



PUCT Rule 25.55 – Weather Emergency Preparedness Overview

A Presentation at ERCOT's Winter Weatherization
Workshop for Generation Resources

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 – Weather Emergency 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 with 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:
 - (c)(1)(B) - weather emergency preparation measures reasonably expected to ensure *sustained operation* at established 95th Percentile minimum average 72-hour temperatures for applicable weather zone and,
 - (c)(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



PUCT Rule 25.55 – Rule Details and Declarations of Preparedness

ERCOT Winter Weatherization Workshop for
Generation Resources

Andrew Gallo
Assistant General Counsel - Regulatory

October 25, 2022

PUCT Rule § 25.55 Declaration Requirements

- Applies to Resource Entities (REs) in ERCOT Region
 - Exceptions
 - Resource w/ ERCOT-approved notice of suspension of operations for winter season *until* return to service date in notice of change of generation resource designation
 - New/repowered Resource scheduled to begin commercial operations during winter season must comply *prior to* commissioning date

Key Definitions

- Weather critical component - Resource: (i) Component susceptible to fail due to a weather emergency; (ii) failure likely to: (1) significantly hinder ability to function as intended *or* (2) lead to trip, derate of $> 5\%$ of capacity in seasonal net maximum sustainable rating or failure to start
- Winter season: December 1 to February 28
- Major weather-related forced interruption of service – Resource: (i) failure to start following ≥ 1 attempts for ≥ 12 continuous hours as result of ***weather emergency***; *or* (ii) loss of $\geq 50\%$ of capacity in seasonal net max. sustainable rating for ≥ 12 continuous hours as result of ***weather emergency***

Winter Requirements in Declaration - Resources

By December 1 of each year:

- Complete winter weather emergency preparation measures for Resources under your control, maintain through winter season and complete on-going monthly 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)
 - Install/maintain adequate wind breaks
 - Install/maintain insulation and enclosures for cold weather critical components
 - Inspect thermal insulation and water-proofing for damage/degradation and repair damaged/degraded materials

Winter Requirements in Declaration – Resources (cont'd)

- Arrange & provide for availability and safekeeping of sufficient chemicals, auxiliary fuels, and other materials for sustained operations during winter weather emergency
- Plan for & maintain operability of instrument air moisture prevention systems
- Maintain freeze protection equipment for cold weather critical components, including fuel delivery systems you control
- Test or verify functionality of freeze protection equipment prior to and on monthly basis during winter season
- Monitor all cold weather critical components, including circuitry providing freeze protection or preventing instrument air moisture
- Review staffing plans for winter weather emergencies & revise as appropriate
- Train operational personnel on winter weather preparations & operations

Winter Requirements in Declaration – Resources (cont'd)

- Between Nov. 1 and Dec. 1, submit declaration:
 - Identify every Resource under your control covered by declaration
 - Summarize all activities to complete requirements above
 - Provide *minimum ambient temperature* at which each Resource experienced sustained operations (measured at Resource 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

NOTE: You must submit the declaration to ERCOT before returning mothballed, outaged, or decommissioned Resource to service; for new/repowered Resource, submit declaration prior to commissioning date

Sample Declaration

Section 2

Generation Entity conducted the activities listed in Appendix A in connection with the requirements in 16 Texas Administrative Code § 25.55(c)(1).

[Insert summary of activities performed for each Resource in a separate Appendix A]

Section 3

I hereby attest to the following:

1. Generation Entity performed the activities set forth in Appendix A.
2. The minimum ambient temperature at which each Generation Resource has experienced sustained operations as measured at the Resource site or weather station nearest to the site 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 Generation Entity, 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 A

Winter - Generation Entity Declaration of Weatherization Preparedness				
Generation Entity: <generation_entity>				
Generation Resource	If a Resource is not covered by this declaration, please indicate the reason below.	Minimum Ambient Temperature (°F)	Activities to Complete the Requirements of 16 TAC §25.55(c)(1)	Comments

NOTE: Work in progress – subject to change



Declarations of Preparedness: Mechanics for the Transfer of Information

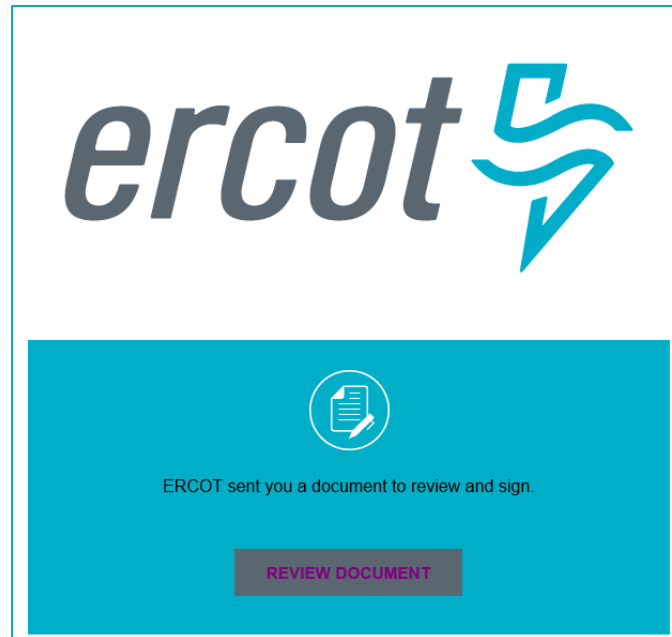
A Presentation at ERCOT's Winter Weatherization
Workshop for Generation Resources

Joel Koepke
Senior Manager, Grid Coordination

October 25, 2022

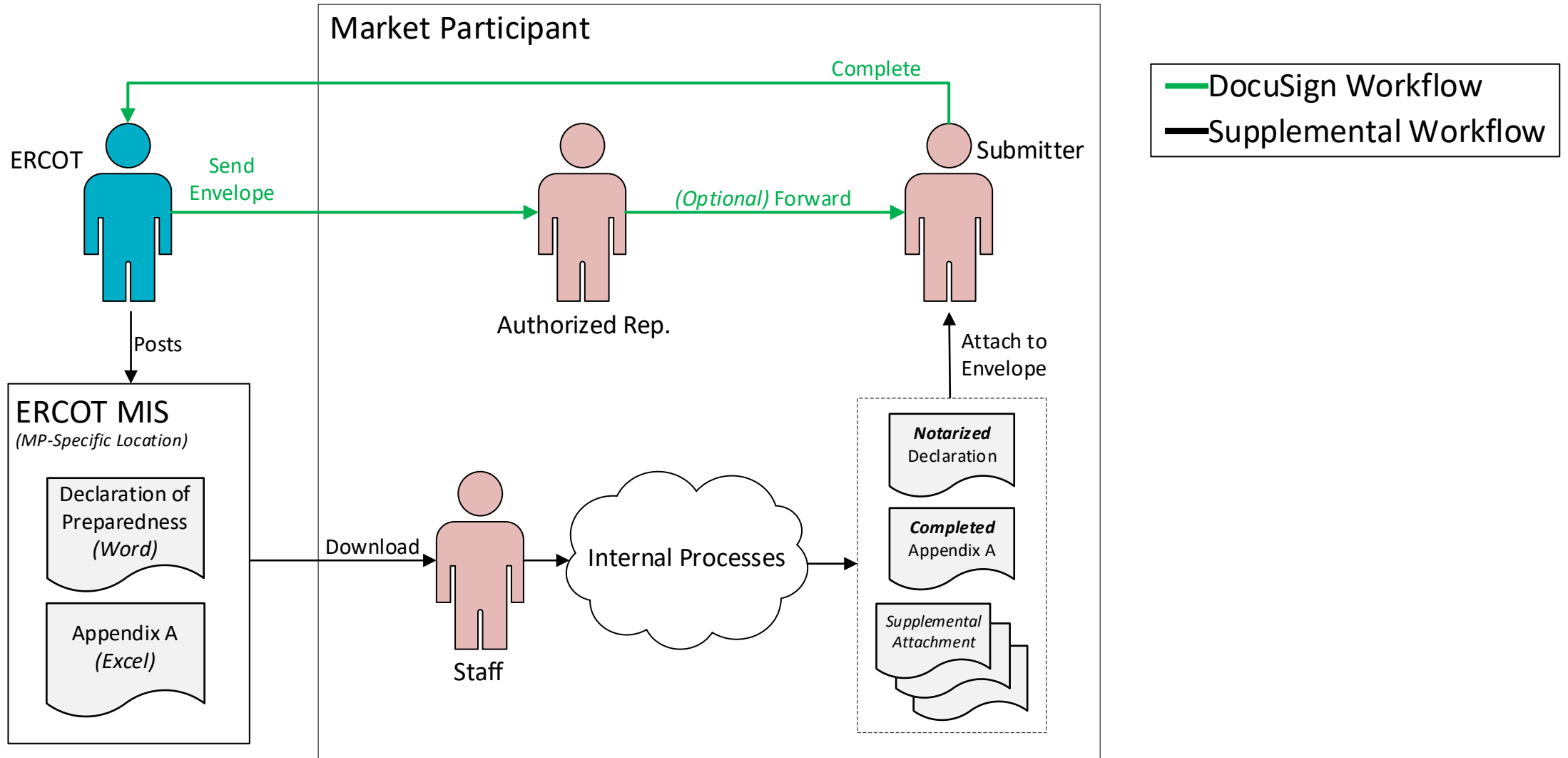
Declarations of Preparedness via DocuSign

ERCOT will use DocuSign to collect Declarations of Preparedness responses.



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

DocuSign and Supplemental Workflows



Appendix A – Which Resources Require a Response?

Appendix A will be pre-populated with the RE's individual Resources per the Network Operations Model

- Combined Cycles
 - Each physical Resource (e.g. GT, ST) will be on a separate row
- Jointly-Owned Units
 - Only the Master RE will have a row for the Resource
- Intermittent Renewable Resources
 - Each Resource, as modeled in the Network Operations Model, will be on a separate row

Appendix A – Which Resources Require a Response?

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

Appendix A: Winter - Generation Entity Declaration of Weatherization Preparedness				
Generation Entity: Acme Energy (RE)				
Generation Resource	If a Resource is not covered by this declaration, please indicate the reason below.	Minimum Ambient Temperature (°F)	Activities to Complete the Requirements of 16 TAC §25.55(c)(1)	Comments
ACME1_ST1				
ACME1_CT1				
ACME2_UNIT1				
ACME2_UNIT2	Reason Resource is not covered by the declaration		Brief summary of activities or references to supplemental files	
ACME3_DGR1				
ACME3_DGR2				
ACME4_ST1				
ACME4_CT1				



Minimum experienced temperature value

Appendix A – Excluding Resources from the Declaration

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

Generation Resource	If a Resource is not covered by this declaration, please indicate the reason below.
ACME1_ST1	Resource in Scheduled Outage as of December 1
ACME1_CT1	Resource Operations Suspended as of December 1
ACME2_UNIT1	Resource Has Not Completed Step 3 of Commissioning Process as of
ACME2_UNIT2	Resource Has Not Completed the Requirements of 16 TAC §25.55



Reasons for excluding the Resource 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 - Generation Entity Declaration of Weatherization Preparedness				
Generation Entity: Acme Energy (RE)				
Generation Resource	If a Resource is not covered by this declaration, please indicate the reason below.	Minimum Ambient Temperature (°F)	Activities to Complete the Requirements of 16 TAC §25.55(c)(1)	Comments
ACME1_ST1	Resource in Scheduled Outage as of December 1		<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> Activities can be listed within the cell... </div>	Cannot perform weatherization activities until outages have concluded
ACME1_CT1	Resource Operations Suspended as of December 1			NSO submitted 6/1/2022 for Winter season
ACME2_UNIT1	Resource Has Not Completed Step 3 of Commissioning Process as of December 1			Target commissioning date of 4/1/2023
ACME2_UNIT2		4	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <ul style="list-style-type: none"> Inspected heat trace circuits Erected a wind break on the north side of units susceptible to outages or derates caused by wind Inspected existing thermal insulation and water-proofing for damage or degradation and repaired damaged insulation </div>	
ACME3_DGR1		-10		<ul style="list-style-type: none"> Visually inspected ESR enclosure Performed maintenance on climate control system
ACME3_DGR2		-10	<ul style="list-style-type: none"> Visually inspected ESR enclosure Performed maintenance on climate control system 	
ACME4_ST1		6	See Attachment "Weatherization_Activities.pdf"	
ACME4_CT1		6	See Attachment "Weatherization_Activities.pdf"	

...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 Energy (RE)**

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 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:



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____
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(c)(1) for winter or § 25.55(c)(2) for summer.
(Insert summary of activities for each transmission facility in Appendix A)

Section 3
Declaration of Weatherization Preparation
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 was operated and sustained operations as measured at the substation or switchyard is listed in the Minimum Ambient temperature column in Appendix A.
(continued on next page)

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

Generation Resource

ACME1_ST1
ACME1_CT1
ACME2_UNIT1
ACME2_UNIT2
ACME3_DGR1
ACME3_DGR2
ACME4_ST1
ACME4_CT1

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

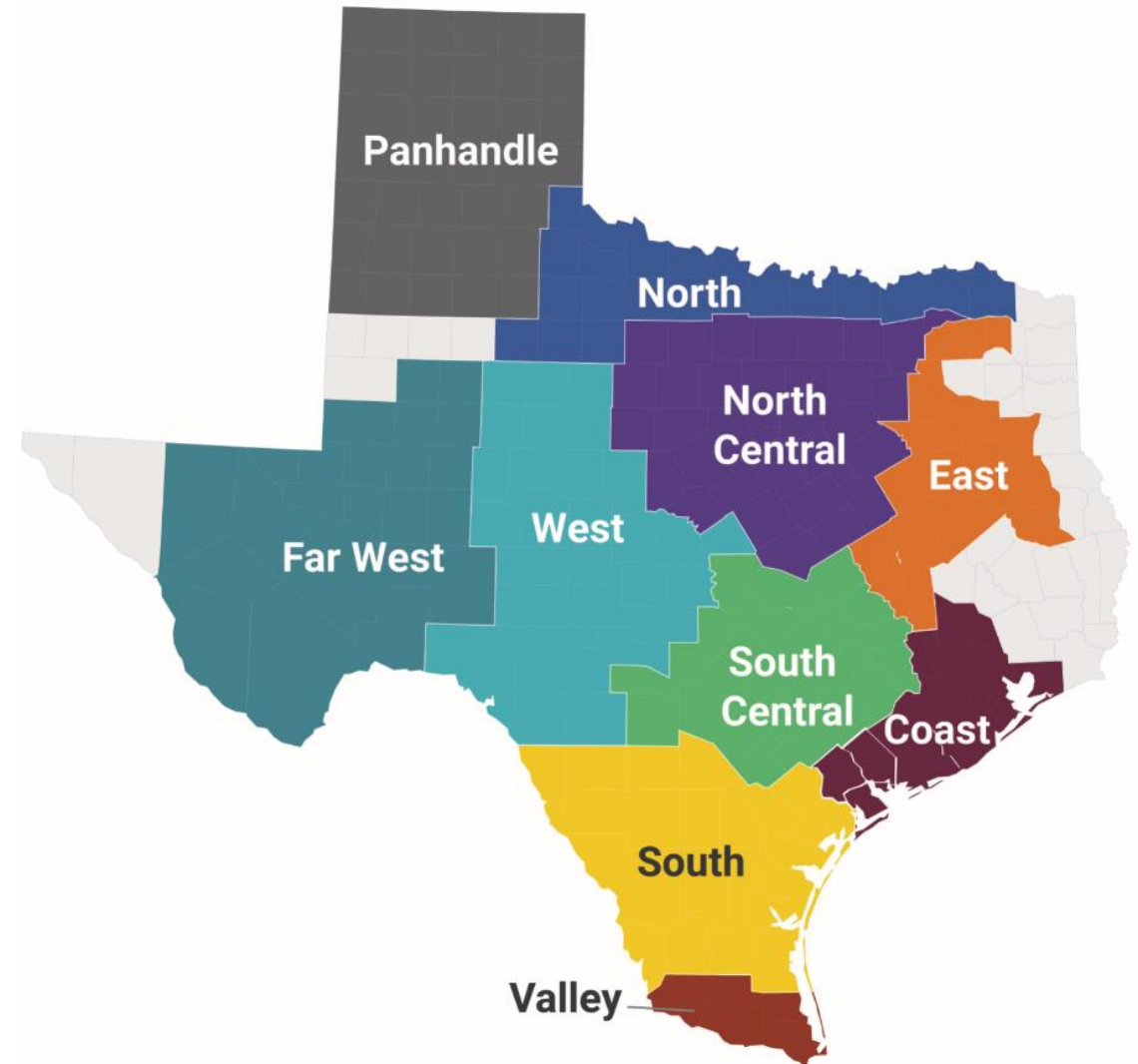
A Presentation at ERCOT's Winter Weatherization
Workshop for Resource Entities

Chris Coleman
Lead Meteorologist

October 25, 2022

Weatherization Mapping

16 TAC §25.55(c)(1)(B) and (c)(2)(B) refer to “the weather zone in which the resource 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.



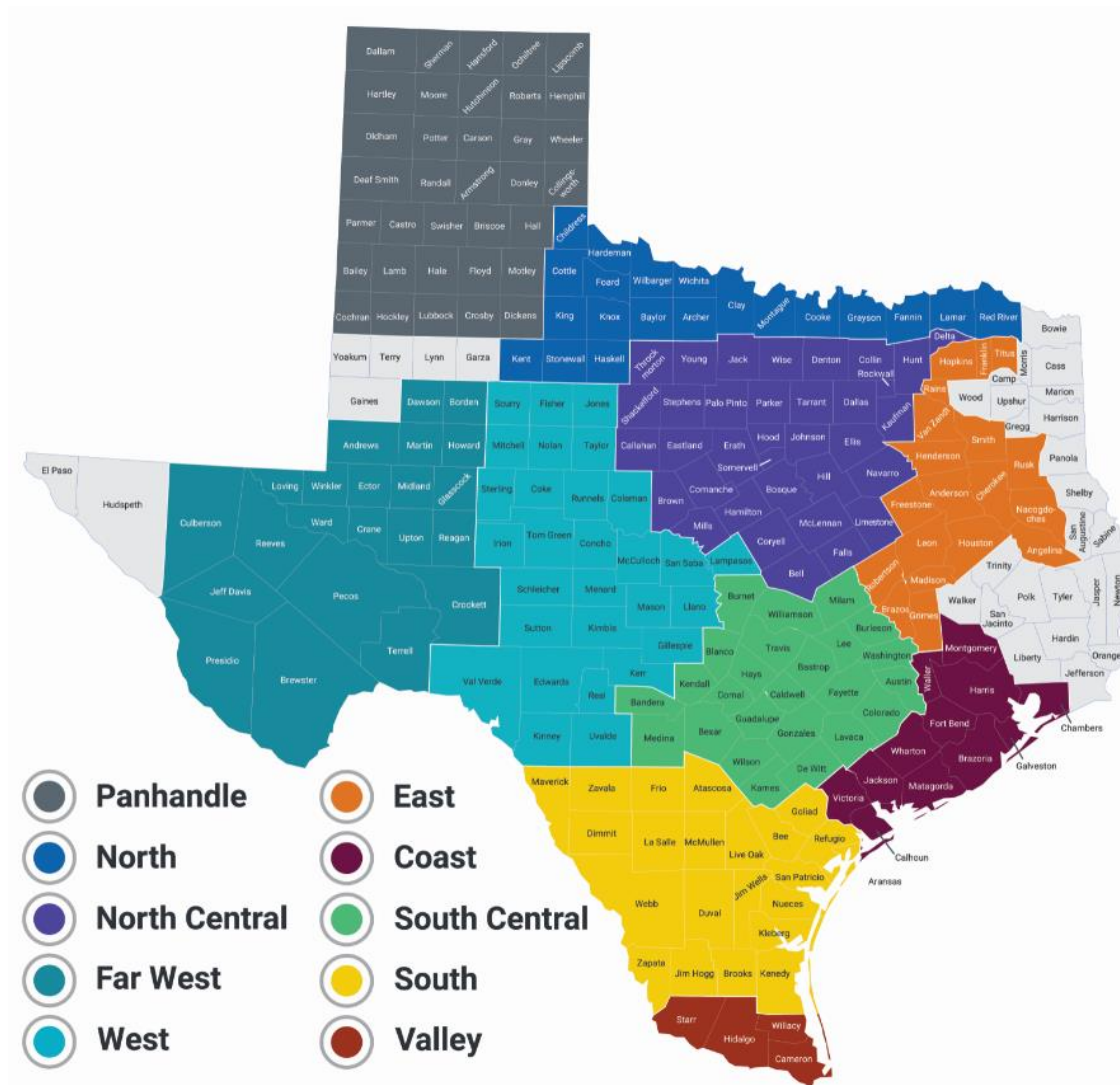
Weatherization Mapping

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





Generation Entity Inspection Checklist Winter 2022-23

A Presentation at ERCOT's Winter Weatherization
Workshop for Resource Entities

Alan H. Allgower
Inspector Analyst Lead

October 25, 2022

16 TAC § 25.55 (c) (1) (A) (i) Installation and maintenance of adequate wind breaks for resources susceptible to outages or derates caused by wind;

Has the GE installed adequate wind breaks for equipment susceptible to outages or derates caused by wind?

Does the GE have records it maintained wind breaks for equipment susceptible to outages or derates caused by wind?

16 TAC § 25.55 (c) (1) (A) (ii) Installation and maintenance of insulation and enclosures for all cold weather critical components;

Has the GE installed insulation or insulated enclosures for all cold weather critical components?

Does the GE have records it maintained insulation and insulated enclosures for all cold weather critical components?

16 TAC § 25.55 (c) (1) (A) (iii) Inspection of existing thermal insulation and associated forms of water-proofing for damage or degradation, and repair of damaged or degraded insulation and associated forms of water-proofing;

Has the GE inspected existing thermal insulation and associated forms of waterproofing for damage or degradation?

Does the GE have records of waterproofing and insulation repairs?

16 TAC § 25.55 (c) (1) (A) (iv) Arrange and provide for the availability and appropriate safekeeping of sufficient chemicals, auxiliary fuels, and other materials necessary for sustained operations during a winter weather emergency;

Has the GE arranged and provided for the availability and appropriate safekeeping of sufficient chemicals and auxiliary fuels necessary for sustained operations during a winter weather emergency?

Has the GE arranged and provided for the availability and appropriate safekeeping of materials necessary for sustained operations during a winter weather emergency?

16 TAC § 25.55 (c) (1) (A) (v) Plan for and maintain the operability of instrument air moisture prevention systems;

Does the GE have a plan for maintaining instrument air moisture prevention systems?

16 TAC § 25.55 (c) (1) (A) (vii) Monitoring of all cold weather critical components, including circuitry that provides freeze protection or prevents instrument air moisture;

How does the GE monitor instrument air moisture?

16 TAC § 25.55 (c) (1) (A) (vi) Maintenance of freeze protection equipment for all cold weather critical components, including fuel delivery systems controlled by the generation entity, and testing or verifying the functionality of freeze protection equipment prior to and on a monthly basis during the winter season;

Has the GE maintained freeze protection equipment for all cold weather critical components, including fuel delivery systems it controls?

Does the GE have records to demonstrate it verified the functionality of freeze protection equipment (including fuel delivery systems it controls) before December 1 and on a monthly basis during the winter season?

16 TAC § 25.55 (c) (1) (A) (vii) Monitoring of all cold weather critical components, including circuitry that provides freeze protection or prevents instrument air moisture;

How does the GE monitor cold weather critical components, including circuitry for freeze protection?

16 TAC § 25.55 (c) (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 GE have an *adequate* staffing plan for a winter weather emergency?

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

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

16 TAC § 25.55 (d) (2) (A) (i) The cure period determined by ERCOT must consider what weather emergency preparation measures the generation entity may be reasonably expected to have taken before ERCOT's inspection, the reliability risk of the resource's noncompliance, and the complexity of the measures needed to cure the deficiency.

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

The Inspector will notify the GE that the ERCOT weatherization team will discuss the factors, determine an appropriate cure period, and inform the GE of the cure period.

16 TAC § 25.55 (d) (2) (A) ERCOT must provide a written report on its inspection of a resource to the generation entity. The written inspection report must address whether the generation entity has complied with the requirements in subsection (c)(1) of this section.

Thank you!



Weatherization Inspection Schedule Communication Plans

A Presentation at ERCOT's Winter Weatherization
Workshop for Resource Entities

Raihan Khondker
Manager, Generation Facility Inspection

October 25, 2022

GE 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 GEs well in advance by ERCOT Client Services.
- ERCOT anticipates inspecting approximately 385-400 GE resources between December 2022 and the end of 2023.

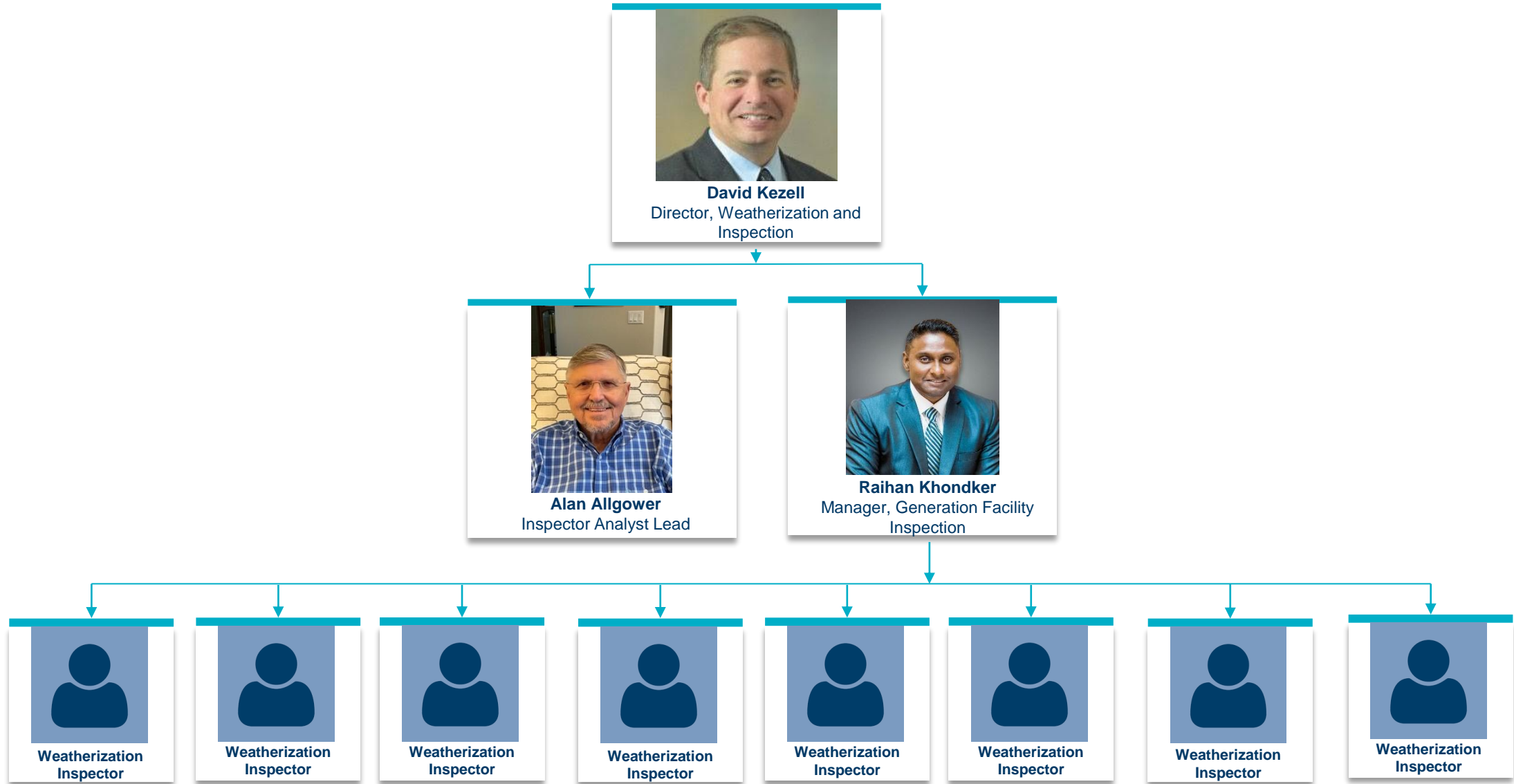
GE Weatherization Inspection Schedule Communication Plans

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

Schedule for GE 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