

FERC/NERC/Regional Entity Inquiry

Federal Energy Regulatory Commission

Washington D.C.



FERC/NERC/Regional Entity Inquiry Report on the South Central U.S. Cold Weather Bulk Electric System Event of January 17, 2018

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Disclaimer

The views expressed herein are mine, and do not necessarily reflect the views of the Commission, individual Commissioners, Commission staff, or individual Commission staff members



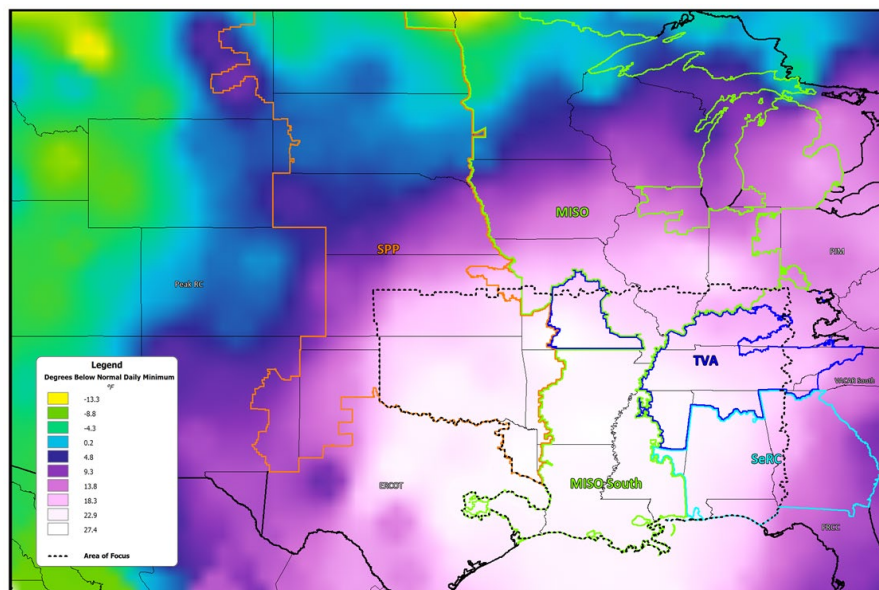
Inquiry Commencement

- ❑ Event on January 17, 2018, was triggered by high loads due to extreme cold in a portion of South Central U.S.

- ❑ Joint Inquiry initiated on September 12, 2018
FERC staff: (OER, OE, OEMR, OEPI, OGC)
NERC, Applicable Regional Entities' staffs

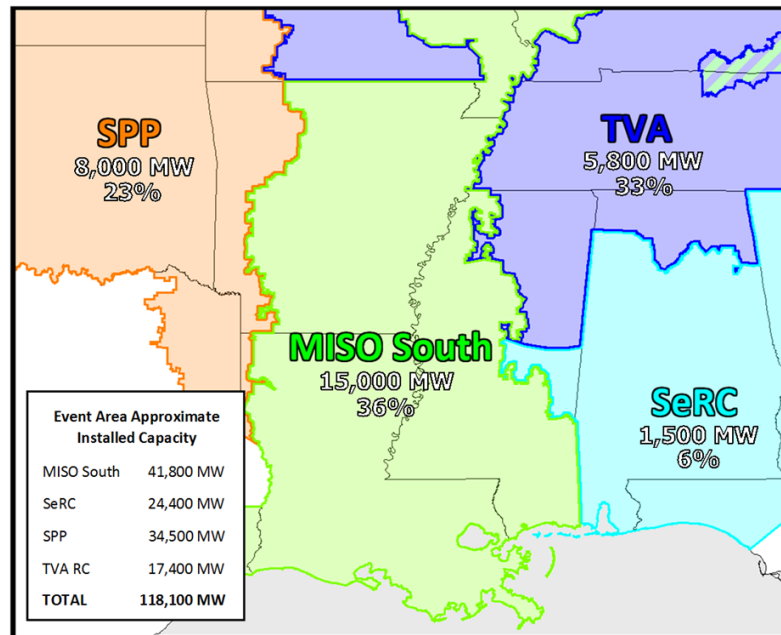


Extreme Cold Across South Central U.S.





Widespread Generation Outages - January 17



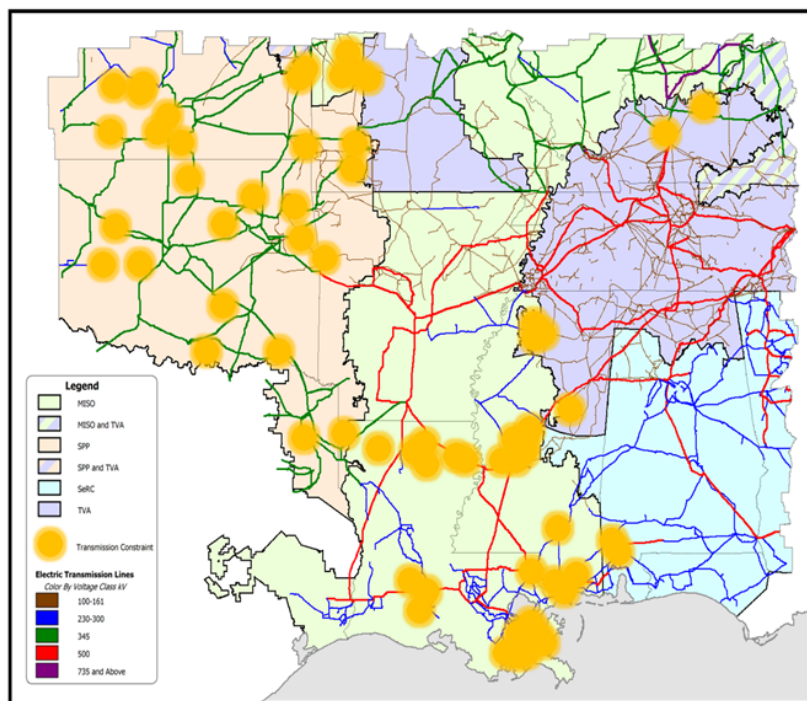


Large Power Transfers Occurred

- ❑ Increased customer electricity demand due to extreme low temperatures
- ❑ MISO's Regional Directional Transfer
- ❑ Remote generation power transfers, including dispatch of wind generation
- ❑ Transfers between SPP and the ERCOT Interconnection



Constrained Transmission Conditions





Summary of Findings

- ❑ As temperatures decreased, unplanned outages increased
- ❑ 44% of outages were directly attributed to, or likely related to, extreme cold weather
- ❑ Gas supply issues contributed to the Event
- ❑ One-third of Generator Owner/Operators did not have winterization procedures



Summary of Findings

- ❑ The Relevant RCs (MISO, SPP, TVA and SeRC) had situational awareness
- ❑ The generation outages on January 17 created energy emergency conditions which required voluntary load reduction
- ❑ Firm load shed needed, if next worst single contingency in MISO South occurred



13 Recommendations

- ❑ Generator Cold Weather Reliability (1)
 - The need for Generator Owners/Operators to perform winterization activities on generating units to prepare for adverse cold weather
 - The need for Generator Owners/Operators to ensure accuracy of their generating units' ambient temperature design specifications



13 Recommendations

- Generator Cold Weather Reliability (1), continued:
 - The need for Balancing Authorities and Reliability Coordinators to be aware of specific generating units' limitations, such as ambient temperatures beyond which they cannot be expected to perform



13 Recommendations

- Transmission and Reserves (12), including:
 - Reliability Coordinators should perform real-time voltage stability analysis in addition to RTCA, for constrained conditions occurring within their own and/or within adjacent Reliability Coordinator areas, such as those experienced by MISO the morning of January 17, and communicate the results of their analysis to adjacent Reliability Coordinator areas



13 Recommendations

- ❑ Transmission and Reserves (12), including:
 - Planning Coordinators and Transmission Planners should jointly develop and study more-extreme condition scenarios to be better prepared for seasonal extreme conditions
 - Balancing Authorities should consider deliverability of reserves to avoid stranded reserves

- ❑ Multiple sound practices by the entities were also identified



Questions?

