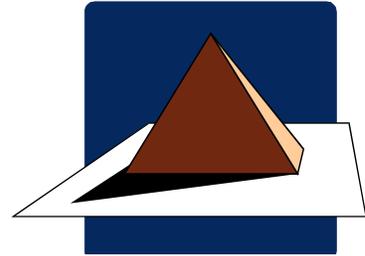


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“Service Measured To The Standard”

## ~ OSHA ELECTRICAL SAFETY TRAINING, II ~

“Electrical shock? It won’t happen to me.” “I know what I’m doing. I won’t get hurt.” How often have you heard statements like these? How confident are you in the personal safety awareness of your electrical maintenance workers? What is your responsibility?

Every day workers receive injuries due to electrical hazards either by contact with an energized component, due to unauthorized re-energization of a circuit, or as the result of equipment failure. This process takes place so quickly that it cannot be stopped once set in motion. If the individual does not suffer life-threatening consequences from the accident, the memories of it will last a lifetime for them...and for their loved ones.

Proper training coupled with years of electrical experience build confidence in the individual’s ability to perform routine tasks without an accident. However, this strength can become a deadly weakness. Overconfident electrical workers, performing routine maintenance or construction tasks, can quickly fall into lackadaisical work practices. Worse yet, their trainees learn the **WRONG** practices.

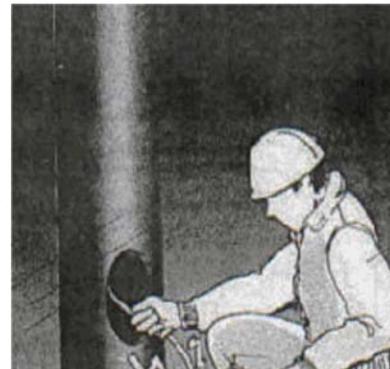


Let’s consider an example of failure in lockout policy procedure. OSHA conditionally allows work to be performed on a de-energized circuit without using a lockout or tagout device. The piece of equipment and the power disconnect device must be near the task site and clearly visible to the worker. Have you seen someone working on a lighting circuit

while the switch is “around the corner”? What can happen? Another person enters the dark room and proceeds to turn the lights on. At that point it is too late to say, “I should have locked out.”

Another example is the use of electrical “fish tape” by construction and maintenance workers to install new or additional wires. These steel tapes are perfect ground paths—and the worker is part of the ground path. A misdirected tape can come into contact with an energized circuit.

Imagine that you are observing the worker in this illustration. What would your audit reveal? What PPE should be used? What would be locked? What drawings would be at the job site?



The worker and the supervisor need to have sufficient knowledge of the job tasks and risks to determine if special PPE is needed; if the tape could enter an energized cubical requiring lockout; if conduit schedule drawings and manufacturer’s drawings or manuals are needed, etc. An audit identifies improper work practices or failure to follow company safety policies; it also gives an opportunity to praise conscientious performance.

OSHA requires audits to be conducted on an annual basis, if not more frequently, for all qualified electrical workers. Why? OSHA reports that nearly half of the 1,000 annual electrical incident fatalities involve circuits with only 120 volts!

### Disclaimer

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## ~ OSHA ELECTRICAL SAFETY TRAINING, II ~

What comprises a qualified electrical worker? *NFPA 70E* provides the definition. “A qualified person is one familiar with the construction and operation of the equipment and the hazards.”



What are the training requirements? Again, referring to the *NFPA 70E*, Part II, 1-5.4.1 for guidance, “A qualified person shall be trained and knowledgeable of the construction and operation of equipment or a specific work method, and be trained to recognize and avoid the electrical hazards that might be present with respect to that equipment or work method. Such persons shall also be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials and insulated tools and test equipment. A person can be considered qualified with respect to certain equipment and methods but still be unqualified for others. Such persons permitted to work within limited approach of exposed energized conductors and circuits parts shall, at a minimum, be additionally trained in all the following:

1. “The skills and techniques necessary to distinguish exposed energized parts from other parts of electric equipment.
2. “The skills and techniques necessary to determine the nominal voltage of exposed energized parts.

3. “The approach distances specified in Table 2-1-3.4 of the Part II and the corresponding voltages to which the qualified person will be exposed.
4. The decision-making process necessary to determine the degree and extent of the hazard and the personal protective equipment and job planning necessary to perform the task safely.”

Who should be trained? Anyone working on a 120 volt circuit is exposed to a potential electrical hazard at “50 volts or more to ground”. OSHA §1910.332 states that training requirements apply to employees who face a risk of electric shock that is not reduced to a safe level by electrical installation discussed in OSHA §1910.303-308. The following list identifies some of the job classification categories.

- Blue-collar supervisors\*
- Electrical engineers\*
- Electronic technicians\*
- Electricians
- Industrial machine-operator\*
- Mechanics\*
- Stationary engineers\*
- Welders

\* “Workers in these groups do not need to be trained if their work or the work of those they supervise does not bring them or the employees they supervise close enough to exposed parts of electric circuits operating at 50 volts or more to ground for a hazard to exist.”

What is the employer’s responsibility? *NFPA 70E*, Part II, 2-3.1 – “The employer shall implement an overall electrical safety program that directs activity appropriate for the voltage, energy level and circuit conditions.”

When was the last refresher training provided for OSHA 1910.137 (PPE), .147 (lockout), .269 (utility systems) and/or .331-335 (general electrical system)? Are you aware of the changes in the 2000 edition of the *NFPA 70E*?

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