no indication that there was reduced market activity as a result of the reference prices not being posted. Additionally, the ISO is unaware of any market participant experiencing a business impact resulting from missing reference prices in OASIS. Accordingly, the ISO concludes that this issue had no adverse affect on market participants.

2.4 Issue Resolution

Short Term

- (a) A manual workaround was executed to re-generate Q2 2011 reference price payload. All nodes having a Q2 2011 reference price were included in this payload. The full set of Q2 2011 reference prices was posted on OASIS on 4/13/2011 at 3:30 PM PST.
- (b) Since the posting of the reference prices prior to the start of the quarter is a tariff requirement, the monitoring of the content of this payload should be included in the dashboard.

Long Term

- (a) More robust application monitoring needs to be put in place to check for the number of nodes for each quarter. This can be done on both sending (CTS) and receiving (OASIS) sides. This enhancement is planned to be implemented during Q3 2011.
- (b) As an enhancement, in case there are any issues with the status flag, the ISO is considering adding logic to trigger re-publication of full quarter reference prices prior to the start of the applicable quarter. This enhancement is planned to be implemented during Q3 2011.