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### COURSE INFORMATION

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Alternate Title: Overhead Tower Line Const 1

Description:

10-451-102 OVERHEAD TOWER LINE CONSTRUCTION 1 ...introduces the basics of overhead power line construction, safe work practices, protective equipment, and climbing techniques. (Co-Requisite: 10-451-100, Introduction to Electrical Tower Worker)

Instructional Level: 10

Total Credits: 2

Total Hours: 72

### COURSE HISTORY

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Status: Active

Active Date: 5/23/2021

Last Revision Date: 2/17/2023

Revised By: SYSTEM IMPORT

Last Approval Date: 2/14/2022

Approved By: Kristina Wendricks (15002977)

### COURSE COMPETENCIES

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#### 1. Apply FAA Rules and Regulations to obstruction light installation.

Status: Active

Assessment Strategies

1.1. discussion, demonstration

Criteria

Learners will be successful when they are able to:

- 1.1. Define different types of obstructions
- 1.2. Discuss the purpose of each obstruction lighting system
- 1.3. Discuss the standards of each obstruction lighting system
- 1.4. Identify the number of lights required per obstruction type

Learning Objectives

- 1.a. Discuss specific types of various obstruction lights
- 1.b. Identify the type of obstruction light to be used on a specific tower

#### 2. Install tower lighting

Status: Active

Assessment Strategies

2.1. demonstration

Criteria

Learners will be successful when they are able to:

2.1. Install proper wiring

2.2. Install photocell

2.3. Install Mid beacon lights

2.4. Install Top light

2.5. Make all the lights flash red

2.6. Make the mid beacons flash red while top beacon flashes white

Learning Objectives

2.a. Install integrated Controller

2.b. Install Lights

2.c. Modify controller settings

### **3. Install structure and boom modification upgrades**

Status: Active

Assessment Strategies

3.1. demonstration

Criteria

Learners will be successful when they are able to:

3.1. Discuss Various types of tower modifications (per tower type)

3.2. Discuss different apparatuses modifications

3.3. Discuss importance of tower modifications

3.4. Install tower mounted brace bracket

3.5. Install sector frame stabilizer kit

Learning Objectives

3.a. Compare different types of modifications for various tower designs

3.b. Analyze strengths of tower designs

3.c. Install V-boom mod upgrade

### **4. Interpret assembly drawings**

Status: Active

Assessment Strategies

4.1. demonstration

Criteria

Learners will be successful when they are able to:

4.1. Identify symbols and characters

4.2. Construction drawings

- 4.3. Read plumbing diagrams
- 4.4. Identify drawing lines and views

Learning Objectives

- 4.a. Discuss fundamental components of blueprint drawings
- 4.b. Read Radio Frequency Data Sheet (RFDS)

**5. Perform Civil side work (ground/shelter)**

Status: Active

Assessment Strategies

- 5.1. demonstration

Criteria

Learners will be successful when they are able to:

- 5.1. Installing H-frame
- 5.2. Modifying H-frame for equipment
- 5.3. Run Rigid and PVC pipe
- 5.4. Install ice bridge posts
- 5.5. Ground posts and grip strut ice bridge
- 5.6. Install hangers and wave guide
- 5.7. Support cables across ice bridge

Learning Objectives

- 5.a. Building Uni-strut rack
- 5.b. Install Ice bridge

**6. Install telco cable runs**

Status: Active

Assessment Strategies

- 6.1. demonstration

Criteria

Learners will be successful when they are able to:

- 6.1. Cut telco wire to length for installation
- 6.2. Install lugs to telco wire
- 6.3. Labeling telco wires for installation
- 6.4. Lay telco cables across ladder rack and facility Interface frame (FIF) rack
- 6.5. Tie cables to FIF rack and ladder rack
- 6.6. Cut telco to length to terminate end
- 6.7. Lug remaining side
- 6.8. Color code to indicate load vs return
- 6.9. Apply heat shrink to protect color codes and lug connection
- 6.10. Secure cables on mounted equipment in sequence

Learning Objectives

- 6.a. Prepare cables for installation

6.b. Run telco wire cables

6.c. Terminate telco cable runs