

# Arc Hazards and Safety Related Work Practices Outline of Training

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## Section 1: Introduction of instructor and training session

Introduction of Instructor and qualifications/welcome the group

Make sure everyone has signed the training roster for the session

- a. Have everyone introduce themselves in the room to the group and tell of their job or where they went or are going to school if they want.
- b. Ice breaker: Who in this room has been shocked by electricity? Tell us about it.
- c. Does anyone know of someone that has died from a shock? Share if you are willing

**Purpose of this training:** The purpose of this training is to show electrical workers the rules involved when working on energized electrical equipment. Ideally, the goal is to work on de-energized equipment, but the need may arise that it is not feasible. We will discuss topics like personal protective equipment (PPE), training, lock out tag out (LOTO), risk assessments, and energized electrical permits. We will show you the different levels of PPE. Voltage rated tools and electric meters will be discussed also.

## Section 2: Short pretest:

A short pretest will be handed out to everyone. Upon completion, we will go over the answers and begin presentation.

## Section 3: Introduction to OSHA

- a. The Occupational Safety and health Act of 1970 states” to assure safe and healthful working conditions for working men and women; by authorizing enforcement of the standards developed under the Act; by assisting and encouraging the States in their efforts to assure safe and healthful working conditions; by providing for research, information, education, and training in the field of occupational safety and health
- b. Whistle blower act; Always report a safety concern of any kind to your immediate supervisor and work with your place of employment to better the safety environment for all employees and yourself. Osha does have whistle blower rights complaint procedures if safety situation is not managed. See OSHA.gov whistle

blower

[https://www.osha.gov/OshDoc/data\\_General\\_Facts/whistleblower\\_rights.pdf](https://www.osha.gov/OshDoc/data_General_Facts/whistleblower_rights.pdf)

We have a whistleblower fact sheet for you to take with you if you want at the end of our session

**Section 4: Power point presentation:**

Arc Hazards and Safety Related Work Practices

5-minute break at slide #31 and #82

End power point with conclusion slide #125

**Section 5: Hands on examination of examples of electrical PPE**

We will pass around and discuss examples as a group of:

1. Arc flash helmet and suit



2. Rubber gloves and leather protectors



Photos Courtesy of Doug Zemler

## Section 6: Electrical Compliance Checklist

The electrical compliance checklist is a worksheet that we can utilize to help with the workflow on an electrical project. It has step by step questions that can help us and not overlook a procedure. We will go over this and answer questions if any arise.

## Section 7: Posttest

We will give students plenty of time to complete test and offer to read questions if need exists.

## Section 8: Wrap up

Go over post-test and answer any questions about training session, give session evaluations to be filled out before exiting.

Offer electrical safety handouts for those who will take them includes **Electrical Safety Quick Card, OSHA FATALFacts Farmworker Electrocutation, OSHA Fact Sheet Working with Electricity, and OSHA FACTSHEET Your Rights as a Whistleblower.** Our wish is for you to work safe, recognize hazards and tell immediate supervisors at work about hazards and take control of your own personal safety at all times whether at work or home.



## Arc Hazards and Safety Related Work Practices Pretest/Post-test (Answer Key)

Instructor:

Class # \_\_\_\_\_

NAME \_\_\_\_\_ Date \_\_\_\_\_

1. OSHA requires that a qualified electrical worker be trained in:
  - a. Skills and techniques to determine live parts from others.
  - b. Determine minimum safe approach distances for shock.
  - c. Use of PPE, precautionary techniques, and insulated had tools.
  - d. All the above.
  
2. Overcurrent protection shall be modified in certain situations.
  - a. True
  - b. False
  
3. Flexible electric cords connected to equipment may be used to raise and lower the equipment.
  - a. True
  - b. False
  
4. The closer you are to the source, the greater the chance of a high voltage transient surge.
  - a. True
  - b. False
  
5. PPE shall be stored in a location from light, temperature extremes, excessive humidity, ozone, and other substances and conditions.
  - a. True
  - b. False
  
6. Copper expands by a factor of \_\_\_\_\_ when it turns from a solid to a vapor.
  - a. 67
  - b. 670
  - c. 6700
  - d. 67000
  
7. Arc rated clothing is given a rating in:
  - a. Oz/yd<sup>2</sup>
  - b. Cal/in<sup>2</sup>
  - c. Cal/oz<sup>2</sup>
  - d. Cal/cm<sup>2</sup>

8. Circuits of 50 volts or more require use of voltage rated gloves if energized work is necessary.
  - a. True
  - b. False
  
9. The minimum arc rating, for arc rated clothing, arc-flash PPE category 2 is:
  - a. 4 cal/cm<sup>2</sup>
  - b. 8 cal/cm<sup>2</sup>
  - c. 25 cal/cm<sup>2</sup>
  - d. 40 cal/cm<sup>2</sup>
  
10. Portable electrical equipment and extension cords are required to be inspected before each use.
  - a. True
  - b. False

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