

November 24, 2011 Resettlement Questions

1. What points will have their prices resettled?

The prices associated with the DC_N Settlement Point for Operating Day 11/24/2011 from 6:15:11 PM to 11:25:10 PM are being recommended for price correction.

2. What transactions are being resettled?

Any energy or Congestion Revenue Rights (CRRs) that are affected in Real-Time by the recommended price correction to the DC_N Settlement Point would be resettled. This resettlement would include a recalculation of the Real-Time Revenue Neutrality Allocation for this Operating Day.

3. Please describe the “software calculation error that” caused DC_N to be modeled as de-energized.

Exports across the DC Tie are modeled as load and imports are modeled as generation. The Real-Time software calculation opened a breaker connecting the DC Tie load when there was not any export across the DC Tie. This caused the DC Tie load zone electrical bus to be erroneously marked as dead even though it was physically connected. The software error in combination with the data error in the heuristic table resulted in price errors on Operating Day 11/24/2011.

- a. How long has it existed?

The logic that isolates the DC Tie load zone electrical bus when not exporting power had been in production from the start of the Nodal market (December 1, 2010). The software was revised on January 10, 2012 to keep the DC Tie load zone electrical bus energized under zero export conditions.

- b. How many SCED intervals were DC_N incorrectly modeled as de-energized?

The prices were incorrect for 52 SCED intervals (between 6:15:11 PM and 11:25:10 PM) on Operating Day 11/24/2011.

- c. Did it also affect the Day Ahead market?

No.

- d. Which equipment was modeled as de-energized (e.g. a breaker or switch)?

See response to Question 3a.

- 4. What process was used to populate the heuristic table?

- a. Why were only two nodes chosen for DC_N?

It was assumed that the two closest electrical buses (**OKLA_5047 and OKLA_5BB7**) on either side of the connectivity node of the line from OKLA station to DC North station were sufficient to calculate the LMP.

- b. Could this same issue occur again if OKLA_5047, OKLA_5BB7, and DCTM_V_A are all de-energized?

Yes. ERCOT has added more electrical buses to the heuristic table and removed the software calculation that de-energized DC_N.

- c. Could this same issue occur at a different Settlement Point with a limited set of nodes in its heuristic table?

Yes, if all the target nodes are de-energized. The heuristic table is not prepopulated for all nodes. If the table doesn't have an entry corresponding to a node, then the LMP of the node, when it is de-energized in the base case, will be determined by the rules stated in Protocol Sections 4.5.1(9)(b) and 6.6.1(b).

- 5. Does ERCOT monitor real time LMPs? Yes.

- a. What method is used to determine if LMPs are questionable or the result of an error?

After each SCED run and each Settlement Interval, an initial price validation check is performed on the Real-Time LMPs and Real-Time Settlement Point Prices. Any errors or warnings of possible errors are analyzed by market analysts and system operations.

- b. What method is used to determine which data or software errors must be corrected by resettlement?

See answer to Question 5a.

- 6. When was ERCOT first aware of this issue?

- a. How was the issue discovered?

In early December 2011, ERCOT identified this price abnormality as part of its investigation of the large Revenue Neutrality associated with congestion on the last week of November 2011.

7. When were market participants notified that Settlement Point prices were questionable and under investigation?

A Notice was sent to all registered Market Participants on 01/10/2012 after ERCOT Staff had concluded that there was a data/software error which resulted in the price abnormality.

8. What is “electrically close”?
- a. Where is this term defined?

The term more commonly used is “Electrically Similar”. Electrically Similar Settlement Point (ESSP) is defined in Section 2.1 of the ERCOT Protocols.

- b. Can congestion ever occur between two “electrically close” points?

No. However, two Electrically Similar Settlement Points in Real-Time can become separated under a contingency and thus can have price separation when a constraint related to that contingency is binding/violated in Real-Time.

9. Has there ever been congestion between DC_N and OKLA_OKLA_G1 Settlement Points that was not the result of a software calculation error?

The line between DCTM and OKLA substations has never been physically constrained or overloaded in Real-Time. However, the prices at DC_N and OKLA_OKLA_G1 can be different as described in response to Question 8b.