

# Electrical Safety for Inspectors

4 Days, 2.8 CEUs

Electrical hazards can result in serious injury or death of personnel working on or around electrical equipment. This course provides information to ensure a safer workplace. Participants are trained to understand electrical hazards, electrical safety regulations, the use of safe work procedures and personal protective equipment (PPE). It is difficult to keep up with revisions and updates to OSHA, NFPA 70E, NEC and PPE technical improvements.

In this course the participant is familiarized with the latest changes in the electrical safety industry. Information is provided to help realize the benefits of complying with regulations and standards; such as fewer electrical accidents and improved electrical system reliability with the corresponding reductions in losses due to accidents and injuries.

This course is intended for new, multi-craft or experienced electricians, technicians, engineers, supervisors and safety managers that install, maintain, repair, troubleshoot or work around industrial electrical systems. This course provides critical information to help meet the mandated training requirements of OSHA 1910.332. The participant should have basic knowledge of AC/DC electricity.

## Lab and Classroom Attire

AVO is committed to the personal safety of each participant and requires safety glasses, long pants and ANSI rated "safety-toe" work shoes for lab activities. Lecture courses may involve a tour of a work or shop area and for this reason open-toe shoes and shorts are not considered appropriate attire for the classroom.

## Learning Objectives:

To receive 2.8 CEUs, the participant must attend 4 days of class (28 contact hours) and attain a minimum grade of 80% on the final exam. Upon completion of this course, the participant will demonstrate that he/she is able to:

- Explain the hazards and effects of electricity.
- Interpret applicable regulations.
- Establish a preventive maintenance program per NFPA 70E & 70B
- Identify hazardous energy control measures for industrial facilities as required by OSHA.
- Use safe work practices for work on or around industrial electrical equipment and overhead lines.
- Select appropriate personal protective equipment (PPE) for a variety of applications.
- Apply the general requirements of electrical regulations and standards to establish an electrically safe work environment.
- List the requirements for an electrical safety inspection of an industrial, utility or utility-like installation following a comprehensive checklist.

## SCOPE

### Day 1\* (7 contact hours)

- I. Introduction (0.5 hr)
  - A. Schedule
  - B. Course Outline
- II. Hazards of Electricity (2.5 hrs)
  - A. Electrical Shock
  - B. Electrical Arc Flash
  - C. Electrical Arc Blast

- III. Electrical Safety Regulations and Standards (1.5 hr)
  - A. OSHA
  - B. Overview of the Regulations and Standards
- IV. National Fire Protection Association (NFPA) (2.5 hrs)
  - A. NFPA 70® *National Electric Code*® (NEC®)
  - B. NFPA 70B® *Recommended Practice for Electrical Equipment Maintenance*®

### Day 2 (7 contact hours)

- V. Deenergized Work (LOTO) (4 hrs)
  - A. Deenergization
  - B. Confirming a System Is Deenergized
  - C. One-Line Diagrams
  - D. Lockout/Tagout
  - E. Application of Control
  - F. Additional Requirements
  - G. Additional Regulatory Requirements for Electrical Lockout
  - H. Typical Minimal Lockout or Tagout System Procedures

\*Class scheduling times may vary based on discussions and size of class

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## SCOPE (continued)

- VI. Energized Work (3 hrs)
  - A. Definition of Energized Work
  - B. Definition of Qualified Person
  - C. Electrical Hazard Risk Assessment Considerations
  - D. Training Requirements for a Qualified Person
  - E. Regulatory Requirements for Energized Work
  - F. Overhead Line Clearances
  - G. Protective Equipment and Tools

### Day 3 (7 contact hours)

- VII. Personal Protective Equipment (3.5 hrs)
  - A. Protective Techniques
  - B. Electrical Protective Equipment
  - C. Arc Flash Protective Equipment
  - D. Arc Blast Protective Equipment
  - E. Other Protective Equipment
  - F. Energy Detection Equipment
- VIII. General Requirements (3.5 hrs)
  - A. Examination, Installation, and Use of Electrical Equipment
  - B. Electrical Equipment Work Space
  - C. Requirements for Industrial Facilities with Utility-Like Installations

### Day 4 (7 contact hours)

- IX. Electrical Inspection Techniques and Procedures (6 hrs)
  - A. OSHA and Self Auditing
  - B. OSHA Mandated Written Programs
  - C. Principle Items to Inspect
  - D. Conducting the Inspection
  - E. Use of Checklists
- X. Conclusion (1 hr)
  - A. Review
  - B. Final Exam