



Control Number: 50595



Item Number: 140

Addendum StartPage: 0



**Public Utility Commission of Texas**

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



**PROJECT NO.** 50595

**AFFECTED ENTITY:** City of Mesen

**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

140

Affected Entity: City of Mason

PROJECT NO. 50595

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

The City electric crew received Training from  
TEC. Also Attached information.

Affected Entity: City of Moson

PROJECT NO. 50595

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.

We train on the Job Training and Aerial T&E.

See Attached

Affected Entity: City of Mason

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.

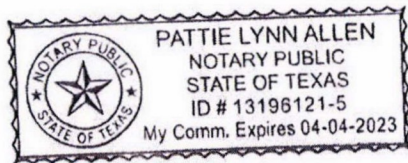
John R. Palacio  
Signature

John R. Palacio  
Printed Name

City Administrator  
Job Title

City of Mason  
Name of Affected Entity

Sworn and subscribed before me this 16<sup>th</sup> day of June, 20.  
Month Year



Pattie Lynn Allen  
Notary Public in and For the State of Texas

My commission expires on 04-04-2023

## **Introduction**

In accordance with the William Thomas Heath Power Line Safety Act, HB 4150, and PUCT Substantive Rule 25.97, Mason is providing a summary description of training programs provided to employees related to overhead transmission and distribution lines. Among other things, this training includes hazard recognition, adherence to NESC guidelines for construction, operation and maintenance of transmission and distribution lines. Training also includes NESC Rule 232, clearance requirements over any of the 178 lakes listed in the Act. Included herein are summaries of the current training modules Mason provides to employees.

## **TRAINING SUMMARIES**

### **Summary of TEC Hotline School I-IV {four-day course}**

Line Construction I-Rubber Gloving from Bucket this course is designed for employees at the apprentice level who have performed some rubber gloving from an aerial device on energized conductors. These students should have safely performed limited live line work from an aerial device with full supervision. Through this course, students gain extensive hands-on training and experience during training exercises with experienced craftsmen, who provide one-on-one training. After completing this course, students should be able to perform basic rubber-gloving techniques safely.

Line Construction II-this course is designed for employees in an advanced stage of apprenticeship training who have at least a year of experience safely performing rubber gloving from an aerial device with full supervision. Students should also have experience performing live line work from an aerial device with full supervision, and should be able to perform live line work safely. Through this course, students gain extensive hands-on training and experience during training exercises with experienced craftsmen, who provide one-on-one training on three-phase construction. After completing this course, the students should be able to perform rubber-gloving techniques safely and plan hot work in a safe and proper work order.

Line Construction III-this course is designed for experienced line technicians in all phases of overhead construction and work performance who deal with multiple hazards associated with overhead line work. Students gain extensive hands-on training and experience during the training exercises.

Line Construction IV-this course is designed for experienced line technicians in all phases of overhead construction and work performance, work procedures, and dealing with CADA, grounding and multi-task job performances. The students will get extensive hands-on training and experience during the training exercises.

### **Summary of TEC Troubleshooting School four-day course}**

This course provides instruction on basic electricity, identifying and correcting line service complaints, identifying errors associated with customer equipment and services, identifying and using all personal protective equipment and cover-up when working on energized equipment, and identifying and understanding all systematic switching procedures to isolate faulted energized equipment and services on overhead and underground systems.

### **Summary of TEC Safety Meeting HB4150 Training {two- to four-hour course}**

The training will include an overview of HB 4150 with an explanation of requirements for the utilities operating in Texas. It will also include hazard recognition training as it applies to the requirements of compliance with the National Electric Safety Code (NESC). This will include clearance requirements for lands, roadways, and waterways. The employee training will define to whom, when and how the bill applies. As well as explanation of guidelines, requirements, and deadlines for filing reports. A portion of the course will include hazard recognition and an explanation of clearance guideline requirements preparing employees to proactively recognize and report hazards and clearance related issues on their utilities' system.

Course Outline:

1. HB 4150 Review
2. Huard Recognition
3. NESC Clearance Guideline Requirements

Course Materials:

1. Power Point Presentation
2. Presentation Material Handouts
3. NESC Clearance Handouts
4. HB 4150 Law

**Summary of Transmission Webinar for PURA §38.102 one-hour course to accompany TEC**

**Safety**

**Meeting)**

PURA §38.102 requires electric utilities including electric cooperatives and municipally owned utilities to provide training to employees related to the National Electric Safety Code (NESC) for construction of electric transmission and distribution lines. This webinar discusses the requirements for transmission facilities which are defined as facilities operating above 60 kV. The webinar will not include discussions regarding distribution lines. This training will focus on transmission clearances, strength issues, and access of overhead transmission lines.

Course Outline:

1. Maximum Operating Temperature and Sag Requirements for Transmission Conductors
2. Additional Ground Clearance Requirements for Transmission Lines
  - a. Maximum Operating Voltage
  - b. Elevation above Sea Level
  - c. Electrostatic Effects to Vehicles below the Line.
3. Additional Clearances: from Building/Signs
  - a. Deflection of Insulators
  - b. Deflection of Structures
  - c. Clearance Based on Maximum Operating Voltage
  - d. Limited Electrostatic Effects to Buildings and Signs below the Line
4. Mid-span Conductor Clearances
5. Power Lines and Phone Lines Crossing below Transmission Lines
6. Grade of Construction for Voltages Over 22kV
  - a. Guying Strength Requirements
  - b. Under-build Strength Requirements
7. Identification of Climable Supporting Structures

Objectives:

1. Determine appropriate clearances for transmission Lines.
2. Define maximum sag for determined clearances.
3. Identify strength requirements for transmission facilities

**Summary of Hazardous Recognition Training for Transmission Facilities (one hour course to accompany TEC Safety Meetings)**

PURA §38.102 requires electric utilities including electric cooperatives and municipally owned utilities to provide hazard recognition training related to overhead transmission and distribution facilities. For the purpose of this training, transmission facilities include those electric facilities operating above 60 kV. One of the challenges to recognizing hazards inherent to transmission facilities is the significant changes in conductor sag for transmission lines. The goal for this training is to educate employees to observe, recognize and report hazardous situations.

Course Outline:

1. Definition of a Hazard
2. Hazards to Report



- a. Non-compliance with NESC
- b. Failed System Components
- c. Failure of Warning Lights/Marker Balls
- 3. Summary of Clearances for Transmission Facilities
- 4. Recognition of Changes in Conductor Sag for Long Spans
- 5. Activities near the Line
  - a. Grading
  - b. Crane Operation OSHA 1926.1408(a)
  - c. Scaffold Clearances OSHA 1926.451(f)
  - d. Construction of Adjacent Buildings/Signs
- 6. Right-of-way Issues
  - a. Danger Trees
  - b. Dead Trees
  - c. Erosion of the Right-of-Way
- 7. Priorities of Reported Issues
- 8. Record Keeping Requirements

**Objectives:**

- 1. Define hazards associated with transmission lines.
- 2. Identify appropriate distance for cranes from power lines.
- 3. Identify required clearances for transmission line related to roads and buildings.
- 4. Define a danger tree.

**Summary of Hazard Recognition /four-hour C-0-R•E course}**

HB 4150 Section 38.102(a)(I) requires utilities to provide a summary of hazard recognition training documents for overhead transmission and distribution lines. Hazard recognition training focuses on equipping electric utility employees with the knowledge to recognize clearance hazards of overhead powerlines.

**Course Outline:**

- 1. Importance of Hazard Recognition for Overhead Power Lines
- 2. Vertical and horizontal clearance requirements
- 3. Importance of an intact system grounding system
- 4. Isolation or/and grounding of anchor guys
- 5. Hazard Assessment Management
- 6. Defining Criteria for Hazard Assessment and Data Collection
- 7. Analyzing Data and Determining Appropriate Actions
- 8. Preparing and Executing an Action Plan
- 9. Report Documentation and Record Maintenance

**Summary of NESC Clearance Requirements <four-hour C-0-R•E course}**

This course will educate all utility personnel whose positions require a working knowledge of the NESC rules, which can include engineers, line workers and staking technicians.

**Course outline:**

- 1. Defining sag requirements-Rule 2302
- 2. Ground clearances-Table 232-1 and 232-2
- 3. Clearances to building and signs-Table 234-1
- 4. Clearances to pools and grain bins-Rule 234E and 234F
- 5. Joint use clearances-Rule 235, 238, and 239

**Summary of Designing Transmission and Distribution Lines Crossing Lake (one-day C-0-R•E course)**

This training reviews clearances as defined by Rule 232 of the NESC and compliance with the U.S. Army



Corps of Engineers easement requirements. This training class will review the applicable sections of the NESC as it relates to designing long spans over lakes and the easement terms and specifications commonly found in easements with the Corps of Engineers. The training provides a demonstration of designing a lake crossing using software such as Pole Foreman and Sag 10.

Course Outline:

1. Requirements of the HB 4150
2. Lake Crossing Issues
3. NESC Requirements for Lake Crossings
  - a. Rule 232 Clearances
  - b. Rule 241 Required Grade of Construction of crossing lakes
  - c. Rule 250D Application of Extreme ice
  - d. Rule 250C Extreme Wind
  - e. Rule 235Cb Design Considerations for Wire Slap and Sag to Lower Conductors
4. Corps of Engineers Easement Requirements
  - a. Vertical Clearance Requirements
  - b. Additional Clearance Requirements for Areas Designated for Rigging or Launching Sail Boats
5. Determining Lake Crossing Clearances
  - a. High Water
  - b. Sag and Tension for Long Crossings
  - c. Worst Case Sag
6. Additional Consideration
  - a. Transmission Adders
  - b. Marker Balls
7. Example problems

NESC Clearance Review of Existing Transmission Lines One-day 00-R•Ecourse

HB 4150 Section 38.102(2) requires utilities to submit a report on training related to the NESC for the "construction of transmission and distribution facilities." This training will concentrate on NESC Section 232-Vertical Clearances. Further, the training will provide the skill sets necessary to inspect transmission lines without creating a model of the line using LiDAR. The target audience for the class will be operations personnel and staking technicians.

Course Outline:

1. Rule 232B Sag and Tension Definition
2. Rule 232 Vertical Clearance above Ground and Water Surfaces
3. Rule 233 Vertical Clearance from Other Utilities
4. Identification of Activity below the Utility Line
5. Example Problems Using Sag 10
  - a. Effect of Long and Short Spans
  - b. Effect of Grade along the Line
6. Determining the Tension of an Existing Line
  - a. Sag Measurements
  - b. Calculation of Tension Based on Sag
7. Use of Software to Determine Ground Elevations
8. Example problems