THE ELECTRICITY FORUM
Content Community Connection

United States
One Franklin Square, Suite 302
Geneva, NY 14456
Tel: 315-7889-8323
Fax: 315-789-8940

Canada
1885 Clements Rd, Unit 218
Pickering, ON L1Z 1X5
905-686-1040
Tel: Fax 905-686-1078
Toll Free: 1-855-824-6131

70e Training - Electrical Safety in the Workplace

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

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

This NFPA 70e Training course teaches safe work practices related to electrical dangers in the workplace. The successful participant will gain a solid understanding of hazards encountered while operating or maintaining electrical installations in the low voltage (below 750V) class including a full understanding of the arc hazard categorization, appropriate PPE selection and safe work procedure.

This arc flash safety course is designed to assist organizations to identify shock and arc flash hazards and prevent injuries and incidents associated with those hazards.

THIS COURSE WILL TEACH YOU HOW TO

- 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 three NFPA-70e 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
- List the steps to install and remove temporary protective grounding equipment
- 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 the Hazard/Risk Category method of selecting arc flash PPE
- List the testing and maintenance requirements for personal protective equipment
- Identify the key objectives of job safety planning

WHO SHOULD ATTEND

- Industrial, Commercial, Institutional Electrical Engineering and Maintenance Personel
- Electrical personnel who work on or near energized and de-energized electrical equipment
- Electrical Safety Managers and 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

OVERVIEW

- Electrical Hazards
- Existing and Proposed Standards
- Preparing to Work Safely
- Determining Safe Approach Distance
- Determining Arc Hazard Category
- Fault Current Calculations
- Determination of Arcing Fault Clearing Time
- Boundary Calculations
- Determining Arc Flash Hazard Risk Category
- Incident Energy Exposure Calculations
- Hazard Analysis

INCIDENT CAUSES

- Unsafe Switching Acts
- Not following Operating Procedure
- Unsafe Working Conditions
- Not following Maintenance procedures

ELECTRICAL HAZARDS

- 5 Main Factors in Electrical Accidents
- Electrical Shock
- Arc Flash Defined
- Incident Energy Defined
- Arc Flash Burn Injuries
- Arc Blast Pressure
- Inhalation Injuries

EXISTING AND PROPOSED STANDARDS AND IMPORTANT DATE

- OSHA 1910.269
- NFPA 70E-2012 edition
- NESC Rule 410A3

DEFINITIONS

- Essential to the application of this standard

PREPARING TO WORK SAFELY (Dead Work)

- Safety Training
- Emergency Procedures
- Detailed Description of a "Job Briefing"
- Use of Equipment
- Establishing an electrically safe work condition
- Lockout / Tagout
- Isolation and Grounding

SHOCK HAZARD PROTECTION (LIVE WORK)

- Understanding and Applying NFPA 70E Tables
- Shock Protection Boundaries
- Limits of Approach
- Energized Work Permit
- Limited Approach Boundary
- Restricted Approach Boundary
- Prohibited Approach Boundary

DETERMINING ARC HAZARD RISK CATEGORY (LIVE WORK)

- Using NFPA 70E Table 130.7

FAULT CURRENT CALCULATIONS

- Power System Short Circuits
- Bolted Faults
- Calculating Prospective Short-Circuit Current
- Calculating Bolted Faults
- Arcing Faults
- Calculating Arcing Fault Current

DETERMINATION OF ARCING FAULT CLEARING TIME

- Time Current Curves
- Coordination studies

BOUNDARY CALCULATIONS

- Detailed Examples and Exercises

DETERMINING ARC FLASH HAZARD RISK CATEGORY

- Detailed Examples and Exercises
- Simplified Table Approach
- Matrix Table Approach
- Single Line Diagram
- Short Circuit Study
- Coordination Study
- NFPA 70E Table 130.7 – Protective Clothing and PPE Matrix

INCIDENT ENERGY EXPOSURE CALCULATIONS

- Selecting the Correct Level of PPE
- NFPA 70E Calculation Method
- Calculating Arc in a Cubic Box
- Comparison of "Arc in Open Air" to "Arc in a Box"
- IEEE 1584 Method

HAZARD ANALYSIS

- Demonstration of Software Packages
- Arc Flash Labels

NFPA 70E AND PPE

- Head Face Neck Chin
- Eyes
- Body
- Hand and Arm
- Foot and Leg
- Tools and measuring instruments