



Oncor Winter Weatherization Strategy & Best Practices

16 TAC 25.55

Weather Emergency Preparedness Reliability standards for a Transmission Service Provider

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Oncor's Weather Emergency Preparedness approach

At Oncor, we break weather emergency preparedness reliability standards for a TSP into 3 parts:

1. Seasonal preparations rules; understanding, interpretation, & implementation
 - (f)(1) Winter season preparations
 - (f)(2) Summer season preparations
2. Declaration of Preparedness (f)(3)
3. ERCOT Inspections (g)



Best Practices for 25.55 Rule implementation

Rule understanding, interpretation, and implementation



Oncor's Best Practices - 25.55 Rule implementation

- Review the season preparation rules and determine:
 - Cross functional team to interpret the rule and determine TSP Cold Weather Critical Components (CWCC) categorization and rationale
 - Determine Preparations measures associated with weather critical components to reasonably ensure sustained operation
 - Determine where automated systems can be leveraged
 - Review and update all applicable procedures to include applicable weatherization rules
 - Ensure personnel training covers applicable rules and personnel expectations
 - Review, update, or create a process to annually review and update training and all procedures as necessary



Best Practices for Declaration

Seasonal Preparations Execution and Declaration



Oncor's Best Practices - 25.55 (f)(3) Declaration of preparedness

- Winter Declaration of preparedness Nov 1 – Dec 1
- Setting timeline for declaration completion that coincides with field weatherization activities and training completion
- Ensure seasonal preparations kickoff has clear communication timelines and affords sufficient time for comprehensive completion and reviews before declaration
- Weekly or Bi-weekly progress reviews and communication
- Collaborative process to ensure declaration narrative outlines how each requirement is met including pointing to procedures addressing the rule/requirement.
- Built-in review process that includes multiple meetings and reviews by multiple parties to confirm accuracy and comprehensiveness before submitting the declaration



Best Practices for ERCOT Winter Inspections

Preparing for and executing inspections

Oncor's Best Practices - 25.55 (g)(1) ERCOT Inspections



ERCOT Inspections Dec 2nd – Feb 28th

- Streamlined process of getting notice of inspections and providing needed information timely through shared list: SharePoint or other collaborative platform
- Use both address and GPS coordinates – GPS coordinates better for rural stations
- District resource as primary contact for inspector; call lead inspector day before or morning of inspection to confirm
- Use inspector's checklist to prepopulate answers for the station not associated with the visual inspection to make the process much smoother
- Arrange for on site qualified resource and SME contacts for any questions by inspectors
- Timely response on additional material/information needed
- Method to capture inspection findings and lessons learned for future improvement

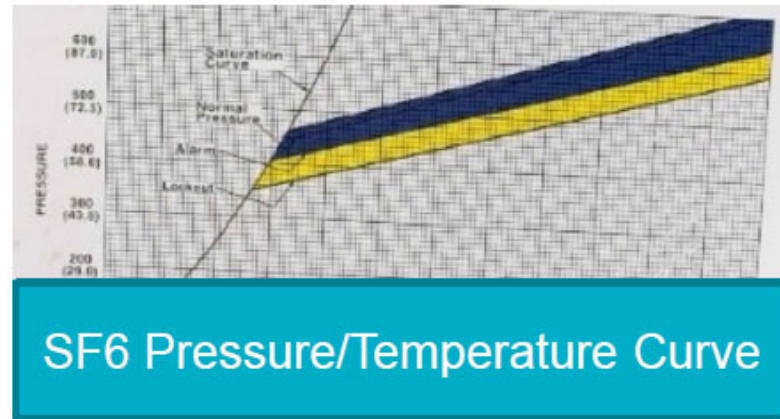
CWCC Preparation and Inspection Best Practices



Rule (f)(1)(A)(ii) Confirm SF6 Pressure and heaters in breakers and metering



Local Pressure Gauge on SF6 Insulated Breaker



Oncor's Best Practices

- Training, patrol procedures, and winter preparedness procedure reviews and updates prior to winter preparedness kickoff
- Expectations clarity, implementation, and accountability
- SF6 Pressure/Temperature Charts in the breaker to assist patrolmen & inspectors
- Inventory of spares (gauges and heaters) to mitigate supply chain constraints
- Review capability/ability to automatically monitor SF6 pressure

CWCC Preparation and Inspection Best Practices



Rule (f)(1)(A)(iii)

Confirmation of the operability of power transformers and auto transformers in winter weather emergencies by:

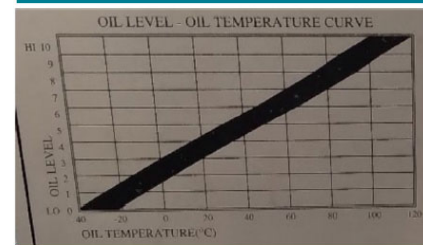
- (I) Inspecting heaters in the control cabinets;
- (II) Verification that main tank oil levels are appropriate for actual oil temperature;
- (III) Inspecting bushing oil levels;
- (IV) Inspecting the nitrogen pressure, if necessary; and
- (V) Verification of proper oil quality such that moisture and dissolved gases are within acceptable ranges for winter weather conditions

Oncor's Best Practice

- Implementation & accountability: Patrol procedures, winter preparedness procedures, and training
- Inventory of spares (gauges and heaters) to mitigate supply chain constraints
- Review capability/ability to automatically monitor oil level and nitrogen pressure
- Have an electronic library of manufacturer instruction books/manuals, if available, when inspectors need them



Transformer Bushing Oil Level



Oil Level/Temperature Curve



Questions?