UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Transmission System Planning	**§**	
Performance Requirements for Extreme	**§**	**Docket No. RM22-10-000**
Weather	**§**	

COMMENTS OF LCRA TRANSMISSION SERVICES CORPORATION ON NOTICE OF PROPOSED RULEMAKING

I. INTRODUCTION

LCRA Transmission Services Corporation (LCRA TSC) respectfully submits these comments on the Notice of Proposed Rulemaking (NOPR) issued by the Federal Energy Regulatory Commission (Commission) in the above-referenced proceeding on June 16, 2022. LCRA TSC appreciates the Commission's efforts to address transmission system planning challenges associated with extreme heat and cold weather events and agrees with the Commission that new or modified reliability standards for transmission planning, in tandem with other solutions, may help mitigate the effects of some types of extreme weather events on the Bulk Electric System.

II. INTEREST OF LCRA TSC

LCRA TSC is a nonprofit corporation and instrumentality of the Lower Colorado River Authority (LCRA). LCRA TSC provides wholesale transmission, transformation, and metering services in the Electric Reliability Council of Texas (ERCOT) region. As a Transmission Service Provider, LCRA TSC owns or operates over 5,500 circuit miles of transmission lines and owns facilities in approximately 420 substations. LCRA TSC also serves as a Transmission Owner, Transmission Operator, and Transmission Planner registered with the North American Electric Reliability Corporation (NERC).

III. GENERAL COMMENTS

LCRA TSC supports efforts to increase system reliability and resiliency and agrees that some of the concerns identified by the Commission are appropriate for NERC to resolve through updated Transmission Planning (TPL) standards. At the same time, LCRA TSC urges that these

new or modified standards should still allow for regional variation and circumstance-specific scenario review. LCRA TSC also believes that NERC should require extreme weather assessments in a new TPL standard separate from TPL-001-5.1. LCRA TSC views TPL-007-4, in which NERC addressed geomagnetic disturbance (GMD) Vulnerability Assessments, as an appropriate model for addressing new transmission system planning challenges associated with extreme weather events while allowing for regional variation and without complicating the existing TPL-001-5.1 standard.

IV. COMMENTS IN RESPONSE TO COMMISSION QUESTIONS

A. Develop Benchmark Planning Cases Based on Major Prior Extreme Heat and Cold Weather Events

LCRA TSC believes that the Transmission Planners and Planning Coordinators within the different regions should have flexibility in defining extreme weather events to account for differences in geography, climate, historical experience, load and generation trends, and other relevant factors. These entities understand the reliability and resiliency needs of their areas of the Bulk Electric System and should therefore be authorized to define events and scenarios as appropriate for their region.

B. Transmission System Planning for Extreme Heat and Cold Weather Events

1. Steady State and Transient Stability Analyses

Planning Coordinators and Transmission Planners should perform both steady state and transient stability analyses. With regard to the set of contingencies that should be considered, LCRA TSC suggests that performing contingency analyses similar to what is required under CIP-014-3 may be useful. For example, in load and generation conditions characteristic of extreme weather events, the contingency analysis could study the outage of a medium impact facility (e.g., single circuit, common tower, common right-of-way, generators with a common fuel or weather failure mode) to determine if the resulting system would be N-1 secure (NERC P1, P2.1, P7.1). If the analysis identifies system instability for conditions such as cascading, voltage instability or collapse, uncontrolled islanding, or excessive load shed, these medium impact facilities could be identified as "weather critical" and targeted for hardening as part of a Corrective Action Plan.

Finally, LCRA TSC also notes that while the role of demand response in LCRA TSC's portion of the Bulk Electric System is negligible today, this could change as more large flexible

loads (e.g., cryptocurrency mining and data centers) are energized. This trend should be flagged for further consideration in the future.

2. Transmission Planning Studies of Wide Area Events

Wide-area planning studies should be defined both geographically and electrically as necessary to represent the geographic correlation of extreme weather events and the electrical connectivity of the transmission system. LCRA TSC believes that current practices should be maintained for determining which entities are responsible for addressing the results of the studies.

3. Study Concurrent Generator and Transmission Outages

In general, LCRA TSC recommends that the TPL standards adopted by NERC in response to this NOPR not be overly prescriptive regarding the modeling assumptions. The primary hurdle with respect to extreme weather events is how to design the case when available generation (given the assumptions) is insufficient to meet the load. Modeling too many outages will result in a case that does not solve and thus cannot be analyzed. Load will also play a role in analyzing these scenarios, especially in the ERCOT region where electricity demand is growing. Other modeling considerations may include the types of heating and cooling technologies used in the region (e.g., heat pumps instead of natural gas furnaces), the relative efficiency of those heating and cooling technologies, and increased smart device usage, particularly in stability analyses and in the development of dynamic load models.

4. Sensitivity Analysis

Given that extreme weather cases are already a type of sensitivity case, there may be less value in requiring the study of additional extreme weather sensitivity cases. The effect of changing inputs (e.g., load and generation, including generation retirements and forced generation outages) should be captured in the contingency definitions, performance requirements, and analysis for the given region and extreme weather case.

5. Modifications to the Traditional Planning Approach

LCRA TSC anticipates potential feasibility and planning challenges in seeking to combine or layer probabilistic approaches into the TPL standards. Probabilistic analysis requires large samples, but extreme weather events are infrequent. The cost to develop the capability to directly

incorporate probabilistic assumptions into transmission planning analyses could be considerable, and the implementation timeframe would likely be many years. In contrast, deterministic cases with appropriately defined assumptions, contingencies, and performance requirements would capture many of the benefits associated with probabilistic approaches. Probabilistic analysis could be useful in the development of credible assumptions (e.g., generator availability) as part of a deterministic transmission planning assessment.

D. Other Extreme Weather-related Events and Issues

LCRA TSC does not recommend modifying TPL-001-5.1 to require Transmission Planners to assess the effects of drought conditions on transmission system operations. In most of the ERCOT region, the effects of drought are largely confined to thermal generation derates, which can be captured as part of building the extreme weather case but do not require their own scenario or case. Similarly, other extreme weather events like tornadoes and hurricanes are already modeled by existing extreme event contingencies and are best addressed by hardening facilities against severe weather.

V. CONCLUSION

LCRA TSC appreciates the opportunity to provide comments and looks forward to participating in efforts to develop improved processes and standards to support system reliability and resiliency against extreme weather.

Respectfully submitted,

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