

Generation Resource Cold Weather Preparation

Mike Kelly

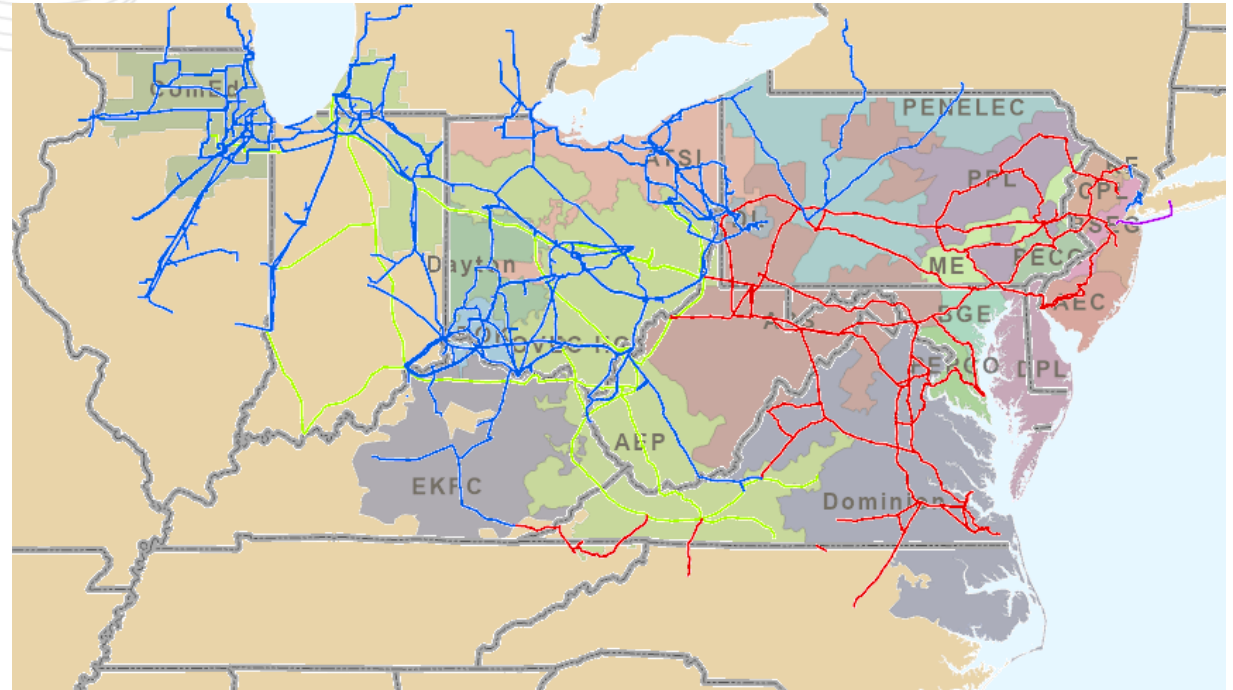
Principle Engineer, Generation

Reliability Standards & Compliance Subcommittee

October 17th, 2025

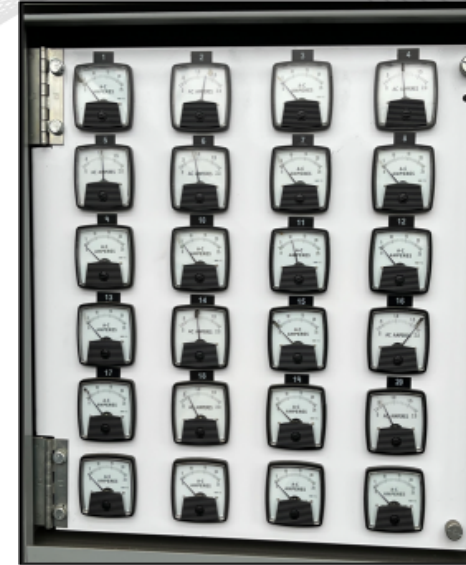
Why cold weather prep matters:

- Our 65+ million customers are depending us (Generators, Transmission Owners and PJM) to Deliver safe, reliable and efficient electricity to their homes and businesses during extreme winter conditions.
- Polar Vortex- January 2014
- Winter storm Uri- February 2021
- Winter Storm Elliot- December 2022
- Winter Storm Enzo- January 2025
- NERC Reliability standards:
 - EOP-011 Emergency Operations
 - EOP-012 Extreme Cold Weather preparedness



- Mechanical Systems
 - Frozen sensing lines, valves, instrument air
 - New systems/Equipment not insulated/heat traced
 - Lubricants and fluid viscosity
- Fuel Delivery and Supply
 - Gas curtailments, coal freeze, oil handling/storage, snow/ice on solar panels
- Electrical and Control Systems
 - Breaker failure, Critical instrumentation reliability
- Staffing & accessibility
 - Travel challenges, extended shifts, onsite accommodations

- Plant hardening measures
 - Heat tracing, insulation, shelters, enclosures, heaters
- Equipment checks & maintenance
 - Critical systems and instrumentation vulnerable to cold weather
- Fuel assurance plans
 - Inventory Levels, alternate supply coordination
- Staff readiness
 - Training, Cold weather procedures, onsite housing/food



- **Generation Resource Operational Exercise**
- Generation resources are strongly encouraged to self-schedule for testing
 - Day-ahead preferred, real-time acceptable with proper notice to PJM dispatch
 - During month of December and temperature forecasted below 35 degrees
 - Informational eDART ticket with cause “Cold Weather Preparation Exercise”
 - [Manual 14-D, Section 7.5.1](#) has details.

- **Pre-Winter Reactive Capability Verification**
- Pre-Winter Review: From October 1st, 2025 - October 31st, 2025
- Generation Owners review their unit reactive capabilities in eDART
- Update D-curves as necessary
- Provide acknowledgement via eDART
- TO D-curve acknowledgment performed during November 1st – 30th.

- **Cold Weather Advisory**

- Provides early notice (3-5 days) that forecasted temperatures may call for a Cold Weather Alert
 - PJM issues Cold Weather Advisory via Emergency procedure Posting
 - Generators to review/update their Cold weather operating limit in markets gateway as needed

- **Cold Weather Alert**

- Notice given in advance to operating day.
- Update all parameters in Markets Gateway
- Report any limitations to PJM Dispatch

- **Markets Gateway**

- Resource Limitation Reporting, Operational Restrictions, Max Run Time

- **Parameter Exceptions**

- For additional information on submitting exceptions for pipeline constraints, please refer to the [Temporary Operating Parameter Limit \(PLS\) Exceptions due to Pipeline Restrictions](#) document posted on the Energy Market page under the Parameter Limited Schedules section
- Temporary Exceptions can be submitted throughout the operating day including before and after the close of the Day-Ahead Market
- Supporting Documentation can now be uploaded directly to Markets Gateway

- **Periodic Fuel and Non-Fuel Consumables Inventory Data Requests**

- **eDART Outage and Informational Tickets**

- **Upcoming In-person Training:**
 - [PJM Markets 201](#) – 11/18 to 11/20
- **[LMS Courses](#):**
 - Generation ITP Part B - PJM Markets and Real Time Ops
 - Generation ITP Part D - Emergency Procedures (Resource Limitations actions covered here)
- **Virtual Sessions Planned for Q4 of 2025:**
 - [Demand response Overview](#) – 10/14
 - [Performance Assessment Intervals](#) – 12/10

- [NERC Winter Prep Webinar 9/4/25](#)
 - Preparation for the upcoming winter weather, including:
 - [Industry specific presentations](#)
 - Reliability First- Generator Site visits
 - MRO- Generator Winterization
 - NERC- Failure Modes and Mechanisms/Lessons Learned- Combustion Turbine anti icing
 - MISO- Generator Survey data update to external stakeholders
 - ISONE- Generator readiness webinar
 - NERC/Duke Energy- Winter reliability assessment update

- **Cold Weather Preparation Guideline and Checklist**
- Provides generation resources with a guide to prepare units for cold weather operation
- Based on [Manual 14-D, Attachment “N”](#)
- Data Request in eDART
 - Open November 1st, 2025 to December 15th, 2025
 - Option of using the PJM or equivalent GO developed checklist
 - GOs requested to identify any improvements or changes to preparation activities made from previous cold weather experiences.
 - GOs requested to share best practices not already documented in M-14D, Attachment “N”

- **Cold Weather Preparation Guideline and Checklist**
- Changes to Cold Weather Preparation Checklist
 - We will be asking for NERC Extreme Cold Weather Temperature
 - Basis for collecting NERC Extreme Cold Weather Temperature is NERC Standard EOP-012-3, effective October 1, 2025
 - Data will be pre-populated where possible

- **Cold Weather Operating Limit Data Request**

- Baseline- October 1st, 2025 - October 31st, 2025
- Question 2 has changed to reflect changes made in TOP-003-6.1
 - Provide a minimum start-up temperature coming from a cold state based on design temperature, historic operating temperature, or determined by engineering analysis.
- Question 1 will be pre-populated, question 2 will not.
- Open Request- December 1st, 2025 – March 31st, 2025

- **Seasonal Fuel and Emissions Data Request**
- Enhance PJM situational awareness in preparation for severe cold weather
- Data Request open in eDART October 1st, 2025 - October 31st, 2025
- Focused on fuel supply and delivery details, emissions limitations and gas supply/delivery information
- Required for reliable operations planning purposes
- Data will be pre-populated where possible

- **Generator Emission Rates Data Request**
- Open from October 1st, 2025 – October 31, 2025
- Purpose of data request is to collect emissions data to track run hours/starts against emissions limits. This will provide better situational awareness for dispatch to determine when a generator may be nearing its emission limit(s)
- This is a separate data request from the Fuel & Emissions data request
- Required for all thermal generators
- This will focus on forward looking limitations (days, weeks).

- **Generation resource site visits**

- PJM coordinating with RF to develop plan and schedule (~24 Sites)
- Targeted start in Q4 2025 and continue into Q1 2026
- Focus on winterization best practices and opportunities

- **Gas-Electric Coordination**

- During Critical Periods:
 - Dispatching gas units in real time taking the intraday gas nomination deadlines into account as necessary
 - Evaluating feedback from gas generators relative to gas supply availability via new Markets Gateway field in compliance with NERC TOP-002-5

- A successful 2025/2026 winter will take a collaborative effort
- Please keep us up to date on all operational limitations that will or may affect Generation Facility output.
 - Participation in data requests
 - Ensure markets gateway accurately reflects current unit conditions
 - eDART Outage/Informational tickets and cold weather operating limits as needed.

Chair:
Monica Burkett,
Monica.Burkett@pjm.com

Secretary:
Dana Hiser,
Dana.Hiser@pjm.com

SME/Presenter:
Michael Kelly,
Michael.Kelly@pjm.com

Generation Resource Cold Weather Preparation



Member Hotline

(610) 666 – 8980

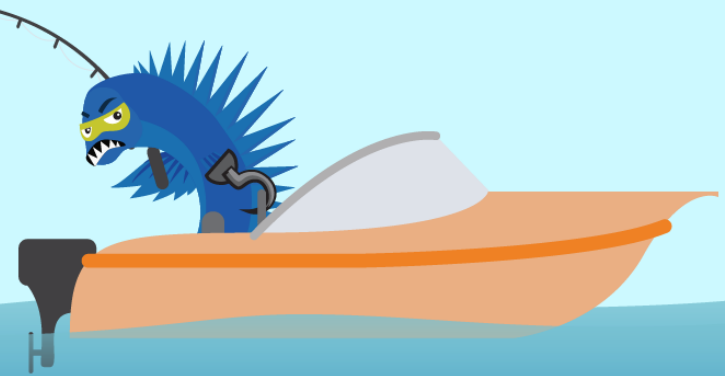
(866) 400 – 8980

custsvc@pjm.com

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