Expected Demand Resource Calls in 2013/14, 2014/15, 2015/16

Introduction:

PJM performed this analysis to provide stakeholders with information regarding the expected frequency of Demand Resource interruptions in future delivery years. The driver for this analysis is the significant reductions in projected generation reserve margins based on recent Base Residual Auction (BRA) results. The analysis examines the 2013/14, 2014/15 and 2015/16 delivery years and assumes a generation reserve margin based on the results from each of the respective Base Residual Auctions.

Results:

Based on simulation results, the projected frequency of Demand Resource calls in each of the next three delivery years is:

- 2013/14: between 1 and 5 calls
- 2014/15: between 5 and 9 calls
- 2015/16: between 5 and 9 calls

The increase in expected Demand Resource calls after delivery year 2013/14 is due to a drop in the RTO-wide Installed Generation Reserve Margin (IGRM) from approximately 13% to 9%.

Assumptions:

- GE-MARS was used to perform the analysis.
- Installed Generation Reserve Margins (IGRM) are based on the cleared generation (plus energy efficiency resources) in the 2013/14, 2014/15 and 2015/16 Base Residual Auctions (BRA). IGRMs are computed with respect to the forecasted 50/50 load used in the respective BRA.
- Load Forecast Uncertainty is the same for each delivery year and is based on the PRISM load models used for the 2016/2017 BRA Capacity Emergency Transfer Objective (CETO) Study. These PRISM Load Models were created with load data from the 1998-2006 period.
- The load margin at which Demand Resources are assumed to be implemented is based on information provided by PJM Operations.
- External units that cleared in the BRAs are included as PJM resources.

Procedure:

GE-MARS is a Monte Carlo simulation tool that computes the hourly difference between available capacity and load. The loads are modeled based on an hourly load shape for an entire year. Load uncertainty is modeled by defining a number of load levels each with an associated probability of occurrence. Available capacity is obtained by simulating the performance of units (recognizing forced and planned outages) throughout the year. Demand Response is modeled as an emergency operating procedure that is implemented when operating reserves fall below a specified MW threshold.