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## Electrical Safety For Non Electrical Workers - Awareness Training

Contact us Today for a FREE quotation to deliver this course at your company's location.

<https://www.electricityforum.com/onsite-training-rfq>

This course is intended to raise awareness about electrical safety both on and off the job. The target audience is non-electricians, including maintenance workers, machine operators and anybody who works with and around electrical tools or equipment. This course covers common situations that could place the non-electrical worker into dangerous situations.

Virtually every worker on an industrial or commercial job site works with or uses electrically-powered equipment. Most of these workers have no concept of the hazards they could possibly be exposed to by performing common, everyday tasks. Jewelry contacting energized components, overstressed power strips, coffee pots and heaters placed into the workplace all can increase the risk to the employee and to production if the worker is not aware of the potential issues involved.

This course (which comes with a CEU certificate of completion) covers workplace electrical safety and the methods used to recognize, identify and avoid the electrical hazards of arc flash and personal shock. The worker's roles and responsibilities are summarized. The

course also teaches the effects of electrocution on the body and principles such as touch step potential. Normal and abnormal equipment conditions are described and students are trained in how to properly identify potential electrical hazards. The course teaches basic safe electrical work procedures, how to avoid the risk of personal shock related to power tools, broken power cords and the hazards when not using GFCIs. The risk of personal injury related to Overhead Power Lines is also identified.

### **COURSE OBJECTIVES**

- Basic electrical terminology and definitions.
- Raise awareness of electrical safety
- Instruct how to recognize electrical hazards
- Provide ways to eliminate, remove and prevent electrical hazards in the workplace
- Emphasize the extreme importance of observing all electrical safety requirements and practices
- Instruct what to do during an electrical accident

### **LEARNING OBJECTIVES**

- Review of electrical hazards, their causes and the potential for injuries and fatalities
- Understand how to avoid these hazards
- Common situations that can increase risk to workers
- OSHA's electrical safety-related work practices regulation as it applies to non-electrical personnel
- Understand electrical LOTO and the Safe Work Zone
- Understand applicable OSHA regulations for non-electrical workers
- Understand and apply NFPA 70E requirements for unqualified persons
- Understand the safe approach distances for shock and arc flash and the purpose of a safe work zone

## WHO SHOULD ATTEND

- Industrial plant managers and supervisors
- Occupational health and safety coordinators
- Government building owners, managers, operators and building service technicians
- Private commercial and institutional building owners, managers, operators and Building service technicians
- Non Electrical Skilled workers such as: Fitters, Painters, Carpenters, Laborers, Utility Operators, Equipment Operators, Janitors, Waste Handlers and Warehouse Workers, HVAC Personnel

## STUDENTS RECEIVE

- FREE 100-Page Digital Electrical Safety Handbook (Value \$20)
- \$100 Coupon Toward any Future Electricity Forum Event (Restrictions Apply)
- 1.4 Continuing Education Unit (CEU) Credits
- FREE Magazine Subscription (Value \$25.00)
- Course Materials in Paper Format

## COURSE OUTLINE

### **Basic Electrical Terminology**

- Current
- Resistance
- Voltage
- Conductors
- Insulators
- Grounding

## **Hazards of Electricity**

- Electrical shock
- Arc flash
- Arc blast

## **Step and Touch Potential**

- Step potential
- Touch potential

## **Electrical Shock**

- Dangers of electrical shock
- Effects of electricity on the body
- How is an electrical shock received?
- Low voltage does not mean low hazard
- Examples of electrical burns and injuries
- Examples of electrical accidents involving non-electrical personnel

## **Arc Flash**

- Characteristics of an arc flash

## **Arc Blast**

- Characteristics of an arc blast

## **Recognizing Electrical Hazards**

- Exposed wiring
- Tripping and abrasion hazards
- Cabinets, boxes, and fittings
- Daisy chain multi-outlet strips
- Electrical boxes
- Damaged grounding plugs
- Broken conduit and damaged equipment
- Overhead lines
- Underground cable

### **Safe Work Practices**

- Portable electric equipment and flexible cord set requirements
- Electrical power tool safety
- Cord control
- Extension cords - items to consider before use
- Resetting breakers
- Conductive apparel
- Wall penetrations
- Equipment applications and standards labeling
- Using ground fault circuit interrupter to protect workers
- Circuit breaker tripping and molded case circuit breakers
- Downed power lines
- Ladders used around electrical hazards
- Approach distances to overhead lines.
- Specific clearance requirements around electrical equipment
- Emergency generators
- Battery banks
- Battery chargers

### **Electrical System Intrusions**

- Excavating, cutting or drilling into electrical systems

## **Obeying All Signs and Barriers**

- Signs, symbols, tags, and barricades are used to warn personnel of potential electrical hazards - know how to read and obey them

## **Electrical Hazards Encountered by Specific Work Groups**

- Welders
- Heavy equipment operators
- Excavators
- Warehouse workers
- Painters

## **Electrical Emergencies**

- Electrical accidents
- Electrical rescue techniques
- Role of CPR

## **Electrical Safety For Building Owners, Managers and Supervisors**

- Federal legislation - Bill C45
- Provincial electrical Safety legislation governing the workplace
- Canadian Electrical Code
- Overview of NFPA 70e/CSA Z462 Electrical Safety in the Workplace (simplified)
- Who is a qualified electrical person?
- Who is an unqualified electrical person?
- Safe work vs unsafe work

## **Hiring outside contractors who are NFPA 70e/CSA Z462 Compliant (checklist)**

- Provide Arc Flash assessment to contractors
- Provide hazard assessment of work location(s) to contractors

- Have contractors provide their procedures when working with electricity
- Contractor qualifications and who from contractor to take out electrical permit as per local regulation

### **Electrical Safety Training Programs**

- Meeting provincial regulations
- Adopting electrical standards such as NFPA 70e/CSA Z462
- Establishing and identifying who within the facility is qualified to work on electrical equipment

### **Electrical Energized Work Permits**

- Where energized work permit needed
- Exemptions
- Sample of energized work permit

### **Lockout Rules**

- Individual lockout requirements
- Group lockout requirements
- Locks, tags and hardware to be used

### **Role of "the Safety Watcher"**

- Qualifications of safety watcher
- Where safety watcher used
- Authority of safety watcher

### **Rules governing Electrical Equipment Labeling**

- Labelling to address electrical code requirements

- Labelling needed to meet NFPA 70e/CSA Z462 standard
- Who applies labelling

### **Electrical Safety Clothing and PPE for electrical personnel**

- Description of all PPE as related to electrical shock and arc flash
- Training on use of PPE
- Procedures where PPE is required

### **Review of expectations Questions and Answers**

### **COURSE TIMETABLE**

#### **Both days:**

Start: 8:00 a.m.

Coffee Break: 10:00 a.m.

Lunch: 12:00 noon

Restart: 1:15 p.m.

Finish: 4:30 p.m.

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