

**Standards**

**HMIS-STD-TQ-61018**

TPD-0040

**Electrical Safety**

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## **Change Summary**

### **Description of Change**

Update training requirements for instructors per functional manager request

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**NOTE:** *Employees may print off this document for reference purposes but are responsible to check HMIS Procedure System to ensure the most current version is used to prevent unintended use of obsolete versions.*

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**PURPOSE**

This document describes how the training requirements specified in DOE-0359, Hanford Site Electrical Safety Program (HSESP), are implemented at the Hanford Site.

- 1.0 Electrical Safety training is designed and developed using a performance-based, graded systematic approach to training.

**SCOPE**

This Training Program Description (TPD) applies to four levels of employees:

- 2.0
- General Employees
  - Non-Electrical Workers
  - Electrical Workers
  - First-Line Managers/Field Work Supervisors/Persons in Charge (PIC) who supervise the above employees.

The training identified in this TPD will ensure that employees are trained in safety related work practices and procedural requirements to provide protection from the electrical hazards associated with their respective job or task assignment.

NOTE: *This document does not apply to installations or work involving automotive, watercraft, and similar equipment or installations under the exclusive control of Electrical Utilities for the purpose of metering, transmission, and distribution of electrical energy.*

3.0

**RESPONSIBILITIES****3.1 Director**

1. Ensures Electrical Safety training is taught by qualified instructors using approved lesson plans.
2. Ensures Electrical Safety training materials are approved before delivery.
3. Ensures evaluations of training activities are performed as needed, and feedback from these evaluations is used to improve training.
4. Ensures auditable copies of training documentation are maintained.

**3.2 Electrical Safety Interpretive/Technical Authority**

1. Reviews and approves electrical safety training programs to ensure courses address legal and regulatory requirements.

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**3.3 Manager**

1. Ensure that all employees in the organization receive electrical safety training commensurate with their exposure to electrical hazards.
2. Ensure that employees who operate or configure electrical equipment are qualified by training or experience to safely perform their assigned tasks.
3. Ensure that employees performing electrical work or using portable electric tools and equipment are qualified by training or experience to safely perform their assigned tasks.
4. Ensure that documentation supporting worker qualifications is available upon request.

**3.4 Supervisor**

1. Ensure that employees who work on or near exposed energized electrical conductors are trained in methods of release of victims from contact with energized parts and in emergency first aid, cardiopulmonary resuscitation (CPR) and Automated External Defibrillator (AED) procedures.

**4.0 TRAINING REQUIREMENTS****4.1 General Employees****1. Initial Training**

General employees will receive initial awareness level training for electrical safety by completing the Electrical Safety module of Hanford General Employee Training (HGET).

**2. Refresher Training**

General employees receive awareness level refresher training for electrical safety annually by completing the Electrical Safety module of HGET.

**4.2 Non-Electrical Workers**

1. Non-electrical workers are employees who face a higher-than-normal risk of exposure to energized electrical systems of 50 volts or more. This includes workers who operate electrically powered hand tools, such as drills and grinders.

**a. Initial Training**

The worker shall complete Course #044480, Basic Electrical Safety Training.

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## b. Refresher Training

The worker shall receive refresher training every 36 months after initial training by completing Course #044480.

## c. Elapsed Training

If a worker has not completed refresher training within 36 months of completing Course #044480, the worker may not be assigned tasks where they face a higher-than-normal risk of exposure to energized electrical systems of 50 volts or more, including operating electrically powered hand tools until Course #044480 has been completed.

## 2. Non-electrical workers who operate electrical disconnects/breakers for equipment or buildings will complete the following:

## a. Initial Training

The worker shall complete Course #043820, Breaker Operation Electrical Safety.

## b. Refresher Training

The worker will receive refresher training every 36 months after initial training by completing Course #043820.

## c. Elapsed Training

If a worker has not completed refresher training within 36 months of completing Course #043820, the worker may not be assigned tasks where they operate electrical disconnects or circuit breakers for equipment or buildings until Course #043820 has been completed.

### 4.3 Electrical Workers

## 1. Workers (including electricians and instrument technicians) who face a higher-than-normal risk of contact with electrically energized parts of 50 volts or more and whose duties could require removing a victim who contacted an exposed energized conductor or circuit shall complete the following training:

## a. Initial Training

- Course #043870, NFPA-70E, Standards for Electrical Safety
- Course #170500, Basic Medic First Aid/CPR/AED.
- Course #044483, Contact Release

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## b. Refresher Training

- The worker shall receive refresher training every 36 months after initial training by completing Course #043875. A worker whose duties could require removing a victim who contacted an exposed energized conductor or circuit, receive Course #170501 every 24 months after initial training. A worker shall receive refresher training every 12 months after initial completing course #044483.

## c. Elapsed Training

- If a worker has not completed refresher training within 36 months of completing Course #043870 or #043875, the worker may not be assigned tasks where they face a higher-than-normal risk of contact with electrically energized parts of 50 volts or more until Course #043875 has been completed.
- If a worker whose duties could require removing a victim who contacted an exposed energized conductor or circuit, has not completed refresher training within 24 months of completing Course # 170500 or # 170501, the worker may not be assigned to be the second electrical worker for a task where there is a possibility of contact with an exposed energized conductor or circuit, until Course #170501 has been completed.

NOTE: *The worker may still perform the duties of an electrical worker (i.e., as the first electrical worker).*

#### 4.4 First-Line Managers//Field Work Supervisors/Persons in Charge

1. First-line managers, field work supervisors, and PICs of workers who face exposure to electrical hazards shall have at least the same level of electrical safety training as the workers they supervise.
2. Initial and Refresher Training

The same initial and refresher training identified in Sections 4.1 through 4.3 applies to first-line managers, field work supervisors, and PICs who supervise at-hazard employees.

For example, if the work activity requires an electrical worker to face a risk of contact with an electrically energized 120-volt circuit, the field work supervisor/PIC must be currently trained on Course #043870 or #43875 and Course #170500 or #170501.

3. Elapsed Training

First-line managers, field work supervisors, and PICs whose retraining required by Sections 4.1 through 4.3 has elapsed may not supervise employees performing the identified tasks until the required retraining has been completed.

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**4.5 National Electric Code Inspector**

1. National Electric Code Inspectors shall pass nationally recognized tests for general electrical inspectors and plan review inspectors. The International Association of Electrical Inspectors (IAEI) or the International Code Council (ICC) shall certify these tests.
2. NEC Inspectors shall remain cognizant of the latest status of the National Electrical Code, NFPA 70, via continued education and training.

**4.6 Electrical Worker Who Works with Batteries**

1. A worker who installs, maintains, or otherwise works directly with batteries that present a chemical or electrical hazard (battery or battery banks operating over 50 volts or stored capacity exceeding 1 kWh) shall complete Course # 041680, Battery Safety Training.

**4.7 Electrical Worker Who Works with Capacitors**

1. A worker who installs, maintains, removes, or disposes of capacitors or capacitor banks (rated greater than 200 $\mu$ F in circuits greater than 100V) shall complete Course # 044609, Capacitors.

**4.8 Worker Near Power Lines**

1. Training for crane operators and crew members should be as designated in DOE-RL-92-36, the Hanford Site Hoisting and Rigging Manual.
2. Spotters shall complete Course # 044605, Equipment Operations Near Power Lines.

**4.9 Training Equivalencies, Waivers, and Extensions**

1. Requests for training equivalencies, waivers, or extensions to the training processes identified in this TPD will be approved and documented by the appropriate Hanford contractor responsible Training Manager. The HSESP Committee shall review and approve training equivalencies submitted by Hanford contractors.

**4.10 Electrical Training Instructor**

NOTE: *These requirements only apply to the training specified in this TPD. There are company-specific instructor training requirements that will apply to company-specific electrical safety training.*

1. Shall be qualified in accordance with instructional Staff Qualification (TPD-0017)
2. Shall be evaluated by course Point of Contact (POC) for specific course qualification using the Instructor Evaluation Form A-6006-794. Instructor Evaluation shall be documented in the Electronic Records section of Integrated Document Management System (IDMS).



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**5.0 RECORD IDENTIFICATION**

All records are generated, processed, and maintained in accordance with HMIS-PRO-RM-10588, *Records Management Processes*, or HMIS-PRO-RM-32281, *Electronic Records Management*, as applicable.

**SOURCES****6.1 Source Requirements**

6.0

None

**6.2 References**

DOE-0359, *Hanford Site Electrical Safety Program (HSESP)*  
DOE-RL-92-36, *Hanford Site Hoisting and Rigging Manuals*