



# Operations Approach to a Peak Day

Energy/Reserve Pricing &  
Interchange Volatility  
MIC Special Session  
April 28th, 2014

- Evaluate Load Projections
  - Weather Forecast
  - Neural Net
  - Similar Days
- Monitor Transmission and Generation outages
  - Reliability analysis (EMS Power Flow studies)
  - Cancel or reschedule those that affect reliability
- Evaluate Long Lead Generation
  - Day ahead commitment limited to  $\leq 36$  hours

- Reliability Evaluation is performed each day leading up to a peak day
  - 7, 3, 2, Next, Day look ahead
- Day Ahead Commitment 16:00
  - Bid in Load
  - Virtual Transactions (Incs and Decs)
  - Results passed to operations
- RAC (Reliability Assessment Commitment) 18:00
  - PJM Forecasted Load
  - No Financial instruments
  - Bid in transaction schedules

- **Operating Day**
  - **Communications with neighbors**
    - Reserves, availability of economic and emergency energy
    - Transmissions limitations, boarder issues
  - **CTO (Combustion Turbine Optimizer)**
    - Optimizes long lead CTs
    - Minimize Production Dollars
    - Outputs 24 hour plan
  - **SCED (Security Constrained Economic Dispatch)**
    - IT SCED 2 hour look ahead commits/de-commits CTs
    - RT SCED 15 minute look ahead dispatches online resources

- Operating Day continued
  - ASO
    - 2 hour look ahead
    - Regulation Assignments
    - Synchronized Reserve Assignments

Area	Ancillary Service Market Area	Day-ahead Scheduling (Operating)	Contingency (Primary)	Synchronized Reserve
RTO		Annual %	150% Largest Unit	Largest Unit
	Mid-Atlantic & Dominion	N/A	1700 MW	Largest Unit
SERC	Dominion	VACAR ARS%	VACAR ARS%	VACAR ARS%

- **The reserve requirements above are document in PJM Manual M-13 Section 2.2.**
  - These reserves are required for DCS compliance with NERC BAL-002-2 and RFC\_Criteria\_BAL-002-02 standards.
- **If Reserves are not met, PJM is obligated to enter into Emergency Procedures as outlined in M-13 Section 2.3 and as mandated by NERC standard EOP-002-2, which include the use of:**
  - Loading generation above their eco max (Max Emergency Action)
  - Demand Response
  - Voltage Reduction Action
  - Manual Load Dump



- Questions