

Employer's Requirements for Performing Energized Electrical Work

Monday, September 16, 2019
8:00 AM-9:50 AM

CONVENTION EDUCATION



Zachary Valdez
Sturgeon Electric

This session is eligible for 1 Continuing Education Hour.

For these hours to appear on your certificate, you must:

- Have your badge scanned at the door
- Attend 90% of this presentation
- Fill out the online evaluation for this session:



CONVENTION EDUCATION



Objectives

1. OSHA Requirements
2. NFPA 70E Definitions
3. Types of Energized Work and Permits
4. Rubber Goods Policies & Procedures
5. Lock-Out/Tag-Out Principals
6. Expectations for Daily Safety Briefings
7. Writing effective MOP's
8. Emergency Action Plans
9. Demonstrate Competency in Use of PPE, LOTO, Meters

1) OSHA Requirements

General Duty Clause

Section 5 (a) (1) Each employer:

- (1) **shall furnish** to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
- (2) **shall comply** with occupational safety and health standards promulgated under this Act.

1) OSHA Requirements

General Duty Clause

Section 5 (b)

Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

1) OSHA Requirements

Employees working in areas where there are potential electrical hazards **shall be provided with, and shall use,** electrical protective equipment that is appropriate for the specific parts of the body to be protected and for the work to be performed.”

1) OSHA Requirements

Live parts to which an employee may be exposed shall be deenergized before the employee works on or near them, unless the employer can demonstrate that deenergizing introduces additional or increased hazards or is **infeasible**.

1) OSHA Requirements

Hierarchy of Controls

1. Elimination
2. Substitution
3. Engineering Controls
4. Administration
5. PPE

2) NFPA 70E Definitions

QUALIFIED PERSON: One who has skills and knowledge related to the construction and operation of the electrical equipment and installations and has received specific safety training on the hazards involved.

ELECTRICALLY SAFE WORK CONDITION: The equipment is de-energized and free of hazardous electrical energy.

ENERGIZED WORK: Any activity On or Near exposed energized conductors where a real hazard exists from contact or equipment failure that can result in electric shock, arc flash burn or arc blast.

WORKING ON: Coming in contact with live parts with the hands, feet, or other body parts, with tools, probes or with test equipment

CONVENTION EDUCATION 

3) Types of Energized Work and Permits

Type 1 - Diagnostic Energized Work

- Inspection, testing, voltage and/or current measurements, phase alignment, troubleshooting, circuit and signal tracing, thermal imaging, etc. that are performed on or near exposed live parts within the Limited Approach Boundary
- Verification Associated with LOTO
- Performed by Qualified Persons Utilizing Appropriately Rated Measurement Equipment and Required PPE.



CONVENTION EDUCATION 

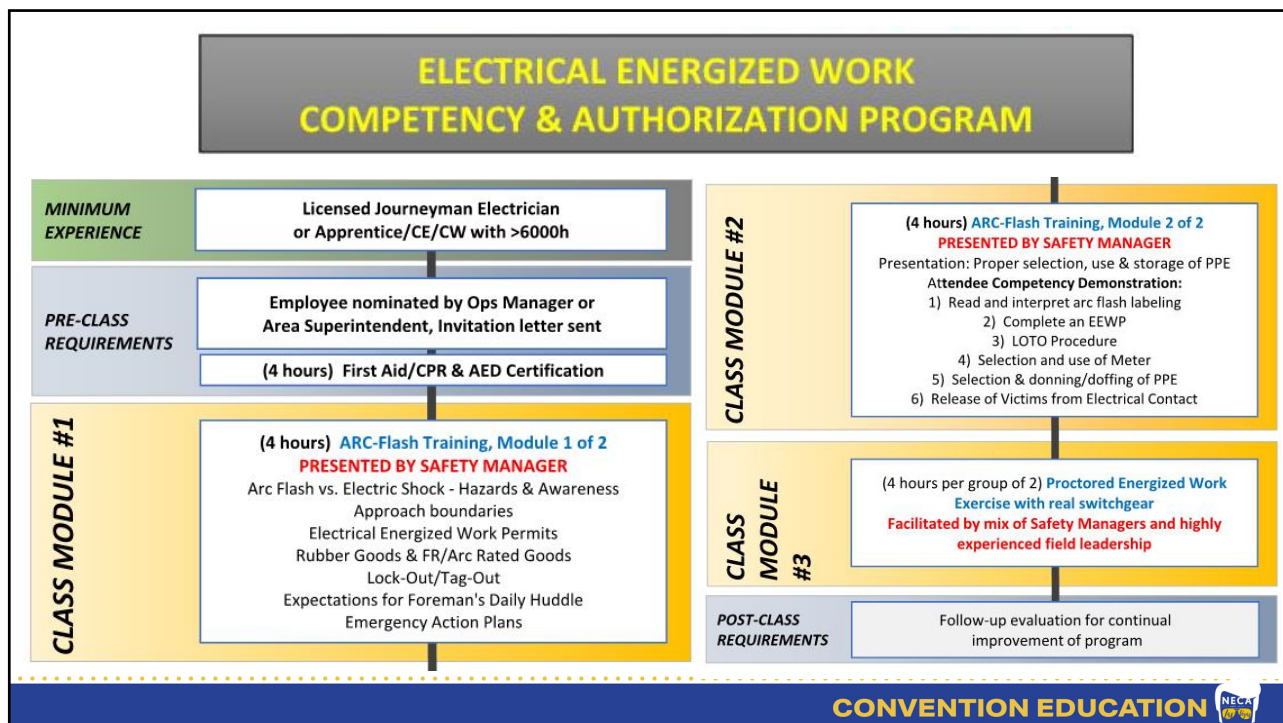
3) Types of Energized Work and Permits

Type 2 - Manipulative Energized Work

- Making, tightening or breaking of energized electrical connections or the replacement, removal, or addition of electrical or mechanical components

Examples:

- Replacing a circuit breaker
- Drilling or punching holes in a cabinet
- Pulling conductors into a panelboard



3) Types of Energized Work and Permits

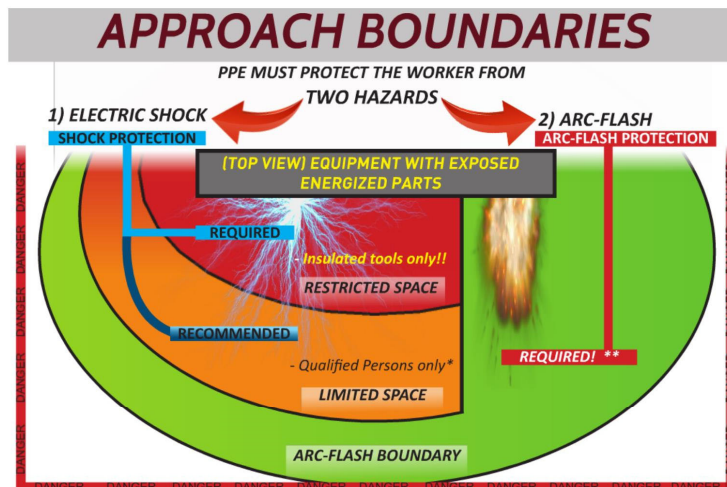
QUALIFIED PERSON: One who has skills and knowledge related to the construction and operation of the electrical equipment and installations and has received specific safety training on the hazards involved.

Energized Work is ONLY permitted to be executed by qualified persons as **designated or authorized by **YOUR COMPANY**.**

Diagnostic Energized Work is allowed only when the diagnostic activity is **not feasible** with the circuit de-energized

130.2 (A) (2) Energized work shall be permitted where the employer can demonstrate that the task to be performed is infeasible in a de-energized state, due to equipment design or operational limitations.

Manipulative Energized Work is restricted to qualified persons.



Refer to 2015 NFPA 70E, table 130.4(D)(a) or (b) for Limited & Restricted Approach Boundaries.

* Note: Per NFPA 130.4 (C)(3) unqualified personnel are allowed in the Limited Space, following hazard advisement and continuous escort by the Qualified Person.

**Note: The Arc-Flash boundary may be greater or less than the Limited Approach boundary

3) Types of Energized Work and Permits

Your Company's Written Definition Of Energized Work:

Performance of any electrical work which will result in exposure of bare energized conductors or circuit parts with voltages above 50VAC or 24VDC.

Minimum Requirements include:

1. Demonstrated competency in Electrical and Safe Work Practices per NFPA70E (e.g. Lock-out/tag-out, rescue, PPE, etc.)
 2. Licensed Journeyman Electrician (except as defined in 17.5.9 or as excepted by local or state requirements)
 3. Possession of a signed Energized Work Permit and Energized Electrical Work Plan (MOP).
- Follow your local Union or State policies surrounding hours of experience required.

4) Rubber Goods Policies & Procedures

- Rubber Goods Inspection and Scheduled Testing
 - Rubber Gloves
 - Rubber Blankets
 - Hand Tools

5) Lock-Out/Tag-Out Principals

- Site-Specific LOTO Plans
- Fully Assembled LOTO Kits
- LOTO Tracking
- Personalized Tags w/Photos

6) Expectations for Daily Safety Briefings

- Documentation as used in court of law
- Evidence of Negligence
- Quality/Completeness indicates crew leader competency
- It's not what you say to your crew, it's whether you *documented* what you said
- Examples of good/poor briefings

7) Writing effective MOP's

- Stop Work Authority if hazards cannot be mitigated
- Critical Components of MOP
 - Key Personnel & respective scopes of work
 - Systems/Equipment Impacted
 - PPE needed
 - Pre-MOP Checklist: permits, forms, tools, PPE, etc.
 - Back-out Plans & EM Contacts, EM Procedure Plans
 - Client Signature

8) Emergency Action Plans

- What is the Facility's protocol?
- What is procedure for unintended incidents i.e. a breaker trips or someone is injured?
- Who to contact/how?

9) Demonstrate Competency

- PPE - Demonstrate understanding of how to correctly inspect, don, store and care for PPE.
- Lockout/Tagout – Demonstrate proficiency in correctly locking out the Source
- Meters – Demonstrate competency in using meters safely and accurately, understand what meters are incorrect, understand calibration stickers

CONVENTION EDUCATION 

Thank You!!

Zachary Valdez
Sturgeon Electric

Employer's Requirements for
Performing Energized Electrical Work

CONVENTION EDUCATION 

Complete the Online Evaluation

Up Next...

- **10:15 am-11:30 am** – *General Session with John Ondrasik* in Mandalay Bay Ballroom EFGH
- **11:30 am-4:00 pm** – *NECA Show Hours*

