Filing Receipt

Received - 2021-07-30 02:25:12 PM
Control Number - 51840
ItemNumber - 50

PUC PROJECT NO. 51840

RULEMAKING ESTABLISHING ELECTRIC WEATHERIZATION STANDARDS	**§ § §**	**PUBLIC UTILITY COMMISSION OF TEXAS**

CALPINE CORPORATION'S COMMENTS TO COMMISSION STAFF'S DISCUSSION DRAFT AND QUESTIONS

Calpine Corporation ("Calpine") is headquartered in Houston and has a geographically diverse fleet across 22 states with significant scale in the ERCOT, CAISO, and PJM competitive wholesale markets. Our Texas fleet utilizes combined cycle and cogeneration technologies and supplies approximately 9,000 MW of generation to the ERCOT wholesale market. We take great pride in owning and operating a modern, clean, environmentally efficient, and reliable fleet and seek to be a positive contributor in the communities where our plants are located. We appreciate the opportunity to provide feedback regarding Commission Staff's discussion draft of new 16 Texas Administrative Code ("TAC") § 25.55 to implement weather emergency preparedness measures for generation entities and transmission services providers in the ERCOT power region as required by Senate Bill 3, 87th Legislative Session (Regular Session) ("SB 3"). As these comments are filed on or before July 30, 2021, they are timely submitted.

I. General Comments

Weather preparedness is experiential – most improvement is gained from the most severe conditions experienced to date at a particular facility. Calpine's experience in ERCOT and other markets has shown that engineering studies are only modestly effective at determining the performance of a facility and are frequently based on heat trace densities and insulation heat retaining capability. Other key factors, such as the physical orientation of the plant, wind direction, wind speed, and affects from cooling tower plumes, among other things, are typically excluded

from any winter readiness model, which makes modeling less effective than experiential knowledge gained from operations of a particular plant over time. From an engineering perspective, Calpine's approach has been one that includes standardization of best practices for the Calpine fleet that take into account experience, not simply design basis, of its fleet, combined with the implementation of improvements over time. Mitigating potential points of weakness and learning from past events has proven successful for Calpine's fleet in the past and has prepared it for unpredictable weather events.

II. Response to Commission Staff's Questions

1. **What is the availability of statistically reliable weather information from, e.g. the American Society of Heating, Refrigeration and Air Conditioning Engineers; National Weather Service; or other sources for the ERCOT power region? Please share the source of that information.**

At this time, the ERCOT Winter Readiness Standard does not provide any insight into the source data for the weather conditions that will be used to develop weatherization requirements and if the standard will be based on average temperature, most severe conditions, or something else. The data provided by the National Oceanographic and Atmospheric Administration (NOAA)[1] is likely sufficient so long as it is robust enough and there are adequate data points available in each region.

2. **Do existing market-based mechanisms provide sufficient opportunity for cost recovery to meet the weather reliability standards proposed in the discussion draft? If not, what cost recovery mechanisms should be included in the proposed rule?**

Calpine is unable to fully answer this question until after the January 2022 study is released. Without knowing the methodology used to calculate the proposed 95th, 98th, and 99.7th percentiles

[1] The NOAA has a climate database with historical maximum and minimum temperatures for each month going back 60 years for most NOAA weather stations located in Texas. *See* https://www.noaa.gov/tools-and-resources/weather-and-climate-resources#historic.

and the ultimate weather reliability standards applicable to each plant, it is impossible to know if expected market revenues could be sufficient to cover the costs required to meet the standard. Once the standards are known a better estimate of compliance costs can be made. Cost recovery mechanisms may be readdressed if sufficient cost recovery is not included in the implementation of this rule.

III. Comments to Discussion Draft of new 16 TAC § 25.55

A. Executive Summary

These comments propose the following modifications:

- Subsection (c)(1) to provide clarity regarding the specific weather study criteria, accounting for 30 years of weather information, considering the impacts of fuel delivery, and suggesting the "weather zones" reflect the diversity of climate within the State.
- Subsection (c)(2) to provide detail surrounding new compliance deadlines that will be required when a new weather study is conducted. Additional request for clarity regarding the term "significant change."
- Subsection (d), and specifically (d)(1), to clarify that if the generation entity has met the preparation standard, but is unable to perform, that it not be subject to a determination of non-compliance or any fine or violation.
- Subsection (e)(1) to reflect more feasible timing for implementation of the new standards that are triggered after a final standard is issued by ERCOT, as well as to clarify the terms "nameplate capacity" and "resource." Recommended changes also include additions of a good cause exception and the ability to petition the commission if timelines cannot be achieved because of limitations on the availability of required equipment and engineering expertise.

- Subsection (f)(2) to allow for a member of the company's executive team to execute the affidavit required in the annual report.
- Subsection (g)(2) to provide clear language that protects generation resources from a violation or administrative penalty when they have satisfied the preparation requirement as demonstrated by a positive inspection report from ERCOT or shown all deficiencies identified in the inspection report have been cured.
- Subsection (h)(1) to make clear the rule requires a preparation standard and to provide timelines for curing deficiencies.
- Subsection (h)(3) to recognize routine ambient derates are common and to clarify that generation outages that are the result of a transmission, fuel delivery, third-party service failures, or collateral impacts from transmission are not considered "weather-related failures" to provide service under the subsection. Recommended modification includes replacing the phrase "reasonable period of time" with a specific period of time, providing for clearer compliance standards.

B. Subsection (c)(1)

Calpine has significant concern regarding the weather study proposal as drafted. The Commission should provide the specific weather study criteria, incorporating a time span that will be used to calculate the referenced probability (for example, will a 25-year span be used to determine the 95th, 98th, and 99th percentile, or will a 30-, 50-, or 100-year span be used).

Additionally, what are the "established weather zones" referenced in the draft language? The inputs for the study are important to ensure the study is not outcome determinative. According to the Office of the Texas State Climatologist, the extreme monthly wintertime temperatures averaged 18.5°F during 1950-1999 and 20.8°F during 2000-2018. Based on the 1975-2018 trend,

extreme wintertime temperatures would increase 3.3°F by 2036 compared to the 2000-2018 average and 5.6°F compared to the 1950-1999 average.[2] This illustrates the concern that without firm study criteria, the study could become outcome determinative allowing for parameters to be altered to achieve certain outcomes. Based on the report produced by the Office of Texas State Climatology, the winter extreme cold temperatures are increasing, not decreasing.[3] Will the 95th percentile study design basis temperature reflect this? And if not, why? In addition, the weather zones must reflect the climate diversity within the state. A "one size fits all" approach will not work given the diversity of Texas facilities. For example, facilities located in the Dallas/Fort Worth area experience different weather stressors than plants in the Rio Grande Valley. Because the state has such a diverse and varied climate, the weather study and standards established must also reflect this diversity. For these reasons, the following language is recommended:

(c) **Weather study.** ERCOT, in consultation with the Office of the Texas State Climatologist, must prepare a weather study that includes statistical probabilities of a range of extreme weather scenarios for the weather zones that ERCOT establishes for this study.

(1) Weather study criteria. The weather study must include statistical probabilities for a range of weather scenarios in the 95th, 98th, and 99th percentile probabilities for the established weather zones, using information based on the last 30 years. The weather study must address a comprehensive range of weather event scenarios that may impact transmission, ~~and~~ generation, and fuel delivery performance in the ERCOT power region. These scenarios must include, at a minimum, parameters for high and low temperatures, wind, humidity, precipitation, and duration. The established weather zones for ERCOT must reasonably reflect the diversity of climate zones in the State.

[2] Texas A&M University Office of Texas State Climatologist, *Assessment of Historic and Future Trends of Extreme Weather in Texas, 1900-2036* at 8 (Mar. 5, 2020), available at https://climatexas.tamu.edu/products/texas-extreme-weather-report/ClimateReport-NOV2036-2.pdf.

[3] *Id.* at 4.

C. Subsection (c)(2)

The last sentence in subsection (c)(2) can be read to conflict with subsection (e), which provides deadlines for compliance. Therefore, striking the last sentence in (c)(2) is recommended to avoid inconsistencies. If the intent of the last sentence is to clarify new compliance deadlines that will be set for any new weather study that occurs *after* the initial study, then that should be clarified, and the following change is proposed:

> (c)(2) Filing and approval. ERCOT must file with the commission the first weather study consistent with this subsection no later than January 1, 2022 and then file with the commission a new weather study five years thereafter. ERCOT must review data relevant to the weather study at least annually. If changes to weather occur that materially affect the ability of generation entities and transmission service providers to meet the weather reliability standards in this section, ERCOT must promptly prepare and file with the commission before the otherwise applicable five-year deadline. A weather study must be approved by the commission with or without modifications for it to affect compliance with the requirements of this section. The commission will consider and establish any compliance deadlines required due to the approval of a new weather study at the time the new weather study is approved by the commission and will provide sufficient time (for design, procurement, and implementation) for a generation entity to implement changes that are required by the new weather study ~~approve compliance deadlines as part of its approval of any study filed after the initial weather study~~.

When establishing any new compliance deadline, the Commission should consider the actual time required to complete new upgrades. Specifically, if the design basis minimum temperature is decreased in a new weather study, the time required to redesign the heat tracing and freeze protection systems at a generation resource could be significant. This is particularly true if all or even a majority of the generators in the State are sourcing certain equipment at the same time and all require outages to implement any improvements. Additionally, clarity regarding whether Market Participants will be expected to be responsible for the cost of any changes required by a new weather study is needed. Market mechanisms may not provide ample recovery for a standard that could potentially change every five years (or more frequently) as new weather studies are

conducted. Just as it would be very costly (and possibly impractical) to upgrade a home every time building codes change, it would likewise be costly to upgrade a generation asset every time a new weather study is conducted.

D. Subsection (d)

As previously stated, how generation entities will recover costs associated with implementing new weather reliability standards should be considered. Under Texas' current energy only market structure, as the grid continues to see a significant penetration of zero marginal cost intermittent resources, thermal generators will rely on lower and lower energy revenues annually to recover all of the costs needed to maintain their resources. This current market structure is relevant to implementation of any new weather reliability standard. While all plants are at risk some may be especially at risk for having significant costs associated with meeting a new reliability standard as many were designed using a different basis temperature. Regardless of the age of the unit, no plant design was developed with the expectation that the design of its winterization systems would be changing.

In addition, clarity should be provided that this is a preparation standard, not a performance standard. The Commission should clarify that under those scenarios the generation resource would be deemed to compliant and would not be subject to any penalties or violations as the preparation standard would have been met. If a generation entity meets the inspection criteria established and has been properly certified, the generation entity should have an unequivocal defense and not be exposed to violations as the standard established by SB 3 is a preparation requirement and not a performance requirement. Therefore, the following change to the proposed draft rule subsection (d)(1) are recommended:

> (d)(1) Basic weather reliability standard. A generation entity must maintain weather preparation measures that reasonably ensure that its resource can provide service at

the resource's applicable rated capability as defined by ERCOT under the 95th percentile of each of the extreme weather scenarios specified in the weather study approved by the commission under subsection (c) of this section. The generation entity will be deemed to have met the preparation standard and complied with this subsection if the resource's applicable rated capability as defined by ERCOT under an extreme weather scenario is rated at or above the 95th percentile.

E. Subsection (e)(1)

As Calpine has stated previously,[4] it is important to allow for flexibility at the implementation level with the ability to develop plant specific plans as well as a good cause exception option. There needs to be a reasonable timeline for compliance and an extension process, if necessary. Specifically, it is beneficial to adopt an exclusion option, based on economic criteria, or size or another measurable standard that would allow a facility to be granted an exclusion if the benefits of the weatherization do not outweigh the costs. Until the actual standards are determined it is difficult to opine as to the sufficiency of the implementation dates included in the rule. Therefore, to provide for flexibility, the Commission should incorporate an extension process or provide some flexibility if it is determined that required upgrades cannot feasibly be incorporated by the dates specified.

It should be made clear that the nameplate capacity for either a simple cycle or combined cycle combustion turbine facility refers to the entire generation facility and not each ERCOT-registered unit at the specific plant site.[5] Without this clarity, the use of the term "resource" when referencing nameplate capacity is ambiguous. Is the reference to each unit at a generation facility, or does it reference each individual resource (which could include multiple units) listed on a Power Generation Company registration? Clarity is key so that a generation entity knows exactly what

[4] *See Rulemaking Establishing Electric Weatherization Standards*, Project No. 51840, Calpine Corporation's Comments Regarding the Staff Questions (Jun. 23, 2021).

[5] In instances where a site has more than one power block, the site should be considered one "resource" or "unit."

timelines each of its facilities must meet. Additionally, further clarity is needed to determine the "nameplate capacity," as a particular unit could have various "nameplate capacity" figures. The easiest reference would be to the nameplate capacity provided on the facility's Power Generation Company registration as this is not impacted by the season and is the capacity of the facility at the time of interconnection or upgrade.

It will be more difficult to weatherize larger facilities and they will require a longer compliance timeline than facilities that are less than 250 MW. More generally, all deadlines expressed in subsection (e)(1) are concerning given the weather study will not be completed until January 1, 2022. Depending on the outcome of that study, there may be no feasible way for all the generation resources in the ERCOT footprint to ensure compliance given the limited number of heat tracing engineering firms and vendors that will be available for the winterization upgrades that may be required to meet new design basis temperature, let alone other recommendations like wind, humidity, and heat requirements. Given this uncertainty around the findings of the weather study, it is important to give resources at least two years to implement the recommendations. This is especially important for larger units that, as the rule is written, will only have 11 months to complete all required upgrades or ask for an extension. To avoid the potential for generators to seek extensions of time, because the timelines presented are not feasible, the Commission should reconsider the timing requirements presented in the draft rule.

Additionally, while the draft rule has provided compliance dates, it has not provided a date by which the standard, that cannot be determined until after the weather study is completed, will be issued. It is important to remember there are limited engineering resources for this type of analysis, which places challenges on the ability for all generators to procure and install the

necessary equipment. For these reasons, the following modifications to (e)(1) and (4) are proposed:

(e)(1) Implementation of basic weather reliability standard. A generation entity must meet the basic weather reliability standard under subsection (d) of this section by the following deadlines:

(A) For each resource with more than 650 megawatts (MW) of nameplate capacity in operation on January 1, 2022, no later than three years after a final standard is issued by ERCOT ~~November 30, 2022~~;

(B) For each resource with less than650 MW of nameplate capacity in operation on January 1, 2022, no later than two years after a final standard is issued by ERCOT ~~November 30, 2023~~; and

(C) As used herein, the "nameplate capacity" is the MW capacity provided on an entity's power generation company registration, under total capacity found in Part E, as separated by physical address of the facility if a particular power generation company registration contains more than one facility. As used herein, the term "resource" references those individual facilities provided for on Part E of the entity's power generation company registration.

....

(4) Extension of deadline. A generation entity may petition the commission to extend the implementation deadline for a generation resource. The commission may approve the petition with or without conditions if the generation entity demonstrates that it used best efforts to meet the deadline. One or more generation entities may petition the commission together to have the deadline extended if the necessary equipment and engineering expertise is difficult to obtain. The commission must grant such request for deadline extension and must consider the costs on the resource entities associated with the compliance period.

F. Subsection (f)(1)(B)

The Commission should provide additional clarity on what would constitute a "significant change" that affects the ability of a resource to meet the applicable weather reliability standard. By using a vague term like "significant change" it can lead to instances of confusion and potential non-compliance because a generation entity may not know what is and is not considered "significant."

G. Subsection (f)(2)

Given the structure of several generation resources and the content of the annual report, the Commission should consider allowing any member of a company's executive team to execute the affidavit on behalf of the company. These members have the same interests and incentives to accurately reflect the company's compliance and other information that may be required by the ERCOT market rules. This also gives the company flexibility to have the individual in charge of compliance with subsection (d) of this section take ownership of the company's compliance. As such, the execution of the affidavit should not be limited to the Chief Executive Officer but should include such other individuals as the Chief Operating Officer ("COO") or the senior Power Operations Officer ("CPO"), both of which may have more knowledge as to the company's preparation than the Chief Executive Officer. For these reasons, the following modifications are proposed:

> (2) Annual report. Each generation entity must submit an annual report to ERCOT no later than November 1 of each year that addresses compliance with subsection (d) of this section. The report must include the name of the generation entity, a list of the generation entity's resources, a summary of activities related to compliance, open items and the expected corrective date of compliance, and all other information prescribed by ERCOT in its market rules. The annual report must also include a notarized affidavit sworn to by a member of the generation entity's executive team that has binding authority over ~~the chief executive officer of~~ the generation entity, attesting that each of the generation entity's resources is in compliance with subsection (d) of this section.

H. Subsection (g)(2)

Generation resources should be able to rely on the inspection report and use a positive report as evidence of compliance, so that a generation resource will not be exposed to penalties under this standard that are the result of a failure to perform during a weather event. Calpine appreciates the Commission's recognition that a reasonable cure period is appropriate to allow a generation resource to cure identified deficiencies. Calpine also requests that the ERCOT

inspection report be made confidential as it implicates critical infrastructure in the state. Therefore, the following revisions to (g)(2) are proposed:

(g)(2) ERCOT inspection report. ERCOT must provide a report on its inspection of a resource to the generation entity. The inspection report must address whether the resource was in compliance with subsection (d) of this section and, if it was not, provide the generation entity a reasonable period to cure the identified deficiencies. The cure period determined by ERCOT must consider what weather preparation measures the generation entity may be reasonably expected to have taken before ERCOT's inspection, the reliability risk of the resource's noncompliance, and the complexity of the weather preparation measures needed to cure the deficiency. No violation or administrative penalty shall be imposed on a generation resource that (1) receives a positive inspection report from ERCOT, or (2) cures all deficiencies identified in the inspection report prior to the weather event. All inspection reports shall be treated as confidential highly sensitive protected information as they implicate critical infrastructure.

I. Subsection (h)(1)

The Commission should make clear that the standard established in SB 3 and that is within PURA is a *preparation* standard and not a performance standard. This concept should be throughout the rule to make clear that if a generation resource has met all preparation standards but is still unable to perform during an extreme weather event that it will not be subject to violation. Violations should only be for the failure to prepare. Additionally, Calpine believes, as with the spirit of this preparation standard and not performance standard, that if ERCOT has approved a generation facility's preparation, and if that facility has done the work, that no penalty will be issued for failure to perform during an extreme event. Further, a generation entity should have a mechanism to dispute a finding of any audit report by using a third-party licensed engineer to determine if the criteria has been met. Additionally, it should be made clear that if there are interruptions in the transmission grid or fuel supply system, the generation resource that is impacted will not be deemed to be in violation of these standards. Consideration should also be given to things like availability of third-party services after extended durations, such as chemical

and water suppliers. Issues involving third-party suppliers can have a large impact on a generation resource and the generation resource may not be able to mitigate these issues in a severe event. The generation resource should not be penalized for weather related grid, fuel supply, transportation, or third-party service interruptions. Finally, because the ambiguity in the term "reasonable amount of time" is concerning the Commission should adopt a more concrete deadline. For these reasons, the following language is proposed:

(h)(1) Administrative penalty. The commission will impose an administrative penalty on a generation entity that has violated subsection (d) of this section and does not cure the violation within ~~a~~6 months of written notice to the generation entity of the identified deficiency ~~period of time~~. Generation outages that are the result of a transmission, fuel delivery, third-party service failures or collateral impacts from transmission failures, are not considered weather-related failures to provide service under this subsection or subsection (d) of this section. An administrative penalty shall not be assessed if the generation resource is in compliance with subsection (d), but fails to perform during the weather event or ERCOT has provided a positive inspection report pursuant to subsection (g).

J. Subsection (h)(3)

Calpine strongly urges the Commission to carve out exceptions for weather related transmission outages or frequency induced system trips that impact the reliability of a generation resource during extreme weather-related events. The Commission and ERCOT must acknowledge and recognize that transmission outages and interruptions impact a generation resource's ability to be on-line during a weather event and the generation resource should not be penalized for failures on the transmission system. Additionally, all generation resources are subject to routine ambient derates, based on turbine limitations, and therefore should be excluded from (h)(3). For these reasons, the following modification is recommended:

(3) Weather-related failures to provide service. For a resource that experiences repeated or major weather-related forced interruptions of service, including forced outages, derates, excluding routine ambient temperature derates, or maintenance-related outages that result in a failure to comply with subsection (d) of this section, the generation entity must contract with a qualified professional engineer who is

not an employee of the generation entity or its affiliate to assess its weather preparation measures, plans, procedures, and operations and submit the assessment to the commission and ERCOT. ERCOT must adopt rules that specify the circumstances for which this requirement applies and specify the scope and contents of the assessment. A generation entity may be subject to additional inspections by ERCOT and referral to the commission for enforcement of any violation of the commission's rules and failure to cure the identified deficiencies within 6 months of written notice to the generation entity of the identified deficiency ~~a reasonable period of time~~. Generation outages that are the result of a transmission, fuel delivery, third-party service failures or collateral impacts from transmission are not considered weather-related failures to provide service under this subsection or subsection (d) of this section.

Additionally, the use of the phrase "reasonable period of time" is unnecessarily vague and believes the Commission should establish a concrete period of time to be referenced here that incorporates the reasonable time it would take to cure the identified deficiency, as shown in the changes above.

Conclusion

Calpine remains committed to emphasizing and improving its weatherization process within ERCOT as required. We appreciate this opportunity to present our views on this very important matter and will remain engaged as this Project develops. We will make available representatives to discuss these positions if helpful to the Commission.

Respectfully submitted,

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