

Follow-up on Winter Storm Uri Report Recommendations

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February 2021 Event Joint Inquiry Report

February 2021 Cold Weather Outages in Texas And South-Central United States

- **Regions Affected: MISO South, SPP, and ERCOT**
 - **Joint Inquiry Participants: FERC, NERC, MRO, NPCC, RF, SERC, Texas RE, WECC, DOE, and NOAA**
 - **Published November 2021**
 - **28 Recommendations (not all applicable to NERC and Regions)**
 - Nine key recommendations, including Reliability Standards changes
 - Five recommendations for further study
 - Each has recommended timeframes for implementation
 - before Winter 2021/2022
 - before Winter 2022/2023
 - before Winter 2023/2024
- Most are recommended within these timeframes*



Project 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination

NERC Standard Project 2021-07 - Extreme Cold Weather Grid Operations, Preparedness, and Coordination

Standards Authorization Request (SAR) Posted for comment November 2021, authorized for drafting team February 25, 2022

10 Recommendations in the SAR based on [Joint Inquiry Recommendation 1](#)

Two phases - Winter 2022/2023 and Winter 2023/2024

NERC Standards Revision Project 2021-07

Phase 1 Due Winter 2022/2023 (Drafting in Progress)

Development and implement corrective action plan (CAP) for identified equipment of outages, failures to start, or derate

Conduct annual unit-specific cold weather preparedness training

Retrofit existing generating units and design new units to operate to specified ambient temperature and weather conditions

Load shed procedures should only be used for manual load shed as a last resort and should start with the final stage

Project 2021-07 Phase 2 Due Winter 2023/2024

Identify cold weather critical components and systems for each generating unit

Identify/implement freeze protection measures for critical components/systems

Account for effects of precipitation and accelerated cooling effect of wind when providing temperature data

Determine the generating unit capacity that can be relied upon during “local forecasted cold weather”

Operating plans should prohibit demand response from critical natural gas infrastructure loads

Protect critical natural gas infrastructure loads from manual and automatic load shedding

Gas-related and other Recommendations in the Report

Electric/Natural Gas Operations, Coordination Improvements

- Further study of Critical Natural Gas Loads Identification
- Develop/enhance Emergency Response Centers

Natural Gas Facility Winter Preparedness

- Require Natural Gas Cold Weather Preparedness Plans
- Establish Natural Gas -Electric Reliability Forum
- Further Study to Address Natural Gas Supply Shortfalls
- Natural Gas Facility Freeze Protection Measures (voluntary)
- Natural Gas Production Facilities SCADA Control

Electric Generation and Demand Incentives and Initiatives

- Generator Compensation Opportunities - Retrofit Costs
- Additional Rapidly-Deployable Demand Response
- Retail Incentives for Energy Efficiency Improvements

Electric Generation and Grid Studies/Analysis

- Cold Weather Effects-Mechanical, Electrical Systems
- Generator Protection Settings/ UFLS Coordination
- Further Study of Additional ERCOT Interconnection Links
- Further Study of ERCOT Black Start Unit Reliability
- ERCOT Generators to Review Low-Frequency Effects
- Further Study of Low-Frequency Effects in Eastern and Western Interconnections



Operational Recommendations in the Joint Inquiry Report

GO/GOP Winter Readiness Voluntary Improvements

- Understanding Generator Natural Gas Contract Risks
- Generator Use of Weather Forecasts for Operating Plans
- Freeze Protection Inspections and Maintenance Timing
- Generator Winter Readiness Technical Conference

PC/RC/BA/TOP Winter Readiness Voluntary Improvements

- Operator-Training Rotational Firm Load Shed Simulations
- Improve Near-term Load Forecasts
- Analyze Intermittent Generation to improve Load Forecast
- Perform Bi-Directional Seasonal Transfer Studies
- Improve Rotational Load Shed Plans
- Report Times for Generation and Transmission Outages
- Peak Load Forecasts and Reserve Margin Calculations

Resources



- **Upcoming Enforceable Standards**
 - [EOP-011-2](#)
 - [IRO-010-4](#)
 - [TOP-003-5](#)
- **[February 2021 FERC/NERC/Regions Joint Inquiry Report](#)**
- **[Project 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination](#)**
 - [Standard Drafting Team Roster](#)
- **[Texas Senate Bill 3](#)**
- **[NERC 2011 Southwest Cold Weather Report and Training Material](#)**
- **[Texas RE/ERCOT Generator Winter Preparation Workshops](#)**

The background of the slide features a blurred Texas state flag on the left and a target with several darts on the right. The darts are clustered in the center of the target, suggesting a focus on a specific point.

Questions?



TEXAS RE

Ensuring electric reliability for Texans