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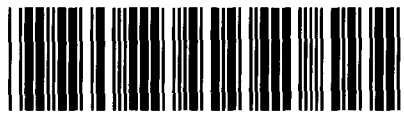

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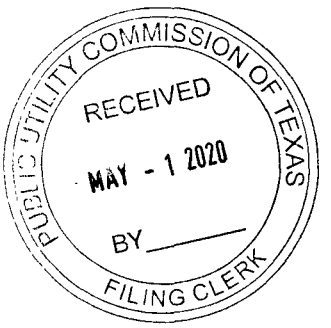

LCRA Transmission Services Corporation

Annual Report on Infrastructure Improvement and Maintenance

May 1, 2020

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PUC PROJECT NO. 38068

REPORT FOR ELECTRIC UTILITY INFRASTRUCTURE IMPROVEMENT AND MAINTENANCE PURSUANT TO SUBSTANTIVE RULE §25.94	§ § §	**PUBLIC UTILITY COMMISSION OF TEXAS**

LCRA TRANSMISSION SERVICES CORPORATION'S ANNUAL REPORT ON INFRASTRUCTURE IMPROVEMENT AND MAINTENANCE

May 1, 2020

Under 16 Tex. Admin. Code (TAC) § 25.94, all utilities must file with the Public Utility Commission of Texas (Commission or PUC) by May 1 of each year a report containing information regarding the utility's activities related to strengthening of facilities in areas subject to storm damage, vegetation management, and inspection of distribution poles. The following report describes LCRA Transmission Services Corporation's (LCRA TSC's) activities from January 1, 2019 through December 31, 2019, that are the subject of 16 TAC § 25.94.

I. LCRA TSC Assets Susceptible to Damage during Severe Weather; Storm Hardening Efforts Related to Susceptible Assets

In accordance with 16 TAC § 25.95, LCRA TSC has developed a Storm Hardening Plan and has filed a summary of that plan with the Commission in Project No. 39339. Most of the transmission lines owned by LCRA TSC are located in central Texas and are not exposed to hurricane-force winds. The minimal exposure to hurricanes notwithstanding, LCRA TSC's existing practice of routinely improving new construction to meet the latest design codes, implementation of remote-controlled switching, and a well-defined and monitored inspection program is already resulting in a cost-effective storm hardening strategy to improve system reliability.

Of the existing LCRA TSC transmission lines in service today, 3,850.71 miles were designed and installed under the 2002 National Electric Safety Code (NESC) or a later edition, have been evaluated to verify if NESC wind loading requirements were met, or have been upgraded

to meet the latest NESC. Presently, 176.39 miles of LCRA TSC transmission line located within the 90 MPH wind zone have yet to be evaluated for compliance with the NESC wind loading requirements. The 90 MPH wind zone is approximately equal to the heavy loading conditions for which LCRA TSC originally designed the lines, and additionally, this wind zone is more than 125 miles from the Texas gulf coast. For the above-mentioned reasons, these LCRA TSC transmission lines are considered to be at a slight risk for hurricane-force winds.

The status of the LCRA TSC transmission system can be summarized as follows:

1. All existing LCRA TSC lines located on or near the Texas gulf coast, in the highest wind storm zones (100 MPH to 140 MPH), are already designed for these extreme winds or are in the process of being upgraded to meet these requirements.

2. As of this report, a total of 176.39 miles of existing lines, all in the NESC 90 MPH wind zone, remain to be evaluated for compliance with the NESC wind loading requirements.

3. LCRA TSC has evaluated the remainder of its existing transmission lines (totaling approximately 4,500 circuit miles) for compliance and determined that they meet or exceed the NESC wind loading requirements, or are being integrated into LCRA TSC's capital plan to be upgraded to meet these requirements.

LCRA TSC's Storm Hardening Plan is a cost-effective method for addressing the design of transmission lines that are considered to be at slight to moderate risk of storm damage. The Storm Hardening Plan is an enhancement of existing practices already being budgeted for, and implemented by, LCRA TSC. The Storm Hardening Plan can be summarized as follows:

1. All transmission lines will undergo engineering analysis, physical climbing inspections, and maintenance repair on a 10-year cycle.

2. The LCRA TSC 10-year analysis, inspection, and repair cycle will assure that all lines, regardless of wind zone, will be analyzed for compliance with the current NESC wind loading requirements during the 10-year period beginning May 1, 2011.

3. LCRA TSC will continue to employ and continuously improve the existing vegetation management cycles, design and construction standards, remote control capabilities, and remote fault detection capabilities. LCRA TSC will review and implement new technologies, where

appropriate, as a means of improving system reliability.

4. Additionally, as transmission line assets are acquired by LCRA TSC, they will be included in the storm hardening analysis and asset management review programs and evaluated accordingly, with corrective actions developed as needed.

In the summer of 2017, the Hurricane Harvey storm event impacted LCRA TSC-owned transmission lines. LCRA TSC's circuits did not sustain any structure (tower) damage. During this event, LCRA TSC experienced hardware and conductor damage on a 69-kV line (T474) from the AEP Rockport Substation to the AEP Fulton Substation. All repairs were made within 11 days. This line was completely rebuilt in 2004 and meets NESC 2002 design load criteria. All structures on the line are considered hardened and adequate for a 130 MPH extreme wind load case.

In 2019, LCRA TSC acquired 97.16 circuit miles of transmission line from Oncor Electric Delivery Company and Central Texas Electric Cooperative (CTEC), approved in Docket Nos. 49536 and 49357 respectively. These 97.16 circuit miles, all in the NESC 90 MPH wind zone, have been added to the plan for analysis to ensure they can withstand extreme weather conditions in accordance with requirements of section 25.95 of the Public Utility Commission of Texas (PUCT) Substantive Rules. The Oncor and CTEC transmission line acquisitions are included in the 176.39 miles remaining to be evaluated for compliance with the NESC wind loading requirements.

Additional details on LCRA TSC Storm Hardening activities for the period January 1, 2019 through December 31, 2019 will be filed in a separate report under PUCT Project No. 39339.

II. LCRA TSC's Vegetation Management Practices

All of LCRA TSC's transmission line rights-of-way (ROW) are included in a 10-year ROW vegetation maintenance process to ensure that the necessary vegetation clearances are maintained from the conductors. Follow-up ROW maintenance is scheduled on a 2-year or 5-year cycle, as necessary, depending on vegetation growth noted on ROW assessments or line patrol reports. Trees within the ROW that have the potential to grow into the conductors are removed or trimmed back to allow a 5-year trimming cycle. LCRA TSC patrols its ROW in adherence to the

LCRA TSC Maintenance Standard, where 69-kV and 138-kV lines are patrolled at least once every 24 months, and 345-kV lines are patrolled once every 12 months.

III. Inspection of LCRA TSC's Distribution Poles

LCRA TSC is a transmission service provider (TSP) and as such owns no distribution facilities that provide electric service directly to any retail customers. As part of its transformation service facilities, LCRA TSC does own two parallel 12.5-kV circuits, each 2.77 miles in length, that tie adjacent substation busses together at two substations located in Lavaca County. For maintenance purposes, these circuits are patrolled every 12 months.

IV. LCRA TSC's Emergency Preparedness Activities

LCRA TSC monitors severe weather 24 hours a day, 7 days a week and maintains equipment and personnel in a state of readiness for emergency response. These personnel participate in periodic readiness drills that simulate emergency situations such as a severe weather event. Progressive levels of alert exist, each with their own pre-defined actions. LCRA TSC's response plans are reviewed annually and modified as needed. An annual review may include lessons learned from actual severe weather events.

A hurricane making landfall in Texas could most severely impact the portions of LCRA TSC's transmission system and related communication infrastructure that are closest to the Texas gulf coast. Since it is impossible to predict in advance which specific facilities will be impacted, system restoration efforts are designed to be flexible.

LCRA TSC has established a special preparedness plan in case of a severe hurricane affecting the LCRA TSC service area. Hurricanes have the potential, depending on their strength and trajectory, to cause major damage to the LCRA TSC transmission system. Complicating preparations is the fact that both the strength and trajectory of hurricanes are often difficult to accurately forecast. Planning for such an event, therefore, requires not only that LCRA TSC monitor the latest forecasted conditions, but also that staff prepare in advance for a reasonable worst-case forecast. The plans are scalable so that readiness plans can be adjusted as appropriate and as conditions change.

In the weeks leading up to Hurricane Harvey, LCRA staff began to closely monitor the forecasted weather event. LCRA's in-house meteorologist identified Hurricane Harvey as a potential threat to LCRA's service territory the second week in August 2017, and monitored the storm's progress via the National Oceanic and Atmospheric Administration (NOAA), The Weather Company (formerly WSI), and news outlets.

On August 23, 2017, as Hurricane Harvey was growing in strength and intensity, LCRA's Incident Management Team increased alert levels, activated its Emergency Operations Center (EOC), and held internal organization-wide briefings twice daily. LCRA's Public Safety and Resiliency Operations teams participated in State Operations Center (SOC) conference calls and coordination efforts with county emergency managers. LCRA followed its "Severe Weather" process to prepare staff and facilities for the storm.

On August 25, 2017, LCRA raised its operational status to "Emergency Response Level 5 – Full Response (Severe)," and personnel were instructed to ensure food, water and sleeping arrangements were sufficient to sustain staff involved in restoration efforts throughout the storm. LCRA's primary and backup control centers operated in parallel to ensure the integrity of operations throughout the hurricane event.

As a river authority with generation and transmission, LCRA must ensure that its emergency procedures envision an integrated EOC and integrated coordination during weather emergencies such as hurricanes. The EOC is staffed with representatives from all of its business operations and support functions, including dam and irrigation operations, generation and Qualified Scheduling Entity (QSE) operations, transmission operations, park and public safety (police) operations, as well as support functions such as a meteorologist and media support. LCRA's joint EOC activation and operation during Hurricane Harvey allowed LCRA to quickly and broadly share weather information and status information across its business units for river and flood information, as well as for relevant transmission and generation status.

LCRA TSC has prepared enterprise-wide Hurricane Preparedness and Response Checklists for its critical facilities and operations. LCRA TSC owns un-staffed transmission facilities within evacuation zones. Re-entry into hurricane-damaged areas is dependent on local and state emergency response organizations and is coordinated through the LCRA EOC, which interfaces with the SOC. LCRA has issued Critical Infrastructure Response Team identification cards so that

key field personnel may identify themselves to law enforcement personnel and facilitate entry into damaged areas for assessment and restoration purposes.

LCRA TSC's hurricane preparedness plan includes procedures for prioritizing responses in order to minimize restoration time, restore service to end-use customers, and ensure public safety.