

Western Interconnection Cold Weather Readiness Assessment

April 2025

In response to cold weather readiness, WECC has created an Assurance Program, managed by WECC staff, to understand the approach to risk mitigation in the Western Interconnection. The program aims to help WECC and its stakeholders better understand how specific risks are being addressed.

Periodically, the program will share best practices and general approaches used by registered entities to mitigate risks (i.e., lessons learned). The program will also make registered entities aware of the resources (e.g., public website posting, newsletter articles) available and publicly posted by industry organizations such as WICF, NAGF, NATF, WECC, NERC, FERC, and others involved with risk mitigation.

The program may also recommend policy, process, and procedure improvements within documentation provided individually or globally for WECC's stakeholders. Some of the program efforts will include reviews of events (e.g., Winter Storm Elliott) and approaches entities may be taking because of the recommendations from reports of those events. Note that even though events occur outside the Western Interconnection (or have a minimal impact on the Western Interconnection) there may be applicable recommendations in the event reports for entities to consider. FERC, NERC, and the industry invest significant resources to publish a report; being aware of the outcomes can be a benefit for those not directly involved in an event.

WECC will use available data to identify candidates to include in program efforts. Data such as Generating Availability Data System (GADS) information, responses to NERC Alerts, risks noted in the Reliability Risk Priorities, events, inherent risks (e.g., generation ownership by type and location), and report recommendations are some of the criteria being considered to identify candidates.

WECC would like to thank the registered entity staff that have been involved with the Assurance Program. We appreciate your taking time out of your schedules to address the questions and work with the team throughout the process. One function of the program is to provide feedback from the information gathered throughout this effort to help benchmark practices and identify areas for improvement from an Interconnection-wide perspective.

Note that the program is in its infancy, and there have been limited interactions so far to provide a thorough assessment. However, the team has shared some observations below for the dedicated registered entities within the Western Interconnection.

Western Interconnection Areas of Strength and Stand-Out Practices

1. Having a mature cold weather readiness program in place before any cold weather requirements. These approaches were based on reliable plant operations.
2. Exhibiting an attitude of continuous improvement by using various opportunities to strengthen their generator readiness program. A few examples include:
 - a. Incorporating insights from industry disturbance reports, lessons learned, and being involved in industry forums and groups (SGAS, WICF, NAGF, etc.).
 - b. Holding an end-of-season review focused on identifying additional actions that will strengthen the readiness program.

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- c. Using information from all the plants in the organization's generation fleet to learn from challenges other plants have experienced.
 3. Maintaining alarms in the control room on freeze protection measures (e.g., heat trace circuits, room thermostats, ambient air temperature and humidity sensors) with associated operator displays for quickly identifying issues.
 4. Creating automatically generated cold weather work orders before the cold weather season. These included the associated expected completion dates. Some entities escalated visibility to upper management when these work orders were approaching the due date or became past due.
 5. Executing practices to perform additional readiness checks when a cold weather storm is forecast.
 6. One entity had the materials to make insulation wraps on site and did not have to rely on a third party.

Western Interconnection General Opportunities for Improvement

1. Some entities have developed Winter Preparedness Plans solely based on meeting the requirements in Reliability Standards.
2. Several entities were not benefiting from opportunities for improvement available from outside their plant or organization (e.g., adjacent neighbors, Regional Entities, industry groups).
3. Several readiness plans were lacking detail that would be useful for someone unfamiliar with the plan.
4. Lack of clear, consistent, documented approach for identifying Cold Weather Critical Components at the plant. Some entities had a reactive approach as to how components were identified for this list.

Overall Assessment

As noted, the limited interactions to date do not allow for a thorough assessment of the preparedness of the Western Interconnection for extreme cold temperatures. Many interactions have resulted in positive observations that reflect dedicated efforts to remain operationally reliable during extreme cold weather. Sharing good practices, which this document reflects at a high level, is a foundational principle for the program. It is understood that some registered entities will reflect a more robust approach to mitigating the risk of operating in extreme cold temperatures. Largely, that robust approach is needed because of the geographical location of the plant. However, other entities should take note of the practices and do a thorough evaluation to see whether implementation of those practices would be beneficial for their site. It is worth noting that, if it is cold in southern parts of the Western Interconnection, there may be a more critical need for those registered entities to maintain operational reliability, as other registered entities further north may be struggling due to the conditions.

This Assurance Program is predicated on gathering information in a variety of ways, including one-on-one site visits. As the program matures and flexes its capability to gather data through other means, it is expected that more information will be added to this and other extreme weather assessment documents.

