Winter Operations and Market Performance

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FERC Winter Operations Panel
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PJM staff conducted an event analysis on the 2014 Winter Operations to include the Polar Vortex operations

Key recommendations were as follows:

- Capacity Performance (CP) - Improve generator availability during extreme weather events,
- Testing of generation in advance of winter operations,
- Improve natural gas and electricity market alignment,
- Implement market incentives for ensuring fuel availability or dual-fuel capability, and

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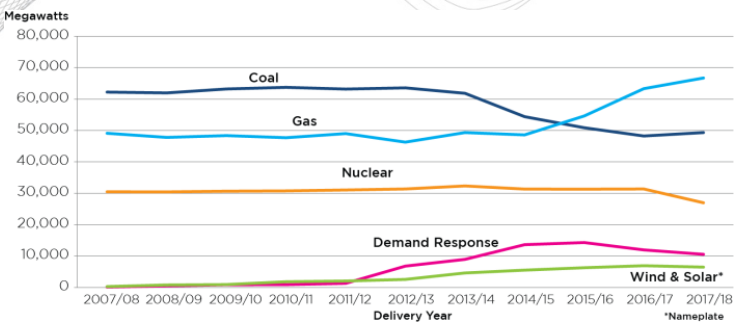
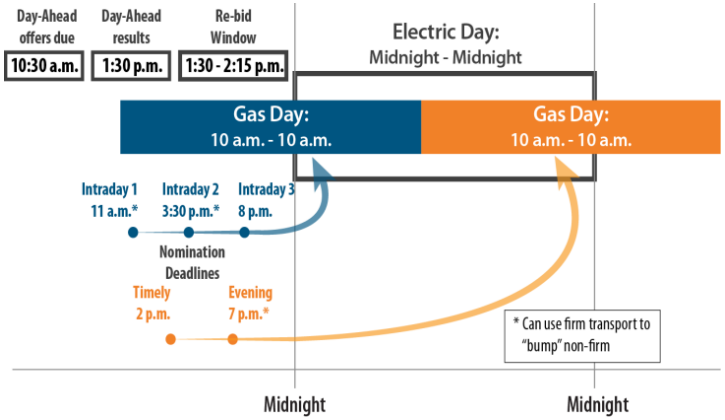
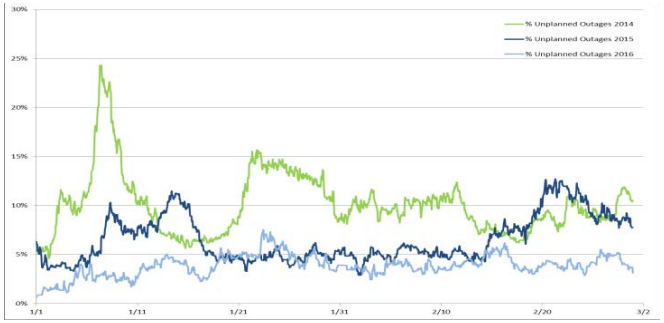
PJM Winter Preparedness

- Implement Capacity Performance
- Enhanced gas/electric coordination
- Enhanced Generator Requirements
  - Winter Generation Testing Program
  - Winter Readiness preparation training
  - Winterization checklist
- Tools which provide better information on unit performance
  - Generation Database development to track unit performance real-time provides system operators with better unit performance metrics







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CP Resources are expected to be available and perform with more flexible parameters during Emergency Conditions

- Penalties assessed for during Emergency conditions
- PJM Operator and Member Training and Drills conducted prior to prepare for new CP rules, processes and tools
- Unit Specific Parameters implemented - based on the resources' physical operating abilities
- Tool enhancements implemented to support communications to members during Performance Assessment Hours
- Summer performance evaluations in progress, additional analysis will be conducted after winter to consider further enhancements

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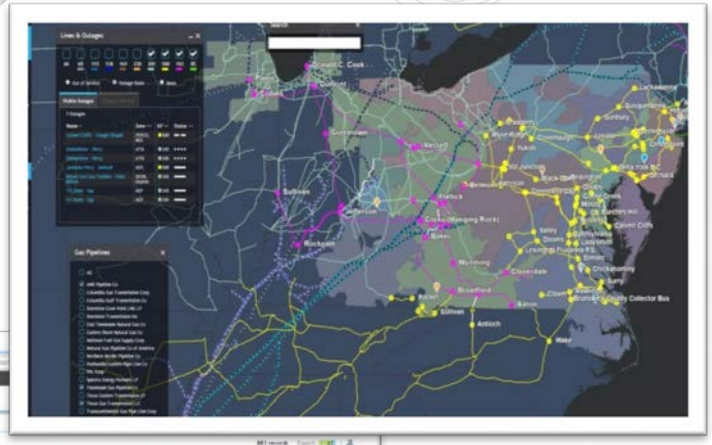
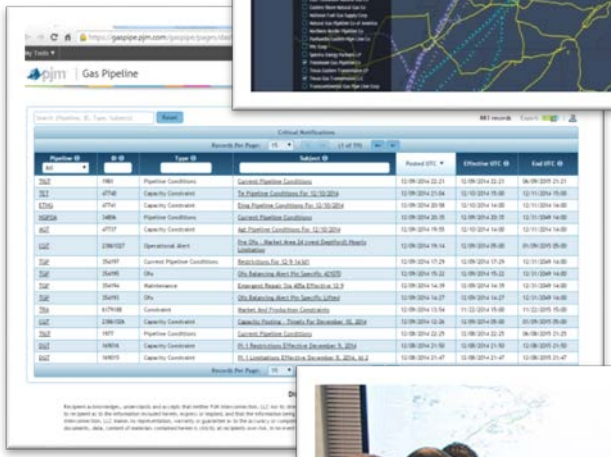
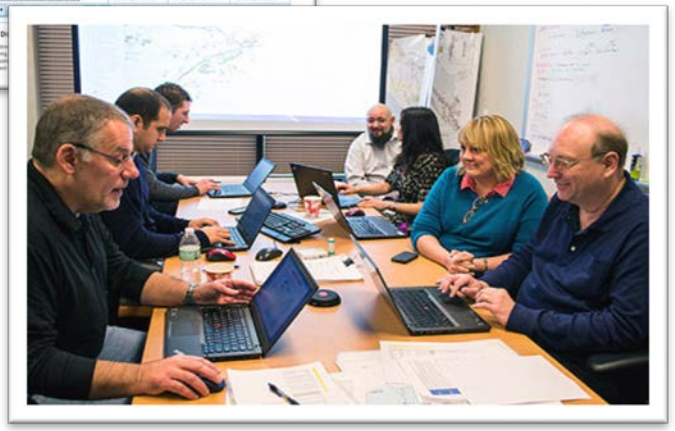
Gas – Electric Coordination

PJM team formed to:

- Analyze data related to gas delivery to units
- Provide operational info that allows operators to make better decisions
- Improve coordination with pipelines and LDCs
- Develop tools to support processes







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Winter Peak Load Base Case	
Load Forecast	135,548 MW
RTO Net Interchange	Importing 5,175 MW
PJM RTO Installed Capacity	183,665 MW
Studied Generator Outages	20,230 MW

- No reliability issues identified for base and N-1 analysis.
- Re-dispatch and switching required to control local thermal or voltage violations in some areas.
- All networked transmission voltage violations were controlled by capacitors. All other voltage violations were caused by radial load.

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Winter 2016/2017 - Gas Electric Coordination

- Pipeline inspection / maintenance activity - Summer 2016
- Vast majority of pipelines are well prepared for winter
- Major exception currently is Texas Eastern (TE) pipeline
    - TE Penn Jersey line rupture and explosion – April 29, 2016
    - Line runs from Pittsburgh to New Jersey
    - Currently running at 50% of design capacity
    - TE currently inspecting entire length of line for anomalies - Anticipated completion and return to full service – Nov. 1, 2016
- PJM believes that given current pace of inspection that TE will meet their November 1, 2016 in service date

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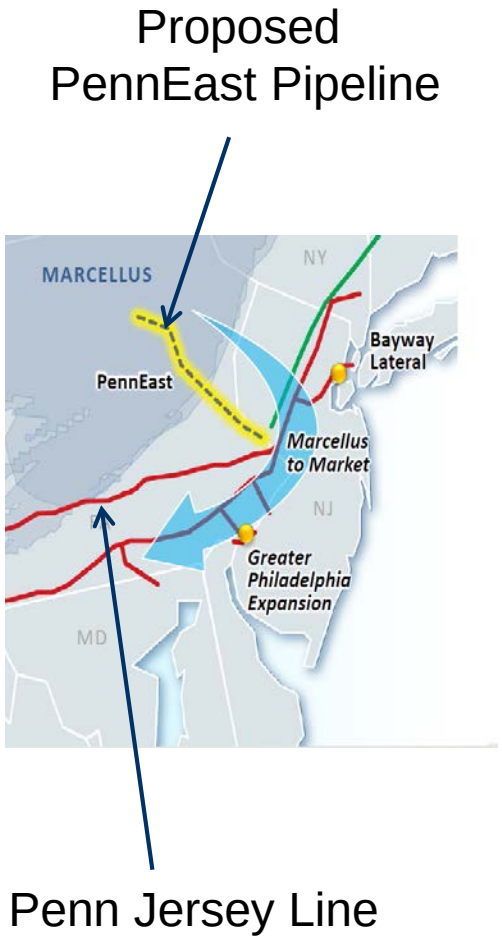
TE incident highlights the importance of midstream pipeline projects designed to take shale supplies to market

- These projects (e.g. PennEast designed to transport 1 Bcf/day of natural gas from Northeastern PA to the southeastern PA and NJ demand centers) are being held up by significant local opposition
- Buildout of these pipeline projects would expand capacity and supply options and improve grid reliability



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