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## Advanced Electrical Safety Training

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

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

Electrical workers face high occupational risks on the job – especially when energized electrical equipment is involved. That's why The Electricity Forum Training Institute provides Advanced Electrical Safety Training. Our course utilizes NFPA 70e/CSA Z462 requirements, preparing electrical workers for the potential electrical hazards in the workplace and teaches the necessary precautionary measures to avoid such hazards.

This ALL NEW 1-day Advanced Electrical Safety training course is best suited for students who want a more in-depth look at NFPA 70e/CSA Z462 arc flash standards, an in-depth look at:

- how to coordinate company safety standards and occupational health and safety management standards;
- how to develop and deliver meaningful electrical safety programs;
- how to perform proper risk assessments and lockout programs; equations for defining electrical safety zones;

- how to work within the limited approach boundary of overhead lines or buried power lines;
- methods for designing electrical safety into equipment and systems, and
- the safe performance of substation tasks.

Our Advanced Electrical Safety training course is designed to take students and their organizations to a deeper level of understanding, planning and coordination of electrical safety program development and implementation. Our electrical safety training course is designed for electrical safety specialists who are responsible for electrical systems and safety programs that help their electrical workers to identify shock and arc flash hazards and prevent injuries and incidents associated with those hazards.

### **COURSE OBJECTIVES**

- Identify electrical safety training requirements for qualified workers
- Identify best practice Regulations that address shock and arc flash hazards
- List the steps to perform a shock hazard analysis and describe each step
- Define the shock protection boundaries and describe their use
- List the personal protective equipment required for shock protection
- List the steps to achieve an electrically safe work condition
- Explain what an arc flash is and the injuries that can result
- Identify when an arc flash hazard exists
- List the steps to perform an arc flash hazard analysis and describe each step
- Define the term “incident energy,” identify the key electrical system variables that affect it
- Define the term “arc flash protection boundary” and explain its application
- Define the term “arc-rated” and explain the difference between “flame-resistant” clothing and “arc rated” clothing
- Select appropriate personal protective equipment for arc flash hazards
- Describe methods of selecting arc flash PPE using the latest NFPA 70e/CSA Z462 Tables
- List the testing and maintenance requirements for personal protective equipment

- Identify the key objectives of job safety planning

### **WHO SHOULD ATTEND**

Employers, supervisors, lead hands, electrical engineering and maintenance personnel who perform or directly or indirectly or oversee live electrical work in the workplace.

- Electrical Engineers
- Plant Electricians
- Instrumentation Mechanics
- Technicians
- Electrical Safety Managers & Safety Professionals

### **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**

#### **ONE-DAY COURSE**

**Instructor**

*John Robin, Arc Flash/Electrical Safety Consultant, The Electricity Forum*

### **1. Co-coordinating Company Safety Standards with Occupational Health and Safety Management Standards**

- Electrical accidents are one of the 4 most common causes of death and serious injuries in the workplace.
- Use of quality management system to reduce and eliminate risk at workplace.
- Remediation of hazards for a safer workplace.

### **2. Electrical maintenance, and Company safety standards**

- What type of Maintenance system works best for your company?
- Electrical drawings, and how not having up to date drawings can impact safety and production.
- Root cause analysis and how to get to the real reasons behind equipment failure.

### **3. Safe approach Zones**

- How approach zones are defined, and what standards are used to define them.

### **4. Methods for determination of Incident energy and arc flash boundaries**

- Equations to define electrical safety zones.
- How voltage classes are determined in electrical equipment.

### **5. Company Electrical safety programs**

- Planning to include all personnel that are subjected to electrical hazards in your plant.
- Getting your crews to “buy in” to the safety program developed within an organization.

- Setting up a logical sequence of introduction for safety procedures within a workplace.

## **6. Risk assessments**

- Identifying hazards
- Organizing tasks in a logical sequence
- Estimating risk in the course of conducting a procedure
- Appropriate risk reduction techniques

## **7. Lockout programs**

- Definitions that impact lock-out procedures
- Choosing your companies lock-out locks
- Identifying lock points on all company equipment

## **8. Selection of PPE and changes in 2015**

- Two category standard clothing system
- Looking at tables in CSA standard, and impact on day to day working apparel for non-electrical, and electrical workers.

## **9. Job briefing and tailboard meetings notes**

- What to include in daily briefings
- How to keep up to date with work conditions, and make changes as jobs progress

## **10. Working within the limited approach Boundary of overhead or buried power Lines and equipment**

- Distances to use when working within boundaries of High Voltage lines
- Delineation of approach distances for workers with boundaries of H.V. lines
- Operation of equipment within this zone.

- Crane operations within HV zones
- Excavations in the vicinity of HV zones
- Over height Vehicle operations in HV zones

### **11. Design considerations**

- Responsibility of facility operators to design safety into equipment
- Design and construction of operating equipment
- Risk reduction methods

### **12. Arc flash and shock warning labels**

- Standard for producing Arc Flash warning labels
- Electrical code requirements for warning labels
- Detailed label

### **13. Substation systems and equipment**

- Safe performance of substation tasks in or in the vicinity of operating substations.
- Limits of approach, and changes due to environmental conditions
- Heat flux rates in HV equipment
- Safe grounding practices
- Disconnects and fuses
- Transformers
- Cable vaults
- insulators

### **14. Shock injuries from electrostatic discharges**

- Identification of areas of potential shock hazards from static discharges
- Liquids and production of electrostatic shock
- Control methods

## **15. Workplace electrical Safety**

- Human error and cause of electrical accidents
- Defining errors causing incidents in the workplace
- Procedure for workers to progress a task
- Job planning to build safety into every job
- Tool box talks
- Post job evaluation of the success (or failure) of job plans
- Communication during tasks
- Identification of equipment being worked on during switching operations
- Supervisor responsibilities during electrical tasks
- Worker responsibilities during electrical tasks

### **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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