



## Filing Receipt

**Received - 2021-09-30 01:04:30 PM**

**Control Number - 50595**

**ItemNumber - 213**



## Public Utility Commission of Texas

### Employee Training Report Required by 16 Texas Admin. Code § 25.97(d)

**PROJECT NO.** 50595

**AFFECTED ENTITY:** LCRA Transmission Services Corporation

#### General Information

Pursuant to 16 Texas Admin. Code § 25.97(d)(2), not later than the 30th day after the date an affected entity finalizes a material change to a document or training program, the affected entity must submit an updated report. The first report must be submitted not later than May 1, 2020.

#### Instructions

Answer all questions, fill-in all blanks, and have the report notarized in the Affidavit.

#### Affidavit

A representative of the affected entity must swear to and affirm the truthfulness, correctness, and completeness of the information provided by attaching a signed and notarized copy of the Affidavit provided with this form.

#### Filing Instructions

Submit four copies (an original and three copies) of the completed form and signed and notarized Affidavit to:

Central Records Filing Clerk  
Public Utility Commission of Texas  
1701 N. Congress Avenue  
P.O. Box 13326  
Austin, Texas 78711-3326  
Telephone: (512) 936-7180

**1. Provide a summary description of hazard recognition training documents you provide your employees related to overhead transmission and distribution facilities.**

On behalf of LCRA Transmission Services Corporation (LCRA TSC), LCRA has a number of programs, processes and practices in place to assist its employees in identifying potential hazards related to overhead transmission and distribution facilities. With regard to hazard recognition training documents, LCRA provides its employees the following:

- a) **LCRA Transmission Services Health and Safety Handbook:** In adherence to LCRA's Transmission Services Health and Safety Handbook, each LCRA Transmission Services department employee is responsible for following all applicable safe work practices and procedures. LCRA's Transmission Services Health and Safety Handbook includes a section on safe working distances ("Safe Working Distances from Energized Lines or Apparatus Field Safety Training") that addresses the minimum approach distances for exposed energized lines and apparatus. As part of LCRA TSC's internal practice to regularly update LCRA's Transmission Services Health and Safety Handbook, the handbook was updated in September 2021 to include a new section on hazard recognition specifically dedicated to line-to-ground clearances of transmission lines and associated employee reporting requirements.
- b) **Monthly Safety Meeting Materials:** The LCRA Safety Department develops materials for monthly safety meetings, which LCRA Transmission Services department employees are required to attend, where in-depth training on topics included in the LCRA Transmission Services Health and Safety Handbook is provided.
- c) **Substation Safety Field Visit Course Curriculum:** The LCRA Transmission Services Substation Safety Field Visit Course promotes safe behavior and practices for non-qualified LCRA personnel (e.g., office workers) that conduct business at sites with transmission facilities operated by LCRA TSC. The training, generally provided on a quarterly basis or as needed, consists of a classroom session as well as a field visit. The training includes hazard recognition and emphasizes conducting a Job Safety Hazard Assessment at the start of every field visit.
- d) **Substation / Right of Way Safety – Key Access Curriculum:** LCRA Transmission Services Substation / Right of Way Safety – Key Access training consists of video training that provides general information and safe work practices, including hazard recognition, for new LCRA Transmission Services department employees that may need to enter a substation and/or transmission line ROW. After completion of the video, the employee is eligible to obtain access keys to such locations.

**2. Provide a summary description of training programs you provide your employees related to the National Electrical Safety Code for construction of electric transmission and distribution lines.**

On behalf of LCRA TSC, LCRA has a number of programs, processes and practices in place to ensure its transmission facilities are planned, designed, constructed, maintained and operated in adherence with requirements set forth in the National Electric Safety Code (NESC). With regard to training programs for its employees related to the NESC for construction of electric transmission and distribution lines, LCRA provides the following:

a) Engineering and Design Practices and Procedures:

i. Consistent with requirements set forth in PUCT 25.101(d) regarding standards of construction and operation of transmission lines, engineers in LCRA's Transmission Line Engineering department are provided Transmission Services engineering procedure L4100. This procedure ensures all project-related work on transmission lines is designed to no less than the NESC-defined clearance standard as a minimum depending on the voltage of operation and to an LCRA TSC-established design clearance that exceeds the NESC threshold. LCRA TSC's more stringent clearance design procedure allows for personnel safety, operational and maintenance flexibility as well as compensating for any surveying and installation tolerances. These procedures are reviewed and updated as appropriate by design engineers in LCRA's Transmission Line Engineering department.

ii. LCRA TSC utilizes an industry standard transmission line design tool (Power Line System-Computer Aided Design and Drafting or "PLS-CADD") that is configured with key design parameters such as terrain, sag-tension, loads, and clearances (vertical and horizontal) necessary for the safe design of new transmission lines and transmission lines to be modified or upgraded. LCRA ensures that its design engineers are trained in PLS-CADD through ongoing and regularly scheduled technical forums facilitated by the tool vendor. Through PLS-CADD, engineers are able to create 3D models of the existing LCRA TSC ROW conditions and with the assistance of Light Detection and Ranging (LiDAR) data, physical 3D representations of conductor sags for various weather scenarios and line loads. The models are then analyzed with specific clearance distances established by the NESC for any possible clearance violations. Along with verifying design tolerances and clearances, LCRA TSC uses PLS-CADD to implement the Transmission Line Assessment Plan (TLAP). As part of this plan, LCRA TSC performs (1) a field review, and (2) a second LiDAR survey to review and compare the field conditions to the original line design.

iii. A designated subject matter expert (SME) within LCRA's Transmission Line Engineering department provides training on NESC changes to other LCRA transmission line engineers and designers and is tasked with updating LCRA TSC's computer models with the latest applicable changes to the NESC. Furthermore, the SME is responsible for compiling a Template PLS-CADD Model (TPM) that contains all of the necessary settings, conditions, specifications, and criteria needed for the proper design and analysis of LCRA TSC's electrical system to NESC standards. The TPM helps to further ensure compliance with NESC specifications by providing a modelling paradigm for transmission line engineers. All transmission engineers are trained in the proper utilization of the template model to help ensure strict adherence to NESC clearances and standards.

b) Project Execution Procedures:

LCRA TSC notifies its employees of the requirement that every design print issued for the construction of electrical facilities as part of its five-year capital plan, including the construction or upgrading of transmission lines, be sealed and signed by a State of Texas registered professional engineer. All transmission line associated capital projects include a task to conduct a LiDAR analysis before the project is closed out. This "as-built" LiDAR analysis ensures transmission lines were constructed or modified as part of the project within the design tolerances, including vertical and horizontal clearances, specified by the design engineer.

c) LCRA Transmission Services Health and Safety Handbook:

As stated in response to 1.b) above, LCRA holds monthly safety meetings that all LCRA Transmission Services department employees are required to attend. These meetings provide in-depth discussions of topics in the LCRA Transmission Services Health and Safety Handbook, including minimum approach distances.

d) Maintenance:

LCRA trains its staff who regularly patrol overhead transmission and distribution lines to identify potential obstacles or encroachments that may affect the safe operation of the lines, including line clearance perspectives. The inspections associated with the patrolling of the lines are guided by written maintenance procedures and performed by staff in LCRA's transmission line operations department.

e) LCRA TSC Right of Way Management Plan (Encroachments Review):


LCRA provides training to its staff from the Real Estate, Engineering and Field Services departments, who meet bi-weekly to review identified transmission line encroachments, including those that may result in potential noncompliance with NESC requirements. These personnel identify and develop mitigation for encroachments along each transmission line ROW to maintain access and ensure safe and reliable operation of each transmission line.

Affected Entity: LCRA Transmission Services Corporation

PROJECT NO. 50595

### AFFIDAVIT

I swear or affirm that I have personal knowledge of the facts stated in this report or am relying on people with personal knowledge, that I am competent to testify to them, and that I have the authority to submit this report on behalf of the affected entity. I further swear or affirm that all statements made in this report are true, correct, and complete.

  
\_\_\_\_\_  
Signature

Sergio Garza  
\_\_\_\_\_  
Printed Name

LCRA V.P., Transmission Design and Protection  
\_\_\_\_\_  
Job Title

LCRA Transmission Services Corporation  
\_\_\_\_\_  
Name of Affected Entity

Sworn and subscribed before me this 30 day of September, 2021.  
Month Year

  
\_\_\_\_\_

Notary Public in and For the State of Texas.

My commission expires on May 5, 2024.

