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Control Number - 54444


Item Number - 44

Kathleen Jackson
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Will McAdams
Commissioner
Lori Cobos
Commissioner
Jimmy Glotfelty
Commissioner



Greg Abbott
Governor
Thomas J. Gleeson
Executive Director

Public Utility Commission of Texas

TO: Woody Rickerson, ERCOT
FROM: Barksdale English,  Division of Compliance and Enforcement
DATE: 20 July 2023
RE: July 20, 2023 Open Meeting – Item #26

Project No. 54444 – *CY 2023 Reports of the Electric Reliability Council of Texas*. Implementation of Wind Chill Values under 16 Tex. Admin. Code § 25.55

Today, the commissioners voted to direct Commission Staff to file a memorandum that summarizes their deliberation and decision related to ERCOT's proposed plan to implement the wind chill value weather preparation standard contained in 16 Texas Administrative Code (TAC) § 25.55(c)(1)(B) and (f)(1)(B). The commissioners unanimously supported the concepts and implementation plan laid out in your July 13, 2023 memorandum¹ and directed ERCOT to implement that plan for the upcoming winter season beginning December 1, 2023.

Based on your memorandum and today's discussion, the commissioners directed ERCOT to:

- (1) require each generation entity and transmission service provider to file with its declaration of winter weather preparedness the ambient temperature and wind speed design values for each resource or facility under that entity's control;²

¹ Project No. 54444, AIS Item No. 40 (Jul. 13, 2023).

² If a generation entity or transmission service provider does not have access to original or current design criteria for ambient temperature or wind speed, the entity must devise those values based on the entity's experience operating the resource or facility.



- (2) assess, in part, a resource's or facility's winter weather preparedness on the 95th percentile, minimum average 72-hour wind chill values included in ERCOT's 2021 weather study as Table 72;³
- (3) inspect documents verifying the design criteria and the entity's efforts to prepare its resource or facility to that design criteria, as needed; and
- (4) evaluate actual temperature and wind speed experienced at a resource or facility that suffers an outage or deration during winter weather conditions, as described by the rule.

Attached to this memorandum is your July 13, 2023 memo for ease of reference. Should you have any questions, please do not hesitate to contact me.

³ *Project for ERCOT Weather Study to Implement Reliability Standards under PURA §§ 35.0021 and 38.075*, Project No. 52691, ERCOT Historical Weather Study Final Report, Version 1.1 (Jul. 13, 2022).



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July 13, 2023

Public Utility Commission of Texas
Interim Chairman, Kathleen Jackson
Commissioner Will McAdams
Commissioner Lori Cobos
Commissioner Jimmy Glotfelty
1701 N. Congress Avenue
Austin, TX 78711

Re: ERCOT Weatherization & Inspection Team Interpretation of Electric Substantive Rule 25.55

Dear Chairman and Commissioners:

Based on discussions at the PUCT's Open Meeting on June 29, 2023, I hereby submit the ERCOT Weatherization & Inspection (W&I) Team's proposed interpretation of 16 Texas Administrative Code (TAC) § 25.55(c)(1)(B) and (f)(1)(B), which establish a temperature standard for preparing generation resources and transmission facilities for winter weather. This notice clarifies ERCOT's June 23, 2023 filing (Item No. 34, Control No. 54444) as requested by the Commissioners in the recent Open Meeting.

This letter states how ERCOT will use the 95th Percentile Minimum Average 72-hour Wind Chill values reported in Table 72 on page 58 of ERCOT's historical weather study filed in Project 52691¹ ("chart values," copied below) to evaluate the adequacy of cold weather design criteria for existing facilities and may be used to establish a minimum standard of cold weather design criteria for new facilities.

¹ The report is available at https://interchange.puc.texas.gov/Documents/52691_6_1221755.PDF.

Weather Zone	95th Percentile Minimum Average 72-hour Wind Chill
North	-5.0°
North Central	-0.5°
West	0.3°
Far West	1.3°
East	4.4°
Coast	18.1°
South Central	8.4°
Southern	16.3°
Valley	20.0°
Panhandle	-17.6°

The ERCOT W&I team proposes using these chart values as follows:

A. Initial Determination of Adequacy of Winter Weather Emergency Preparation Measures

1. Market participants will provide the temperatures and wind speeds used in the current design of existing generation resources and transmission facilities (“facilities”) and calculate the associated Wind Chill temperature using the equation in the NOAA/NWS Wind Chill Chart:²

$$\text{Wind Chill (°F)} = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$$

where T is the temperature and V is the wind speed used when designing the facility.

2. If the calculated design Wind Chill (°F) is less than or equal to the chart value, the weather emergency preparation measures the market participant implements to protect against those cold weather design conditions would establish a presumption—subject to confirmation during an inspection—that the market participant met the requirement of (c)(1)(B) or (f)(1)(B). For example, if a market participant has a facility in the East weather zone (chart value of 4.4°) designed and constructed to a cold temperature of 15°F and a 10 mph wind speed, its calculated Wind Chill (2.66°F) is lower than the chart value and, therefore, ERCOT would presume that no additional weather emergency preparation measures

² Attachment 1 is the National Weather Service wind chill chart demonstrating the calculation of wind chill based on various combinations of temperature and wind speed.

should be required for that facility to reasonably be expected to have sustained operation at the chart value.³

3. If the calculated design Wind Chill (°F) is greater than the chart value, ERCOT would presume that the market participant must implement additional weather emergency preparation measures to reasonably ensure sustained operations at or above the chart value. For example, if the market participant had designed and constructed the same facility in the first example to a cold temperature of 15°F and a wind speed of 5 mph, its calculated Wind Chill (7.11°F) is *higher than* the chart value and, therefore, that facility would be presumed to need additional weather emergency preparation measures to reasonably ensure sustained operation at the chart value.
4. Accordingly, ERCOT will add two columns to the templates used as Appendix A (example in Attachment 2)⁴ to the declarations of preparedness required by 16 TAC § 25.55(c)(3) and (f)(3). Those columns will require market participants to submit the temperature and wind speed used in the *current* design of each facility —*i.e.*, the original design or a subsequent redesign.
5. If the generation entity or TSP does not have (or cannot identify) a *current* design basis cold temperature or wind speed for an existing facility, it must assess its weather emergency preparation measures, plans, procedures, and operations to determine what, *if any*, additional weather emergency preparation measures, plans, procedures, and operations it must perform that could reasonably be expected to ensure sustained operation of the facility at the chart value to meet the 16 TAC § 25.55(c)(1) or (f)(1) requirements.
6. During facility inspections, ERCOT may request access to records or other documents that it determines may be needed to establish compliance with 16 TAC § (c)(1)(B) and (f)(1)(B). ERCOT will also continue established inspection practices to evaluate compliance with other requirements of 16 TAC § 25.55(c)(1) or (f)(1).
7. For new facilities, ERCOT encourages generation entities and TSPs to select conservative cold weather design criteria significantly exceeding the minimum standards established in the chart values.

³ Rule 25.55 contains a list of mandatory actions market participants must take in addition to measures intended to prepare the facility to operate at or above the Wind Chill chart value. Design Wind Chill values below the weather zone Wind Chill value do not obviate the obligation to fulfill all the rule's requirements.

⁴ An example Appendix A for generation entities (the TSP Appendix A will be similar) showing the additional columns.

B. Evaluation of Failures when Actual Temperature Exceeds the Chart Value

1. If a facility has an apparent weather-related failure when the *ambient temperature* was above the chart value, ERCOT will evaluate the circumstances and may inspect the facility to determine if the generation entity or TSP failed to meet the requirements of 16 TAC § 25.55(c)(1) or (f)(1). That evaluation will consider wind chill values calculated from *actual* temperatures and wind speeds at (or near) the facility site at the time of the failure.
2. If: (i) the *actual* calculated wind chill value at the time of the weather-related failure is equal to or below the chart value and (ii) the generation entity or TSP applied and maintained its weather emergency preparation measures, ERCOT will not consider that failure to constitute a violation of 16 TAC § 25.55(c)(1)(B) or (f)(1)(B).
3. If the *actual* calculated wind chill value at (or near) the facility site at the time of the weather-related failure is *above* the chart value, ERCOT's evaluation may determine the weather emergency preparation measures were inadequate to reasonably expect sustained operation at the chart value as required by 16 TAC § 25.55(c)(1)(B) and (f)(1)(B). In that case, ERCOT will assign a cure period for the generation entity or TSP to remedy the deficiency, as required by 16 TAC § 25.55(d)(2)(B) and (g)(2)(B).

This clarified interpretation regarding use of the wind chill chart values assures the standard will enhance system reliability during cold weather as intended and avoid the possibility that generation entities and TSPs might double-count the chilling effect of wind at low temperatures. It will also provide clear expectations for: (i) generation entities and TSPs when providing preparedness declarations and (ii) ERCOT when performing evaluations.

Respectfully submitted,

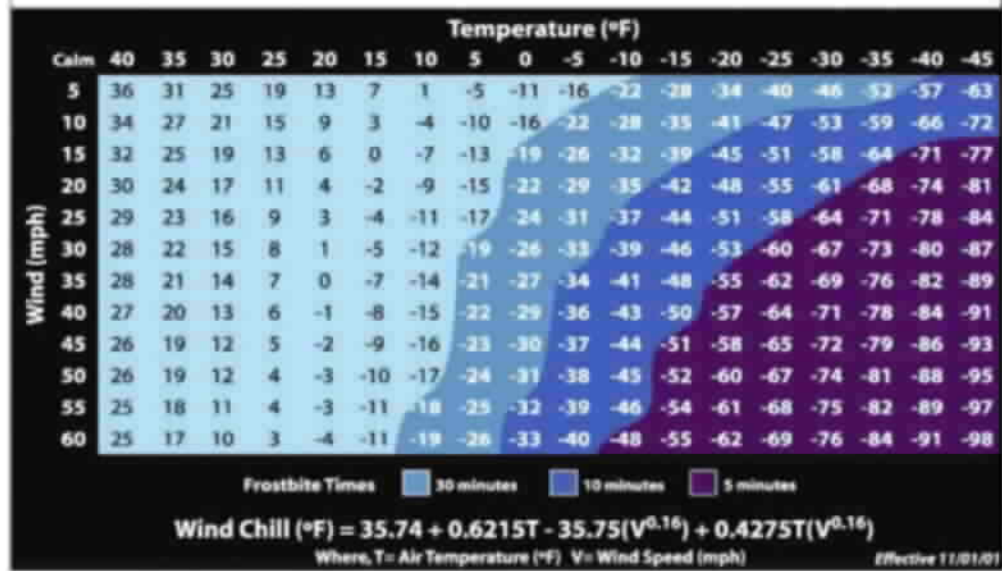
/s/ Woody Rickerson

D.W. "Woody" Rickerson
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Attachment 1



Wind Chill Chart



Attachment 2

Instructions:

- Every row requires a response.
- Existing rows cannot be deleted.
- Rows can be added by right-clicking on the row number and selecting "Insert".

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.	Design Basis Cold Temperature (°F)	Design Basis Wind Speed (mph)	Minimum Experienced Ambient Temperature (°F)	Activities to Complete the Requirements of 16 TAC §25.55(c)(1)	Comments