



Control Number: 39339



Item Number: 142

Addendum StartPage: 0

Project No. 39339



LONE STAR TRANSMISSION, LLC
STORM HARDENING PLAN SUMMARY
PURSUANT TO P.U.C. SUBST. R. 25.95

May 1, 2020 Update

A. Purpose of Plan. Lone Star Transmission LLC's ("Lone Star") Storm Hardening Plan ("Plan") is adopted to ensure cost-effective strategies to increase the ability of its 345 kV transmission facilities to withstand extreme weather conditions. This year's update does not include material revisions to the Plan. Lone Star has employed and will continue to employ its construction standards, policies, procedures, and practices as described in its plan.

B. Description of Facilities. Lone Star's transmission facilities were constructed utilizing pre-stressed spun concrete and steel poles. Lone Star does not have and has no current plans to construction underground transmission facilities or overhead or underground distribution facilities.

C. Areas addressed pursuant to P.U.C. SUBST.R. 25.95:

1. Construction standards, policies, procedures, and practices employed to enhance the reliability of utility systems, including overhead and underground transmission and distribution facilities.

Lone Star's design and construction standards, policies, procedures, and practices employed to enhance the reliability of utility systems are summarized as follows:

- a. Lone Star's 345 kV overhead transmission lines were designed to meet or exceed the requirements of the applicable version of the National Electrical Safety Code ("NESC"), which includes criteria that address extreme wind and combined ice and wind loads. The loads that were used in Lone Star's design specifications exceeded those specified in the applicable version of

the NESC.

- b. Lone Star's design also considered factors other than extreme weather events that impact the reliability of transmission lines in order to reduce the likelihood of forced outages. These factors include insulation level, lightning activity, vegetation management, and avian interaction.
 - c. Lone Star's stations also were designed to withstand the wind criteria from the same applicable version of the NESC. Also, the station control houses were designed to meet the applicable International Building Code ("IBC") edition.
 - d. Structures with adequate longitudinal strength (*e.g.*, deadends) are utilized at locations where longitudinal loading results from unequal line tensions in adjacent spans. In uninterrupted sections of standard suspension structures, consideration should be given to identifying locations where structures with means to prevent or to contain progressive, cascading-type failure should be installed.
2. **Vegetation Management Plan for distribution facilities, including a tree pruning methodology and pruning cycle, hazard tree identification and mitigation plans, and customer education and notification practices related to vegetation management.**

Lone Star does not own and at this time does not plan to construct distribution facilities. Therefore, Lone Star does not require vegetation plans and procedures for distribution facilities.

3. Plans and procedures to consider infrastructure improvements for its distribution system based on smart grid concepts that provide outage resilience, faster outage restoration, and/or grid self-healing.

Lone Star does not own and at this time does not plan to construct distribution facilities. Therefore, Lone Star does not require plans and procedures to consider infrastructure improvements for a distribution system.

4. Plans and procedures to enhance post storm damage assessment, including enhanced data collection methods for damaged poles and fallen trees.

Lone Star's field operations teams will capture any damage information, including that for damaged poles and fallen trees, following any major storm impact on the transmission system.

5. Transmission and distribution pole construction standards, pole attachment policies, and pole testing schedule.

Lone Star constructed its 345 kV transmission facilities utilizing pre-stressed spun concrete pole and steel poles. Construction pole standards to support the Lone Star system meet or exceed the requirements of the applicable version of the NESC and the American Society of Civil Engineers ("ASCE"). Lone Star did not construct its poles to support foreign attachments. Lone Star has established aerial and ground pole inspection and maintenance schedules to assess facility conditions.

6. Distribution feeder inspection schedule.

Lone Star does not own and at this time does not plan to construct distribution facilities. Therefore, Lone Star does not require a distribution feeder inspection schedule.

7. Plans and procedures to enhance the reliability of overhead and underground transmission and distribution facilities through the use of transmission and distribution automation.

All of the Lone Star 345 kV transmission facilities incorporate automatic reclosing capability. In addition to self-healing line reclosing schemes, Lone Star will evaluate additional remote condition assessment and automation technologies as they become available for implementation on the Lone Star transmission system. Disturbance Monitoring Equipment in the 345 kV substations capture system events and provide remote access and download capability for analysis by Lone Star's technical support personnel.

8. Plans and procedures to comply with the most recent NESC wind loading standards in hurricane prone areas for new construction and rebuilds of the transmission and distribution system.

Any new construction or rebuilds will comply with all applicable loading and strength requirements specified in the most recent applicable NESC, ANSI/IEEE C2 standards.

9. Plans and procedures to review new construction and rebuilds to the distribution system to determine whether they should be built to NESC Grade B (or equivalent) standards.

Lone Star does not own and at this time does not plan to construct distribution facilities, and therefore, Lone Star does not require plans and procedures to review new construction and rebuilds to a distribution system.

10. Plans and procedures to develop a damage/outage prediction model for the transmission and distribution system.

Lone Star has established systems for weather monitoring, lightning detection, and performs outage assessments, as needed. Each part of Lone Star's transmission line system is modeled in a computer system that a qualified engineer can use to predict damage/outage from an anticipated event that would produce weather loads in excess of loads used to design and construct Lone Star's existing transmission facilities. Lone Star used extreme weather loads that meet or exceed the applicable NESC that consider the effects of Gulf Coast hurricanes. Lone Star does not require such plans for distribution facilities, because Lone Star does not own and does not plan to construct distribution facilities at this time.

11. Plans and procedures for use of structures owned by other entities in the provision of distribution service, such as poles owned by telecommunications utilities.

Lone Star does not own and at this time does not plan to construct distribution facilities, and therefore, Lone Star does not require plans and procedures for use of structures owned by other entities in the provision of distribution service.

12. Plans and procedures for restoration of service to priority loads and for consideration of targeted storm hardening of infrastructure used to serve priority loads.

Lone Star does not serve any priority loads. Lone Star does not own, and at this time, does not plan to construct distribution facilities.