# 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

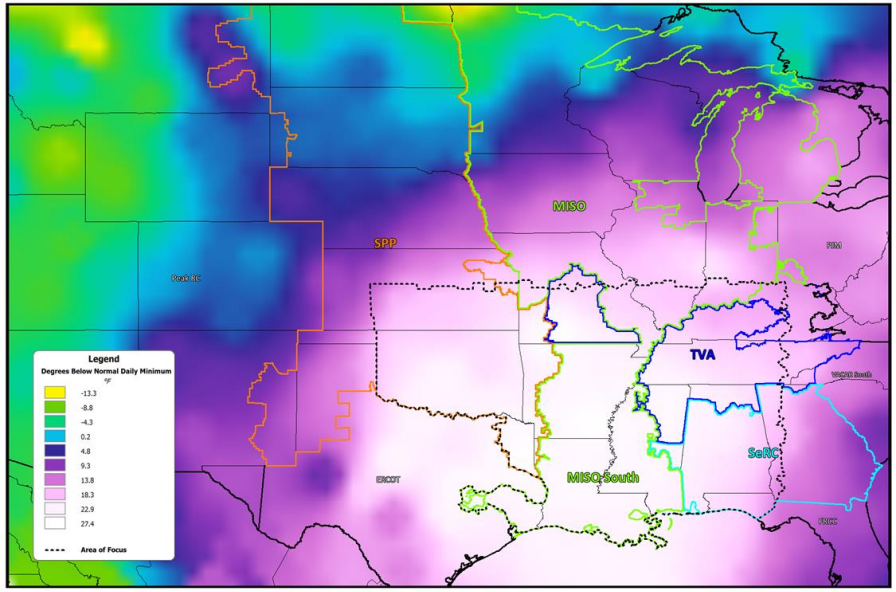
*The views expressed herein are mine, and do not necessarily reflect the views of the Commission, individual Commissioners, Commission staff, or individual Commission staff members*

# Inquiry Commencement

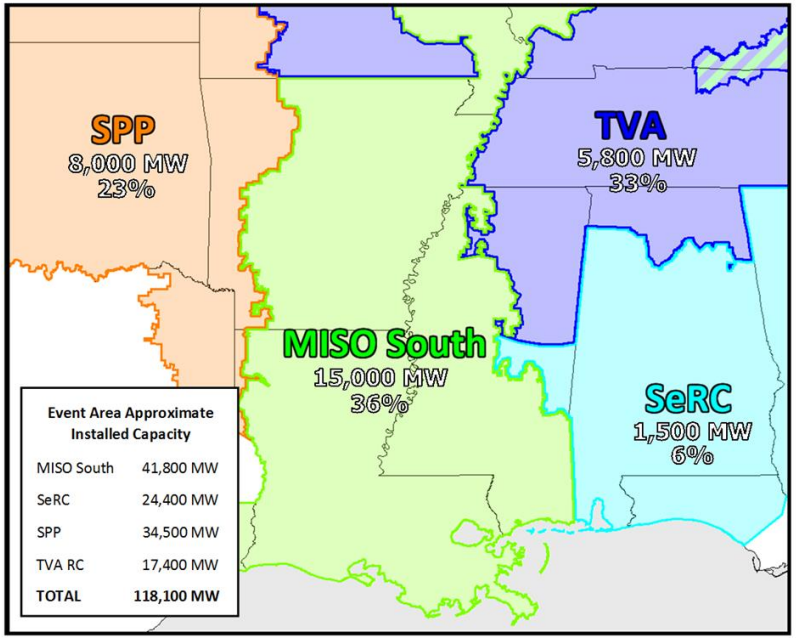
- Event on January 17, 2018, was triggered by high loads due to extreme cold in a portion of South Central U.S.

- 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.



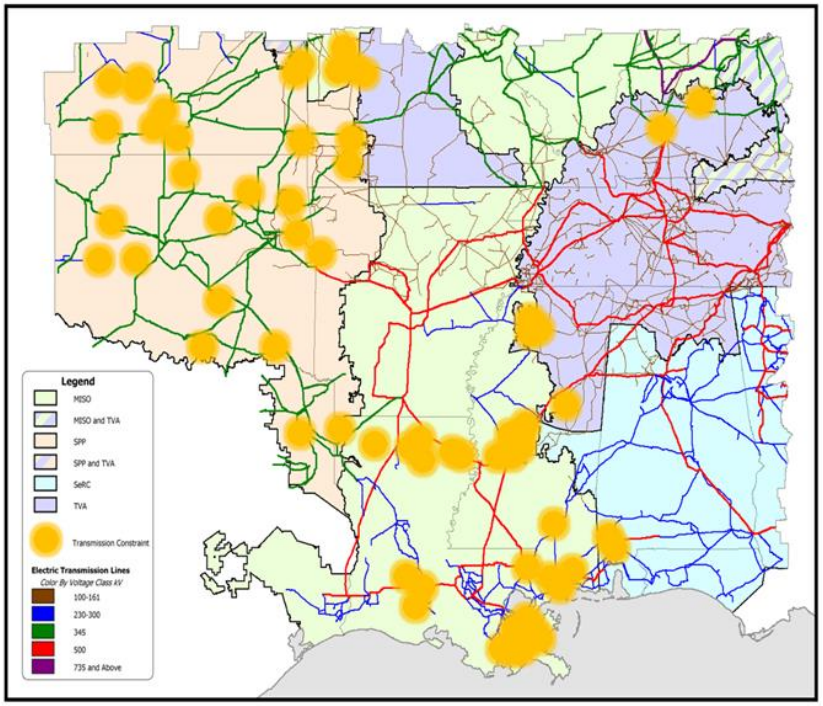
# Widespread Generation Outages - January 17



# 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?