

# Generation Resource Cold Weather Preparation

Mike Kelly

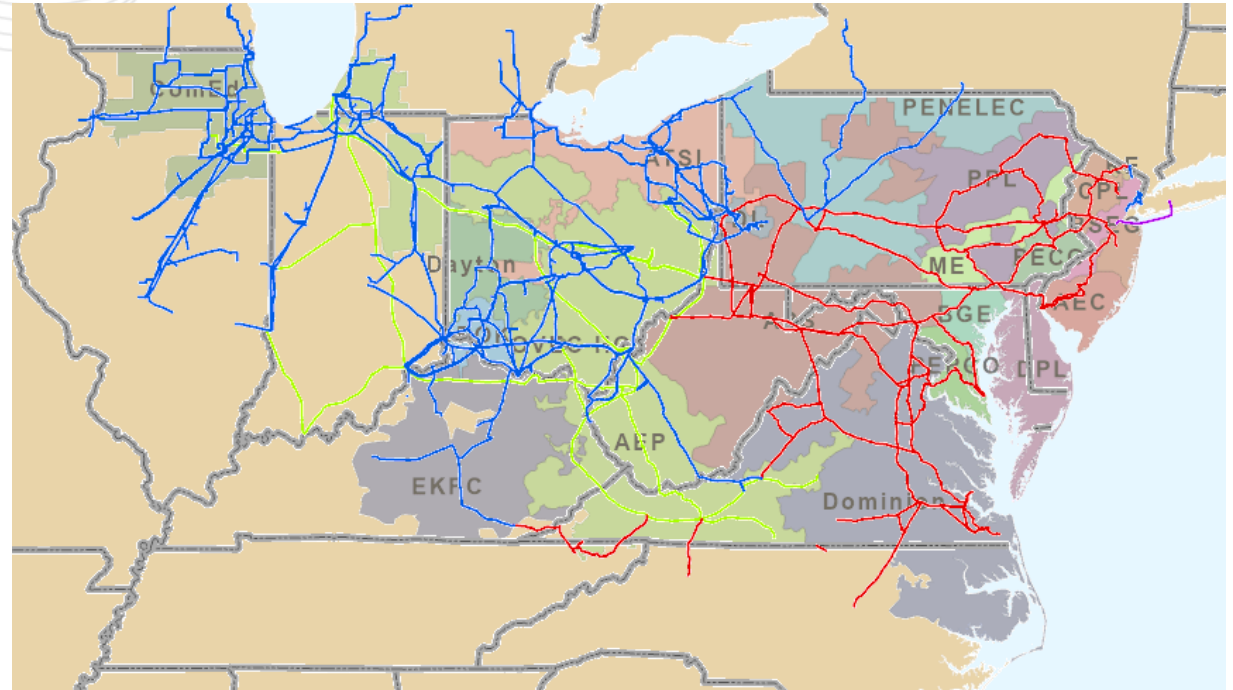
Principle Engineer, Generation

System Operations Subcommittee

October 1st, 2025

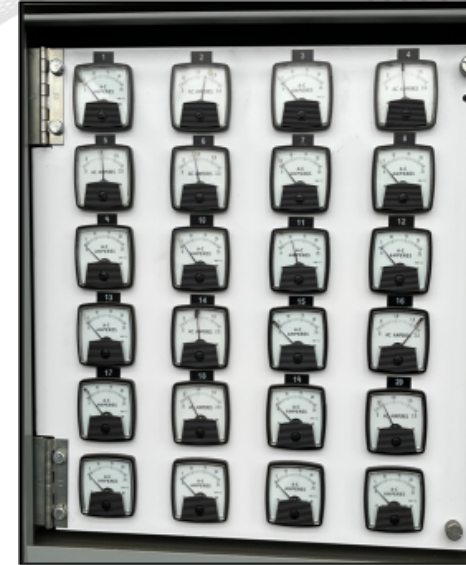
# Why cold weather prep matters:

- 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 1<sup>st</sup>, 2025 - October 31<sup>st</sup>, 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 1<sup>st</sup> – 30<sup>th</sup>.

- **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 1<sup>st</sup>, 2025 to December 15<sup>th</sup>, 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 1<sup>st</sup>, 2025 – March 31<sup>st</sup>, 2025

- **Seasonal Fuel and Emissions Data Request**
- Enhance PJM situational awareness in preparation for severe cold weather
- Data Request open in eDART October 1<sup>st</sup>, 2025 - October 31<sup>st</sup>, 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.

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## Generation Resource Cold Weather Preparation



### Member Hotline

(610) 666 – 8980

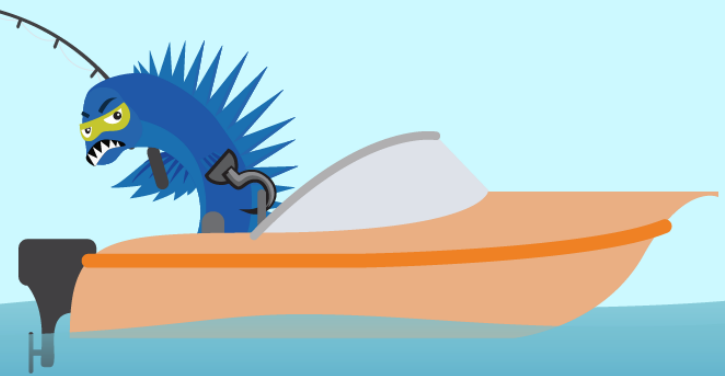
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POWER GRID**  
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