Winter 2013-2014 Operations and Market Performance

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Overview

- Coldest temperatures experienced in two decades
- Successfully prepared for and managed new all-time winter market peak
- Electric/Gas Coordination Field Trial allowed for open communication
- Historic event led to key takeaways and lessons learned
Impacts of extreme low temperatures were experienced across the entire MISO Region. Temperatures in many areas were the coldest experienced in 20 years.
The number of forced outages escalated as the severe weather conditions moved into the footprint. Freezing components and fuel restrictions caused challenges for many units.
Load was able to be served broadly as flows reversed based on the low temperatures and high loads even while the South was experiencing peak conditions within their region near summer peak demands.

Severe cold conditions in the South Region were a significant contributor to MISO's jump of 9% in our peak demand.

Negative North to South Flow means flow is from north to south.
MISO experienced winter peak conditions on January 6th. Reduced peak load obligations on subsequent days freed up resources allowing MISO to assist PJM as the extreme cold temperatures moved into the East.

- Negative sign of NSI between MISO and PJM means net import from PJM and positive sign indicates net export from PJM.

MISO was net importing from PJM when the new all-time winter peak demand was set on January 6th.
Electric/Gas Coordination Field Trial allowed for open coordination with gas pipeline companies during these extreme weather conditions and during the TransCanada Pipeline explosion.

Provided opportunity to communicate any issues that could have impacted pipeline operations and gas flows to generation resources within our footprint

Explosion of a gas pipeline on the TransCanada Pipeline on January 25th added to the winter season’s operational challenges
Extreme conditions were managed successfully due to extensive preparation and significant coordination with members and natural gas pipeline operators.

**Preparation & Planning**
- Staffing
- Conference calls (internal & external)
- Daily internal operations meetings
- Alerts/Notifications/Declarations
- Requests for updated load management availability
- Continued review and refinement of peak hour plan
While this historic winter season was managed reliably, MISO continues to explore opportunities to improve.

- Improved Coordination with the Gas Pipeline Operators through Electric-Natural Gas Coordination Task Force & on-going field trial
- Substantial seasonal variation in Demand Side Resource availability
- Enhance situational awareness around generation unavailability and post-analysis capabilities
- Develop reliable, efficient, localized processes to manage local constraints to not unnecessarily impede regional transactions
- Market Pricing, in general, was reflective of the tight operating system conditions. Need to enhance pricing to ensure demand response doesn’t distort market signals.