

<u>Review of Education: Day Ahead Reliability and Reactive Cost Allocation</u> <u>A Sub-Group of the Market Implementation Committee Report</u>

November 19, 2012: MIC - Allocation of Day-Ahead Reliability and Black Start Make Whole Meeting

Meeting to discuss filing to change allocation for units called on in Day Ahead Market (DAM) for reliability. 20121119 Item 1A - Units Scheduled in DA

Cost of units scheduled for reliability in the DAM as well as a list of typical reasons and transmission zones (September 2012)

20121119 Item 1B - Impact Analysis

Operating Reserve Summary/Breakdown and LOC analysis (September 2012)

December 14, 2012: DARRCA (MIC) meeting

In the first meeting the group reviewed problem statement, work plan and educational requirements.

December 22, 2012: PJM's Filing (ER13-481-000)

PJM filed to modify OATT/OA language to begin a new allocation for reliability units in DAM.

January 25, 2013: DARRCA (MIC) meeting

Educational Meeting to review operations and settlements impacts to new allocation and review reactive cost allocation.

20130125 Item 3A - Operations Presentation

This presentation describes the effect of putting reliability units into the DAM; both on the market timeline and the resulting dispatch stack.

20130125 Item 4A - Settlements Presentation

Described the allocation of costs for units called on for reliability in the DAM before and after December 1 change.

20130125 Item 5A - Reactive Service Presentation

Review of the issue with examples.

January 28, 2013: FERC's response (ER13-481-000)

FERC accepts PJM's filing.

February 26, 2013: DARRCA (MIC) meeting

Educational Meeting to review (1) settlements implications of the change of allocation (2) connection between transmission planning and operation of units for reliability (3) the complexity of modeling reactive service and interface control in the Day Ahead Market (4) review of OR charges (5) Education on Reactive Services and (6) Review of RAC simulation.

20130226 Item 5A - Impact Analysis

Operating Reserve Summary/Breakdown and LOC analysis (September 2012) 20130226 Item 5B - Impact Analysis

Operating Reserve Summary/Breakdown and LOC analysis (October 2012 - January 2013)

201302226 Item 6A – MA Reactive Services Issue



Review of the Reactive Services Issue

20130226 Item 7A – Review of Simulation

Review of Simulation of DAM LMPs with and without reliability units

March 19, 2013: DARRCA (MIC) meeting

Meeting to review education on reactive scenarios and PJM methodology for calling on units for black start, reactive services, and interface control.

20130319 Item 2A – Review of Allocation

Review of dispatch changes made in September and allocation changes made December 1, 2012.

20130319 Item 3A – DA reliability units and LMP

Education on why some units called on for reliability do not set price.

20130319 Item 4A – Review of Reactive Services

Review of the Reactive Service Issue and the Impact on BOR rates

April 5, 2013: DARRCA (MIC) meeting

Meeting to review education on reactive scenarios and PJM methodology for calling on units for black start, reactive services, and interface control.

20130404 Item 03 - Day Ahead Market Training

Explanation of the process PJM uses to clear the Day-Ahead Market including constraints, products and commitment.

20130404 Item 04 - Impact of Reliability Unit Commitment in Day Ahead Whitepaper

Explanation of the simulations with and without reliability units.

May 31, 2013: DARRCA (MIC) meeting

Stu Bresler reviewed and answered questions about the history of the DAM.

June 17, 2013: DARRCA (MIC) meeting

20130614 Item 02A – DARRCA Educational Chart

Review of Status Quo and Proposed Solutions in table form.

20130614 Item 03A - Interface Control Allocation

Education on allocation of units called on for reliability

20130614 Item 03B - Day Ahead Reliability Units LMP

Education on why reliability units don't set LMP and the methods for committing reliability units in the DAM

20130614 Item 03C - Voltage Control

Education on voltage control

20130614 Item 04A - MA Reactive Services Credits Proposal Examples

Education on allocation of reactive services in RT

August 19, 2013: DARRCA (MIC) meeting

20130819 Item 04A - MA Reactive Services Credits Proposal Details Education on hourly verses segmented make whole



FAQ How many MW are committed for reliability every day in the DAM?

Day Ahead MW for Reliability posting CVS containing sum of MW committed in the DAM for reliability is posted daily

<u>What is the effect on BOR rates if Reactive Start and No Load were allocated to Reactive?</u> <u>201302226 Item 6A – MA Reactive Services Issue</u>: Slide 6 <u>20130319 Item 4A – Review of Reactive Services</u> : Slide 6 20130819 Item 04A - MA Reactive Services Credits Proposal Details Slide 12-14

<u>What is the effect on LMP of committing units into the DAM?</u> 20130404 Item 04 - Impact of Reliability Unit Commitment in Day Ahead Whitepaper

<u>What is the impact of changing make whole payments for reactive segmented instead of hourly?</u> 20130819 Item 04A - MA Reactive Services Credits Proposal Details Slide 11/12