



Control Number: 53401



Item Number: 39

PROJECT NO. 53401

**ELECTRIC WEATHER
PREPAREDNESS STANDARDS -
PHASE II**

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**PUBLIC UTILITY COMMISSION
OF TEXAS**

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**ORDER REPEALING 16 TAC §25.55 AND ADOPTING NEW 16 TAC §25.55, AS
APPROVED AT THE SEPTEMBER 29, 2022, OPEN MEETING**

The Public Utility Commission of Texas (commission) repeals 16 Texas Administrative Code (TAC) §25.55 relating to Weather Emergency Preparedness and adopts new 16 TAC §25.55 relating to Weather Emergency Preparedness. The commission adopts this rule with changes to the proposed rule as published in the June 10, 2022, issue of the Texas Register (47 TexReg 3376). New 16 TAC §25.55 represents the second phase of the two phases in the commission's development of robust weather emergency preparedness reliability standards to ensure that the electric industry is prepared to provide continuously reliable electric service. Specifically, it requires generation entities and transmission service providers (TSPs) in the Electric Reliability Council of Texas, Inc. (ERCOT) power region to maintain weatherization preparation standards for both winter and summer seasons. The new rule requires ERCOT to conduct on-site inspections of every generation resource and transmission facility in the ERCOT region. Additionally, the new rule requires utilities who do not comply with weatherization preparedness standards to undergo an independent assessment by a qualified professional engineer.

This new rule implements Senate Bill 3 §13 and §16 from the 87th Regular Session of the Texas Legislature, which amended Public Utility Regulatory Act (PURA) §35.0021 relating to Emergency Weather Preparedness and §38.075 relating to Emergency Weather Preparedness.

The commission received comments on the proposed rule from Advanced Power Alliance and the American Clean Power Association (APA and ACP); AEP Texas, Inc. and Electric Transmission LLC (collectively, AEP); Andrew Dessler; Broad Reach Power, LLC (Broad Reach); CenterPoint Energy (CenterPoint); Constellation Energy Generation, LLC (Constellation); Enbridge, Inc. (Enbridge); Environmental Defense Fund, Texas Consumer Association, and Alison Silverstein Consulting (collectively, EDF, TCA, and ASC); the Lower Colorado River Authority (LCRA); NextEra Energy Resources, LLC (NextEra); NRG Energy, Inc. (NRG); the Office of Public Utility Counsel (OPUC); Oncor Electric Delivery Company LLC (Oncor); San Miguel Electric Cooperative, Inc. (SMEC); Sharyland Utilities, LLC (Sharyland); the Steering Committee of Cities served by Oncor (OCSC); Texas Competitive Power Advocates (TCPA); Texas Electric Cooperatives, Inc. (TEC); Texas Industrial Energy Consumers (TIEC); the Texas Public Power Association (TPPA); the Texas Solar Power Association (TSPA); Texas-New Mexico Power Company (TNMP); and Vistra Corp. (Vistra).

The structure of the proposed rule contained several nonconsecutive, similar or identical provisions. In particular, there was heavy overlap within and between subsections (c) and (f) of this rule. Due to the large number of stakeholder comments addressing nonconsecutive provisions together, some issues that are relevant to multiple provisions of this rule may only be addressed in one location.

General Comments

NextEra and SMEC expressed general support for the proposed rule, but also proposed modifications to the rule. OPUC expressed appreciation for the efforts the commission has made to implement effective weatherization standards. Sierra Club expressed its appreciation to the commission for separating weatherization rules into two phases so the market would have adequate time to prepare for both summer and winter weather emergency conditions. LCRA expressed appreciation for commission staff's work in developing a set of "all seasons" preparation standards for generation and transmission facilities. LCRA emphasized the continuing need for this rule to be considered and enforced as a preparation standard.

Broad Reach expressed its ability and willingness to support this initiative and work towards implementing reasonable standards to protect the system.

Transparency

OCSC encouraged the commission to ensure full public transparency regarding electric weather emergency preparedness due to its potential effect on the general health and welfare of Texas citizens. Specifically, OCSC recommended that facilities subject to §25.55 that experience weather-related forced service interruptions and that fail to comply with commission remedial orders be publicly disclosed.

Commission Response

Any entity that fails to comply with the requirements of this rule may be subject to a commission enforcement action resulting in a publicly available order imposing administrative penalties. This strikes the appropriate balance between public transparency and protecting the confidentiality of sensitive critical energy infrastructure information.

Consistent Standards

Sharyland recommended establishing consistent and reasonable overload or safety factors consistent with recognized industry standards such as those established by the National Electric Safety Code (NESC), the Institute of Electrical and Electronic Engineers (IEEE), and American National Standards Institute (ANSI).

Commission Response

The purpose of the weatherization rule is to create a preparedness standard for all generation resources and transmission facilities for summer and winter weather in Texas. Preparation of resources and facilities under this rule is symbiotic with and parallel to other applicable industry standards. Accordingly, the commission does not adopt similar industry standards in this rule.

Effective date of requirements

APA and ACP requested the commission clarify when weatherization requirements will be effective as the phrase “beginning in 2023” in proposed §25.55(c)(1)(B), (c)(2)(B), (f)(1)(B), and (f)(2)(B) is unclear as to whether the proposed effective date is January 1, 2023, for all weatherization requirements or if the requirements are seasonally based, meaning an effective date of June 1, 2023, for summer preparedness and December 1, 2023, for winter preparedness. Oncor recommended proposed §25.55(f)(1)(B) be revised to stated “Beginning in the 2023-2024 winter season” to be more specific in its applicability.

Commission Response

Under the adopted rule, the current winter preparation requirements remain in effect and apply to the 2022-2023 winter season. The winter temperature standards take effect on December 1, 2023. The summer temperature standards are effective June 1, 2023. The commission adds language to clarify these effective dates.

Cyclical review of weatherization standards

OPUC asked the commission to consider reviewing the weatherization requirements on a cyclical basis, such as every five years, to allow Texas to respond more effectively to changing weather patterns and prevent or mitigate future weather emergency events.

Commission Response

The commission declines to modify the language of the rule in response to OPUC's comments. Under the adopted rule, ERCOT is required to revise and file with the commission a new weather study at least once every five years and affected entities are required to update their preparation measures in response to ERCOT's revised weather study. Moreover, under Tex. Gov't Code §2001.039, the commission is required to review each of its rules every four years. Finally, the commission acknowledges the importance of weather preparedness standards to grid reliability and will be monitoring the effectiveness of the rule accordingly.

Design limitations and warranties

APA and ACP noted that renewable generation asset owners and operators have minimal latitude to change "capabilities, specifications, or characteristics without voiding Original Equipment Manufacturer (OEM) warranties" and accordingly recommended any weather preparedness standards be adopted with this reality in mind. APA and ACP noted that wind turbines, solar generators, and battery energy storage units are designed to shut down if a certain ice accumulation level or ambient temperature is exceeded. Accordingly, APA and ACP recommended the commission clarify that the proposed rule "will not require generation owners or operators to operate beyond OEM design tolerances during severe weather events." Enbridge agreed with APA and ACP that weatherization preparedness standards should account for OEM warranties.

APA and ACP further recommended that the proposed rule "clearly require generation resources to take reasonable measures to ensure operational availability to generate according to OEM specifications and ERCOT dispatch instructions." Specifically, AEP and ACP recommended the

rule include weather emergency event planning requirements for generators and ensure penalties for non-compliance will not be assessed “solely upon the failure of a generation unit to produce electricity provided that such generator complied with the preparation requirements set forth in the rule.” Enbridge also agreed with APA’s and ACP’s comments that the weatherization preparedness standards under the rule should consider commercially available technology and original design parameters.

TCPA recommended the commission “limit required weatherization measures to those that are reasonably possible in consideration of particular plants’ existing design limitations” as not all facilities are the same. TCPA stressed that any weatherization requirements the commission adopts should not require generation owners to “effectively rebuild generators” to “withstand all possible heat stress scenarios beyond existing plant capabilities.”

Enbridge proposed edits to clarify that the weather emergency preparedness standard requires generators take reasonable measures to be able to operate as designed during a weather emergency, to keep consistent with SB3. Further, Enbridge urged the commission to take the same approach in Phase II as the commission did with Phase I which focuses on establishing preparedness standards and provided generation resources the flexibility to implement these measures.

NextEra recommended clarifying that the Phase II standard does not require generation resources or transmission facilities to operate equipment beyond design limits.

Commission Response

Under the adopted rule, each TSP and generation entity is required to implement weather emergency preparation measures that could reasonably be expected to ensure the sustained

operation of its facility or resource during seasonal weather conditions. The commission clarifies, at Enbridge's request, that this is a preparation standard similar to the existing Phase I rule. Compliance with the preparation standard in this rule will not be assessed based on performance. However, a failure to perform may prompt a commission investigation into whether the resource or facility was adequately prepared, as required by the rule.

With regard to the specific preparation measures discussed by commenters above, it is not the commission's expectation that resources or facilities are operated in a fashion that would endanger life or safety, or void the OEM warranty of equipment. The commission agrees that each resource or facility is different and that which specific preparation measures would be reasonably expected to ensure a particular resource or facility can sustain operations through the relevant weather scenarios is, in many cases, a fact-based question. However, the commission rejects arguments that would uniformly permit current design limitations to serve as a justification for not meeting the preparation standard in the rule. Under this adopted rule, the commission does not require a TSP or a generation entity to "effectively rebuild" its facility or resource but does require a TSP or generation entity to install preparation measures that are in addition to the facility's or resource's original design and are appropriate for the facility or resource to reasonably ensure sustained operations during seasonal weather conditions.

Ambient Temperature Requirement

APA and ACP, TPPA, and Vistra recommended the 2023 weather preparedness standards under proposed §25.55(c)(2)(B) and (f)(2)(B) rely only on the ERCOT weather study under proposed §25.55(i) and not the minimum or maximum ambient temperature at which the resource has experienced sustained operations. APA and ACP maintained that a resource “may sustain operations at a lower or higher limit than the stated design range” but such outlier events should not set expectations for consistent performance at those levels. TPPA argued that ambient temperature standards would disadvantage older generators that have been exposed to more diverse temperature standards over time.

Vistra argued that the ambient temperature requirement would “create an ambiguous standard that would render the ERCOT weather study (and the associated weather predictions from the state climatologist) irrelevant to the weather preparedness rule” and therefore is contrary to the requirements of PURA §35.0021. Vistra concluded the ambient temperature standard would “add material risk, complexity, and costs to compliance efforts” and more severely impact generators that cannot recover the costs associated with compliance. Vistra provided draft language consistent with its recommendations.

TPPA recommended proposed §25.55(c)(3)(A)(iii), (c)(3)(B)(iii), (f)(3)(A)(iii), and (f)(3)(B)(iii), which require disclosure of the minimum and maximum ambient temperature the resource was able to sustain operations for generation entities and TSPs, respectively, be replaced with a single baseline for compliance, namely “the 95th percentile minimum average 72-hour temperature reported in ERCOTs historical weather study” as discussed for proposed §25.55(c)(1)(B), (c)(2)(B), (f)(1)(B), and (f)(2)(B).

Commission Response

The commission declines to remove the maximum local ambient temperature standard from the rule for the summer season. The ambient temperature standard provides a more localized assessment of the temperatures for which resources need to prepare during the summer. This is important for resiliency, because local conditions may differ within a weather zone. This standard is intended to consider those local conditions to the extent they vary from those provided by the ERCOT historical weather study. Specifically, this provision requires a resource to be able to sustain operations at ambient temperatures that it has previously been able to sustain operations – essentially, requiring the resource to match its past performance.

The commission declines to include a specific time period for this requirement, as this is unnecessary for a preparation standard. A generation entity needs to implement weather preparation measures that allow it to operate its resource in the temperature ranges indicated by the ERCOT weather study, unless the past performance of the resource indicates it is capable of outperforming this range. In that instance, it must prepare to match its prior performance.

The commission disagrees that this provision is contrary to PURA. PURA §35.0021 and §38.075 do not require the commission to strictly adhere to a weather study or the weather predictions of the state climatologist. Rather, PURA directs the commission to require generation entities “to implement measures...to provide adequate electric generation service” and TSPs to “maintain service quality and reliability” during a weather emergency.

This directive is more effectively achieved if each entity is required to prepare for the conditions that exist where its facilities and resources are located. Moreover, the requirement that each entity implement preparation measures reasonably expected to allow each of its resources and facilities to match its past performance will prevent the grid from becoming less resilient over time.

However, the commission does remove the local ambient temperature standard for the winter months and, instead, bolsters the cold weather standard by including a consideration of wind chill in §25.55(c)(1)(B) and (f)(1)(B), as calculated in the ERCOT weather study as the “95th percentile minimum average 72-hour wind chill temperature.” This modification will help ensure that the grid is prepared for winter weather conditions while instituting a more predictable preparation standard for entities subject to the rule.

Revision of Weather Report

TPPA recommended ERCOT “complete a revised weather study that complies with the statute and contains all elements that generation entities and TSPs should consider before the Commission adopts a final rule.” TPPA elaborated, stating that a revised report would be consistent with proposed §25.55(c)(1)(B), (c)(2)(B), (f)(1)(B), and (f)(2)(B), which, beginning in 2023, require compliance with weather preparation measures consistent with ERCOT’s report. TPPA alternatively recommended deleting all four provisions as well as deleting proposed §25.55(i) and instead directly coordinate with the office of the state climatologist to more fully and transparently comply with SB 3.

Commission Response

On July 13, 2022, ERCOT filed in Project Number 52691 a final version of its weather study which included data for the Panhandle weather zone and the 95th percentile of the 72-hour sustained minimum and maximum temperatures for each weather zone. No additional information from ERCOT is necessary for entities to comply with the temperature standards prescribed by the rule. In preparing the weather study, commission staff and ERCOT consulted with the state climatologist's office. Going forward, adopted subsection (i)(3) requires ERCOT to continue to consult with the state climatologist's office in its preparation of future weather studies.

TPPA recommended that proposed §25.55(c)(1), (c)(2), (f)(1), and (f)(2) be revised to clearly indicate that an entity would only be required to update its weatherization preparation measures “if necessary” to comply with ERCOT’s revised report. TPPA also recommended that the commission specify that the one-year compliance deadline is one year from the date “the Commission issues an order approving or modifying ERCOT’s historical weather study report,” rather than from the date ERCOT files the report with the commission. TPPA provided draft language consistent with its recommendations.

Commission Response

The commission agrees with TPPA that the requirements regarding updates of an entity’s weather preparation measures to comply with revisions to ERCOT’s report should be clarified. The proposed language has been modified. Adopted §25.55(c)(1), (c)(2), (f)(1), and

(f)(2) require entities to update weather preparedness measures only if necessary to come into compliance with ERCOT's revised report. The one-year period for the compliance deadline is counted from the date that ERCOT files its historical weather study.

Black-start facilities

EDF, TCA, and ASC commented that the 95th percentile standard based on the ERCOT historical weather study is insufficient to assure the weather readiness of black-start facilities and transmission assets related to such black-start resources in light of events such as Winter Storm Uri. Accordingly, EDF, TCA, and ASC recommended a higher standard of weather preparedness be required for every generation resource and transmission asset necessary for black-start service.

Commission Response

The commission declines to modify the rule to include heightened requirements for black start generation resources and transmission assets, because issues pertaining to black start resources are beyond the scope of this rulemaking. This rulemaking project is focused on adopting standards that apply to every generation resource and transmission facility in ERCOT, not particular subsets such as black start resources. Moreover, the commission did not notice heightened requirements for black start resources in its proposal for publication, so the operators of these resources have not been given a chance to contribute to the development of an appropriate heightened standard.

Black start resources may be addressed by the commission in a future rulemaking project or as part of the commission's market redesign process.

Climate trends

EDF, TCA, and ASC stated that the proposed rule “does not adequately protect Texas grid reliability and resilience” from weather events as it fails to account for the impact of floods tornadoes, hurricanes and wildfires and impact of changing climate trends on historical and future weather events. EDF, TCA, and ASC recommended the commission incorporate standards based on Federal Energy Regulatory Commission rulemakings related to weather vulnerability assessments and transmission planning performance requirements.

Sierra Club recommended the commission reject the temperature standards in the proposed rule and adopt more specific requirements to consider future weather patterns that account for changing climate trends in the preparations of weather preparedness requirements for TSPs and generators.

Commission Response

The adopted weather preparation standards establish regulations related to winter and summer weather emergencies, primarily related to temperature. These standards are to be implemented in advance of the winter or summer season. The commission declines to reject in the temperature standards in this rule in favor of more forward-looking weather assessment, as recommended by the Sierra Club. The adopted rule requires summer

preparation to the 95th percentile of the ERCOT weather study and supplements this requirement with an ambient temperature standard that ensures local conditions are taken into account and that weather preparedness ratchets up, as resources and facilities are able to sustain operations through severe weather conditions. Similarly, the adopted rule requires winter preparation measures to be implemented with an additional consideration of wind chill, to ensure that winter preparations are sufficient for the conditions faced by resources and facilities during the winter months.

Preparations related to floods, tornadoes, and hurricanes are currently addressed in an entity's emergency operations plan, as required under 16 TAC §25.53, and are also addressed in the NESC and various other industry-accepted design and operating standards. These other weather conditions are beyond the scope of this rulemaking project but may be taken up by the commission in the future, as necessary.

Inspection costs

TCPA recommended that any costs associated with weatherization inspections be "socialized through the ERCOT system administration fee, and not borne solely by the generation entities whose facilities are subject to inspection." TCPA explained that because the purpose of the weatherization requirements and related inspections are in the public interest and accrue to all Texas consumers by increasing reliability and reducing forced outages, and are therefore consistent with ERCOT's core function, it is appropriate to recover inspection costs through ERCOT's system administration fee. TCPA added that under PURA §35.0021(c), ERCOT is required to inspect generation assets and therefore recovery of the costs associated with such inspection "be

handled in the same manner as any of ERCOT's other prescribed duties, meaning cost recovery should be equitable and competitively neutral."

Commission Response

The funding of inspection costs is being addressed through the ERCOT protocols. The commission declines to specify how these costs must be allocated at this time as cost allocation is out of scope of this rulemaking.

Good cause exception

TCPA recommended the good cause exception under existing §25.55(c)(6) and existing (f)(4), which allowed a generation or TSP to submit a notice asserting good cause for noncompliance with the weather preparation measures required by the rule, to be included in the adopted rule. TCPA commented that under NPRR 1108, "no minimum amount of capacity is required for generation planned outages" and that in the spring of 2022 ERCOT has "exercised its authority to request the cancellation of or rescheduling of approved generator outages" and that both events have adversely impacted a resource owner's ability to conduct maintenance, including completing weather preparedness measures. Accordingly, TCPA argued that "resource owners who are unable to comply with weatherization standards because ERCOT has shortened, delayed, or rejected necessary requested outages, should not be penalized" and that such entities should instead be able to communicate with ERCOT and commission staff to obtain a good cause exception. TCPA further recommended that good cause exceptions should be granted for older resources "that are

physically unable to meet certain of these standards in an effort to prevent their mothball or retirement” so as to not jeopardize ERCOT’s resource adequacy and reliability.

TEC and TPPA recommended the good cause exception not be deleted from the existing rule as the new rule may impose requirements that are “impractical, unnecessary, or not cost-effective” as the level and type of weather preparedness required will vary between facility and location. TEC and TPPA recommended adding a new §25.55(c)(6) which would consist of the good cause exception from the current, 2021 version of the rule.

TPPA also requested the commission clarify what additional measures are expected from entities if “there is a shortfall between the contemplated standard and the resource or facility’s ability to comply with that shortfall.” TPPA highlighted the significant time and investment weather preparedness measures may require of entities under the proposed rule.

Commission Response

The good cause exception was included in the existing rule because of the short time period between adoption of the requirements and the compliance deadline. The winter preparedness standards are substantially similar to those required in 2021 and facilities are not required to comply with the summer preparedness standards until 2023. Therefore, a good cause exception process is unnecessary moving forward. Every resource or facility needs to be prepared to operate during weather emergencies, and there is sufficient time before the new weather standards take effect to make this happen.

With regard to the concerns expressed by commenters above, the commission disagrees with TCPA that recent ERCOT actions require the retention of a good cause exception. In addition to the time that entities have to implement the additional preparation requirements before they take effect in 2023, one of the factors that ERCOT must take into account in determining an appropriate cure period for compliance failures identified in ERCOT inspections is what preparation measures the entity could reasonably have been expected to implement prior to the inspection. If an entity can produce documentation that it could not implement sufficient preparation measures by the relevant deadline, this will be taken into account in determining the cure period.

The commission disagrees that this rule would require the implementation of preparation measures that are impractical, unnecessary, or impossible for resources, such as older resources, to implement. Under this rule, each generation entity and TSP is only required to implement preparation measures that could be reasonably expected to ensure its resources and facilities can sustain operations during the relevant seasonal weather conditions.

The adopted rule requires each entity to implement emergency weather preparation measures that could be reasonably expected to ensure its generation resources and transmission facilities can sustain operations through the relevant seasonal weather conditions. This preparation requirement exists regardless of whether the resource or facility ultimately meets the temperature standards in the rule. If, upon inspection, ERCOT determines that the preparations were inadequate, it will provide the entity with a reasonable cure period. If the entity is still not able to implement adequate preparation measures, an enforcement investigation may be warranted. However, each of these steps is a fact-based inquiry into what measures were, ultimately, reasonable to expect the entity to implement.

The commission will not pre-judge each potential fact pattern resulting in compliance shortfalls in this order, but several aspects of this question are discussed in response to more specific comments below.

Conflict with ERCOT protocols

TPPA commented that, under the proposed Nodal Protocol Revision Request (NPRR) 1132 and the proposed rule, entities would be responsible for submitting duplicative data to ERCOT and the commission but on different dates. TPPA recommended the commission “immediately sunset the conflicting and overlapping portions of NPRR 1132, *Communicate Operating Limitations during Cold and Hot Weather Conditions*, when the proposed rule is made effective, consistent with its complete authority over ERCOT's operations.

Commission Response

The standards imposed by the adopted rule are separate and distinct from the requirements of NPRR 1132, which is focused on implementing FERC and NERC requirements. Sunsetting NPRR 1132 is beyond the scope of this rulemaking project.

Mothballed and suspended units

TEC indicated that the proposed language under proposed §25.55(a)(1) and (c)(3)(C) may disincentivize mothballed or suspended units from returning to respond to the immediate needs of

the grid. TEC therefore recommended an exception to compliance be granted for “certain generation resources returning to support reliability.”

Commission Response

The commission declines to include an exception to compliance for “certain generation resources to support reliability” as recommended by TEC. A mothballed unit that is returning or is considering the possibility of returning must be able to perform as reliably as any other resource or it cannot be depended upon for reliability purposes.

Preamble

OPUC requested that the preamble language of the *public benefits* section be changed in reference to microbusinesses to acknowledge that there may be some economic cost to weatherizing electric facilities.

Commission Response

The preamble language to the commission’s proposal for publication has already been published in the *Texas Register* in accordance with the Administrative Procedure Act under Tex. Gov’t Code §2001.0221. The commission is not able to amend that language.

Trainings

TPPA requested clarification on the training of operational personnel required under proposed §25.55(c)(1)(D), (c)(2)(D), (f)(1)(D), and (f)(2)(D) as it is unclear whether summer and winter trainings can be combined or should there be separate trainings. TPPA recommended the phrase “ensure that relevant personnel are trained” be inserted into each proposed subparagraph.

Commission Response

The adopted rule only specifies the date by which training must be complete. It does not otherwise mandate when this training must occur or whether the seasonal trainings can be combined. This is intended to provide entities with flexibility in implementing this requirement. However, each entity should design its training program to ensure its employees are adequately prepared to respond to emergency weather conditions.

Public compliance reports

TPPA recommended proposed §25.55(c)(4), (c)(5), (f)(4), and (f)(5) explicitly require ERCOT to publicly file a compliance report addressing whether a generation entity or TSP has filed the appropriate declaration and host the report on the front page of ERCOT’s website. TPPA also recommended those provisions address whether the declaration was filed for all resources under control of the generation entity or TSP.

Commission Response

In balancing the competing interests of public transparency and maintaining the confidentiality of sensitive critical energy infrastructure information, publicizing such report on the ERCOT website is not currently necessary. Further, ERCOT must report compliance for all resources under the control of a generation entity and all facilities maintained by a TSP or facilities owned by each generation entity or TSP to the commission, therefore requiring ERCOT to file the report publicly and host it on ERCOT's webpage to the proposed rule is not warranted. Therefore, the commission declines to revise §25.55(c)(4), (c)(5), (f)(4), and (f)(5) in the manner TPA recommends.

Require ERCOT provide written inspection reports

TPPA recommended the commission require ERCOT to provide a written report on its inspection to the utility as opposed to the verbal feedback currently required under proposed §25.55(d)(2)(A) and (g)(2)(A) to avoid confusion and provide a common knowledge base for the utility, ERCOT, and the commission.

Commission Response

The commission agrees that a written report better facilitates identifying and resolving deficiencies, and also helps establish that an entity is in compliance for record keeping purposes. The commission modifies the rule language accordingly.

Site specific plans

TPPA commented that, due to the uniqueness of each power plant in both design and location, the commission should require only general weather preparedness measures confirmed via affidavits submitted by each generation entity and TSP. Consequently, each generation entity and TSP would be responsible for developing site-specific plans that comply with the intent of the rule without forcing all facilities into a potentially problematic uniform solution.

Commission Response

The rule is structured to provide flexibility to entities in implementing the required weather preparedness measures. The declarations of preparedness required in the rule will enable each generation entity or TSP to detail how such preparations were performed. PURA §35.0021 requires the commission to implement rules related to weather emergency preparedness “according to reliability standards adopted by the commission.” PURA §38.075 similarly requires ERCOT to inspect the facilities of certain regulated entities for compliance with such reliability standards. The commission therefore declines to revise the rule as recommended by TPPA because such a modification would be contrary to express statutory language.

Question 1

The proposal requested that TSPs provide information related to wind-loading design criteria for the 345 kV network.

Sharyland stated that it utilizes NESC and ANSI industry standards based on load zone in conjunction with relevant IEEE updates.

AEP similarly responded that it currently designs its transmission stations and lines to meet or exceed the loadings adopted by the current NESC and ANSI. AEP stated that “the design wind loading ranges from 90 mph on the inland portion of the system increasing with potential exposure to hurricane force winds up to 140 mph.”

Oncor stated it also relies on NESC standards in designing its transmission structures which generally require operation “in 3-second gusts of high wind speeds: 90 mph in almost all of its service territory” with the exception of a slightly higher standard along coastlines due to hurricane risks. Oncor noted that NESC standards also specify horizontal clearance requirements in different wind conditions.

Commission Response

The commission appreciates the information shared by parties that responded to *Question 1*.

Question 2

The proposal requested comments on whether the proposed rule appropriately defines “repeated or major weather-related forced interruptions of service”?

Commission Response

Comments and commission responses to this question are summarized and addressed with comments to §25.55(b)(5)-(b)(7) below.

§25.55(a) – Application

Proposed §25.55(a) lists the entities to which the weatherization preparedness standards apply.

LCRA expressed support for proposed language requiring a new resource to meet the requirements of this section prior to its commercial operations date. However, LCRA recommended that the commission consider identifying more stringent criteria for all new generation resources.

Commission Response

The commission declines to create different standards for existing resources and new resources, because it is inappropriate to require entities competing in a single market to meet separate standards. The adopted rule requires both new and existing resources to perform reliably in weather emergency conditions.

Vistra noted that proposed §25.55(a) excludes a resource that submits an ERCOT-approved Notice of Suspension of Operations (NSO). TCPA and Vistra noted that ERCOT does not technically approve NSOs. TCPA also commented that the exemption for generation resources with an ERCOT-approved NSO under proposed §25.55(a)(1) for the summer or winter season is flawed. TCPA provided draft language consistent with its recommendations.

TPPA recommended proposed §25.55(a)(1) be revised to specify that a generation resource with an ERCOT-approved NSO for the summer or winter season is not required to comply with “the applicable season-specific requirements” of the proposed rule.

Vistra further noted that, in reviewing an NSO, ERCOT may determine that a resource is necessary for reliability and may negotiate a Reliability Must Run (RMR) agreement with the entity as a last resort after evaluating whether viable alternatives to an RMR exist. Vistra stated that over the course of the negotiation period, a generator is required to be available only for a Reliability Unit Commitment (RUC), during which only certain operating costs are recoverable for resources utilized under the RUC. Vistra argued that resources available for a RUC and pending a NSO review by ERCOT should not be required to comply with weatherization standards as the recoverable operating costs under a RUC do not include costs required to implement the Phase II weatherization standards under the proposed rule. Vistra recommended that a generation resource only be required to comply with weather preparedness standards “when it remains in service for the relevant season (through a seasonal mothball), returns to service (on the date indicated in its NSO), or after it begins the term of an RMR agreement negotiated with ERCOT.” Vistra provided draft language consistent with its recommendations.

Commission Response

The adopted rule creates a preparedness standard for all TSPs and resources. It is unnecessary for the rule to specify that a resource with an ERCOT-approved NSO is not required to comply with “the applicable season-specific requirements” as NSOs are specific to when an NSO is approved. Further, if a resource expects to return to service during the

summer or winter season, including via an RMR agreement, it should be prepared to operate reliably. A resource with an ERCOT-approved NSO that has a return to service date outside the summer or winter seasons is not required to comply with weather preparation requirements until the next winter or summer season. As such, the commission declines TCPA's, TPPA's and Vistra's recommendations.

Constellation noted that the rule is silent on a burden of proof or an evidentiary standard to demonstrate that the failure was not weather related and recommended amending the rule to provide notice and appeals process and provided draft language consistent with its recommendations.

Commission Response

The commission declines to include a burden of proof or evidentiary standard to determine whether a potential major or repeated weather-related forced interruption of service is weather related and, therefore, requires contracting with a qualified professional engineer. The requirement to contract with a qualified professional engineer is not a punitive measure or the result of an enforcement action. Entities subject to the rule are encouraged to work with ERCOT and provide any information that may assist ERCOT in determining whether notice of a major or repeated weather-related forced interruption of service should be issued, triggering the requirement to contract with an engineer. However, if there is uncertainty or disagreement over whether a failure is weather-related, an appeals process of this

determination is not necessary or efficient. An assessment by an independent engineer is an appropriate means of assessing the cause of the failure.

If an interruption of service may have been weather-related, the resiliency goals of this rule are best served by obtaining an independent root-cause analysis of the failure. If the failure was weather-related, the entity may need to implement additional weather preparation requirements to comply with the preparation standard required by this rule. If the failure was not weather-related, the root-cause analysis may still help determine how to prevent future interruptions of service.

Constellation noted that there are circumstances, such as acts of God or reductions of load for the safety of personnel and equipment, that may constitute a forced interruption but should not be considered a “major weather-related forced interruption of service” or an occurrence of a “repeated weather-related forced interruption of service.” Constellation recommend a provision be added to proposed §25.55(a) or proposed (b)(5) and (b)(6) exempting such circumstances from meeting the criteria for repeated or major weather-related forced interruptions of service. Constellation provided draft language consistent with its recommendation.

Commission Response

The commission declines to adopt Constellation’s proposed language. Interruptions of service that meet the adopted definitions of repeated and major weather-related forced interruptions of service will be reviewed as required in an independent assessment by a qualified professional engineer under §25.55(e) and (h).

Proposed §25.55(a)(2) – Application; new generation resource and transmission facilities

Proposed §25.55(a)(2) delineates the new resources and transmission facilities that are required to comply with §25.55.

OCSC recommended including load-side resources, including Large Flexible Loads, in the proposed rule, specifically for weatherization and inspection requirements. OCSC alternatively recommended including load-side resources in a future rulemaking involving §25.53, relating to Electric Service Emergency Operations Plans, if the commission declines to implement the recommendation in the current rulemaking.

TPPA recommended requiring that load resources providing ancillary services to comply with weather preparedness measures and that the commission include “load resources providing ancillary services” to the definition of “resource” under proposed §25.55(b)(8).

Commission Response

Imposing weather preparedness requirements on load resources is beyond the scope of this rulemaking, because the proposal for publication did not provide notice of the possibility of imposing requirements on these entities. Load-side resource requirements may be taken up in a future rulemaking project.

The commission also modifies §25.55(a)(2) to clarify the applicability of this rule to a new or repowered resource or transmission facility.

Sharyland commented that standards such as those created by NESC, IEEE and ANSI would provide clarity and consistency in the industry while avoiding unintended consequences and recommended such standards be incorporated into §25.55(a)(2).

Commission Response

The adopted rule does not explicitly adopt the standards proposed by Sharyland in the rule as the weather preparedness requirements work symbiotically with other industry standards.

Proposed §25.55(b) – Definitions

Proposed §25.55(b) contains the definitions applicable within the rule.

“Transmission capability”

TPPA recommended the commission define the term “transmission capability” which is currently undefined in commission rules, the ERCOT Nodal Protocols, and by NERC. TPPA asserted that defining such a term would “improve compliance and clarify which events will trigger the TSP independent assessment.”

Commission Response

“Transmission capability” is not referenced in the definition of “major weather-related forced interruptions of service” in the adopted rule. As such, TPPA’s recommendation is unnecessary.

TNMP recommended deleting the current definition of “weather critical component” and instead provided separate definitions of “cold weather critical component” and “hot weather critical component” to better address the distinct weather risks posed by each type of weather emergency.

Oncor commented that the proposed definitions of “major weather-related forced interruptions of service” under §25.55(b)(5), “repeated weather-related forced interruptions of service” under §25.55(b)(6), and “weather emergency” under §25.55(b)(11) are overly broad and could be construed as strict liability standards, regardless of causation or level of preparedness, and therefore the definitions impose a performance standard, rather than a preparedness standard as required by statute and acknowledged by the commission.

Commission Response

The adopted definitions for “weather critical component,” “major weather-related forced interruption of service,” and “weather emergency” have been amended to specify the type of conditions and components captured by this rule. Specifically, the commission clarifies that under the rule “an interruption of service” must be the result of an event designated as a “weather emergency,” as defined under adopted §25.55(b)(11), by an ERCOT-issued notice and accordingly revises the definition of “weather critical component” under adopted §25.55(b)(10) to provide more objective criteria in relation to a trip, derate, or failure to

start. The commission also splits the definition of “major weather-related forced interruption of service” into two different definitions, adopted as §25.55(b)(5) and (b)(6), applicable to resources and transmission facilities, respectively.

However, in response to Oncor’s concerns that the definitions of repeated and major weather-related forced interruption of service impose performance requirements, the commission agrees. These definitions are relevant to the requirement that a TSP that experiences major or repeated failures must hire an independent engineer to provide an independent review. This is separate from the temperature-based preparation requirements of this rule. However, this should not be construed as strict liability, because these performance issues are not violations of the rule subjecting the TSP to enforcement. These provisions merely provide an additional layer of assurance that major or repeated weather failures are properly addressed.

Proposed §25.55(b)(5) – Major weather-related forced interruption of service and proposed §25.55(b)(6) – Repeated weather-related forced interruption of service

Proposed §25.55(b)(5) and (b)(6) define “major weather-related forced interruption of service” as “the loss of 7,500 Megawatt-hours (MWh) of generation service or transmission capability occurring as a result of a weather emergency” and “repeated weather-related forced interruption of service” as “three or more of any combination of the following occurrences as a result of a weather emergency within any three-year period: a failure to start, a forced outage, or a deration of more than fifty percent of the nameplate capacity of a generation resource or a transmission facility.”

TEC stated that the proposed definitions are ambiguous. TEC explained that a single definition is more appropriate because corrective action tied to the size of an outage based on megawatt-hours introduces ambiguity due to the different capacities of facilities managed by a utility.

Commission Response

The commission disagrees with TEC that the definitions of “major weather-related forced interruption of service” and “repeated weather-related forced interruption of service” should be combined. The objective of these definitions is to differentiate between a large singular event, “major weather-related forced interruption of service,” and multiple smaller event which could be indicative of a larger problem, “repeated forced interruption of service.” To combine these definitions, would be contrary to their purpose in the rule.

AEP argued that the proposed definitions should be revised to “more accurately to address the failure of weather critical components in a transmission facility.”

Both NRG and Vistra recommended revising the proposed definitions to apply exclusively to outages caused by the weather emergency. Vistra contended that unrelated events causing forced outages and derates are “outside the scope of what a generator can prepare for.”

Constellation expressed concern that the rule as written would treat any failure occurring during a weather emergency as being “weather-related” and instead recommended modifying the definitions of “major weather-related forced interruption of service” and “repeated weather-related

forced interruption of service” to specify a direct causal link between the weather emergency and the forced interruption of service.

Commission Response

In response to AEP’s comments, and in acknowledgment of the differences between a resource and transmission facilities, the commission separates the definition of “major weather-related forced interruption of service” into two definitions applying to resources and TSPs separately. The commission agrees with Constellation NRG, and Vistra that repeated and major interruptions of service must be the result of the weather emergency to implicate the provisions of this rule. Accordingly, the definitions of “major weather-related forced interruption of service” of a resource and transmission facility under adopted §25.55(b)(5) and (b)(6), and “repeated weather-related forced interruption of service” under §25.55(b)(7) require an interruption of service be “as a result of a weather emergency.”

NextEra recommended modifying the definition of “major and repeated weather-related forced interruptions of service” to treat generation resources and transmission facilities with different rated capabilities equitably.

Vistra recommended the terms “major weather-related forced interruption of service” under proposed §25.55(b)(5) and “repeated weather-related forced interruption of service” under proposed §25.55(b)(6) incorporate a twelve-hour duration requirement so that both proposed definitions “capture losses of capacity with similar cumulative impact.” Vistra explained that a twelve-hour threshold would trigger the independent review of weather preparedness on a basis

that recognizes “that repeated smaller interruptions of service may warrant the same policy treatment as one major interruption of service.”

LCRA requested that the commission modify definitions in proposed §25.55(b)(5) and (b)(6) to clearly describe which forced interruptions of generation service will trigger proposed §25.55(e). LCRA noted that high temperature related HSL adjustments should not be counted as a “derate” and that the commission should include, in its final rule, that any derate required for compliance with environmental permits are not “weather-related” and would not count as a major or repeated weather-related forced interruption of service.

Commission Response

The commission acknowledges NextEra’s concern that the proposed definitions for major and repeated weather-related forced interruptions of service could be refined to address generation resources and transmission facilities with different rated capabilities. The adopted definitions measure loss by percentage of the capacity reflected in a resource’s seasonal net maximum sustainable rating or a transmission facility’s rating, so that entities of different rated capabilities are treated equitably. No further changes are needed.

Regarding Vistra’s request to amend the definitions of “major weather-related forced interruptions of service” and “repeated weather-related forced interruptions of service” to include a 12-hour standard, the adoption definition of “major weather-related forced interruption of service of a resource” includes a 12-hour standard. For TSPs, the commission declines to include a 12-hour standard and instead defines it as a non-momentary outage. “Momentary interruption” is a defined term in §25.52(c)(5), relating to

Reliability and Continuity of Service, that is already understood by TSPs. The commission declines to add a 12-hour standard for repeated interruptions, because this definition is intended to capture recurring instances of smaller events that could indicate a larger problem at a given system.

Regarding LCRA's concerns that derates unrelated to a weather emergency would count towards a "repeated weather-related forced interruption of service", the adopted definitions require that a derate be the result of a weather emergency. No further change is needed.

Enbridge expressed concern that the definition of "repeated weather-related forced interruption of service" imposes what are effectively performance requirements on weather resource-dependent resources during planned or expected periods of low wind or solar resources. Enbridge provided draft language consistent with its recommendation.

NextEra also requested that the weatherization standard in the proposed rule distinguish between the loss of generation due to weather related equipment failures and naturally occurring variability in production that renewable resources experience due to changes in wind speed and solar irradiance.

Commission Response

The commission disagrees with Enbridge's assertion that the definition of "repeated weather-related forced interruption of service" would include planned or expected periods of low wind or solar resources. Planned or expected periods of low non-dispatchable

resources would have to occur during weather emergencies to be included in the adopted definition of “repeated weather-related forced interruption of service.” Interruptions of service that meet the adopted definitions may be reviewed, as required in an assessment by a qualified professional engineer, under subsection (e) or (h), as applicable.

However, the commission acknowledges Enbridge’s concerns regarding weather-dependent generation resources and revises the definitions in a manner that is more inclusive of such resources. Specifically, the commission revises the definition of a “major weather-related forced interruption of service of a generation resource” to refer to a failure to start or loss through a duration element of 12 or more hours as a result of a weather emergency. The commission further revises the definition of a “repeated weather-related forced interruption of service” to refer to “the failure of a resource to start” during separate weather emergencies and “the loss of 50% or more of the capacity reflected in a resource’s seasonal net maximum sustainable rating for 30 minutes or more” during separate weather emergencies. The commission maintains that these revisions adequately address Enbridge’s and NextEra’s concerns regarding the impact of the adopted definitions on solar and wind resources, as the adopted definitions require a forced interruption of service as caused by a weather emergency.

Proposed §25.55(b)(5) – Major weather-related forced interruption of service

CenterPoint commented that, for a TSP, the definition of “major weather-related forced interruption of service” is ambiguous and requested the commission clarify the definition.

CenterPoint stated that the definition should be narrowed only to “transmission losses occurring as a result of a weather emergency.”

Commission Response

The commission agrees with CenterPoint that the proposed definition is ambiguous and modifies the language for “major weather-related forced interruption of service” to require a forced interruption of service be the result of a weather emergency.

AEP recommended revising the proposed definition of “major weather-related forced interruption of service” under proposed §25.55(b)(5) to identify forced outages of transmission facilities, caused by failure of weather critical components as a result of a weather emergency, that directly cause a limitation or restriction in the deliverability of generation services above a specified threshold.”

Oncor commented that the definition of “major weather-related forced interruptions of service” under proposed §25.55(b)(5) should focus on resiliency and accordingly 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.” Oncor recommended the proposed definition explicitly require a forced outage to have a clear causal relationship with the direct restriction of generation deliverability.

TCPA commented that a “major weather-related forced interruption of service” should be “tied to a coincident risk” and not an interruption occurring in isolation without a system-wide impact.

TCPA stated that, absent an emergency, loss of one plant cannot be a “major weather-related outage impacting the grid as a whole.”

Commission Response

The adopted rule defines “major weather-related forced interruption of service” for TSPs and resources as resulting from weather emergencies, which are defined as involving a risk of load shed or direct reliability risk to the ERCOT system. This addresses the concerns of Oncor, AEP, and TCPA that interruptions of service that do not actually threaten reliability will not count as major interruptions of service.

Sharyland requested that the commission clarify the rationale for the use of 7,500 MWh, as from its perspective, the loss of 7,500 MWh of transmission capability may not necessarily be significant.

Enbridge and LCRA recommended that the commission clarify that the 7,500 MWh applies on a per event basis, rather than per season. LCRA requested clarifying the definition of “major weather-related forced interruption of service” to ensure that the definition is applied per unit.

TEC noted that the proposed definition of “major weather-related forced interruption of service” is unclear on whether the 7,500 MWh threshold “should be considered on a contiguous basis or an accumulation over time.” TEC also indicated that higher capacity, more efficient plants would be burdened disproportionately by the rule as a perverse incentive would be created via the proposed production-based metric. If the commission includes a megawatt-hour threshold, TEC urged the

commission to work with utilities and ERCOT to determine whether the 7,500 MWh threshold is “a realistic and nondiscriminatory metric” that warrants being codified in commission rules.

NRG and Vistra requested that the 7,500 MWh trigger referenced in the “major weather-related forced interruption of service” be reconsidered. TCPA stated that the basis for the 7,500 MWh number used in the proposed definition is not explained and is ambiguous as to whether the standard is system-wide or unit-specific.

TPPA argued that the proposed definition of “major weather-related forced interruption of service” under proposed §25.55(b)(5) is overbroad as it would include any ancillary purchases or trades instead of just actual production capacity. To make the proposed definition more precise, TPPA recommended revising the definition to reference “net generation capacity” and include a duration element, specifically “within a one-week time period” in which a major interruption, or loss of 7,500 MWh, is experienced. TPPA noted that the 7,500 MWh standard for a transmission facility would be triggered on essentially any outage on a transmission line, switchyard, or bus, and trigger the independent assessment under the rule. TPPA stressed that the current definition, as applied to TSPs, would be cumbersome to comply with and does not meaningfully strengthen grid reliability for seasonal hot and cold weather.

CenterPoint objected to the 7,500 MWh term in the definition as, according to CenterPoint, “TSPs do not normally measure a loss of transmission capability in terms of megawatt hours.” Instead, CenterPoint argued that TSPs measure such a loss by duration and concurred that minor or momentary interruptions of transmission capability do not meet the definition of a “major weather-related forced interruption of service.” CenterPoint recommended that the commission adopt a duration measurement for “major weather-related forced interruption of service” that, “at a minimum, excludes momentary losses of transmission capability.” CenterPoint recommended

replacing the proposed definition “a non-momentary transmission service outage caused by damage to, or the inoperability of, a transmission facility as a result of a weather emergency.”

OCSC objected to the definition of “major weather-related forced interruption of service” as too restrictive. Specifically, OCSC stated the definition does not allow for losses lesser or greater than 7,500 MWh and that, as proposed, the definition would require a loss of *exactly* 7,500 MWh. OCSC commented that the presumed intent was to define a “major weather-related forced interruption of service” as the loss of 7,500 MWh *or greater*. OCSC noted that 7,500 MWh or greater would result in an overly permissive definitions because it would exclude some of the state’s largest power generation facilities. OCSC concluded that the threshold should be 2,500 MWh, rather than 7,500. OCSC recommended replacing the proposed definition with “the loss of 2,500 megawatt-hours or more of generation service or transmission capability occurring as a result of a weather emergency.”

TCPA argued that the 7,500 MWh threshold would place additional pressure on “larger dispatchable baseload units” due to the studies, inspections, penalties, and weatherization requirements under the rule because larger resources with more units could trigger the threshold in a short period of time, while smaller resources may never trigger the threshold. TCPA recommended that if the proposed definition is intended to be unit-specific, then the definition should be scaled appropriately to more equitably apply the definition across small and large generation units.

Constellation, Vistra, and NRG agreed with TCPA’s initial comments that the 7,500 MWh threshold would result in disparate treatment for generation resources of different sizes possessing a different number of units. Constellation recommended modifying the definition to prevent discriminatory treatment.

Vistra concluded the definition would create “an arbitrary distinction in its application to different resources” and therefore “would not ensure a robust review of weather-preparedness plans across the ERCOT fleet” for outages of similar duration.

TCPA also commented that if the threshold is based on a “system-wide loss of generation,” as it proposes, then using a specific MW amount to calculate “loss” is only viable if the “available installed capacity in ERCOT remains stagnant.” Since additional generation will be added or taken offline over time, TCPA accordingly proposed replacing the 7,500 MWh threshold with a percentage value rather than a whole number. TCPA recommended, specifically, “greater than 50% of available lost capacity for a period of 48 or more consecutive hours.” NRG agreed with TCPA’s proposed duration-based scale and recommended the adoption of a revised definition similar to TCPA’s recommended rule language. Vistra proposed substantially similar language as well.

Constellation proposed scaling the trigger to the facility by a specified number of hours based on the type of facility plus the amount of time the generator has committed to come online under normal circumstances in its unit commitment.

Commission Response

The commission agrees that the rule could be clarified to specify the application of the 7,500 MWh figure. However, in consideration of commenters concerns with the figure, it is no longer a part of either definition regarding “major weather-related forced interruptions of service”. Therefore, implementing Enbridge’s, TCPA’s, Constellation’s, Vistra’s, NRG’s, OCSC’s, Sharyland’s, TEC’s, TPPA’s, and LCRA’s recommendation is unnecessary.

The commission agrees with CenterPoint that the proposed definition of “major weather-related forced interruption of service” to be specific to TSPs, and splits the definition into two separate definitions respectively applicable to resources and transmission facilities.

Constellation also stated that these definitions should be limited to the summer and winter seasons and should be consistent with ERCOT protocols.

Commission Response

The commission disagrees with Constellation that the definition of “major weather-related forced interruption of service” must specify that they are limited to summer and winter. The language throughout the rule is limited to the winter and summer seasons, effectively limiting the application of the definitions themselves.

LCRA also requested that the rule clearly define that in determining if a “major weather-related forced interruption of service” has occurred, loss of generation be calculated based off the resource’s seasonally adjusted high sustained limit (HSL). LCRA further proposed modifying proposed §25.55(b)(5) to create a new, separate definition applicable to generation resources and provided draft language consistent with its recommendation.

LCRA recommended that the commission focus this definition on the most critical times when weather-related failures are most likely to negatively impact electric consumers, such as during ERCOT-declared emergency conditions.

Commission Response

The commission disagrees with LCRA’s recommendation to include reference to a resource’s HSL in the definition of “major weather-related forced interruption of service of a resource” and instead includes language referring to a resource’s seasonally adjusted net maximum sustainable rating to calculate loss of generation. Unlike the HSL, the seasonally adjusted net maximum sustainable rating is a value that a generation entity must report to ERCOT prior to the beginning of the summer and winter seasons and is reflective of a more typical operating range of a resource during that season and is not subject to frequent changes throughout a season.

The commission also notes that the revised definition is a separate definition applicable only to resources and requires emergency conditions determined by ERCOT issuing an Emergency Notice. As such, no further modifications are required.

APA and ACP recommended revising the proposed definition of “major weather-related forced interruption of service” to add “causing an outage or derate attributable to equipment failures that could have feasibly been prevented by following commonly accepted Good Utility Practices” to the end of the provision. APA and ACP maintained that the definition should not apply to equipment limitations outside of the reasonable control of the resource owner, and rather focus only on outages and derates caused by equipment failures that could have been prevented if good utility practices had been followed. APA and ACP accordingly recommended the commission

specify a methodology or otherwise clarify “how the required analysis to calculate expected lost electricity production will be completed consistently and accurately.”

AEP further recommended revising the definition by replacing “weather-related” with “weather emergency” to align with the defined term “weather emergency under proposed §25.55(b)(11). AEP provided draft language consistent with its recommendations.

Commission Response

The commission has split the definition of “major weather-related forced interruptions of service” into two separate definitions applicable to transmission facilities and resources, respectively. The commission maintains that the new definitions “major weather-related forced interruption of service of a transmission facility” and “major weather-related forced interruption of service of a resource” strike the appropriate balance of narrowing the definition while still appropriately specifying the entities that must implement weather preparedness standards.

The commission will not modify “major weather-related forced interruption of service of a transmission facility or resource” to state “major weather-emergency forced interruption of service of a transmission facility or resource” because “weather-related” is consistent with PURA §35.0021 and the adopted definitions specify weather emergency conditions are necessary, making the modification unnecessary.

Proposed §25.55(b)(6) – Repeated weather-related forced interruption of service

CenterPoint objected to the inclusion of language relating to “failure to start” and “a deration of more than fifty percent of the nameplate capacity” in the definition of “repeated weather-related forced interruption of service” under proposed §25.55(b)(6) as inapplicable to transmission facilities. LCRA recommended deleting “failed start” from the definition, because a persistent startup failure leading to a loss of generation capacity would be captured by the term “forced outage” in the proposed definition of “repeated weather-related forced interruption of service” under §25.55(b)(6).

TEC argued that a derate materially differs in scale from a complete outage or a failure to start and accordingly recommended revising the proposed definition of “repeated weather-related forced interruption of service” under §25.55(b)(6) to remove derations as a trigger for an independent review under proposed §25.55(e) and (h). TEC also contended that outages at a TSP’s switchyard or substation may not be able to quantify the megawatt-hour disruption directly caused by an outage or derate. TEC therefore recommended that repeat failures by a facility should be considered more relevant than the size of a single failure.

AEP commented that the proposed definition “repeated weather-related forced interruption of service” under §25.55(b)(6) is overly broad as it could be interpreted as construing a forced outage of “any three transmission elements anywhere on the TSPs system” a repeated forced interruption of service, regardless of the cause. AEP recommended revising the proposed definition to specify “that any of the combination of occurrences would occur at the same transmission facility, due to the failure or one or more weather critical components within that transmission facility, and the failure is a result of a weather emergency.” AEP provided draft language consistent with its recommendations.

CenterPoint, LCRA and Oncor recommended amending the definition to explicitly state that it only applies to individual units as the proposed language lacks clarity.

CenterPoint elaborated that, if a forced outage occurred in different transmission facilities in consecutive years, such outages should not be within the proposed definition of “repeated weather-related forced interruption of service.”

CenterPoint recommended replacing the proposed definition of “repeated weather-related forced interruption of service” with “three or more of any combination of the following occurrences as a result of a weather emergency within any three-year period involving the same generation resource or transmission facility: a failure to start, a forced outage, or a deration of more than fifty percent of the nameplate capacity of a generation resource; or a forced outage of a transmission facility.”

Oncor recommended the commission explicitly specify in the proposed definition of “repeated weather-related forced interruption of service” that the threshold for meeting the proposed definition is discrete to each facility. Oncor also recommended the proposed definition exclude momentary interruptions and referred to §25.52(c)(5), relating to Reliability and Continuity of Service as support for its contention.

TEC and TPPA also recommended the commission revise the proposed definition of “repeated weather-related forced interruption of service” under §25.55(b)(6) to clarify that multiple outages during the same weather event are considered a single outage or occurrence. TEC explained the possibility for a facility to fail to start or sustain multiple short, forced outages as attempts are made to correct the issue. Accordingly, TEC and TPPA contended that a utility should not be penalized for any restoration efforts it undertakes. TEC provided draft language consistent with

its recommendations for the proposed definition of “repeated weather-related forced interruption of service” under §25.55(b)(6).

TPPA also recommended that the proposed definition be limited to the failure of “the same or similar components” within a generation facility, due to the complicated nature of generation facilities and the fact that repeat interruptions can occur due to the failure of unrelated components.

For the same reasons stated in its recommendations to the proposed definition of “major weather-related forced interruption of service” §25.55(b)(5), APA and ACP recommended revising the proposed definition of “repeated weather-related forced interruption of service” to state “three or more of any combination of the following occurrences, attributable to equipment failures that could have feasibly been prevented by following commonly accepted Good Utility Practices, as a result of a weather emergency within any three-year period: a failure to start, a forced outage, or a deration of more than fifty percent of the expected capability of a resource or a transmission facility.”

LCRA commented that the “three strikes” criteria included in the definition of “repeated weather-related forced interruption of service” only apply when the weather-related interruption results in an actual loss of generation service.

Similarly, TCPA argued that the “three strikes” provision is unrealistic, as a generator that starts 100 times but fails three times should not be treated the same as a generator that starts five times but fails three times. TCPA maintained that under the proposed definition a repeat weather-related failure should be based on the same component in accordance with statute, and that components that commonly break should not trigger the definition.

Commission Response

In response to multiple comments, the definition of “repeated weather-related forced interruption of service” has been changed to clarify that failures to start are during separate weather emergencies.

The proposed definition of “repeated weather-related forced interruption of service” is intended to capture repeated failures of the same resource or transmission facility. The weather preparedness requirements under the adopted rule are intended as preparation standards, not performance standards. Resources are required to prepare for summer and winter conditions. Interruptions of service that meet the adopted definitions may be reviewed as required in an assessment by a qualified professional engineer under §25.55(e) or (h), as applicable.

LCRA and TPPA recommended amending that the rule language to calculate any loss of generation based off the resource’s seasonally adjusted HSL. LCRA further recommended that any derates required for compliance with environmental permits not be considered “weather-related” nor count toward a resource’s “three strikes.”

TCPA also recommended the commission provide criteria for the term “forced outage” as used in the proposed definitions including “a threshold of time and direct weather-related causation” as outages that coincidentally occur during a weather emergency event may not be related to the weather.

TPPA also recommended “that forced outages or derations that occur because of unforeseeable circumstances outside the reasonable control of the resource or transmission facility owner” as

well as extensions of an already existing outage “not be counted toward the limited number of occurrences” under the proposed definition. TPPA provided draft language consistent with its recommendations.

Commission Response

The adopted definition of “repeated weather-related forced interruption of service” calculates loss of a resource based off the resource’s seasonally adjusted net maximum sustainable rating and require loss as a result of a weather emergency. No modifications are needed for LCRA and TPPA’s requests.

Further, LCRA recommended creating a new, separate definition for generation specific repeated weather-related interruptions of service and provided draft language consistent with its recommendation.

APA and ACP also recommended the commission specify a duration threshold in the proposed definition of “repeated weather-related forced interruption of service” so that “outages and derates of sufficient impact qualify as repeated weather-related forced interruptions of service” and that the definition should more clearly apply to energy storage resources.”

Commission Response

The adopted definition of “repeated weather-related forced interruption of service” has specific requirements for loss of a resource that address LCRA’s concerns.

Further, the adopted definition requires loss of a resource for “30 minutes or more;” this durational element addresses APA’s and ACP’s concern.

Constellation and TCPA recommended that the definition of “repeated weather-related forced interruption of service” focus on whether the interruptions are the result of the failure of the same critical weather component or the failure of the same resource or transmission facility. Constellation expressed that a failure to start of any duration should not be considered a forced interruption of service and recommended adding a reasonable minimum duration threshold. Constellation recommended the threshold be a failure to start “that results in an outage continuing for four or more hours beyond a resource’s scheduled online time.” TCPA asserted that a resource-level focus for the definition is flawed, as an interruption on that scale does not necessarily mean that an issue is “repeated.”

Vistra requested clarification of what the phrase “failure to start” means, as used in the proposed definitions, in the context of a forced outage, particularly in relation to the 7,500 MWh threshold in the proposed definition of “major weather-related forced interruption of service.”

Commission Response

Furthermore, the commission clarifies that a failure to start means when a resource that is offline and available for dispatch is given an instruction from ERCOT to turn on and is unable to successfully start up.

Vistra recommended revising the term to clarify “that the relation to weather is one of direct causality (to ensure that outages occurring during a weather event, but for some other, non-weather-related reason are excluded) and to input a relative duration threshold for failures to start, forced outages, and derations.” Vistra maintained that brief derates or outages or delayed starts lasting minutes or hours should not trigger the definition and result in an entity incurring the cost of a full audit of the generation resource’s weather preparedness. Vistra noted that such incidents are common at older generators, even in normal weather conditions.

TCPA also recommended that the proposed definition for “repeated weather-related forced interruption of service” require a failure to start to “result in an outage that goes twelve or more hours before the resource’s scheduled online time” and that a brief interruption or “trip” should not be considered a forced outage under the definition if the resource can return to service.

Commission Response

There is no direct relationship between a failure to start and a forced outage other than being criteria for what constitutes a “repeated weather-related forced interruption of service”. In context of this rule, a failure to start occurs as a result of a “weather emergency.” No changes to the rule language are necessary.

TCPA recommended that a “repeated weather-related forced interruption of service” should only be deemed to exist if ERCOT has provided notice to a resource owner following each of the weather-related incidents counted toward the three that may trigger an audit.

Commission Response

Adopted §25.55(e) and (h) require ERCOT to provide a generation resource or TSP notice when a resource or TSP has a repeated or major weather-related forced interruption of service. The commission declines to make notice a requirement for a major or repeated weather-related forced interruption of service to exist, as that would be counter to the objective of this rulemaking project. An entity should be aware when they experience a major or repeated forced interruption of service.

NRG recommended that generation units be evaluated based on their actual generation capacity and not their nameplate generation capacity. They asserted that a unit's age and other factors can reduce its actual generation capacity to an amount less than its nameplate generation capacity.

NextEra recommended removing the reference to "nameplate capacity" within proposed §25.55(b)(6) and replacing it with the new term "expected capability". "Expected capability" is defined as "either the nameplate capacity rating for a non-intermittent renewable resource, or the nameplate capacity rating of an intermittent renewable resource, appropriately adjusted to reflect the expected production of the resource based on prevailing wind and solar irradiance conditions during the weather emergency period."

Commission Response

The commission declines to adopt NextEra's recommendation to include "expected capability" instead of "nameplate capacity." Instead, "repeated weather-related forced interruption of service" has been revised to replace "nameplate capacity" with "the capacity reflected in a resource's seasonal net maximum sustainable rating." Resource availability for non-dispatchable entities will be considered as a part of the after-event analysis.

Proposed §25.55(b)(9) – Transmission facility

Proposed §25.55(b)(9) defines transmission facility as a "transmission-voltage element inside the fence surrounding a TSP's high voltage switching station or substation."

Sharyland recommended revising the proposed definition of "transmission facility" to "A system comprised of multiple transmission elements and wholly-contained within a TSP's high-voltage switchyard or substation that is engineered, designed, constructed, operated and maintained to provide for (i) the transmission of high-voltage electricity or (ii) the reduction of high-voltage electricity to a lower voltage."

LCRA recommended modifying the proposed definition of "transmission facility" to clarify that entities subject to this rule are responsible only for those facilities that they own and operate.

EDF, TCA, and ASC contended that the proposed definition of "transmission facility" under §25.55(b)(9) as "a transmission-voltage element inside the fence surrounding a TSP's high-voltage switching station or substation" is insufficient because transmission line operations extend beyond substation equipment. EDF, TCA, and ASC stressed that the "full capability and continuity of transmission line operations" at all levels is essential to reliability and continuity of electric service. EDF, TCA, and ASC indicated that "high temperature-driven transmission ampacity reductions

would exacerbate transmission thermal and voltage limits that tighten transmission constraints, reducing deliverability and raising congestion costs when customer demand is highest.” Accordingly, EDF, TCA, and ASC recommended transmission lines be accounted for in the proposed definition of “transmission facility”.

TPPA suggested narrowing the proposed definition of “transmission facility” under §25.55(b)(9) in scope and provide a “meaningful voltage component.” TPPA’s proposed definition would result in the regulation of transformers referenced under proposed §25.55(f)(1)(A)(iii), (f)(2)(A)(i), and (f)(2)(A)(ii) to “focus on the transformers that are part of the bulk electric system.” TPPA asserted its approach is more consistent with establishing a uniform policy approach to regulating the bulk electric system. TPPA commented that the commission’s proposed definition of “transmission facility” under §25.55(b)(9) is unclear as it does not specify what infrastructure is contemplated and relies on industry jargon. TPPA recommended the proposed definition refer to specific voltage levels and mirror the ERCOT protocols. TPPA provided draft language consistent with its recommendations.

TPPA alternatively recommended revising the proposed definition of “transmission facility” under §25.55(b)(9) to more specifically indicate whether and to what extent transformers are included within the scope of the rule. TPPA requested the commission “consider the number of transformers at each level of the transmission system and the associated impact on staffing needs and crew hours needed to meet those requirements” if the commission insists on more discrete regulation of the transmission system.

Commission Response

The commission agrees with LCRA and amends the adopted definition of “transmission facility” to those owned and operated by the TSP as recommended by LCRA. This revision also partially addresses the concerns of Sharyland and TPPA. However, the commission disagrees with EDF, TCA and ASC’s recommendation to include transmission lines in the definition of “transmission facility.” Currently, transmission line construction standards, which are largely governed by NERC, NESC, IEEE and other national standards, are more precise about transmission line construction and maintenance to handle different weather conditions, including wind loading and ice loading. Considering the strict standards imposed on transmission line construction, extensive cost and logistical challenges to inspecting all transmission lines within the ERCOT region, the commission refuses to consider including transmission lines in the definition of transmission facility. The amended definition of “transmission facility” is “a transmission-voltage element inside the fence surrounding a TSP’s high-voltage switching station or substation owned or operated by the TSP.”

Sharyland recommended amending proposed §25.55(b) to include a definition of “transmission element” defined as “Any component or individual piece of equipment, operating at a nominal voltage at or in excess of 60 kilovolts and located inside the fence of a TSP’s high-voltage switching station or substation.”

Commission Response

The commission has narrowed the definition of transmission facility to better identify a transmission-voltage element and maintains that the suggested language from Sharyland is too limiting.

Proposed §25.55(b)(10) – Weather critical component

Proposed §25.55(b)(10) defines weather critical component as “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.”

NRG and Vistra recommended revising the proposed definition of “weather critical component” under §25.55(b)(10) to clarify that the definition only captures those components that fail because of a weather emergency and not those that simply fail during a weather emergency. Vistra commented such a change is necessary to ensure the rule requirements are limited only to issues directly caused by a weather emergency, rather than issues that occur during, but are unrelated to, a weather emergency.

Oncor noted that the proposed definition of “weather critical component” under §25.55(b)(10) is too generic to sufficiently cover hot and cold weather critical components. Oncor recommended preserving the existing definition of “cold weather critical component” and suggested the adoption of a similar definition for “hot weather critical component.” Oncor stated that, if the commission were to retain the proposed definition of “weather critical component” under §25.55(b)(10), then

“weather critical component” should be revised to “either a cold weather critical component or a hot weather critical component, or both, as applicable.”

CenterPoint recommended that the terms of temperature conditions, namely hot and cold weather, should be included in the proposed definition of “weather critical component” under §25.55(b)(10) as the weather emergency preparation measures under proposed §25.55(c) and (f) are based on hot and cold weather temperature conditions. CenterPoint recommended replacing the current proposed definition with “Any component of a resource or transmission facility that is susceptible to fail under the weather conditions described in §25.55(c)(1)(B) and (c)(2)(B) for resources and §25.55(f)(1)(B) and (f)(2)(B) for transmission facilities, 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.”

Enbridge reiterated comments made about wind turbines during the Phase 1 rulemaking by GE Renewable North America, Vestas American Wind Technology, and Siemens Gamesa Renewable Energy. Specifically, that the cited companies neither offer hardware retrofit technology to prevent ice from forming on turbine blades or to remove ice build-up once it occurs, nor blade coatings to protect against ice. Therefore, Enbridge recommended the revision of the definition of “weather critical component” to focus on ensuring components function as designed instead of protecting against potentially necessary operational interruptions, as icing is currently unavoidable in certain weather emergency conditions due to technological limitations. TSPA commented that the proposed definition of “weather critical component” under subsection §25.55(b)(10) fails to consider how solar facilities are constructed over multiple acres with multiple components. TSPA further commented that the failure of an individual component could result in a minimal deration

with no impact on the operations of the overall facility. Accordingly, TSPA recommended the definition be revised to specify a “derate of more than five percent of the installed capacity.”

Commission Response

The commission modifies the definition of weather critical component to specify that the component is susceptible to fail as a result of a weather emergency, addressing NRG and Vistra’s concerns. However, the commission declines to bifurcate the definition into separate definitions for “hot” and “cold” components as recommended by Oncor and CenterPoint. Language in §25.55(c)(1)(A) and (f)(1)(A) specify the types of measures expected to be implemented to protect these components depending on the season and as appropriate for the resource or transmission facility. The commission disagrees with Enbridge that the definition of weather critical component should focus on components working as designed. The objective of this definition is to capture component which could lead to failure if it freezes or overheats, the definition will not be modified as Enbridge requested.

TPPA stated that the proposed definition of “weather critical component” is overly broad and recommended the narrowing of the definition. TPPA suggests that the definition only include components that could cause a “signification” deration be considered critical, which would be consistent with other language in the proposed definition. TPPA also recommended that the proposed definition of “weather critical component” under §25.55(b)(10) also include “failure to provide any ancillary service for which the resource is obligated to provide.”

Commission Response

In response to TPPA, the commission agrees that the definition of weather critical component need be narrowed to only include components whose failure would cause a signification derate. The definition of “weather critical component” is modified to require that a derate be of more than 5% of the capacity represented in a resource’s seasonal net maximum sustainable rating or a transmission facility’s rating. This modification addresses TSPA’s concern as well.

Sharyland expressed its belief that the intent of the proposed definition of “weather critical component” was to capture only emergencies caused by hot or cold temperature and recommended amending both definitions to reflect this consideration.

Commission Response

The commission maintains that the weather preparedness standards imposed by the adopted rule are limited to the summer and winter seasons. As such, the definition of “weather critical component” does not need to explicitly specify summer and winter seasons.

Proposed §25.55(b)(11) – Weather emergency

Proposed §25.55(b)(11) defines “weather emergency” as “a situation resulting from weather conditions that produces significant risk for a TSP that firm load must be shed or a situation for which ERCOT provides advance notice to market participants involving weather-related risks to the ERCOT power region.”

TCPA recommended limiting the weather conditions under the proposed definition of “weather emergency” to the summer and winter seasons to comply with SB 3. TCPA provided draft language consistent with its recommendation.

AEP recommended amending the proposed definition of “weather emergency” under §25.55(b)(11) to specifically ensure that the term explicitly correlates with cold or hot weather emergency conditions. AEP provided draft language consistent with its recommendations. Oncor noted the proposed definition of “weather emergency” under §25.55(b)(11) is overly broad and recommended the term be restricted to only hot or cold weather conditions and critical component failures associated with such conditions.

Commission Response

The definition of weather emergency has been modified to specify summer and winter weather events, as recommended by TCPA, AEP, and Oncor. The commission declines to adopt Oncor’s specific recommendation to include critical component failures in the definition of “weather emergency” as it is unnecessarily restrictive and may potentially exclude certain weather events.

TCPA recommended revising the proposed definition of “weather emergency” under §25.55(b)(11) to clarify the type of notice and level of urgency of the advance notice ERCOT provides for weather emergencies. TCPA explained that ERCOT regularly provides multiple notices on a variety of matters and that “mere notice of weather conditions should not be considered indicative of a weather emergency,” rather an Energy Emergency Alert (EEA) should be required under the proposed definition.

TPPA recommended the commission delete the language establishing a weather emergency when there is “significant risk for firm load shed,” as this non-specific activation criterion is heavily subjective and fact-based.” TPPA argued the definition of “weather emergency” should be limited to ERCOT issued notices regarding hot or cold weather risks, or grid reliability. TPPA provided draft language consistent with its recommendations.

Constellation and NRG noted that the proposed definition of “weather emergency” does not indicate what type of advance notice is issued or the level of urgency to the notification provided by ERCOT. Constellation stated that mere notice of any kind should not constitute a weather emergency, instead notice of an EEA or other emergency notice issued by ERCOT should be required.

CenterPoint encouraged the commission to include the “good utility practice” standard as defined under §25.5(57), relating to Definitions, in the proposed definition of “weather emergency.” CenterPoint asserts that it is an objective standard historically used by the commission and would be helpful for assessing load shed risks. CenterPoint also commented that the phrase “a situation for which ERCOT provides advance notice to market participants involving weather-related risk to the ERCOT power region” is ambiguous. CenterPoint and instead recommended the proposed definition include language referencing “any temperature-based weather condition for which ERCOT issues an Emergency Notice” as constituting a weather emergency. CenterPoint recommended replacing the current proposed definition of “weather emergency” with: “A situation resulting from ambient temperature conditions, which (a) presents a significant risk, as determined by the TSP using good utility practice, that firm load must be shed or (b) causes ERCOT to issue an emergency notice to market participants that it is operating in an emergency condition pursuant to ERCOT Nodal Protocol Section 6.5.9.3.4.”

NRG and APA and ACP requested that the definition of “weather emergency” be grounded in existing ERCOT emergency alert levels set out in ERCOT protocols section 6. As such, NRG recommended that “weather emergency” under the proposed rule be triggered by an ERCOT “emergency notice”, Protocol 6.5.9.4, or an “energy emergency alert” declaration, Protocol 6.5.9.4. APA and ACP recommended revising the proposed definition of “weather emergency” to “a situation resulting from weather conditions that produces significant risk for a TSP that firm load must be shed or a situation resulting from weather conditions that causes ERCOT to declare an Energy Emergency Alert Level 3 in accordance with the ERCOT protocols.” APA and ACP also requested clarification on the process for determining and communicating the occurrence of a weather emergency to ensure market participants are aware of when an outage or derate may qualify as a “major or repeated weather-related forced interruption of service.”

Commission Response

The commission agrees with TCPA, TPPA, Constellation, NRG, CenterPoint, and APA and ACP that the definition of “weather emergency” under §25.55(b)(11) should include language referencing ERCOT Emergency Notices. The commission disagrees with TCPA’s NRG’s, and APA and ACP’s specific recommendation and declines to tie the definition of “weather emergency” to ERCOT EEA notices as the threshold to trigger such events is too high of a standard for the purposes of this rule. The commission also disagrees with CenterPoint’s recommendation regarding the inclusion of “good utility practice” because such a term would provide a spectrum of determinations by entities when a binary

distinction is required. Tying the definition to ERCOT Emergency Notices creates an objective, independent basis for determining whether a “weather emergency” exists. In response to APA and ACP’s specific request for a process to determine and communicate the occurrence of a “weather emergency”, the revision tying ERCOT Emergency Notices to the definition should address this concern as such Notices are communicated to market participants and the general public in a manner that is already known.

TCPA recommended the definition of “weather emergency” exclude weather emergency events during which “a generator would not reasonably be expected to operate given the design capabilities of the resource.” TCPA stressed this point is particularly important due to the potential costly measures that must be performed under the rule and the high administrative penalties associated with an entity’s failure to comply.

Vistra commented the proposed definition of “weather emergency” under §25.55(b)(11) be limited only to emergencies that impact generation resources and not general weather events for which ERCOT provides an emergency notice. Specifically, Vistra noted the proposed definition appropriately limits the applicability of the definition for TSPs but does not do so for generation entities. Vistra accordingly recommended the phrase “generation resources in” the ERCOT power region be inserted in the proposed rule.

Commission Response

The commission declines to modify the definition of weather emergency to exclude emergency events during which a generator would not reasonably be expected to operate given its design capabilities, as recommended by TCPA. The definition of weather

emergency serves to help identify which periods of time the rule focuses on and is a situational condition. It is not a specific status that applies to each facility. As such, modifying the definition of weather emergency based on the design capabilities of individual facilities is inappropriate.

The commission disagrees with Vistra that the definition of weather emergency needs to reference generation resources as it does TSPs. TSPs are the entity that implement load shed, but load shed could be necessary due to either the failures of TSPs or generation resources. If TSPs must shed load due to the weather-related failure of either type of entity, it is a weather emergency.

CenterPoint commented that the definition for a “weather emergency” should include the conditions for determining whether a “weather emergency” exists. CenterPoint recommended that the proposed definition of “weather emergency” specify objective standards for determining whether “temperature-based weather conditions produce a ‘significant risk for a TSP that firm load must be shed.’”

TNMP suggested revising the definition of “weather emergency” to state that any load shed must be material and recommended the load shed risk be clarified as a shedding of 100 MWh or more.

TPPA contended that the proposed definition of “weather emergency” under §25.55(b)(11) is overbroad as it implicitly references hurricanes and tornadoes, which are not common or exclusive to summer and winter weather and therefore out of scope of the proposed rule.

Oncor noted that preparedness for other types of weather events, such as tornadoes, are outside of the scope of this rulemaking and such measures involve overall system design and capital improvements, not discrete facility preparedness as is considered under the rule.

EDF, TCA, and ASC recommended expanding the term “weather emergency” to include other weather events unrelated to cold or heat conditions such as “hurricanes, flooding from storms, coastal storm surges, tornadoes, and wildfires.” EDF, TCA, and ASC emphasized the dangers wildfires pose to transmission lines and recommended the rule “expand TSP requirements to identify lines and substations in wildfire risk areas and the consequences for ERCOT system operation if the lines were shut down proactively or lost due to active wildfires.”

LCRA noted that the proposed definition for “weather emergency” does not specify the types of weather conditions used as criteria and requested that the definition be revised to align with the intent for the weatherization preparedness measures to apply only to hot and cold weather emergencies.

Sharyland expressed that the intent of the proposed definitions of “weather critical component” and “weather emergency” was to capture only emergencies caused by hot or cold temperature and recommended amending both definitions to reflect this consideration.

Commission Response

In response to CenterPoint’s request for objective standards to be included in the definition of “weather emergency,” the commission maintains that the revision tying the definition to ERCOT-issued Emergency Notices provides entities sufficient, objective criteria for determining whether a “weather emergency” exists.

The commission declines to implement TNMP's specific language regarding load shed risk of 100 MWh or more as this may inappropriately exclude weather emergencies that still represent a threat to grid reliability or health and safety of the general public. The revised language of "weather emergency" also specifically references summer or winter weather to address TPPA's and Oncor's concerns about hurricanes and tornadoes being implicated in the definition. For the same reasons, the commission declines to expand the definition of "weather emergency" as recommended by EDF, TCA, or ASC to weather events unrelated to heat or cold as such events are outside the scope of this rulemaking.

In response to LCRA's comment, the commission maintains that language in §25.55(c)(1), (c)(2), (f)(1), and (f)(2) limits the definition of "weather emergency" to seasonal "hot" or "cold" weather emergencies. This distinction, in addition to the revision referencing ERCOT-issued Emergency Notices, substantively addresses LCRA's concern.

In response to Sharyland's comment, the weather preparedness standards imposed by the adopted rule are limited to the summer and winter seasons. As such, the definition of "weather emergency" does not need to explicitly specify summer and winter seasons.

Proposed §25.55(b)(12) – Weather emergency preparation measures

Proposed §25.55(b)(12) defines weather emergency preparation measures as – "measures that a generation entity or TSP takes to support the function of a resource or transmission facility during a weather emergency."

LCRA noted that the proposed definition of "weather emergency preparation measures" under §25.55(b)(12) does not specify the types of weather conditions used as criteria and requested

revision of the definition to align with the intent for the weatherization preparedness measures to apply only to hot and cold weather emergencies.

LCRA and TPPA recommended specifying in the definition of “weather emergency preparation measures” that such measures are those taken by a generation entity or TSP to support the function of facilities that it owns.

Commission Response

In response to LCRA’s comment regarding weather condition criteria, the commission maintains that language in §25.55(c)(1), (c)(2), (f)(1), and (f)(2) limits the definition of “weather emergency preparation measures” to seasonal “hot” or “cold” weather emergencies. As such, the commission declines to amend the definition of “weather emergency preparation measures” to specifically refer to “hot and cold weather emergency measures.”

The commission declines to modify the definition of weather emergency preparation measures to specify that such measures are those taken by an entity to support the function of facilities that it owns as it is necessary as recommended by LCRA and TPPA. This definition is establishing what is a weather emergency preparation measure, but it does not speak to which entity is required to conduct these measures. Further, specifying that an action is only a weather emergency preparation measure if conducted by the entity that owned the facility would introduce unnecessary ambiguity over whether the work of

contractors or other agents count as weather emergency preparation measures under the rule.

LCRA requested further clarification about whether the commission intended for summer and winter preparations to address weather conditions not tied to those seasons, including earthquakes, floods, hurricanes, and tornadoes.

Commission Response

The commission declines to amend the definition of weather emergency preparation measure to exclude other types of emergencies as it is unnecessary. The adopted definition of weather emergency, which is directly referenced in the definition of weather emergency preparation measures, has been modified to refer to summer and winter events.

Proposed §25.55(b)(13) – Winter season

Proposed §25.55(b)(13) defines “winter season as “December 1 to March 31 each year.”

TCPA and Vistra recommended the proposed definition of “winter season” under §25.55(b)(13) incorporate the same definition from the ERCOT protocols for consistency, which define the winter months as December 1 to February 28. Vistra noted that the proposed definition includes the entire month of March which is inconsistent with the protocols and offered draft language replacing “March 31” with “February 28.”

TPPA recommended the commission revise the definition to state “the season beginning December 1 of each year and ending March 31 of the following year” for clarity.

Commission Response

The commission agrees with TCPA and Vistra that the definition of “winter season” should be consistent with the ERCOT protocol definition of “Season or Seasonal,” which defines February as a winter month and March as a spring month and modifies the rule accordingly. The commission also modifies the definition to clarify that the winter season extends from December 1 to February 28th “of the following year”, as recommended by TPPA.

§25.55(c) -- Weather emergency preparedness reliability standards for a generation entity;

§25.55(c)(1) -- Winter season preparations; and §25.55(c)(2) -- Summer season preparations

Combined comments

Proposed §25.55(c) contains the weather emergency preparedness reliability standards with which generation entities must comply. Proposed §25.55(c)(1) and (c)(2) contain season specific weather preparation requirements that generation entities must comply with by December 1 and June 1, respectively.

Vistra recommended that proposed §25.55(c)(1) and (c)(2) incorporate a reasonability standard and “not rely on ‘assurances’ from generation entities to achieve and maintain a preparedness

standard beyond their reasonable control” as some preparedness measures may be affected by the weather event itself.

Additionally, Constellation took issue with the word “assurance” used throughout the paragraph as that phrasing would impose a performance standard.

Commission Response

The commission modifies the rule language to address Vistra’s and Constellation’s concerns by removing the term “assurance” from the requirements of adopted paragraphs §25.55(c)(1) and (c)(2). These changes are specifically reflected in §25.55(c)(1)(A)(iv) and (v), (c)(2)(A)(ii), (iii), and (iv).

Subsections (c)(6) and (f)(4) of the existing rule respectively permitted a generation entity and TSP to submit a notice to the commission asserting good cause for noncompliance with specific weatherization requirements as part of winter weather readiness reports submitted to the commission.

TIEC and Vistra noted that there may be situations where compliance with the proposed weatherization standards would be technologically infeasible, cost prohibitive, or may accelerate a potential retirement decision for an existing unit, and recommended adding a good cause exception to proposed §25.55(c)(1) and (c)(2). Vistra elaborated and further requested the commission clarify that a generation entity is not required to update its weather preparedness measures under proposed §25.55(c)(1) and (c)(2) following an update by ERCOT to its historical

weather study as that may adjust the standards for which a utility is required to prepare. Vistra accordingly recommended the rule permit a good cause exception to extend or waive the deadline on a case-by-case basis. Vistra provided draft language consistent with its recommendations.

TCPA recommended the revision of proposed §25.55(c)(1) to include a good cause exception as, in TCPA's view, there are "several circumstances in which weather-related forced interruptions should not be counted as a 'major' or 'repeated' forced interruption-triggering event." TCPA also requested that proposed §25.55(c)(1) exempt a resource that has a good cause exception or has nothing to update from the requirement to update its emergency preparedness measures.

Commission Response

Subsections (c)(6) and (f)(4) of the existing rule respectively permitted a generation entity and TSP to submit a notice to the commission asserting good cause for noncompliance with specific weatherization requirements as part of winter weather readiness reports. The commission declines to include a good cause exception allowing a generation entity or TSP to assert good cause for noncompliance with the provisions of this rule. The good cause exception was included in the existing rule because of the short time period between adoption of the requirements and the compliance deadline. The winter preparedness standards are substantially similar to those posed in 2021 and facilities are not required to comply with the summer preparedness standards until 2023. Therefore, a good cause exception process is unnecessary moving forward. Further, the commission does not agree with TCPA that circumstances where forced interruptions should not be considered 'major' or 'repeated' support the inclusion of a good cause exception to the weather preparedness standards in

§25.55(c). These standards are separate from the requirements to contract with a professional engineer for major or repeated forced interruptions.

Proposed §25.55(c)(1)(A) and (c)(2)(A) – Weather emergency preparation measures reasonably expected to ensure sustained operations of cold and hot weather critical components for a generation entity.

Proposed §25.55(c)(1)(A) and (c)(2)(A) respectively require a generation resource to implement weather emergency preparation measures for each resource under its control that could reasonably be expected to ensure the sustained operation of all cold and hot weather critical components during winter and summer weather conditions.

TCPA commented that the “reasonably expected to ensure sustained operations” standard used in proposed §25.55(c)(1)(A) and (c)(2)(A) is contrary to the preparedness standard stipulated under SB 3 which is based on a historical weather study. TCPA recommended “sustained operations” be a preparedness standard, namely the “95th percentile minimum/maximum average 72-hour temperature” reported in ERCOT’s historical weather study. TCPA also proposed the revision of §25.55(c)(1)(A) to clarify the winter weather emergency preparation measures are for “normal” winter weather conditions.

Commission Response

The commission declines to clarify that winter weather emergency preparation measures under §25.55(c)(1)(A) are for “normal” winter weather conditions, because it is unnecessary. This subparagraph enumerates a set of preparation measures that are required for each resource, as appropriate for the resource. The language requiring each entity to implement weather emergency preparation measures that would ensure the sustained operation of its generation resources through winter weather conditions serves to guide entities in determining whether each of those enumerated measures is required for each resource. They are not every measure for every resource, but only those appropriate based on the features of that resource. Whether we are talking about cold weather or very cold weather should not significantly alter this calculation. However, even if it does, the commission also declines to make the requested modification because by definition weather emergency preparation measures are preparation measures to support the function of a resource during a weather emergency.

TIEC recommended that the commission consider allowing generation entities to petition for tailored weatherization plans, including specific exemptions or modification to the general requirement under §25.55(c)(1)(A) and (c)(2)(A).

Commission Response

The commission declines to allow generation entities to petition for tailored weatherization plans. The specific requirements of §25.55(c)(1)(A) and (c)(2)(A) are weather preparedness measures to ensure the sustained operations of weather critical components “as appropriate

for the resource.” These broad requirements are intended to provide flexibility to entities in adopting the necessary weather preparedness measures. Therefore, it is unnecessary to permit entities to petition for tailored weatherization plans.

Enbridge recommended the commission revise §25.55(c)(1)(A) and (c)(1)(B) and §25.55(c)(2)(A) and (c)(2)(B) to maintain a preparation standard. Enbridge suggested reverting to the “intended to ensure the sustained operation” language from the existing rule as the phrase “reasonably expected to” establishes an infeasible performance standard that is not in the interest of grid reliability and public safety.

Commission Response

The commission declines to modify the language to require preparation measure “intended” to ensure the sustained operations” of resources, because the commission is not well positioned to determine the intent behind different preparation measures. The commission disagrees with Enbridge that “reasonably expected to” creates a performance standard. If it is reasonable to expect the preparation measure to allow a generation entity to sustain operations in a weather emergency, the standard is met.

TEC commented that it interpreted proposed weatherization preparedness requirements under §25.55(c)(1)(A) relating to installation of certain equipment to be “temporary and seasonal in nature.” TEC noted that, if intended to be permanent, such a requirement could impose significant

costs to a resource owner. TEC also requested revision of the clauses to permit personnel to be used to complete the tasks required under proposed §25.55(c)(1)(A), rather than “automated ‘systems.’” TEC provided redline edits of proposed §25.55(c)(1)(A) and (c)(2)(A) which replace the phrase “such measures include” with “may be implemented on a reasonable basis and where appropriate, may be implemented using either personnel or automated systems.”

Constellation commended the commission for recognizing that the measures mentioned in this subparagraph may not be appropriate for a particular resource. However, TCPA and Constellation noted that the language recognizing what is “appropriate for the resource” was not uniformly placed throughout the subsection and in other areas a one-size-fits-all approach was present.

Commission Response

The commission agrees with TEC that the preparation measures identified in this rule can be implemented on a temporary and seasonal basis, as appropriate, under the proposed language. The commission also agrees with TEC that the preparation measures required by this rule may be implemented using either personnel or automated systems and modifies the rule accordingly. The commission makes similar modifications to the equivalent provisions under subsection (f).

Proposed §25.55(c)(1)(A)(i) – Cold weather critical components; installation and maintenance of wind breaks for a generation entity

Proposed §25.55(c)(1)(A)(i) requires the installation of adequate wind breaks for resources susceptible to outages or derates caused by wind, as appropriate for the resource.

TPPA requested the requirement of proposed §25.55(c)(1)(A)(i), relating to the installation of adequate wind breaks, be revised to require the inspection and maintenance of such preparation measures, “with installation only being required if the measures are not sufficient.”

Commission Response

The commission clarifies that §25.55(c)(1)(A)(i) does not mandate a new installation every year if it is not appropriate for the resource. If reasonable preparations already exist as appropriate for the resource, then no further action is required beyond submitting the declarations of preparedness.

Proposed §25.55(c)(1)(A)(ii) – Cold weather critical components; installation and maintenance of insulation and enclosures (generation entity)

Proposed §25.55(c)(1)(A)(ii) requires the installation of insulation and enclosures for all cold weather critical components, as appropriate for the resource.

TPPA requested changing proposed §25.55(c)(1)(A)(ii), relating to the installation of adequate insulation and enclosures to require the inspection and maintenance of such preparation measures, “with installation only being required if the measures are not sufficient.”

Commission Response

The commission clarifies that §25.55(c)(1)(A)(ii) does not mandate a new installation every year if it is not appropriate for the resource. If reasonable preparations already exist as appropriate for the resource, then no further action is required beyond submitting the declarations of preparedness.

TEC recommended revising the proposed §25.55(c)(1)(A)(ii) to permit the installation of insulation “or” enclosures, rather than require installation of both insulation “and” enclosures. TEC commented that cold weather preparedness by cooperatives in North and West Texas is location and facility specific and therefore adequate protection may not require both insulation and enclosures.

TCPA opposed the language in proposed §25.55(c)(1)(A)(ii) which requires the “Installation of insulation and enclosures for all cold weather critical components” as the provision does not account for the “necessity, feasibility, and costs” associated with such a requirement, as insulation and physical enclosures may not be necessary for all components. TCPA revised proposed §25.55(c)(1)(A)(ii) to read “Installation of protection for cold weather critical components.”

Constellation and Vistra suggested flexibility for what protection may be necessary and removing the word “all” before “cold weather critical components” from proposed §25.55(c)(1)(A)(ii).

Vistra further recommended replacing the word “and” with “or”, allowing either insulation or enclosures to be installed.

Commission Response

Adopted §25.55(c)(1)(A)(ii) requires the installation and maintenance of insulation and enclosures for all cold weather critical components. Cold weather critical components should be protected from cold weather in an insulated enclosure.

The commission declines to remove the word “all” from §25.55(c)(1)(A)(ii) as it is the objective of this rule to protect all weather critical components. Regarding TCPA’s argument that insulation and enclosures are not necessary for all cold weather components, the rule requires each of these preparation measures as appropriate for the resource. If a particular measure would not be reasonably expected to help ensure sustained operations, it is not required by the rule. However, each of these measures was included, because there is a presumption that they help ensure sustained operations through seasonal weather conditions.

Proposed §25.55(c)(1)(A)(iv) – Cold weather critical components; materials necessary for sustained operations of a resource

Proposed §25.55(c)(1)(A)(iv) requires a generation entity to arrange and provide for the availability and appropriate safekeeping of sufficient chemicals, auxiliary fuels, and other

materials necessary for sustained operations of its resources during a winter weather emergency, as appropriate for the resource.

TPPA requested the commission clarify whether proposed §25.55(c)(1)(A)(iv) requires either an on-site stockpile or whether “supplier availability with a delivery guarantee or mutual aid agreements would be sufficient.” TPPA noted that on-site stockpiles may be challenging for utilities to manage and would require monthly testing of oil freeze protection equipment from November 1 through March 31, yet require preparation measures be completed by December 1.

Commission Response

In response to TPPA’s request for clarification, §25.55(c)(1)(A)(iv) does not necessarily require all materials to be on-site. Each of these preparation measures must be implemented in a fashion that could reasonably be expected to ensure the sustained operation of the critical weather component during winter weather conditions. The generation entity should use its best judgement to determine what qualifies as “available” and should be prepared to support its claim that its implementation decision meets that standard.

TCPA opposed the usage of the term “assurance” in proposed §25.55(c)(1)(A)(iv) and (c)(1)(A)(v) as overly broad and as requiring a performance standard, not a preparedness standard as required by SB 3. TCPA accordingly recommended “assurance for the availability” be replaced with “arrange for, and provide” in proposed §25.55(c)(1)(A)(iv) and “assurance of” be replaced with “plan for” in proposed §25.55(c)(1)(A)(v). TCPA also commented that due to outage availability

and supply chain issues, generators may be prevented from implementing weatherization standards and therefore from complying with the proposed rule beginning in 2023 as required under proposed §25.55(c)(1)(B) and (c)(2)(B).

LCRA also noted the historic supply chain challenges, labor shortages, and other events and requested that the rule adopt a lens of reasonableness instead of absolute assurance. LCRA requested that all references to “assurance” be replaced with “reasonable assurance” for the same reasons it stated in its comments for proposed §25.55(c)(1)(A)(iv). LCRA noted that it is not possible to remove all heat and moisture from hot weather critical components if those components are heated beyond their design temperature tolerances. LCRA provided draft language consistent with its recommendations.

Commission Response

The commission revises proposed §25.55(c)(1)(A)(iv) and (c)(1)(A)(v) to clarify that the weather preparedness standards are not requirements to issue a guarantee to ERCOT or the commission, but instead are intended to ensure that entities are sufficiently prepared for hot and cold weather emergencies, as appropriate for the resource.

TPPA requested clarification on whether the proposed requirement that generation resources implement measures “reasonably expected to ensure sustained operations” represents a revision of the commission’s compliance standard from an intention or design standard to a reasonability standard.

Commission Response

The adopted rule does not contain a different compliance standard from the existing rule. The proposed requirement to implement measures “that could reasonably be expected to ensure sustained operations” was modified from the existing requirement to implement measures “intended” to ensure sustained operations, to make it clear that compliance does not hinge on the mental state or intentions of the generation entity. Because this rule is a preparation standard, an entity is not required to implement preparation measures that guarantee sustained operations. It is required to implement preparation measures that are reasonably expected to sustain operations.

Proposed §25.55(c)(1)(A)(vi) – Cold weather critical components; freeze protection equipment maintained by a generation entity

Proposed §25.55(c)(1)(A)(vi) requires the maintenance of freeze protection equipment for all cold weather critical components, including fuel delivery systems controlled by the generation entity and the testing or verifying the functionality of freeze protection equipment on a monthly basis during the winter season, as appropriate for the resource.

LCRA noted that it is not possible for a generation entity to test the effectiveness of its freeze protection until freezing conditions are experienced. LCRA recommended changing proposed §25.55(c)(1)(A)(vi) language to require “verifying the functionality of” freeze protection equipment.

APA and ACP similarly recommended proposed §25.55(c)(1)(A)(vi) to permit the testing of freeze protection equipment on a monthly “or OEM specified” basis and permit “remote testing when applicable.”

Commission Response

The commission agrees with LCRA’s proposed change and replaces the term “and testing of” with the phrase “and verifying the functionality of” for clarity. The commission agrees with APA and ACP that remote testing satisfies this requirement. The commission declines to permit entities from verifying the functionality of its cold weather critical components less frequently than monthly, as requested by APA and ACP, but the modification made to this provision should prevent this monthly requirement from being unduly burdensome.

TPPA stated that the requirement under proposed §25.55(c)(1)(A)(vi) requiring completion of monthly testing on protection equipment from November 1 through March 31 is impossible to comply with as three months of each period occur after the deadline of December 1. TPPA recommended revising the provision to require “annual testing prior to” December 1 in a manner that comports with the other rule preparation requirements.

TEC requested the commission revise the equipment maintenance and testing deadline of November 1 through March 31 prescribed under proposed §25.55(c)(1)(A)(vi) for the completion of requirements under proposed §25.55(c)(1) for winter preparedness. TEC noted that entities may experience problems completing these checks for months that have not yet occurred, as the biannual deadlines are on December 1 for winter preparedness. TEC requests the timelines be

revised to ensure entities are only responsible for declaring preparedness actions already taken, as opposed to prospective preparedness actions.

Commission Response

The commission agrees that the proposed language appears to require entities to complete and attest to the completion of actions after the date the completion of these actions is required. The commission modifies the language of the rule to clarify that requirements with ongoing or monthly completion dates must be completed at the appropriate time. The commission makes this edit consistently throughout subsections (c) and (f) of this rule. With regard to the attestation requirements of this rule, the provisions in subsection (c) already align with this language by requiring the attestation of the completion of “all applicable activities.” To prevent an entity from having to attest to the completion of future activities in subsection (f), the commission modifies the appropriate provisions to clarify that the entity must attest to the completion of all activities, except those activities required to be completed in the future.

Consistent with its recommendations for the definition of “winter season” under proposed §25.55(b)(11), TCPA recommended proposed §25.55(c)(1)(A)(vi) be revised to replace “November” with “December” and “March 31” to “February 28.”

Commission Response

Proposed §25.55(b)(11) has been modified to define the winter season as “December 1st to February 28”. Proposed §25.55(c)(1)(A)(vi) has been modified to refer to the “winter season” and not specific dates, addressing the concern raised by TCPA here.

Proposed §25.55(c)(1)(A)(vii) – Monitoring of cold weather critical components for a generation entity

Proposed §25.55(c)(1)(A)(vii) requires the monitoring of all cold weather critical components, including circuitry that provides freeze protection or prevents instrument air moisture.

TPPA requested revising the requirement of proposed §25.55(c)(1)(A)(vii), relating to the installation and maintenance of monitoring systems to require the inspection and maintenance of such preparation measures, “with installation only being required if the measures are not sufficient.”

Commission Response

The commission clarifies that §25.55(c)(1)(A)(vii) does not mandate a new installation every year if it is not appropriate for the resource. If reasonable preparations already exist as appropriate for the resource, then no further action is required beyond submitting the declarations of preparedness.

Consistent with its recommendations for proposed §25.55(c)(1)(A)(ii), TCPA recommended revising proposed §25.55(c)(1)(A)(vii) to state “establish monitoring systems, as practicable” in order to account for different forms of monitoring of cold weather critical components. TCPA

recommended monitoring only requiring cold weather systems and striking the word “all” to permit flexibility for utilities in what those options may be.

LCRA recommended amending proposed §25.55(c)(1)(A)(vii) to require “installation or maintenance” of monitoring systems to clarify that monitoring systems need not be newly installed on an annual basis. LCRA also noted that some cold weather critical components may be monitored through procedures and not systems. Thus, LCRA recommends amending the language to include “monitoring procedures.”

Commission Response

To clarify that monitoring is to be done as appropriate for the resource, proposed §25.55(c)(1)(A)(vii) has been modified to require “monitoring of all cold weather critical components.” TCPA’s and LCRA’s recommended language is unnecessary as §25.55(c)(1)(A)(vii) allows for different forms of monitoring and does not require new installation. The commission declines to modify the rule to remove the word “all,” because the monitoring of all cold weather critical components best supports the reliability goals of this rule.

Proposed §25.55(c)(1)(B), and (c)(2)(B) – Weather emergency preparation measures reasonably expected to ensure sustained operations of a resource

Proposed §25.55(c)(1)(B) and (c)(2)(B) require, beginning in 2023, a generation entity to implement weather emergency preparation measures that could reasonably be expected to ensure

the sustained operation of each resource under the generation entities' control during the lesser of the minimum (in winter months) and greater of the maximum (in summer months) ambient temperature at which the facility has experienced sustained operations or the 95th percentile minimum average 72-hour temperature reported in ERCOT's historical weather study for the weather zone in which each resource is located.

TCPA commented that SB 3 intended for "some statistical basis to be used in determining the weather preparation standard that resources should prepare to implement in 2023" and that the usage of the term "experienced sustained operations" renders ERCOT's statistical analysis unnecessary and is contrary to statute. TCPA accordingly recommended deleting the minimum and maximum ambient temperature standards from proposed §25.55(c)(1)(B) and (c)(2)(B).

Commission Response

As previously noted, the commission modifies the rule to remove the local ambient temperature standard for the winter months.

The commission disagrees with TCPA's analysis that the usage of the term "sustained operations" will "render ERCOT's statistical analysis unnecessary and is contrary to statute." Rather, it is the commission's intent that the summer ambient temperature standard provide for more localized data to be used to address local conditions. The ambient summer temperature standard accounts for higher temperatures localized to specific areas of the state. Because local conditions may differ within a weather zone, this standard is intended to consider those local conditions to the extent temperatures vary with those provided by the ERCOT historical weather study. Further, the ambient temperature

standard only captures conditions during which a resource has previously sustained operations. For many resources, the temperature standard in the ERCOT weather study will still apply. For a resource for which the summer ambient temperature requirement does apply, the rule only requires that the resource has implemented preparation measures reasonably expected to allow it to match its prior performance.

OPUC recommended adding a reporting requirement to §25.55(c)(1)(A), (c)(1)(B), (c)(2)(A), and (c)(2)(B) to allow the commission to see the additional measures taken and which practices are common among generators and TDUs.

Commission Response

The commission declines to amend the rule to require a reporting requirement, as requested by OPUC, but notes that information regarding best practices may be included in the compliance reports ERCOT files with the commission for weather preparedness under adopted §25.55(c)(4), (c)(5), (f)(4), and (f)(5).

APA, ACP, LCRA, NextEra, NRG, TCPA, Sharyland and TPPA noted that certain information is missing from ERCOT's 2021 historical weather study, namely the "95th percentile maximum average 72-hour temperature" as used in proposed §25.55(c)(2)(B) and "the sustained heat or sustained cold temperature data for the Panhandle." Due to this lack of information, TPPA concluded that the rule only effectively requires preparation measures in relation to the maximum

ambient temperature at which a resource or facility has experienced sustained operations. NRG recommended revising the language of proposed §25.55(c)(2)(B) to match the 168-hour figure reflected in the study or revising the study to incorporate a 72-hour maximum temperature figure. Because this information is needed for purchasing and maintenance decisions for this calendar year, LCRA requested the commission to consider allowing a limited good cause exception.

Commission Response

The commission has updated the historical ERCOT weather study available on the Interchange since the draft rule was filed. The commission refers commenters to the July 13, 2022, filing in Project Number 52691 which includes the missing information noted by commenters.

APA, ACP, and NextEra stated that the rule must preserve the ability of a generator to maintain and operate its generating equipment consistent with OEM design limits. APA, ACP, and NextEra therefore recommended that the rule should be revised to clarify that the new weather emergency preparedness rule does not create an obligation on the part of generation resources to operate beyond their OEM design limits. Enbridge supported APA's and ACP's recommended changes to proposed §25.55(c)(1)(B) and (c)(2)(B).

TSPA noted that proposed §25.55(c)(1)(B) and (c)(2)(B) require a generation entity to make additional investments over time which may either be cost prohibitive or violate a manufacturer's warranty. TSPA recommended amending proposed §25.55(c)(1)(B) and (c)(2)(B) to add "unless these requirements exceed the manufacturer's specified operating ranges for the weather critical

component at risk. If the manufacturer's specified operating ranges are less than the requirements of this paragraph, then the generation entity must submit updated resource registration information to re-notify ERCOT of its existing operating limits” at the end of each provision.

Commission Response

The commission declines to modify the rule to explicitly reference OEM warranties or design limits. The standard for weather preparedness is “emergency preparation measures reasonably expected to ensure...sustained operation.” A reasonableness standard does not require the rule to exhaustively define every possible scenario. Instead, it is a fact-dependent inquiry based on the capabilities of the resource or facility, and the surrounding environment’s expected impact on generation or transmission. Operation of a renewable resource outside of an OEM warranty may therefore be unreasonable. However, the commission declines to consider OEM design limitations as a uniform justification for noncompliance with the temperature standards contained in this rule. This topic is discussed in greater detail in the general comments section above.

For the same reasons, the commission declines to adopt TSPA’s recommendation to revise proposed §25.55(c)(1)(B) and (c)(2)(B).

SMEC noted that proposed §25.55(c)(1)(B) and (c)(2)(B) require implementing measures reasonably expected to ensure operation during minimum or maximum ambient temperature or the 95th percentile minimum average 72-hour temperature reported in ERCOT’s historical weather study. SMEC recommended the commission clarify how the commission intends the ambient

temperature standard to be defined because ambient temperatures can vary and what is considered a period of “sustained operations” will impact the calculation of the appropriate ambient temperature.

Commission Response

As previously noted, the commission has removed the local ambient temperature standard for the winter months.

The summer ambient temperature standard provides a more localized assessment of the temperatures for which resources need to prepare. Specifically, this provision requires a resource to be able to sustain operations at ambient temperatures that it has previously been able to sustain operations – essentially, requiring the resource to match its past performance. The commission declines to include a specific time period for this requirement, as this is unnecessary for a preparation standard. A generation entity needs to implement weather preparation measures that allow it to operate its resource in the temperature ranges indicated by the ERCOT weather study, unless the past performance of the resource indicates it is capable of outperforming this range. In that instance, it must prepare to match its prior performance.

NRG recommended revising proposed §25.55(c)(1)(B) and (c)(2)(B) to clarify the weather emergency preparation standard a generation entity is required to meet. NRG recommended the ERCOT Historical Weather study as a better basis for the standard. However, NRG expressed its belief that temperature is not a sufficient measure of weather conditions alone and recommended

that future revisions to the ERCOT historical weather study and potential revisions to the rule include wind speed and precipitations as factors into a “holistic weather severity metric”.

Similarly, TPPA noted that utility performance in weather emergency conditions “is dependent on many aspects of weather outside temperature including humidity, atmospheric pressure, and wind chill, as well as resource and facility-specific factors including age, type, and location.”

Commission Response

As previously noted, the commission has removed the local ambient temperature standard for the winter months.

The commission declines to adopt NRG’s and TPPA’s recommendations for §25.55 (c)(2)(B), and (f)(2)(B). Further, the commission declines to modify the rule to include a “holistic weather severity metric” or other aspects of weather beyond temperature at this time. The temperature requirements contained in this rule strike the proper balance between grid resiliency and implementation costs to TSPs and generation entities. As necessary, the possibility of wind speed, precipitation, or other weather variables can be considered by the commission in a future project.

For proposed §25.55(c)(1)(B) and (c)(2)(B) Vistra recommended using a single standard for both the summer and winter season that “incorporates the results of the ERCOT weather study, using the 95th percentile minimum (for winter) and maximum (for summer) average 72-hour temperatures as such a standard would be consistent with PURA §35.0021. However, Vistra

recommended that the “99th percentile of the 72-hour minimum average daily temperature” be used for the cold weather standard to better encompass weather emergency events that utilities should prepare for.

Vistra opposed the alternative standard provided by the proposed rule regarding the minimum and maximum ambient temperatures “at which the resource has experienced sustained operations” as it would result in a difficult to apply and non-uniform standard. Vistra explained that the ambient temperature standard is not defined under commission rules or in an independent weather study and is therefore too imprecise and ambiguous “to result in a uniform level of preparedness” for weather emergency scenarios.

Vistra continued, stating the alternative standard would “effectively eliminate” the ERCOT weather study standard because the current language in proposed §25.55(c)(2)(B) would require the standard for which the lower temperature for winter and the higher temperature for summer be used, and therefore the ambient temperature standard would always be used. TCPA and Vistra commented that “sustained operations” is also undefined and results in ambiguity in applying the ambient temperature standard. Vistra accordingly recommended deleting the ambient temperature and relying solely on the ERCOT weather study standard. Vistra provided draft language consistent with its recommendations.

Commission Response

The commission declines to adopt Vistra’s recommendation to increase the 95th percentile standard for cold weather preparedness to the 99th percentile as it may lead to overly burdensome preparation requirements. Requiring preparation for the 95th percentile

weather standard to include wind chill strikes an appropriate balance between ensuring resiliency and not imposing overly burdensome requirements.

The commission also disagrees with Vistra that the weather preparedness standards under the rule should rely only on the historical ERCOT weather study and not the ambient temperature standard for the summer months. The ambient temperature standard ensures that each generation entity prepares its resources to match past performance during the summer season, ensuring that the grid does not become less resilient over time.

Further, the commission disagrees with Vistra's claim that the goal should be a uniform level of preparedness. Different resources are exposed to different weather conditions, so each resource must be prepared to perform uniformly, *relative to these conditions*. The ambient temperature standard helps ensure that each resource is adequately prepared for summer weather emergencies.

The commission does eliminate the ambient temperature standard for the winter months under (c)(1)(B) and instead revises the 95th percentile 72-hour minimum average temperature standard reported in ERCOT's historical weather study to include wind chill temperatures. This revision is in consideration of how cold and hot weather impact resources and facilities in different ways, specifically the effect of wind chill on equipment during the winter months.

TSPA commented that the five-year update requirement for weather emergency preparedness under proposed §25.55(c)(1) and (c)(2) may result in the early retirement of marginally profitable

solar, natural gas, and coal generation resources if the requirements increase over time based on the ERCOT historical weather study or ambient temperature standard.

Commission Response

The commission declines to modify the rule to remove the requirement that each entity updates its weather preparations, if necessary, to account for changes in ERCOT's updated weather study. If subsequent updates of the weather study by ERCOT present more weather emergency scenarios, then the reliability of the bulk electric system requires an increased level of preparation from TSPs and generation entities to sustain operations through those scenarios.

Proposed §25.55(c)(2)(A)(ii) – Hot weather critical components; Provision and storage of adequate water supplies by a generation entity

Proposed §25.55(c)(2)(A)(ii) requires generation entities to provide assurance of the availability of adequate water supplies for various generation needs.

TPPA noted that factors outside of a generation entity's control, such as a drought, may impact the adequate water supply requirement under proposed §25.55(c)(2)(A)(ii). TPPA recommended inserting "use of available and reasonable methods to maintain adequate water supplies" into the proposed clause to address this issue.

Commission Response

The commission declines to implement TPPA's recommended change to adopted §25.55(c)(2)(A)(ii) but modifies the rule to require that generation entities arrange and plan for the provision and storage of adequate water supplies. Generation entities are expected to implement preparedness measures reasonably expected to sustain operations through summer weather conditions, but the commission removes the requirement of assurance of adequate water supplies to emphasize that this is not a performance standard.

Vistra recommended adding "for the duration referenced in §25.55(c)(2)(B)" to the end of proposed §25.55(c)(2)(A)(ii) to clarify the requirement only applies to the ERCOT weather study standard under Vistra's revised version of proposed §25.55(c)(2)(B).

Commission Response

The commission declines to implement Vistra's recommended change to proposed §25.55(c)(2)(A)(ii) as the amount of "adequate" water supplies is determined by the generation entity through consideration of what is reasonable for the resource. Therefore, cross referencing to the 72-hour ambient temperature standard under §25.55(c)(2)(B) is unnecessary.

Proposed §25.55(c)(2)(A)(v) – Hot weather critical components; maintenance of air flow or cooling systems by a generation entity

Proposed §25.55(c)(2)(A)(v) requires a generation entity to maintain all hot weather critical components and test all components on a monthly basis during the summer season

APA and ACP recommended proposed §25.55(c)(2)(A)(v) permit remote testing by adding “or through remote testing when applicable” to the end of the provision.

TPPA also recommended that the term “testing” be clarified under proposed §25.55(c)(2)(A)(v) as it is unclear whether the term refers to a performance test related to efficiency, cleanliness, or pump flows and discharge pressures. TPPA noted that such a level of testing is not possible for every device on a power plant, and monthly testing would present considerable difficulty for utilities to accomplish and may cause uneven compliance due to the ambiguity inherent in the term. TPPA indicated that if such a level of testing is not intended by the commission, then the term should be clarified. TPPA provided examples such as specifying that “testing” can be performed through visual inspection if a monthly requirement is imposed.

Commission Response

The commission revises proposed §25.55(c)(2)(A)(v) by replacing the phrase “and testing” with “and verifying the functionality of” to better reflect the intention of the requirement and to address APA and ACP’s recommendation regarding remote testing and TPPA’s request for clarification. An entity may remotely verify the functionality of a component

under §25.55(c)(2)(A)(v) if such remote verification is reasonable and appropriate for the resource.

TPPA stated that the requirement under proposed §25.55(c)(2)(A)(v), requiring completion of monthly testing on protection equipment from May 1 through September 30, respectively, is impossible to comply with as three months of each period occur after the deadline of June 1. TPPA recommended the provision be revised to require “annual testing prior to” June 1 in a manner that comports with the other rule preparation requirements.

TEC requested the commission revise the equipment maintenance and testing deadlines of May 1 through September 30 prescribed under proposed §25.55(c)(2)(A)(v), for the completion of requirements under proposed §25.55(c)(2), for winter preparedness. TEC requests the timelines be revised to ensure entities are only responsible for declaring preparedness actions already taken, as opposed to prospective preparedness actions.

Commission Response

As discussed in greater detail its response to comments under heading §25.55(c)(1)(A)(vi), the commission modifies the rule to clarify that entities need not complete or attest to the completion of requirements by June 1 that are not required to be completed until after that date. This modification addresses the concerns expressed by TPPA and TEC.

Proposed §25.55(c)(2)(A)(vi) – Monitoring of all hot weather critical components by a generation entity

Proposed §25.55(c)(2)(A)(vi) requires the installation of monitoring systems for all hot weather critical components, as appropriate for the resource.

Vistra recommended proposed §25.55(c)(2)(A)(vi) be revised to strike the word “all” and insert the phrase “as practicable and reasonable” to the end of the provision because, unlike cold weather critical components, “not all hot weather critical components are effectively monitored via electronic systems.”

TPPA requested the commission clarify the term “monitoring system” as used in proposed §25.55(c)(2)(A)(vi) as generation facilities may have equipment that does not have real-time temperature indicators capable of being monitored from a control room. TPPA noted that the current language could be construed as requiring an engineering study to identify all weather-critical components and determine whether monitoring systems are available for all components and requested the commission clarify whether this interpretation was intended.

Commission Response

The commission modifies the rule to require the “monitoring” of all hot weather critical components instead of the “installation of monitoring systems.” This modification addresses the concerns expressed by TPPA and Vistra regarding electronic monitoring systems for hot weather critical components.