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RULEMAKING TO ESTABLISH § PUBLIC UTILITY COMMISSION
 ELECTRIC WEATHERIZATION §
 STANDARDS § OF TEXAS

TEXAS SOLAR POWER ASSOCIATION'S COMMENTS

The Texas Solar Power Association (TSPA) files these Comments which address the Commission's request for comments on weatherization of electric infrastructure. TSPA is a statewide industry trade association that promotes the development of solar electric generation. Our member companies invest in the development of solar photovoltaic products and projects in Texas, serving customers in both wholesale and retail markets.

1. To fulfill the requirements of Texas Utilities Code § 35.0021(b), under what weather emergency conditions should the Commission require a provider of electric generation service in the Electric Reliability Council of Texas (ERCOT) power region to be able to operate its generation facilities? At a minimum, please address standards for temperature, icing, wind, flooding, and drought conditions. For each, please address whether the standard should vary by region or by type of generation facility. Please provide any relevant support for your recommendations, including existing or proposed standards in other jurisdictions, or related studies.

The Commission should require all generator-owned equipment to provide electricity from all sources of electric generation above 10 MW to be able to operate within a fixed range of temperatures without experiencing a forced outage or a forced deration of more than 50% of the installed capacity. If the manufacturer of a piece of equipment rates the equipment to be equal to or better than these requirements, then the Rules should affirmatively state that no further action is required. A uniform standard for all generator technologies is appropriate so that it is easy to communicate to the public and simple to understand and implement in the Control room. In the heat of the moment, an ERCOT operator shouldn't be required to recall which generator technologies might fail at what temperature. This fixed temperature standard could be in relation to the closest weather station's historical temperatures to account for regional differences.

Most large-scale solar facilities have the ability to de-ice by angling the panel at 90 degrees to avoid accumulation of snow. Additionally, the black color of panels makes them easy to absorb sunlight and heat and more easily melt snow.

Additional weatherization requirements could cover drought, wildfires, flooding associated with hurricanes or major storms. For flood risk, requirements should be on a forward basis because they could require complete reconstruction. Because these weren't the direct cause of legislation, these requirements should be taken up separately in another docket that revisits these Rules.

Facilities that require fuel or water should also be required to weatherize their fuel supply that is under their control for the same fixed temperature standard. For example, coal piles might freeze, natural gas intake facilities or onsite storage may need to be weatherized. Emergency operations plans should account for this onsite fuel and water. The amount of water, water temperature, and onsite fuel quantities and conditions should be reported to ERCOT each day, and disclosed on the same timeframe as other confidential resource information about a particular generator. The public availability of this data can help inform the risk of outages, which is a key indicator of future scarcity that could drive new investment in additional generation capacity that meets modern weatherization standards.

In order to ensure compliance with these risks, the Commission could require by Rule that each facility perform an audit every four years that shows their risk factors in a weather event, and which components of the facility are at risk under what conditions. The audit should identify specifically which equipment is not rated to maintain operations within the Commission's weatherization standard. Any component that is not rated to perform at this level must be weatherized to do so. Failure to weatherize an item identified in the audit could be accounted for when penalties are assessed. This requirement should be a component of emergency operations plans, and any pending rulemaking requirements for emergency operations plans should be taken up concurrently with weatherization requirements. To the extent that the weatherization ratings of generator equipment is equal to or better than the requirements of Commission Rules, the audit should be strictly limited to confirming that the equipment ratings are correct.

Each facility that has a forced outage or forced deration of more than 50% of installed capacity should be required to update their emergency operations plan to explain whether the outage or deration was due to weather, what happened to cause the outage, and whether any steps were taken to avoid this cause of failure in the future. This requirement should not extend to forced outages or derations due to transmission issues. Emergency operations plans should be made public 60 days after the conclusion of the season for which they were in effect. The value of confidentiality does not outweigh the public benefit derived understanding risks to the electric grid that have affected millions of Texans and could do so again. In addition, this outage risk is a key indicator of the forward-value of electricity, and detailed data can help inform investors in new capacity. Because this State depends on new investment in generation capacity, there is a compelling public interest to release this information.

Finally, because these risks are complicated, and time is short under legislative deadlines, the Commission should express its intent to revisit weatherization Rules within four years.

2. To fulfill the requirements of Texas Utilities Code §38.075(a), under what weather emergency conditions should the Commission require an electric cooperative, municipally owned utility, or transmission and distribution utility providing transmission service in the ERCOT power region to be able to operate its transmission facilities? At a minimum, please address standards for temperature, icing, wind, flooding, and drought conditions. For each, please address whether the standard should vary by region or by type of generation facility. Please provide any relevant support for your recommendations, including existing or proposed standards in other jurisdictions, or related studies.

Weatherizing the transmission system is particularly difficult due to the thousands of miles of wires and the difficulty of avoiding icing on any of them. However, utilities could consider using load or short-circuit currents to melt or prevent transmission line icing. This approach might involve redispatch of SCED to increase currents on specified lines¹.

The Commission should consider weatherization of transmission equipment at the same time it considers planning for extreme weather impacts as required by SB 1281. There will be trade-offs between the cost of weatherization of existing lines vs the construction of new lines, and the Commission should encourage ERCOT and stakeholders to come up with an optimal answer for both requirements.

Finally, because these risks are complicated, and time is short under legislative deadlines, the Commission should express its intent to revisit weatherization and associated transmission planning Rules within four years.

3. Additional Comments

In addition to considering Rules to implement weatherization standards, the Commission should modify TAC §22.246 to implement §15.023 of the Texas Utilities Code to add additional penalties based on weatherization violations.

¹ H. M. Merrill and J. W. Feltes, "Transmission icing: a physical risk with a physical hedge," *2006 IEEE Power Engineering Society General Meeting*, 2006, pp. 7 pp.-, doi: 10.1109/PES.2006.1709619.

Abstract: For 50 years US utilities used load and short-circuit currents to melt or prevent transmission line icing. This technique fell into disuse in the US during the last 50 years. Major recent ice storms caused many downed lines and much loss of customer load. Improved control and weather monitoring allow transmission-icing risks to be hedged without switching or otherwise jeopardizing system security. A careful risk analysis is needed to develop the right strategy.

URL: <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=1709619&isnumber=36065>

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Charlie Hemmeline', positioned above a horizontal line.

Charlie Hemmeline

Executive Director

Texas Solar Power Association