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RE: Subject: Project No. 53401 – Electric Weather Preparedness Standards – Phase II

Oncor is filing a redline version of its Initial comments in Project No. 53401. Attachment A was intended to be a filed as a redline but was inadvertently converted to a clean version through the efiling process. Oncor therefore requests Central Records void the original filing, item 14, in Project No. 53401.

Sincerely,

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PROJECT NO. 53401

ELECTRIC WEATHER PREPAREDNESS STANDARDS-PHASE II	**§ § §**	**PUBLIC UTILITY COMMISSION OF TEXAS**

ONCOR ELECTRIC DELIVERY COMPANY LLC'S COMMENTS ON THE PROPOSAL FOR PUBLICATION OF REPLACEMENT RULE 16 TAC § 25.55

Oncor Electric Delivery Company LLC ("Oncor") files these comments on the Proposal for Publication of Repeal of 16 TAC § 25.55 and Replacement with Proposed New 16 TAC §25.55, As Approved at the May 26, 2022, Open Meeting of the Public Utility Commission of Texas ("Commission"), as filed in this project on May 26, 2022 ("Proposal for Publication"). Oncor's comments are timely filed on or before June 23, 2022.

I. COMMENTS ON PROPOSED REPLACEMENT RULE 16 TAC § 25.55

A. General Comments

Oncor appreciates the Commission's efforts to maximize grid operability and resilience through the adoption of weatherization standards for extremely hot or cold weather. As the Commission explained in its Phase I rulemaking, these weatherization standards should focus on grid preparedness, not guaranteed performance.[1]

The Phase I weatherization standards for transmission service providers ("TSPs") worked as intended for the 2021-2022 winter season, and the Commission proposes to retain the vast majority of its winter weatherization standards. In extending the rule's scope beyond winter weather, though, it would be a mistake to genericize terminology that should remain specific for different seasons. Summer and winter preparedness demand individual, precise terms to avoid confusion and ambiguity in critical TSP weather preparedness activities.

For example, the Commission should keep rather than delete the existing definition of "cold weather critical component." Similarly, it should adopt a similar definition for "hot weather critical component." The Proposal for Publication's definition of "weather critical component" is too generic and fails to adequately describe either cold or hot weather critical components. TSPs

[1] *See, e.g., Rulemaking to Establish Electric Weatherization Standards*, Project No. 51840, Order Adopting New 16 TAC § 25.55 as Approved at the October 21, 2021 Open Meeting (Oct. 26, 2021) at 65 ("The commission agrees with the commenters that the rule should impose a preparation standard on a TSP rather than a performance standard."); *see also* PURA § 38.075(a) (requiring Commission to establish rules requiring TSPs to "implement measures to prepare the [TSP's] facilities…").

need a certain level of specificity within the rule to determine the transmission elements to which these weatherization standards apply. This specificity helps ensure that timely trainings, inspections, installations, and maintenance occur regarding the intended facility components.

Additionally, ambiguity in the Proposal for Publication may lead to unintended consequences. For example, the broad definitions of "weather emergency," "major weather-related forced interruptions of service," and "repeated weather-related forced interruptions of service" could be interpreted to lead to a strict liability standard imposed on transmission facility outages, regardless of causation or level of preparedness. That result would impose a transmission performance standard, contrary to statutory intent and the Commission's previously-expressed recognition that these weatherization rules should impose a preparation standard, not a performance standard. Oncor's comments seek to ensure the weatherization standards remain focused on grid preparedness without expanding them into performance guarantees.

Oncor includes two attachments to aid the Commission in reviewing these comments. Attachment A shows Oncor's suggested changes to the Proposal for Publication in redline format. Attachment B contains an executive summary of Oncor's comments, in the format and location within the filing requested in the Proposal for Publication.

B. Specific Comments

As requested in the Proposal for Publication, Oncor comments follow the organization of the proposed replacement rule.

1. Proposed § 25.55(b) – Definitions

- *Definition of "cold weather critical component" (proposed reinstatement of existing subsection (b)(1))*

"Cold weather critical component" is a defined term in the existing rule. The proposed replacement version of the rule would delete this definition while nevertheless still using this term several times throughout the substantive requirements of the rule (including, as relevant to TSPs, subsection (f)(1)(A)). This creates ambiguity and uncertainty. The more generic term "weather critical component," as defined in the Proposal for Publication, does not provide the necessary specificity or context when specifically applied to cold weather. The existing definition defines "cold weather critical component" to include components susceptible to icing or freezing, which does provide appropriate specificity. Therefore the rule should retain, not delete, this definition.

- *Definition of "hot weather critical component" (proposed addition to subsection (b))*

"Hot weather critical component" is an undefined term used in the proposed replacement rule (including, as relevant to TSPs, subsection (f)(2)(A)). Defining this key term will promote a shared understanding of its meaning and allow a reasonable opportunity for TSPs (as well as resources) to comply with the substantive requirements in which this term is used. All electrical components may overheat and fail if operated beyond their rated capacity. A key factor distinguishing "hot weather critical components" from other components is reliance on active cooling such as fans or pumps to maintain their capacity. Oncor's proposed definition of this term focuses on those components that depend on active cooling systems to avoid overheating and maintain their rated capacity. It also lists the TSP facilities that would be included in the term.

Following the general rubric of the definition of "cold weather critical component," Oncor suggests to define this new term as follows:

> **Hot weather critical component** – Any component that is susceptible to overheating due to dependence on active cooling to maintain its rated capacity, the occurrence of which is likely to significantly hinder the ability of a resource or transmission facility to function as intended and, for a generation entity, to lead to a trip, derate, or failure to start of a resource. For a TSP, hot weather critical components within a transmission facility consist of: autotransformers that rely on forced air and/or forced oil; synchronous condensers; static synchronous compensator (STATCOM) devices; and static volt-amps reactive (VAR) compensator (SVC) devices.

- *Definition of "major weather-related forced interruption of service" (subsection (b)(5))*

This term, and the enforcement provisions related to it, should recognize that resiliency is a key feature of a reliable transmission system. A forced outage of a transmission facility, standing alone, should not constitute a major weather-related forced interruption of service without some connection to both diminished grid performance and a weather-related failure of a weather critical component. To better correspond with the generation aspect of this definition, this term should clarify that it is forced outages of a transmission facility *directly restricting generation deliverability* that implicate TSPs' weatherization-related power delivery responsibilities. If a resource is not capable of delivering power to the grid for whatever reason at the time of an interconnecting transmission facility's forced outage, or TSP facility configurations allow delivery of generation output through an alternate transmission pathway, the TSP facility outage does not affect the amount or deliverability of power to the grid. That situation should not constitute a major weather-related forced interruption of service *by the TSP* because the relevant TSP facility's

operation or non-operation would not cause service interruption in those circumstances. The revisions proposed below would also clarify that analysis under this term focuses on the failure of weather critical components, not on forced outages that may occur during a weather emergency for some other reason.

Finally, the proposed revisions below would further define this term to include firm load shed events of at least 100 megawatts (MW). This 100 MW trigger level would align this rule with federal reliability standards adopted by the National Electric Reliability Corporation ("NERC")[2] as well as U.S. Department of Energy emergency reporting requirements.[3]

Accordingly, this definition should be clarified and revised as follows:

> **Major weather-related forced interruption of service** -- The loss of 7,500 megawatt-hours of generation service or the forced outage of a transmission facility that directly causes the restriction of deliverability of more than 7,500 megawatt hours of generation capacity ~~capability~~ occurring as a result of failure of one or more of the resource's or transmission facility's weather critical components caused by a weather emergency that results in firm load shed of 100 megawatts or more.

- *Definition of "repeated weather-related forced interruption of service" (subsection (b)(6))*

The weatherization standards fundamentally aim to maximize power deliverability even in the face of extremely hot summer weather and extremely cold winter weather. Oncor reads this defined term to apply individually to a specific transmission facility. In other words, the same facility must not experience three or more weather-related forced interruptions of service within the stated period. Without further clarification, however, ambiguity exists that could result in a different interpretation on the scope of the "repeat analysis." For example, one interpretation of the repeat analysis could extend that scope to any and all of the TSP's facilities during the 3-year time period, regardless of the TSP's size or number of facilities. To guard against this, the Commission should clarify that the repeat analysis looks on each discrete transmission facility. Similarly, the Commission should expressly exclude momentary interruptions as defined in 16

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[2] *See, e.g.,* NERC Reliability Standard EOP-004-4 & Attachments 1 & 2 thereto, *available at* https://www.nerc.com/pa/Stand/Reliability%20Standards/EOP-004-4.pdf (last visited June 15, 2022) (requiring filing of various reports due to 100+ MW load shed event resulting from certain emergencies).

[3] *See, e.g.,* Electric Emergency Incident and Disturbance Report, Department of Energy Form DOE-417, *available at* https://www.oe.netl.doe.gov/docs/OE417_Form_05312024.pdf (last visited June 15, 2022) (generally requiring emergency alert report filing within 1 hour of 100+ MW firm load shed event implemented under emergency operational policy).

TAC § 25.52(c)(5). Finally, Oncor's proposed revision clarifies that the term focuses on the failure of weather critical components, with proposed language as follows:

> **Repeated weather-related forced interruption of service** – Three or more of any combination of the following occurrences at the same generation resource or the same transmission facility as a result of failure of one or more weather critical components caused by a weather emergency within any three year period: a failure to start, a forced outage (excluding momentary interruptions as defined in section 25.52), or a deration of more than fifty percent of the nameplate capacity ~~of a generation resource or a transmission facility~~.

- *Definition of "weather critical component" (subsection (b)(10))*

Because cold and hot weather critical components should each have their own definition as discussed above, the definition of the general term "weather critical component" could be streamlined to simply state as follows: "Either a cold weather critical component or a hot weather critical component, or both, as applicable."

- *Definition of "weather emergency" (subsection (b)(11))*

In this Phase II rulemaking expanding these weatherization standards beyond the scope of the 2021-2022 winter season, the Commission should take care to ensure this definition does not cover weather events beyond its intended scope or the preparedness measures TSPs could realistically undertake. Discussion surrounding weatherization pertaining to extreme temperature events tends to sometimes blend with discussion surrounding the transmission system's ability to withstand other extreme weather or storm events, such as tornadoes, earthquakes or ice storms. But utility approaches to these situations differ significantly. Extreme temperature events clearly relate to weatherization preparedness, and they are events for which utilities can and should make regular inspections and facility checks as contemplated in this proceeding.

Other types of extreme weather or storm events, however, more closely relate to system design, such as facility ratings and transmission network resiliency. These other types of extreme events do not lend themselves to the types of weatherization preparedness activities contemplated in this proceeding. As a simple example, TSPs have not designed their transmission systems to withstand Category 5 tornadoes, and therefore there are no weather-related preparedness activities that could realistically increase system protection from such an event. But the broad nature of this definition has the potential to capture that scenario.

Tying the weather emergency definition to extreme hot or cold weather conditions and the corresponding potential for hot or cold weather critical component failures (consistent with the

definitions proposed above), would reasonably align the term's meaning with the substantive preparedness measures required in subsections (f)(1)-(2). And it would provide greater clarity that facility outages caused by tornadic or similar activity would not unintentionally become swept into the scope of this rule and thereby mandate a TSP performance standard that the Commission has sought to avoid.[4]

Oncor supports the goals of increasing transmission system resiliency and hardening against these other types of extreme, non-temperature-related weather events. But solutions to these types of events typically entail capital improvements rather than weatherization measures. Oncor looks forward to addressing these types of resiliency-related solutions in the Commission's pending rulemaking concerning 16 TAC § 25.101.[5]

Oncor therefore proposes the following three additions to this defined term to better tailor the rule's scope to its intended circumstances:

> **Weather emergency** -- A situation resulting from extreme hot or extreme cold weather conditions that produces significant risk for a TSP that firm load must be shed due to potential weather critical component failures, or a situation for which ERCOT provides advance notice to market participants involving weather-related risks to the ERCOT power region.

2. Proposed § 25.55(f) – Weather Emergency Preparedness Reliability Standards for a TSP

- *Winter Season Checks for Oil Quality (proposed subsection (f)(1)(A)(iii)(V)*

The winter weatherization standards adopted in Phase I of this rulemaking should remain materially unchanged. The Commission proposes to add a verification requirement for oil quality based on acceptable ranges of moisture and dissolved gases *for winter weather conditions.* In Oncor's experience, moisture and dissolved gas levels of oil for cold weather critical components do not appreciably vary based on extreme cold (or extreme hot) weather. Therefore, Oncor proposes removal of this new requirement.

If the Commission desires to include an oil quality verification specific to dissolved gas and water content analyses, then it should instead adopt an annual testing requirement without

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[4] In a similar context, the Commission has already defined "forced interruptions" to exclude certain "major events," including catastrophes like earthquakes and other extreme storms that exceed system design limits. *See* 16 TAC § 25.52(c)(4)(A), (D).

[5] *See Review of Chapter 25.101 Certification Criteria*, Project No. 53403, Staff Discussion Draft (June 15, 2022) at 2 (requesting comments on resiliency project definitions, criteria, and related issues).

language specific to seasonal weather conditions. This type of annual verification would better align with industry standards and operational experience.

- *Timing of Winter Weather Preparedness Measure Implementation (proposed subsection (f)(1)(B))*

The proposed rule would mandate implementation of described in subsection (f)(1)(A) "by 2023." This level of detail lacks specificity as applied to the 2022-2023 winter season, which begins on December 1, 2022. Oncor proposes to clarify the apparent intent of the rule by adding the following language to the beginning of subsection (f)(1)(B): "Beginning in the 2023-2024 winter season, …."

- *Clarification of Facility Temperature Measurement Locations (proposed subsections (f)(1)(B) and (f)(2)(B))*

As currently drafted, subsections (f)(1)(B) and (f)(2)(B) create ambiguity in terms of how facility ambient temperature measurements may be collected. Based on Oncor's reading of the rule, it appears that facility temperature measurements may permissibly occur *either* at the facility itself *or* at an appropriate measurement location within the weather zone in which the facility is located. This flexibility is critical, because TSPs do not necessarily have weather measurement equipment located at each station facility site. Sometimes TSPs have their own weather measurement equipment in each of its designated weather zones based on its facility footprint, and sometimes TSPs rely on weather measurements from the National Weather Service or similar governmental agencies. The likelihood of on-site facility temperature measurement equipment decreases the further back in time the historical weather data goes. Clearing up the permissible use of weather zone data as discussed in these subsections would better clarify this critical flexibility in weather measurement locations. Oncor accordingly suggests slight revisions to these subsections, as shown in Attachment A, to make clear that weather zone measurements can be adopted for facilities in lieu of on-site measurements at each individual facility.

- *Clarification of Historical Facility Temperature Measurement Timelines (proposed subsections (f)(1)(B), (f)(2)(B), (f)(3)(A)(iii), (f)(3)(B)(iii), and (i))*

Relatedly, these provisions as well as subsection (i) should establish a reasonable time period in which the historical analysis of minimum or maximum ambient temperatures must be analyzed. Otherwise, the rule is ambiguous as to what data set should be used for both TSPs' past ambient temperature analyses for its facilities and for ERCOT's historical weather study analyses. Is it the relevant facility's entire history since entering service, or some other timeframe in which

these analyses should be conducted? The Commission should clarify the relevant time period TSPs and ERCOT should use in compiling these historical weather data points.

- *Clarification of Transformer Coolers (proposed subsection (f)(2)(A)(i))*

The Commission should slightly tweak this requirement to better reflect the range of cooling systems and devices as well as add in the purpose of the requirement, with suggested language as follows: "Inspecting transformer ~~coolers~~ cooling systems to ensure operability on a monthly basis between May 1 and September 30…."

- *Clarification of Transformer Cooler Cleaning Requirement (proposed subsection (f)(2)(A)(ii))*

Similar to the preceding comment on subsection (f)(2)(A)(i), Oncor proposes slightly tweaked language to better reflect the types of activities that may be necessary on transformer cooling systems, as follows: "Cleaning or clearing transformer ~~coolers~~ cooling systems on a regular basis during the summer season…."

- *Clarification of Material-Related Protections (proposed subsection (f)(2)(A)(v))*

The Commission should implement a minor tweak to this requirement to confirm the apparent intent of this requirement, with suggested language as follows: "Confirmation that sufficient chemicals, coolants, and other materials necessary for sustained operations during a summer weather emergency are protected from adverse effects from heat and drought."

- *Change Scope of TSP Facility Responsibility to Reflect Ownership Rather Than "Control" (proposed subsections (f)(3)(A)(i), (f)(3)(B)(i), (f)(4), and (f)(5))*

Throughout subsections (f)(3)-(5) relating to TSP preparedness declarations, the Proposal for Publication imposes reporting obligations on the TSP based on facilities under the TSP's "control." This control concept is not defined in the rule and it is not a commonly understood industry term. To avoid ambiguity, the Commission should use a more objective criterion based on TSP ownership of the facility, as suggested in Attachment A. Basing reporting and weatherizing responsibilities on facility ownership rather than "control" will also better align with definitions and understandings under ERCOT protocols and NERC reliability standards.

3. Proposed § 25.55(g) – ERCOT Inspections of Transmission Facilities

- *Clarification of Criteria for ERCOT Inspection Prioritization (subsection (g)(1))*

To tie in the factors on which ERCOT bases its inspection priorities to the defined terms within the rule, Oncor proposes minor edits to the first sentence of this subsection as follows:

ERCOT must conduct inspections of transmission facilities and may prioritize inspections based on factors such as whether a transmission facility; is critical for electric grid reliability; has experienced a major weather-related forced ~~outage~~ interruption of service or ~~other failure related to~~ a repeated weather-related forced interruption of service ~~emergency conditions~~....

4. ***Minor Conforming Edits (e.g., subsections (f)(1)(A)(i), (f)(3)(B)(v), (g)(2)(A), etc.)***

Oncor also proposes minor edits to the Proposal for Publication to correct a small number of typographical errors and conform language in the Proposal for Publication to the new definitions, terminology, and structure of the proposed replacement rule, all of which are reflected in Attachment A.

II. RESPONSES TO SPECIFIC QUESTIONS FOR COMMENT

Below Oncor responds to the two specific questions for comment included in the Proposal for Publication.

1. *For Transmission Service Providers (TSPs) that provide comment on proposed §25.55, provide information relating to wind-loading design criteria for the 345 kV network.*

Wind loading primarily impacts transmission line design with respect to structural loading and horizontal clearances. Oncor's transmission structures are all designed to meet National Electrical Safety Code ("NESC") Extreme Wind requirements under NESC Rule 250C. This rule requires Oncor's transmission structures to operate in 3-second gusts of high wind speeds: 90 mph in almost all of its service territory, and a slightly higher wind speed in a small, southeastern portion of its service territory near Lufkin that is closer to the coast and its attendant hurricane risks.[6] The NESC also describes a variety of horizontal clearances which should be considered (measured from the conductors) when there is no wind and when the conductors are displaced due to 6 lbs./ft.^{2} of wind.

2. *Does ... proposed §25.55(h) appropriately define "repeated or major weather-related force interruptions of service"?*

No, for the reasons discussed above in Oncor's comments on these definitions contained in § 25.55(b).

III. REQUEST FOR PUBLIC HEARING

Oncor requests that the Commission hold a public hearing at 9:00 a.m. on July 1, 2022, as scheduled in the Proposal for Publication.

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[6] Other subsections within NESC Rule 250 contain lower wind speed criteria for other weather scenarios.

IV. CONCLUSION

Oncor appreciates the opportunity to comment on the Proposal for Publication and encourages the Commission to adopt revisions to 16 TAC § 25.55 consistent with these comments.

Respectfully submitted,

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ATTORNEYS FOR ONCOR ELECTRIC DELIVERY COMPANY LLC

§25.55. Weather Emergency Preparedness.

(a) **Application**. This section applies to the Electric Reliability Council of Texas, Inc. (ERCOT) and to generation entities and transmission service providers (TSPs) in the ERCOT power region.

(1) A generation resource with an ERCOT-approved notice of suspension of operations for the summer season or winter season is not required to comply with this section until the return to service date identified in its notice of change of generation resource designation required under the ERCOT protocols.

(2) A new generation resource or transmission facility that is scheduled to begin commercial operations during the summer season or winter season must meet the requirements of this section prior to either the commercial operations date established in the ERCOT interconnection process for generation resources or initial energization for transmission facilities, as applicable.

(b) **Definitions**. In this section, the following definitions apply unless the context indicates otherwise.

(1) **Cold weather critical component** -- Any component that is susceptible to freezing or icing, the occurrence of which is likely to significantly hinder the ability of a resource or transmission facility to function as intended and, for a generation entity, to lead to a trip, derate, or failure to start of a resource.

~~(1)~~(2) **Energy storage resource** -- An energy storage system registered with ERCOT as an energy storage resource for the purpose of providing energy or ancillary services to the ERCOT grid and associated facilities controlled by the generation entity that are behind the system's point of interconnection, necessary for the operation of the system, and not part of a manufacturing process that is separate from the generation of electricity.

~~(2)~~(3) **Generation entity** -- An ERCOT-registered resource entity acting on behalf of an ERCOT-registered generation resource or energy storage resource.

~~(3)~~(4) **Generation resource** -- A generator registered with ERCOT as a generation resource and capable of providing energy or ancillary services to the ERCOT grid, as well as associated facilities controlled by the generation entity that are behind the generator's point of interconnection, necessary for the operation of the generator, and not part of a manufacturing process that is separate from the generation of electricity.

(5) **Hot weather critical component** -- Any component that is susceptible to overheating due to dependence on active cooling to maintain its rated capacity, the occurrence of which is likely to significantly hinder the ability of a resource or transmission facility to function as intended and, for a generation entity, to lead to a trip, derate, or failure to start of a resource. For a TSP, hot weather critical components within a transmission facility consist of: autotransformers that rely on forced air and/or forced oil; synchronous condensers; static synchronous compensator (STATCOM) devices; and static volt-amps reactive (VAR) compensator (SVC) devices.

~~(4)~~(6) **Inspection** -- Activities that ERCOT or its agents engage in to determine whether a generation entity is in compliance with all or parts of subsection (c) of this section or whether a TSP is in compliance with all or parts of subsection (f) of this section. An inspection may include site visits, assessments of procedures, interviews, and review of information provided by a generation entity or TSP in response to a request by ERCOT, including review of evaluations conducted by the generation entity or TSP or its contractor.

~~(5)~~(7) **Major weather-related forced interruption of service** -- The loss of 7,500 megawatt-hours of generation service or the forced outage of a transmission ~~capability~~ facility that directly causes the restriction of deliverability of more than 7,500 megawatt hours of generation capacity occurring as a result of failure of one or more of the resource's or transmission facility's weather critical components caused by a weather emergency that results in firm load shed of 100 megawatts or more.

~~(6)~~(8) **Repeated weather-related forced interruption of service** -- Three or more of any combination of the following occurrences at the same generation resource or the same transmission facility as a result of failure of one or more weather critical components caused by a weather emergency within any three year period: a failure to start, a forced outage (excluding momentary interruptions as defined in section 25.52), or a deration of more than fifty percent of the nameplate capacity ~~of a generation resource or a transmission facility~~.

~~(7)~~(9) **Resource** -- A generation resource or energy storage resource.

~~(8)~~(10) **Summer season** -- June 1 to September 30 each year.

~~(9)~~(11) **Transmission facility** -- A transmission-voltage element inside the fence surrounding a TSP's high-voltage switching station or substation.

~~(10)~~(12) **Weather critical component** -- ~~Any component of a resource or transmission facility that is susceptible to fail during a weather emergency, the occurrence of which failure is likely to significantly hinder the ability of the resource or transmission facility to function as intended or, for a resource, is likely to lead to a trip, derate, or failure to start~~Either a cold weather critical component or a hot weather critical component, or both, as applicable.

~~(11)~~(13) **Weather emergency** -- A situation resulting from extreme hot or extreme cold weather conditions that produces significant risk for a TSP that firm load must be shed due to potential weather critical component failures, or a situation for which ERCOT provides advance notice to market participants involving weather-related risks to the ERCOT power region.

~~(12)~~(14) **Weather emergency preparation measures** -- Measures that a generation entity or TSP takes to support the function of a resource or transmission facility during a weather emergency.

~~(13)~~(15) **Winter season** -- December 1 to March 31 each year.

(c) **Weather emergency preparedness reliability standards for a generation entity.**

(1) **Winter season preparations**. By December 1 each year, a generation entity must complete the following winter weather emergency preparation measures for each resource under its control. A generation entity must maintain these measures throughout the winter season. A generation entity must update its winter weather emergency preparation measures no later than one year after ERCOT files a historical weather study report under subsection (i) of this section.

(A) Implement weather emergency preparation measures reasonably expected to ensure the sustained operation of all cold weather critical components during winter weather conditions. Such measures include, as appropriate for the resource:

(i) Installation of adequate wind breaks and other structural preparations as needed for resources susceptible to outages or derates caused by wind;

(ii) Installation of insulation and enclosures for all cold weather critical components;

(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;

(iv) Assurance of the availability and appropriate safekeeping of sufficient chemicals, auxiliary fuels, and other materials necessary for sustained operations during a winter weather emergency;

(v) Assurance of the operability of instrument air moisture prevention systems;

(vi) Maintenance of freeze protection equipment for all cold weather critical components, including fuel delivery systems controlled by the generation entity, and testing freeze protection equipment on a monthly basis from November 1 through March 31; and

(vii) Installation of monitoring systems for all cold weather critical components, including circuitry that provides freeze protection or prevents instrument air moisture;

(B) Beginning in 2023, implement weather emergency preparation measures, in addition to the weather emergency preparation measures required by subparagraph (A) of this subsection, reasonably expected to ensure sustained operation of the resource during the lesser of the minimum ambient temperature at which the resource has experienced sustained operations or the 95th percentile minimum average 72-hour

temperature reported in ERCOT's historical weather study, required under subsection (i) of this section, for the weather zone in which the resource is located.

(C) Review the adequacy of staffing plans to be used during a winter weather emergency and revise the staffing plans, as appropriate.

(D) Train relevant operational personnel on winter weather preparations and operations.

(2) **Summer season preparations**. By June 1 each year, a generation entity must complete the following summer weather emergency preparation measures for each resource under its control. A generation entity must maintain these measures throughout the summer season. A generation entity must update its summer weather emergency preparation measures no later than one year after ERCOT files a historical weather study report under subsection (i) of this section.

(A) Implement weather emergency preparation measures reasonably expected to ensure the sustained operation of all hot weather critical components during summer weather conditions. Such measures include, as appropriate for the resource:

(i) Identification of regulatory and legal limitations of cooling capacity, water withdrawal, maximum discharge temperatures, and rights for additional water supply;

(ii) Assurance of adequate water supplies for cooling towers, reservoirs, heat exchangers, and adequate cooling capacity of the water supplies used in the cooling towers, reservoirs, and heat exchangers;

(iii) Assurance of availability and appropriate safekeeping of adequate equipment to remove heat and moisture from all hot weather critical components;

(iv) Assurance of the availability of sufficient chemicals, coolants, auxiliary fuels, and other materials necessary for sustained operations during a summer weather emergency;

(v) Maintenance of all hot weather critical components, including air flow or cooling systems, and testing of all components on a monthly basis from May 1 through September 30; and

(vi) Installation of monitoring systems for all hot weather critical components.

(B) Beginning in 2023, implement weather emergency preparation measures, in addition to the weather emergency preparation measures required by subparagraph (A) of this subsection, reasonably expected to ensure sustained operation of the resource during the greater of the maximum ambient temperature at which the resource has experienced sustained operations or the 95th percentile maximum average 72-hour temperature reported in ERCOT's historical weather study, required under subsection (i) of this section, for the weather zone in which the resource is located.

(C) Review the adequacy of staffing plans to be used during a summer weather emergency and revise the staffing plans, as appropriate.

(D) Train relevant operational personnel on summer weather preparations and operations.

(3) **Declaration of preparedness**. A generation entity must submit to ERCOT, on a form prescribed by ERCOT, the following declarations of weather preparedness:

(A) No earlier than November 1 and no later than December 1 of each year, a generation entity must submit a declaration of winter weather preparedness that:

(i) Identifies every resource under the entity's control for which the declaration is being submitted;

(ii) Summarizes all activities engaged in by the generation entity to complete the requirements of paragraph (1) of this subsection;

(iii) Provides the minimum ambient temperature at which each resource has experienced sustained operations, as measured at the resource site or the weather station nearest to the resource site;

(iv) Includes any additional information required by the ERCOT protocols; and

(v) Includes a notarized attestation sworn to by the generation entity's highest-ranking representative, official, or officer with binding authority over the generation entity attesting to the completion of all applicable activities described in paragraph (1) of this subsection, and to the accuracy and veracity of the information described in subparagraph (3)(A) of this paragraph.

(B) No earlier than May 1 and no later than June 1 of each year, a generation entity must submit a declaration of summer weather preparedness that at a minimum:

(i) Identifies every resource under the entity's control for which the declaration is being submitted;

(ii) Summarizes all activities engaged in by the generation entity to complete the requirements of paragraph (2) of this subsection;

(iii) Provides the maximum ambient temperature at which each resource has experienced sustained operations, as measured at the resource site or the weather station nearest to the resource site;

(iv) Includes any additional information required by the ERCOT protocols; and

(v) Includes a notarized attestation sworn to by the generation entity's highest-ranking representative, official, or officer with binding authority over the generation entity attesting to the completion of all applicable activities described in paragraph (2) of this subsection, and to the accuracy and veracity of the information described in subparagraph (3)(B) of this paragraph.

(C) A generation entity must submit the appropriate declaration of preparedness to ERCOT prior to returning a mothballed or decommissioned resource to service during the winter or summer season.

(4) No later than December 20 of each year, ERCOT must file with the commission a compliance report that addresses whether each generation entity has submitted the declaration of winter weather preparedness required by subparagraph (3)(A) of this subsection for each resource under the generation entity's control.

(5) No later than June 20 of each year, ERCOT must file with the commission a compliance report that addresses whether each generation entity has submitted the declaration of summer weather preparedness required by subparagraph (3)(B) of this subsection for each resource under the generation entity's control.

(d) **ERCOT inspection of resources**.

(1) ERCOT must conduct inspections of resources and may prioritize inspections based on factors such as whether a resource is critical for electric grid reliability; has experienced a forced outage, forced derate, or failure to start related to weather emergency conditions; or has other vulnerabilities related to weather emergency conditions. ERCOT must determine, in consultation with commission staff, the number, extent, and content of inspections, provided that every resource interconnected to the ERCOT power region must be inspected at least once every three years. ERCOT must develop, in consultation with commission staff, a winter weather inspection checklist and a summer weather inspection checklist for use during resource inspections. Inspections may be conducted by ERCOT's employees or contractors.

(A) ERCOT must provide each generation entity at least 48 hours' notice of an inspection unless otherwise agreed by the generation entity and ERCOT. Upon provision of the required notice, a generation entity must grant access to its facility to ERCOT and to commission staff, including an employee of a contractor designated by ERCOT or the commission.

(B) During the inspection, a generation entity must provide ERCOT and commission staff access to any part of the facility upon request. A generation entity must provide access to inspection, maintenance, and other records associated with weather emergency preparation measures

and must make the generation entity's staff available to answer questions. A generation entity may escort ERCOT and commission staff at all times during an inspection. During the inspection, ERCOT or commission staff may take photographs or video recordings of any part of the facility and may conduct interviews of facility personnel designated by the generation entity.

(2) **ERCOT inspection report**.

(A) ERCOT must provide a report on its inspection of a resource to the generation entity. The inspection report must address whether the generation entity has complied with the requirements in paragraph (c)(1) or (c)(2) of this section.

(B) If the generation entity has not complied with a requirement in paragraph (c)(1) or (c)(2) of this section, ERCOT must provide the generation entity a reasonable period to cure the identified deficiencies.

(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.

(ii) The generation entity may request ERCOT provide a longer period to cure the identified deficiencies. The request must be accompanied by documentation that supports the request.

(iii) ERCOT, in consultation with commission staff, will determine the final cure period after considering a request for a longer period to cure the identified deficiencies.

(C) ERCOT must report to commission staff any generation entity that does not remedy the deficiencies identified under subparagraph (A) of this paragraph within the cure period determined by ERCOT under subparagraph (B) of this paragraph.

(D) A generation entity reported by ERCOT to commission staff under subparagraph (C) of this paragraph will be subject to enforcement investigation under section §22.246 (relating to Administrative Penalties) of this title. A violation of this section is a Class A violation under section §25.8(b)(3)(A) (relating to Classification System for Violations of Statutes, Rules, and Orders Applicable to Electric Service Providers) and may be subject to a penalty not to exceed $1,000,000 per violation per day.

(e) **Weather-related failures by a generation entity to provide service**. A generation entity with a resource that experiences repeated or major weather-related forced interruptions of service must contract with a qualified professional engineer to assess its weather emergency preparation measures, plans, procedures, and operations. The qualified professional engineer must not be an employee of the generation entity or its affiliate. The qualified professional engineer must not have participated in previous assessments for the resource for at least five years, unless the generation entity provides documentation that no other qualified professional engineers are reasonably available for engagement. The qualified professional engineer must conduct a root cause analysis of the failure and develop a corrective action plan to address any weather-related causes

of the failure. The generation entity must submit the qualified professional engineer's assessment to the commission and ERCOT. A generation entity to which this subsection applies may be subject to additional inspections by ERCOT. ERCOT must refer to commission staff for investigation any generation entity that does not comply with a provision of this subsection.

(f) **Weather emergency preparedness reliability standards for a TSP**.

(1) **Winter season preparations**. By December 1 each year, a TSP must complete the following winter weather preparation measures for its transmission facilities. A TSP must maintain these measures throughout the winter season. A TSP must update its winter weather preparation measures no later than one year after ERCOT files a historical weather study report under subsection (i) of this section.

(A) Implement weather emergency preparation measures reasonably expected to ensure the sustained operation of all cold weather critical components during winter weather conditions. Such measures include, as appropriate for the facility:

(i) Confirmation of the operability of all ~~systems and subsystems~~transmission facilities containing all cold weather critical components;

(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; and

(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; and

(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~~.

(B) Beginning in the 2023-2024 winter season, implement weather emergency preparation measures, in addition to the weather emergency preparation measures required by paragraph (A) of this subsection, reasonably expected to ensure the sustained operation of the TSP's transmission facilities during the lesser of: the minimum ambient temperature at which the facility, or similar facilities of the TSP within the same weather zone, has experienced sustained operations; or the 95th percentile minimum average 72-hour temperature reported in ERCOT's historical weather study, required under subsection (i) of this section, for the weather zone in which the facility is located.

(C) Review the adequacy of staffing plans to be used during a winter weather emergency and revise the staffing plans, as appropriate.

(D) Train relevant operational personnel on winter weather preparations and operations.

(2) **Summer season preparations**. By June 1 each year, a TSP must complete the following summer weather preparation measures for its transmission facilities. A TSP must maintain these measures throughout the summer season. A TSP must update its summer weather preparation measures no later than one year after ERCOT files a historical weather study report under subsection (i) of this section.

(A) Implement weather emergency preparation measures reasonably expected to ensure the sustained operation of all hot weather critical components during summer weather conditions. Such measures include, as appropriate for the facility:

(i) Inspecting transformer ~~coolers~~cooling systems to ensure operability on a monthly basis between May 1 and September 30;

(ii) Cleaning or clearing transformer ~~coolers~~cooling systems on a regular basis during the summer season;

(iii) Verifying proper cooling fan and pump control capabilities and settings;

(iv) Confirmation of the availability of sufficient chemicals, coolants, and other materials necessary for sustained operations during a summer weather emergency; and

(v) Confirmation that sufficient chemicals, coolants, and other materials necessary for sustained operations during a summer weather emergency are protected from adverse effects from heat and drought.

(B) Beginning in 2023, implement weather emergency preparation measures, in addition to the weather emergency preparation measures required by subparagraph (A) of this paragraph, reasonably expected to ensure the sustained operation of the TSP's transmission facilities during the greater of: the maximum ambient temperature at which the facility, or similar facilities of the TSP within the same weather zone, has experienced sustained operations; or the 95th percentile maximum average 72-hour temperature reported in ERCOT's historical weather study, required under subsection (i) of this section, for the weather zone in which the facility is located.

(C) Review the adequacy of staffing plans to be used during a summer weather emergency and revise the staffing plans, as appropriate.

(D) Train relevant operational personnel on summer weather preparations and operations.

(3) **Declaration of preparedness**. A TSP must submit to ERCOT, on a form prescribed by ERCOT, the following declarations of weather preparedness:

(A) No earlier than November 1 and no later than December 1 of each year, a TSP must submit a declaration of winter weather preparedness that:

(i) Identifies each transmission substation or switchyard ~~under~~ owned by the TSP~~'s control~~ for which the declaration is being submitted;

(ii) Summarizes all activities engaged in by the TSP to complete the requirements of paragraph (1) of this subsection,

(iii) Provides the minimum ambient temperature at which each substation or switchyard has experienced sustained operations,

as measured at the transmission facility or the weather station nearest to the transmission facility;

(iv) Includes any additional information required by the ERCOT protocols; and

(v) Includes a notarized attestation sworn to by the TSP's highest-ranking representative, official, or officer with binding authority over the TSP, attesting to the completion of all activities described in paragraph (1) of this subsection, and to the accuracy and veracity of the information described in subparagraph (3)(A) of this paragraph.

(B) No earlier than May 1 and no later than June 1 of each year, a TSP must submit a declaration of summer weather preparedness that at a minimum:

(i) Identifies each transmission substation~~s~~ or switchyard ~~under~~ owned by the TSP~~'s control~~ for which the declaration is being submitted;

(ii) Summarizes all activities engaged in by the TSP to complete the requirements of paragraph (2) of this subsection,

(iii) Provides maximum ambient temperature at which each substation or switchyard has experienced sustained operations, as measured at the transmission facility or the weather station nearest to the transmission facility;

(iv) Includes any additional information required by the ERCOT protocols; and

(v) Includes a notarized attestation sworn to by the TSP's highest-ranking representative, official, or officer with binding authority over the ~~generation entity~~TSP attesting to the completion of all activities described in paragraph (2) of this subsection, and to the accuracy and veracity of the information described in subparagraph (3)(B) of this paragraph.

(4) No later than December 20 of each year, ERCOT must file with the commission a compliance report that addresses whether each TSP has submitted the declaration of winter weather preparedness required by subparagraph (3)(A) of this subsection for all transmission facilities ~~under~~ owned by the TSP~~'s control~~.

(5) No later than June 20 of each year, ERCOT must file with the commission a compliance report that addresses whether each TSP has submitted the declaration of summer weather preparedness required by subparagraph (3)(B) of this subsection for all transmission facilities ~~under~~ owned by the TSP~~'s control~~.

(g) **ERCOT inspections of transmission facilities**.

(1) ERCOT must conduct inspections of transmission facilities and may prioritize inspections based on factors such as whether a transmission facility; is critical for electric grid reliability; has experienced a major weather-related forced ~~outage~~interruption of service or ~~other failure related to~~a repeated weather-related forced interruption of service ~~emergency conditions~~; or has other vulnerabilities related to weather emergency conditions. ERCOT must determine, in consultation with commission staff, the number, extent, and content of inspections, as well as develop a risk-based methodology for selecting at least ten percent of substations or switchyards providing

transmission service to be inspected at least once every three years. ERCOT must develop, in consultation with commission staff, a winter weather inspection checklist and a summer weather inspection checklist for use during facility inspections. Inspections may be conducted by ERCOT's employees or contractors.

(A) ERCOT must provide each TSP at least 48 hours' notice of an inspection unless otherwise agreed by the TSP and ERCOT. Upon provision of the required notice, a TSP must grant access to its facility to ERCOT and commission staff, including an employee of a contractor designated by ERCOT or the commission to conduct, oversee, or observe the inspection.

(B) During the inspection, a TSP must provide ERCOT and commission staff access to any part of the facility upon request. A TSP must provide access to inspection, maintenance, and other records associated with weather preparation measures, and must make the TSP's staff available to answer questions. A TSP may escort ERCOT and commission staff at all times during an inspection. During the inspection, ERCOT and commission staff may take photographs and video recordings of any part of the facility and may conduct interviews of facility personnel designated by the TSP.

(2) ERCOT inspection report.

(A) ERCOT must provide a report on its inspection of a transmission ~~system or~~ facility to the TSP. The inspection report must address whether the TSP has complied with the requirements in paragraph (f)(1) or (f)(2) of this subsection.

(B) If the TSP has not complied with a requirement in subsection (f)(1) or (f)(2) of this subsection, 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.

(ii) The TSP may request ERCOT provide a longer period to cure the identified deficiencies. The request must be accompanied by documentation that supports the request.

(iii) ERCOT, in consultation with commission staff, will determine the final cure period after considering a request for a longer period to cure the identified deficiencies.

(C) ERCOT must report to commission staff any TSP that does not remedy the deficiencies identified under subparagraph (A) of this paragraph within the cure period determined by ERCOT under subparagraph (B) of this paragraph.

(D) A TSP reported by ERCOT to commission staff under subparagraph (C) of this paragraph will be subject to enforcement investigation under §22.246 (relating to Administrative Penalties) of this title. A violation of this section is a Class A violation under section §25.8(b)(3)(A) and may be subject to a penalty not to exceed $1,000,000 per violation per day.

(h) **Weather-related failures by a TSP to provide service**. A TSP with a transmission facility that experiences repeated or major weather-related forced interruptions of service must contract with a qualified professional engineer to assess its weather emergency preparation measures, plans, procedures, and operations. The qualified professional engineer must not be an employee of the TSP or its affiliate. The qualified professional engineer must not have participated in previous assessments for this facility for at least five years, unless the TSP provides documentation that no other qualified professional engineers are reasonably available for engagement. The qualified professional engineer must conduct a root cause analysis of the failure and develop a corrective action plan to address any weather-related causes of the failure. The TSP must submit the qualified professional engineer's assessment to the commission and ERCOT. A TSP to which this subsection applies may be subject to additional inspections by ERCOT. ERCOT must refer to commission staff for investigation any TSP that violates this subsection.

(i) **ERCOT historical weather study**. ERCOT must study historical weather data across each weather zone classified in the ERCOT protocols. ERCOT must file with the commission a report summarizing the results of the historical weather study at least once every five years, beginning no later than November 1, 2026.

(1) At a minimum, ERCOT must calculate the 90th, 95th, and 99th percentiles of:

(A) the daily minimum temperature in each weather zone;

(B) the daily maximum temperature in each weather zone;

(C) the maximum sustained wind speed in each weather zone;

(D) the minimum average 72-hour temperature in each weather zone;

(E) the maximum average 72-hour temperature in each weather zone; and

(F) the minimum average wind chill in each weather zone.

(2) ERCOT may add additional parameters to the historical weather study.

(3) ERCOT must take into consideration weather predictions produced by the office of the state climatologist when preparing the historical weather study.

Attachment B

PROJECT NO. 53401

REVIEW OF 16 TAC § 25.55	**§**	**PUBLIC UTILITY COMMISSION**
RELATING TO WEATHER	**§**	
EMERGENCY PREPAREDNESS	**§**	**OF TEXAS**

EXECUTIVE SUMMARY – ONCOR ELECTRIC DELIVERY COMPANY LLC'S COMMENTS ON THE PROPOSAL FOR PUBLICATION OF 16 TAC § 25.55

Oncor provides the following executive summary of its recommendations in bullet list form on the last page of its filing, as requested in the Proposal for Publication.

Recommendations to Revise Rule § 25.55(b) (Definitions):

- "Cold weather critical component" – The Commission should keep, rather than delete, this definition because it provides important specificity for TSPs.
- "Hot weather critical component" – The Commission should define this term to focus on components susceptible to overheating due to dependence on active cooling functions to maintain their rated capacity. TSP examples would include autotransformers with forced air and/or forced oil, synchronous condensers, STATCOM devices, and SVC devices.
- "Major weather-related forced interruption of service" – This definition should also recognize that only transmission facility forced outages resulting from weather critical component failures that directly restrict generation capacity in excess of 7,500 megawatt hours and cause firm load shed of 100 megawatts or more should fall within the scope of this definition.
- "Repeated weather-related forced interruption of service" – This definition should clarify that repeat occurrences must occur at the same transmission facility and result from a weather critical component failure. It should also expressly exclude momentary interruptions.
- "Weather critical component" – Instead of using this generic definition, the Commission should instead maintain the defined term "cold weather critical component" and adopt a similar definition of "hot weather critical component."
- "Weather emergency" – The Commission should clarify that this definition encompasses extreme temperature-related weather conditions (whether hot or cold) that produce significant risk of load shed due to potential weather critical component failures.

Recommendations to Revise Rule § 25.55(f):

- Removal of oil quality verification (subsection (f)(1)(A)(iii)(V)) – Oil quality does not materially vary based on winter weather, so it should be removed as a winter requirement.
- Clarification of timing for winter preparedness measure implementation (subsection (f)(1)(B)) – Because the winter season falls in two separate calendar years, the Commission should clarify when these Phase II weatherization requirements begin.
- Clarification of facility temperature measurement locations and timelines (subsections (f)(1)(B), (2)(B)) – The Commission should clarify that TSPs may use on-site facility temperature measurements or measurements from similar facilities within the same weather zone, and it should also clarify the time period over which TSPs should report historical temperature data.
- Clarifications regarding transformer cooling systems and material protections (subsections (f)(2)(A)(i), (ii), (v)) – The Commission should adopt minor clarifications regarding the purpose of, and activities contemplated by, these provisions.
- Change scope of TSP reporting obligations to focus on ownership, not "control (subsections (f)(3)(A)(i), (f)(3)(B)(i), (f)(4), and (f)(5)) – To provide a more objective and less ambiguous criterion upon which to base reporting obligations, the Commission should require TSPs to report on transmission facilities they own, not those they "control."

Recommendation to Revise Rule § 25.55(g):

- Clarification on ERCOT inspection prioritization criteria (subsection (g)(1)) – Oncor proposes minor changes to this provision to align the criteria for prioritizing TSP facility inspections with the defined terms for "major" and "repeated" weather-related forced interruptions of service.