



We Energize Life
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UPDATE ON EXTREME COLD WEATHER PLANS

Meeting with OCC

December 28, 2021

FERC, NERC, Reginal Entity Staff Report¹

Purpose

- Assessment of the February 2021 cold weather event and identifies findings, causes, and recommendations (28 overall; 9 key)

Conditions

- Below freezing temperatures for prolonged period; as much as 40-50 degrees lower than average daily minimum temps; periods of freezing precipitation and snow

Findings

- Generating units failed in large numbers (outages, derates, failed to start) due to freezing components and fuel issues
- Natural gas fuel supply struggled to meet residential load and generator demand due to decreased natural gas production

Next Steps

- Nine Key Recommendations addressed in NERC Reliability Standards as part of NERC Project 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination²

¹ FERC, NERC and Regional Entity Staff Report, [The February 2021 Cold Weather Outages in Texas and the South Central United States](#), published November 16, 2021

² [NERC Project 2021-07 Extreme Cold Weather Grid Operations, Preparedness, and Coordination](#)

Report Recommendations – 9 KEY Recommendations

Those applicable to **Electric Utilities** must be addressed in NERC Reliability Standards¹

Proposed implementation period – phased over three Winters

- Winter 2021/2022
 - Identify reliability risks associated with natural gas contracts/arrangements.
- Winter 2022/2023
 - Develop corrective action plans for cold related outages,
 - Cold weather plans should specify inspection and maintenance of freeze protection measures timeframes
 - Implement Training to operating personnel,
 - Retrofit existing and new designs to operate in extreme weather conditions and provided opportunity for recovery of costs,
 - Separate manual load shed and underfrequency load shed circuits,
 - Regulators to host technical conference,
 - Regulators to require natural gas industry to implement cold weather preparedness plans and industry to implement measure to prevent freezing and other cold weather limitations,
 - FERC to establish a forum with natural gas legislatures and regulators.
- Winter 2023/2024
 - Identify and protect cold weather critical components and systems (accounting for precipitation and wind),
 - Provide SPP with %-age of total capacity that can be relied on during cold weather,
 - SPP Operating plans prohibit use for demand response of critical natural gas infrastructure loads,
 - Protect critical natural gas infrastructure loads from load shedding,
 - Reconsider inputs to publicly-reported winter season calculations to better predict the reserve levels during winter peak conditions.

Standard Drafting Process

November 17th



November 22nd



To Be Determined;
based on Project
Standard Drafting
Team and
Implementation
dates of Key
Recommendations

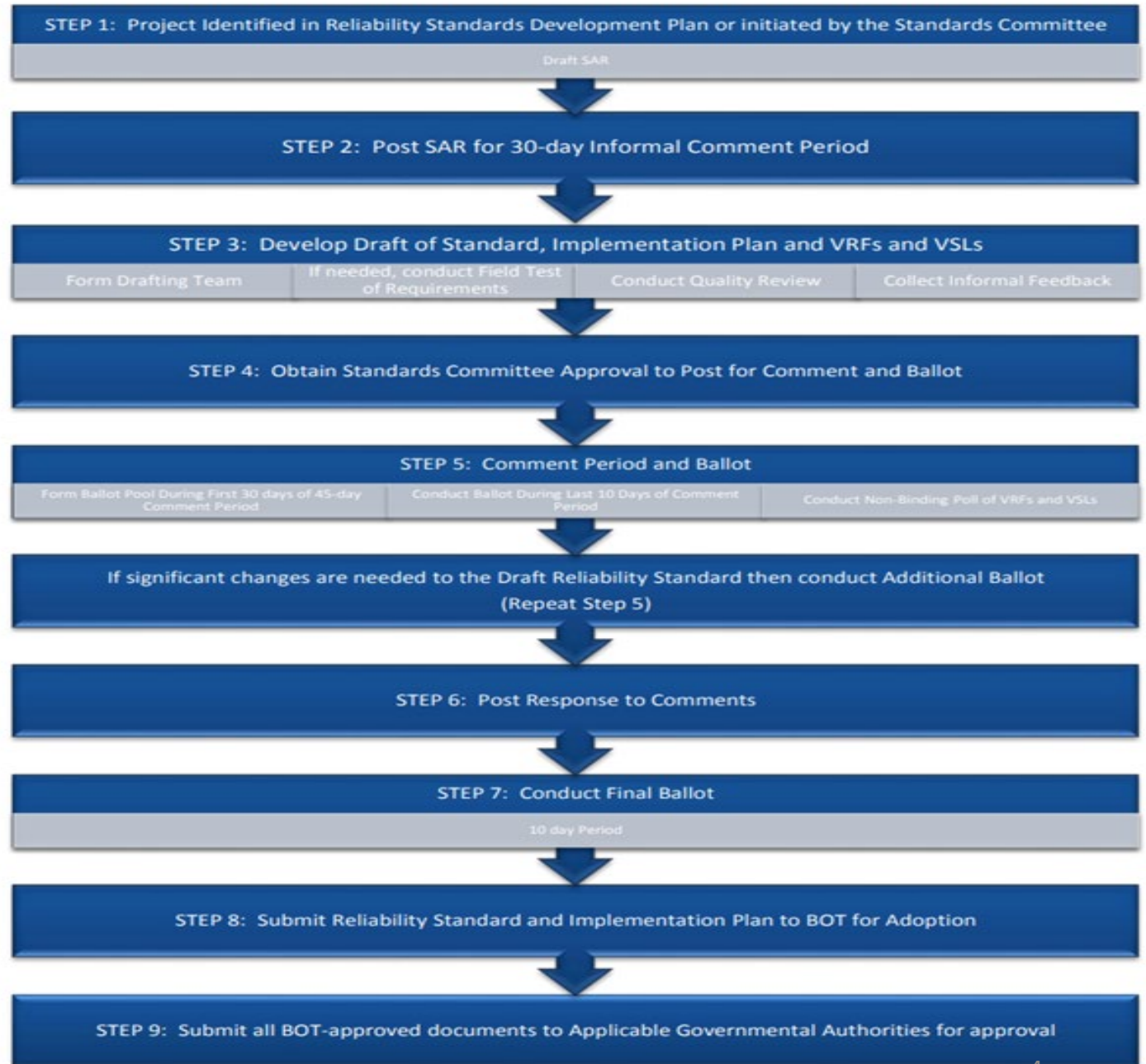


FIGURE 1: Process for Developing or Modifying a Reliability Standard

Report Recommendations – Additional Recommendations

- **Additional 19 recommendations with varying ownership; examples:**
- **Electric Utility**
 - Analyze systems not directly susceptible to freezing but which suffered failure during cold weather events, to assess the impact of extreme cold weather.
 - Incorporate weather forecasts into planning to lessen the impact of cold weather events on the performance and availability of the units.
 - Perform Operator Training Simulator training of firm load shed scenarios, at least annually.
 - Evaluate load shedding plans for opportunities to improve their capacity for rotating manual load shedding.
- **Additionally, the report recommends further study, including:**
 - Black start unit availability in ERCOT during cold-weather conditions,
 - Additional links between the ERCOT Interconnection and the Eastern, Western and/or Mexico Interconnections,
 - Potential measures to address natural gas fuel supply shortfalls during extreme cold-weather events,
 - Potential effects of low-frequency events on generators in the Western and Eastern Interconnections,
 - Establishing a guideline with criteria for identifying critical natural gas infrastructure loads.

OG&E Approach

- **Feb. 2021 Cold Weather Event - After Action Review (AAR)**
 - Capture areas of success and opportunity for lessons learned
 - Assess and identify projects (near- and long-term) for improved resiliency
 - Ongoing process
- **Assess FERC, NERC, RE Staff Report**
 - Incorporate recommendations into AAR projects in flight
 - Identify new projects to address Nine Key recommendations
- **Engagement**
 - Closely monitor and engage in NERC Project 2021-07
 - Provide feedback to assure requirements have a balanced approach to address resiliency and feasibility
 - Nominate OG&E member to the NERC Project 2021-07 Standard Drafting Team