



PUCT Rule 25.55 – Weather Emergency Preparedness Overview

A Presentation at ERCOT's Winter Weatherization
Workshop for Transmission Service Providers

David Kezell
Director, Weatherization and Inspection

October 25, 2022

Disclaimer

- Slides throughout the presentations in today's workshop contain paraphrased summaries of some of the rule's requirements. In case of a conflict between any of the information in our presentations and the rule, the rule prevails.
- ERCOT is not responsible for interpreting the rule for you and provides this information for convenience.

16 TAC § 25.55 Background

- Phase I PUC Rule 25.55 – Winter Weather Preparedness (adopted October 19, 2021) established first phase of winter weather emergency preparedness standards for generation and transmission facilities
- Phase II PUC Rule 25.55 – Weather Emergency Preparedness (adopted September 29, 2022) established second phase of weather emergency preparedness standards, as well as a set of summer weather emergency preparedness standards, for generation and transmission facilities
- Phase II winter requirements similar to Phase I and must be completed by December 1 of each year and maintained throughout winter season
 - Must complete on-going or monthly requirements to maintain measures at appropriate time
- Phase II requires Declarations of Preparedness w/ notarized attestations of completion of requirements and accuracy/veracity of information in declaration

16 TAC § 25.55 Highlights

- Phase II contains several provisions required “Beginning in 2023”
 - For summer, effective for 2023, must be in place by June 1, 2023
 - For winter, effective winter 2023-2024 but must be in place by **December 1, 2023**
- Winter requirements (beginning in 2023):
 - (f)(1)(B) - weather emergency preparation measures reasonably expected to ensure the sustained operation of the TSP’s transmission facilities at the 95th percentile minimum average 72-hour wind chill temperature for applicable weather zone and,
 - (f)(1)(E) - list of cold weather critical components
- Winter 2023 items not addressed today -- another workshop in Spring 2023
- ERCOT must update its historical weather study once every five years
 - Next update due by November 1, 2026
 - If necessary to comply w/ PUCT rule, you must update weather emergency preparation measures no later than one year after ERCOT’s filing of update

Summary of Phase II PUC Rule § 25.55

- 16 TAC §25.55 requires Market Participants to:
 - Establish & maintain weather preparation measures for winter and summer seasons
 - Provide notarized declarations of preparedness
 - Beginning 2023, create list of hot and cold weather critical components
- Beginning in 2023, rule establishes weather-zone-specific cold and hot temperatures to implement measures *reasonably expected* to ensure *sustained operation*
- ERCOT must:
 - Deliver biannual reports re: whether GE and TSP submitted declaration
 - Develop checklists for inspections
 - Prescribe a form for declarations of weather preparedness
 - Inspect to determine compliance (every resource 1x/3yr, 10% of TSP facilities 1x/3yr)
 - Provide inspection reports and establish cure periods for deficiencies
 - Report to commission market participants not curing deficiency(ies) within cure period
 - File historical weather study every five years

Key Takeaways

- Effective weatherization of facilities essential to reliability during extreme cold and hot weather conditions
 - Market Participants demonstrated high compliance levels in Winter 2021-22
- 16 TAC § 25.55 requires preparedness declarations by June 1 each year for summer and December 1 for winter
- Inspections will occur in winter & summer
- ERCOT will sponsor additional weatherization workshops in 2023



Weatherization Inspection Schedule Communication Plans for Transmission Service Providers

A Presentation at ERCOT's Winter Weatherization
Workshop for Transmission Service Providers

Raihan Khondker
Manager, Generation Facility Inspections

October 25, 2022

TSP Weatherization Inspection Schedule Communication Plans

- The schedule is slated to be developed in November 2022.
 - The full schedule will be confidential and only available to ERCOT and PUCT
- Market Notices of Winter weatherization preparedness site visits will be distributed to TSPs well in advance by ERCOT Client Services.
- ERCOT anticipates inspecting approximately 160-170 TSP substations or switchyards between December 2022 and the end of 2023.

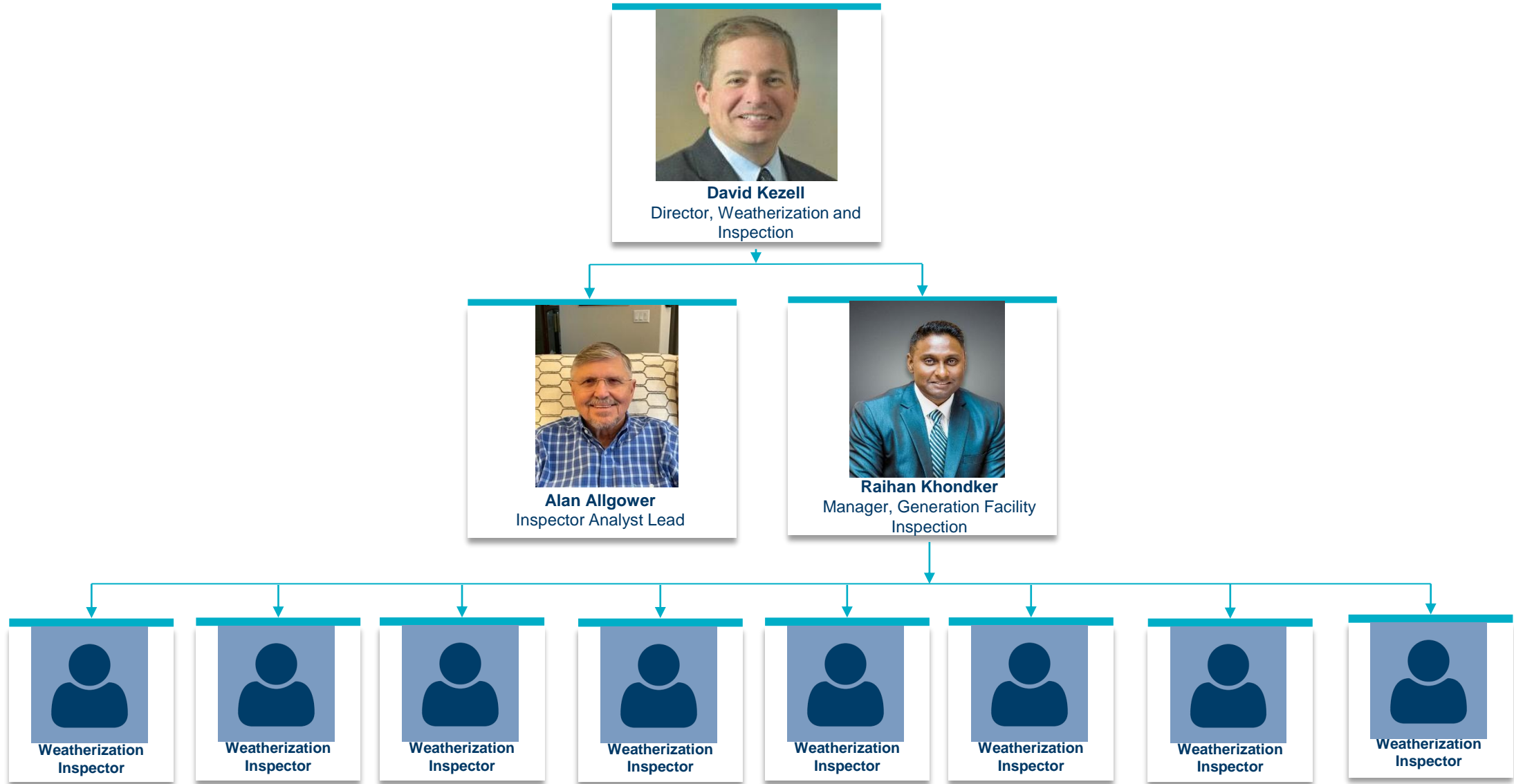
TSP Weatherization Inspection Schedule Communication Plans

- ERCOT will send out notice(s) to each Authorized Representative (AR) and Backup Authorized Representative (BAR) for the TSPs selected for winter inspection(s). The notice(s) will include:
 - TSP and associated substation(s) or switchyard(s) selected for inspection
 - Purpose of the inspection
 - Method of communication
 - Inspection Date(s)
 - Name of the Inspector(s) and contact details
- Selected TSP(s) AR/BAR, and site contacts must route ALL inspections-related communications through:
TSPWeatherizationInspections@ERCOT.com

Schedule for TSP Inspection

- Inspections will be scheduled from approximately December 2, 2022, through February 28, 2023
- There will be no inspections scheduled from 12/23/22 – 1/2/23
- There will be no inspections scheduled on Martin Luther King Jr. Day (Monday 1/16/23) nor President's Day (Monday 2/20/23)

Inspection Team



THANK YOU



Transmission Service Provider – Facility Inspection Checklist Winter 2022-23

A Presentation at ERCOT's Winter Weatherization
Workshop for Transmission Service Providers

Alan H. Allgower
Inspector Analyst Lead

October 25, 2022

16 TAC § 25.55 (f) (1) (A) (ii) Confirmation that the sulfur hexafluoride gas in breakers and metering and other electrical equipment is at the correct pressure and temperature to operate safely during winter weather emergencies, and perform annual maintenance that tests sulfur hexafluoride breaker heaters and supporting circuitry to assure that they are functional;

Does the TSP have records it confirmed the sulfur hexafluoride gas in circuit breakers, and metering and other electrical equipment is at the correct pressure and temperature to operate during a winter weather emergency?

Does the TSP have records it performed annual maintenance to test sulfur hexafluoride breaker cabinet heaters and supporting circuitry for functionality?

16 TAC § 25.55 (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

Does the TSP have records it inspected control cabinet heaters for power transformers and auto transformers?

Are the control cabinet heaters for power transformers and/or auto transformers operable?

(II) Verification that main tank oil levels are appropriate for actual oil temperature;

Is the conservator (if present) and main tank oil levels for auto transformers and/or power transformers at the appropriate level for the actual oil temperature?

16 TAC § 25.55 (f) (1) (A) (iii) Confirmation of the operability of power transformers and auto transformers in winter weather emergencies by: (III) Inspecting bushing oil levels

Does the TSP have records it inspected bushing oil levels for power transformers and/or auto transformers?

Are the bushing oil levels for power transformers and/or auto transformers at the appropriate level?

(IV) Inspecting the nitrogen pressure, if necessary

Does the TSP have records it inspected the nitrogen pressure (where applicable) for power transformers and auto transformers?

Where applicable, do power transformers and auto transformers have adequate nitrogen pressure?

16 TAC § 25.55 (f) (1) (A) (iii) Confirmation of the operability of power transformers and auto transformers in winter weather emergencies by: (V) Verification of proper oil quality such that moisture and dissolved gases are within acceptable ranges for winter weather conditions.

What is the last test date the TSP verified proper oil quality for auto and/or power transformers such that moisture and dissolved gases are within acceptable ranges for *winter weather conditions*?

16 TAC § 25.55 (f) (1) (C) Review the adequacy of staffing plans to be used during a winter weather emergency and revise the staffing plans, as appropriate.

Does the TSP have an *adequate* staffing plan to be used during a winter weather emergency?

16 TAC § 25.55 (f) (1) (D) Train relevant operational personnel on winter weather preparations and operations.

Did the TSP train relevant personnel on winter weather preparations and operations?

16 TAC § 25.55 (f) (1) (A) (i) Confirmation of the operability of all systems and subsystems containing all cold weather critical components;

Has the TSP identified additional systems and subsystems containing cold weather critical components beyond those that were previously addressed in the checklist? If so, does the TSP have records it confirmed the operability of those additional systems and subsystems containing cold weather critical components?

16 TAC § 25.55 (g) (2) (B) If the TSP has not complied with a requirement in subsection (f)(1) of this section, ERCOT must provide the TSP a reasonable period to cure the identified deficiencies.

(i) The cure period determined by ERCOT must consider what weather emergency preparation measures the TSP may be reasonably expected to have taken before ERCOT's inspection, the reliability risk of the TSP's noncompliance, and the complexity of the measures needed to cure the deficiency.

If the TSP has not complied with any part of 25.55(f)(1), confer with the TSP on a suggested cure period to address identified deficiencies and document accordingly.

The ERCOT weatherization team will discuss the factors, determine an appropriate cure period, and inform the TSP of the cure period.

16 TAC § 25.55 (g) (2) (A) ERCOT must provide a written report on its inspection of a transmission system or facility to the TSP. The written inspection report must address whether the TSP has complied with the requirements in subsection (f)(1) of this section.

Thank you!



PUCT Rule 25.55 – Rule Details and Declarations of Preparedness

ERCOT Winter Weatherization Workshop for
Transmission Service Providers

Andrew Gallo
Assistant General Counsel - Regulatory

October 25, 2022

PUCT Rule § 25.55 Declaration Requirements

- Applies to TSPs in ERCOT Region
 - Exception: Transmission facility scheduled for initial energization during winter season must comply *prior to* initial energization

Key Definitions

- Transmission facility: Transmission-voltage element inside fence surrounding TSP's high-voltage switching station or substation owned or operated by TSP
- Weather critical component – Transmission facility: (i) Component susceptible to fail due to weather emergency; (ii) failure likely to: (1) significantly hinder ability to function as intended or (2) lead to derate of >5% of transmission facility's rating
- Winter season: December 1 to February 28
- Major weather-related forced interruption of service – Transmission facility: non-momentary transmission service outage caused by damage to, or inoperability of, transmission facility as result of ***weather emergency***

Winter Requirements in Declaration - TSPs

By December 1 of each year:

- Complete winter weather emergency preparation measures for your transmission facilities, maintain through winter season and complete on-going requirements
- Implement weather emergency preparation measures reasonably expected to ensure *sustained operation* of cold weather critical components during winter weather conditions (using personnel or automated systems)
 - Confirm operability of systems and subsystems w/ cold weather critical components
 - Confirm sulfur hexafluoride gas in breakers, metering and other electrical equipment is at correct pressure and temp to operate during winter weather emergencies

Winter Requirements in Declaration – TSPs (cont'd)

- Perform annual maintenance to test sulfur hexafluoride breaker heaters and supporting circuitry to assure they function
- Confirm operability of power transformers and auto transformers in winter weather emergencies by:
 - Inspecting heaters in control cabinets
 - Verifying main tank oil levels are appropriate for actual oil temperature
 - Inspecting bushing oil levels
 - Inspecting nitrogen pressure, if necessary
 - Verifying proper oil quality so moisture and dissolved gases are w/n acceptable ranges for winter weather conditions
- Review staffing plans for winter weather emergencies & revise as appropriate
- Train operational personnel on winter weather preparations & operations

Winter Requirements in Declaration – TSPs (cont'd)

- Between Nov. 1 and Dec. 1, submit declaration:
 - Identify every transmission substation or switchyard you maintain covered by declaration
 - Summarize all activities to complete requirements above
 - Provide *minimum ambient temperature* at which each transmission facility experienced sustained operations (measured at facility site or closest weather station)
 - Include additional information required by ERCOT protocols
 - Include notarized attestation sworn to by highest-ranking representative, official, or officer with binding authority attesting to completion of applicable activities and accuracy and veracity of information

Sample Declaration

Instructions: Complete this Declaration in its entirety. Leave nothing blank. Add the year in the appropriate spot (show two years – the year Winter begins and the year it ends; e.g., 2022-23).

This Declaration must be signed by the highest-ranking representative, official, or officer of the Transmission Service Provider (TSP) with binding authority over the TSP attesting to the completion of all applicable activities described in Appendix A and the accuracy and veracity of the information provided herein.

Section 1

Winter 20 to 20
 [year] [year]

TSP Name: _____

This Declaration applies to all transmission facilities listed in Appendix A.

Sample Declaration

Section 2

TSP conducted the activities listed in Appendix A in connection with the requirements in 16 TAC § 25.55(f)(1).

[Insert summary of activities for each transmission facility in Appendix A]

Section 3

Declaration of Weatherization Preparations

I hereby attest to the following:

1. TSP performed the activities set forth in Appendix A.
2. The minimum ambient temperature at which each transmission facility has experienced sustained operations as measured at the substation or switchyard or the weather station nearest to the substation or switchyard is listed in the Minimum Ambient Temperature column in Appendix A.

Sample Declaration (cont'd)

I certify I am the highest-ranking representative, official, or officer with binding authority over the above-referenced TSP, I am authorized to execute and submit this Declaration and, based on my investigation and review, I attest to the accuracy and veracity of the information provided herein.

Signature

Printed Name

Title

Date

Sample Declaration (cont'd)

Notary Acknowledgement

STATE OF _____

§

COUNTY OF _____

§

Before me, the undersigned notary, on this day personally appeared _____, known to me (or proven to me) to be the person whose name is subscribed to the foregoing Declaration and acknowledged to me s/he executed it for the purposes therein expressed.

Given under my hand and seal this _____ day of _____, 20____.

Notary Public in and for the State of _____.

Sample Appendix

Winter - Transmission Service Provider Declaration of Weatherization Preparedness

Transmission Service Provider: <TSP>

Transmission Substations/Switchyards covered by this declaration	Status	Minimum Ambient Temperature (°F)	Summary of activities per the requirements of 16 TAC §25.55(f)(1)	Comments

NOTE: Work in progress – subject to change



Declaration of Preparedness: Mechanics for the Transfer of Information

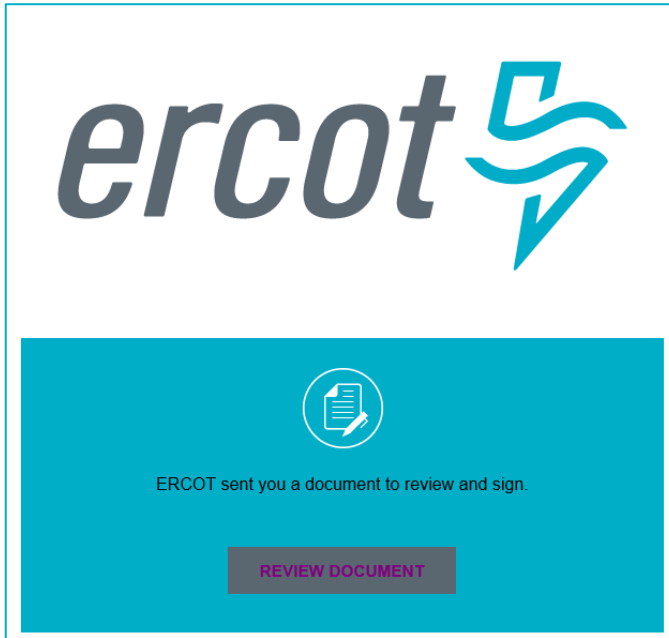
A Presentation at ERCOT's Winter Weatherization
Workshop for Transmission Service Providers

Joel Koepke
Senior Manager, Grid Coordination

October 25, 2022

Declarations of Preparedness via DocuSign

ERCOT will use DocuSign to collect Declarations of Preparedness responses.



The DocuSign envelope will be sent to the Authorized Representative of the TSP.

One DocuSign Response Per TSP

One DocuSign envelope will be used to provide responses for all substations and switchyards associated to the TSP.

Declaration of Preparedness

Declaration of Preparedness - Transmission Service Provider
Summer/Winter Weatherization

Instructions: Complete this Declaration in its entirety. Leave nothing blank. Check *Winter* or *Summer* to indicate the season to which this Declaration applies and add the year in the appropriate spot (Summer requires one year; Winter should show two years – the year the Winter begins and the year it ends; e.g., 2022-23).

This Declaration must be signed by the highest-ranking representative, official, or officer of the Transmission Service Provider (TSP) with binding authority over the TSP attesting to the completion of all applicable activities described in Appendix A and the accuracy and veracity of the information provided herein.

Section 1

Season: Summer 20____ Winter 20____ to 20____
[year] [year]

TSP Name: _____

This Declaration applies to all transmission facilities listed in Appendix A.

Section 2

TSP conducted the activities listed in Appendix A in connection with the requirements in 16 TAC § 25.55(f)(1) for winter or § 25.55(f)(2) for summer.

[Insert summary of activities for each transmission facility in Appendix A]

Section 3

Declaration of Weatherization Preparations

I hereby attest to the following:

- TSP performed the activities set forth in Appendix A.
- The minimum ambient temperature at which each transmission facility has experienced sustained operations as measured at the substation or switchyard or the weather station nearest to the substation or switchyard is listed in the Minimum Ambient Temperature column in Appendix A.

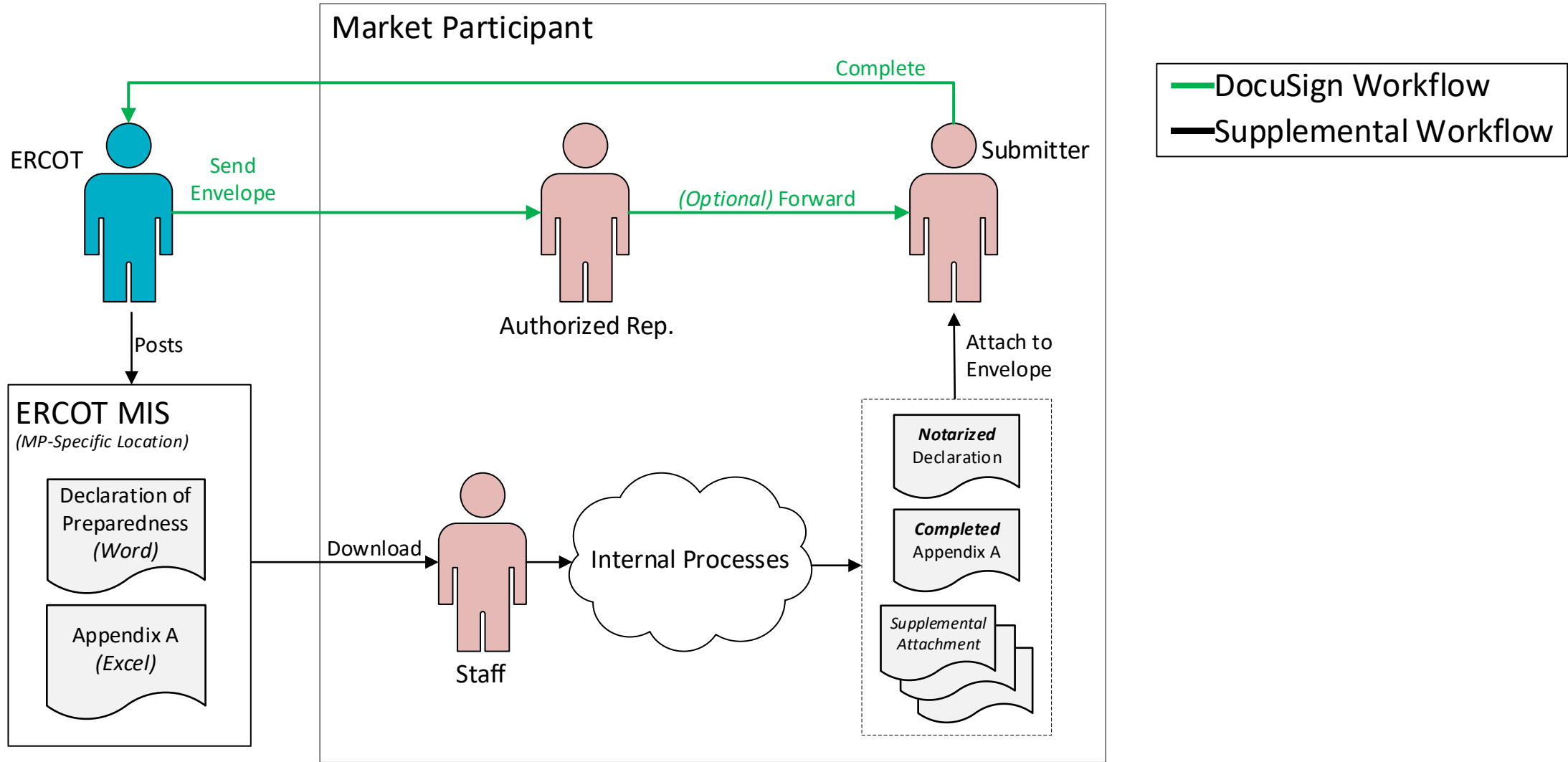
[continued on next page]

Appendix A

Transmission Substations/Switchyards covered by this declaration	Substation/Switchyard Description	If a Transmission Substation or Switchyard is not covered by this declaration, please indicate the reason below and explain in the Comments column.	Minimum Ambient Temperature (°F)	Summary of activities per the requirements of 16 TAC §25.55(f)(1) for Winter	Comments
AIRPORT	Airport Substation				
SCHOOL	School Substation				
DEPOT	Depot Substation				
WIDGET	Widget Factory				
PUMP	Pumping Station				
FACTORY	Important Factory				

Two attachments will be required with the submission. Pre-populated templates will be posted to the ERCOT MIS.

DocuSign and Supplemental Workflows



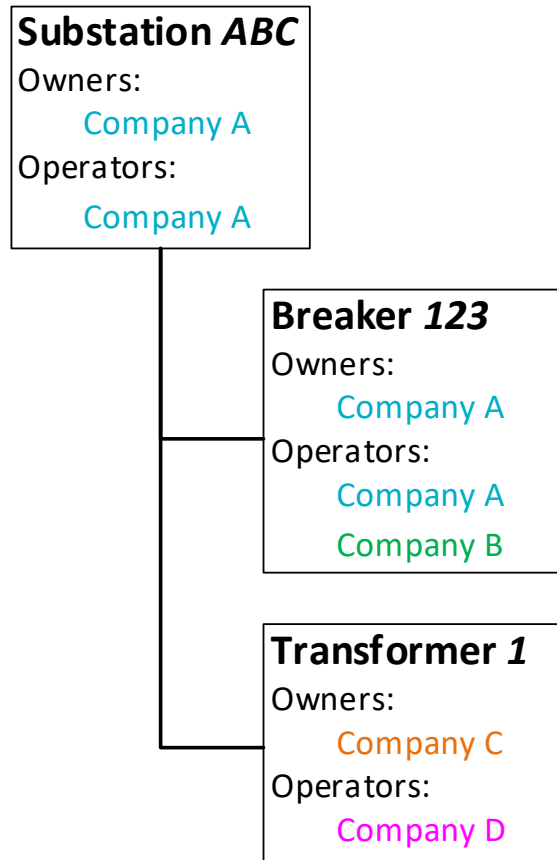
Appendix A – Which Substations Require a Response?

Appendix A will be pre-populated with substations associated to the TSP per the Network Operations Model

Transmission Substations/Switchyards covered by this declaration	Substation/Switchyard Description	If a Transmission Substation or Switchyard is not covered by this declaration, please indicate the reason below and explain in the Comments column.	Minimum Ambient Temperature (°F)	Summary of activities per the requirements of 16 TAC §25.55(f)(1) for Winter	Comments
AIRPORT	Airport Substation				
SCHOOL	School Substation				
DEPOT	Depot Substation				
WIDGET	Widget Factory				
PUMP	Pumping Station				
FACTORY	Important Factory				

Appendix A – Which Substations Require a Response?

Substations are associated to TSPs based on the ownership and operatorship of equipment within the station.



- A substation will be associated if any equipment (a Transmission Facility) is owned or operated by the TSP
- Transmission Facility = transmission voltage element inside the fence owned or operated by the TSP
- A substation may require a response from multiple TSPs

Example: A response for substation ABC will be required by Company A, Company B, Company C, and Company D

Appendix A – Which Substations Require a Response?

Every substation in Appendix A requires a response. Rows cannot be deleted.


Appendix A: Winter - Transmission Service Provider Declaration of Weatherization					
Transmission Service Provider: Acme Transmission (TDSP)					
Transmission Substations/Switchyards covered by this declaration	Substation/Switchyard Description	If a Transmission Substation or Switchyard is not covered by this declaration, please indicate the reason below and explain in the Comments column.	Minimum Ambient Temperature (°F)	Summary of activities per the requirements of 16 TAC §25.55(f)(1) for Winter	Comments
AIRPORT	Airport Substation	Reason substation is not covered by the declaration		Brief summary of activities or references to supplemental files	
SCHOOL	School Substation				
DEPOT	Depot Substation				
WIDGET	Widget Factory				
PUMP	Pumping Station				
FACTORY	Important Factory				

↑
Minimum experienced temperature value

Appendix A – Excluding Substations from the Declaration

To exclude a substation from the Declaration, a reason from a pre-defined list must be selected.

Transmission Substations/Switchyards covered by this declaration	Substation/Switchyard Description	If a Transmission Substation or Switchyard is not covered by this declaration, please indicate the reason below and explain in the Comments column.
AIRPORT	Airport Substation	No Owned or Operated Equipment at This Substation
SCHOOL	School Substation	Substation Has Not Been Energized as of December 1
DEPOT	Depot Substation	Substation Has Not Completed The Requirements of 16 TAC §25.55


Reasons for excluding the substation can be selected via a drop down in Excel

Appendix A – Summary of Activities

A summary of weatherization activities must be provided within the Excel file.

Appendix A: Winter - Transmission Service Provider Declaration of Weatherization Preparedness					
Transmission Service Provider: Acme Transmission (TDSP)					
Transmission Substations/Switchyards covered by this declaration	Substation/Switchyard Description	If a Transmission Substation or Switchyard is not covered by this declaration, please indicate the reason below and explain in the Comments column.	Minimum Ambient Temperature (°F)	Summary of activities per the requirements of 16 TAC §25.55(f)(1) for Winter	Comments
AIRPORT	Airport Substation	No Owned or Operated Equipment at This Substation			Recently sold assets
SCHOOL	School Substation	Substation Has Not Been Energized as of December 1			Substation modeled prior to construction completion
DEPOT	Depot Substation		4	<ul style="list-style-type: none"> • Verified SF6 pressure based on ambient temperatures • Verified transformer oil levels given current temperatures 	
WIDGET	Widget Factory		-10	See attachment "Region_1_Weatherization.pdf"	
PUMP	Pumping Station		-8	See attachment "Region_1_Weatherization.pdf"	
FACTORY	Important Factory		6	See attachment "Customer_Weatherization.pdf"	

Activities can be listed within the cell...

...or supplemental attachments can be referenced

DocuSign Attachments

There are three different attachment locations within the envelope

This Winter Declaration of Preparedness form is provided by ERCOT to facilitate compliance with 16 Texas Administrative Code § 25.55(c)(1).

Generation Entity: **Acme Transmission (TDSP)**

DocuSign Instructions

- Responses in this document can only be provided by one person.
- The document can be forwarded or "Assigned to Someone Else" via the menu at the top of the DocuSign web page.
- The declaration document and Appendix A spreadsheet containing all Resources has been uploaded into your Requested Information folder of certificate is required for access. Please attach the completed document.
- Please contact your ERCOT Account Manager with any additional questions.

Submitter signature:



Submitter name: **John Smith**

Date: **10/24/2022**

Declaration:



Appendix A:



Supplemental Documents:



Transmission Substations/Switchyards covered by this declaration
AIRPORT
SCHOOL
DEPOT
WIDGET
PUMP
FACTORY

Declaration: The notarized Declaration must be attached prior to submission. **Only one file should be attached.**

Appendix A: The completed Appendix A must be attached prior to submission. **Only one file should be attached.**

DocuSign attachment limits
 Max size: 25MB
 Total max size: 100MB
 Max attachments: 20 files

Supplemental Documents: Multiple additional files summarizing weatherization activities can be attached.



Questions?



Counties in Weather Zones from the ERCOT Historical Weather Study

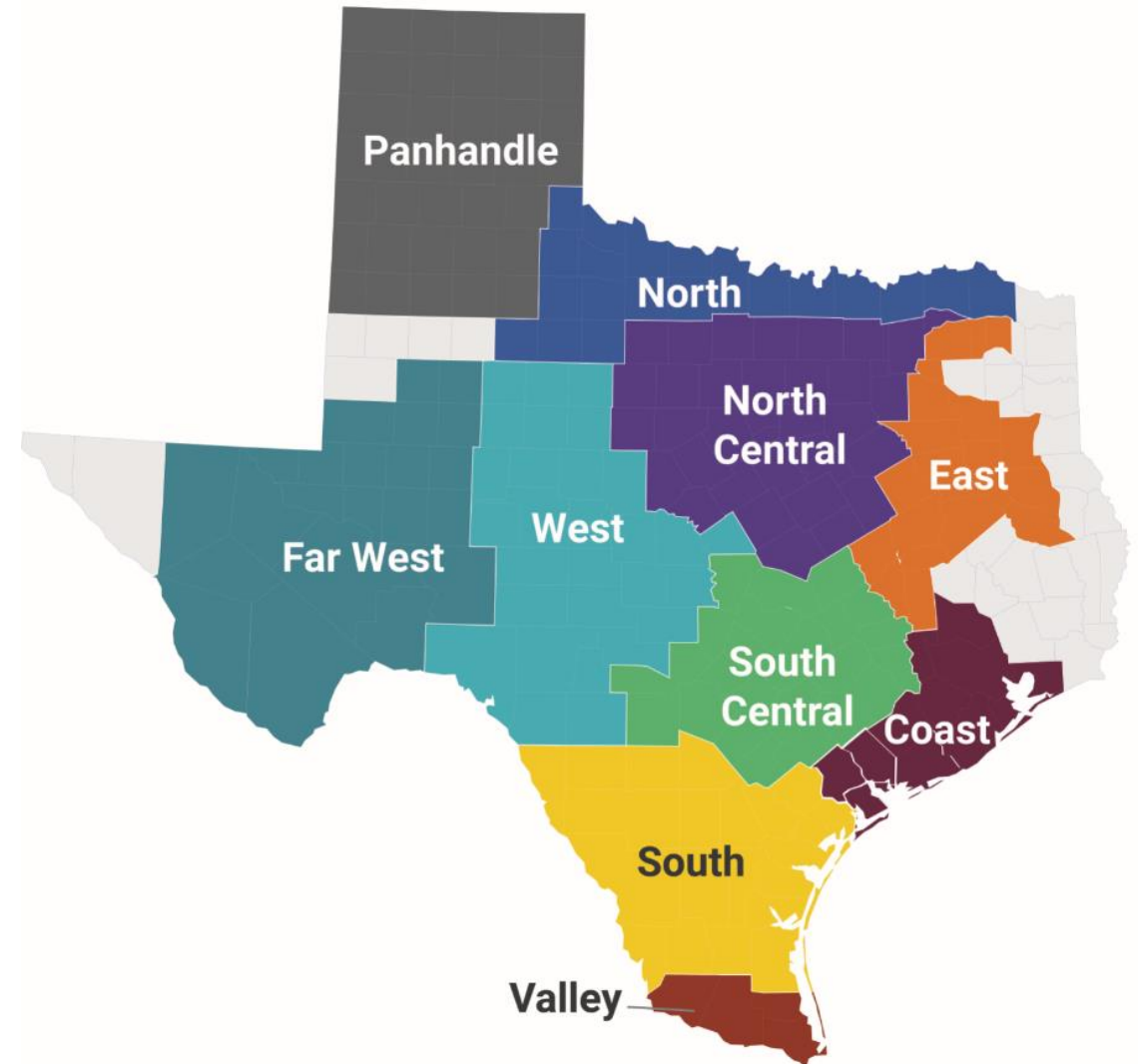
A Presentation at ERCOT's Winter Weatherization
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Chris Coleman
Lead Meteorologist

October 25, 2022

Weatherization Mapping

16 TAC §25.55(f)(1)(B) and (f)(2)(B) refer to “the weather zone in which the facility is located” from ERCOT’s historical weather study. Attachment C to that study mapped many Texas counties to the various zones. The county-to-zone mapping appears on the map at right



Weatherization Mapping

31 counties (currently outside ERCOT's load zones) have no weatherization zone designation

ERCOT will apply a climate analysis to each currently non-designated county using historical weather data

Counties will then receive a specific weatherization zone designation based on the nearest zone with the most similar climate

ERCOT will produce a revised map and communicate it after completing the analysis

