

Class: Arc Flash Electrical Safety NFPA 70E®

Description:

The foremost goal of this two-day Arc Flash Electrical Safety course is to keep workers safe while working on or around electrically energized equipment. The course is structured to help companies fulfill requirements set forth in OSHA 29 CFR Part 1910, Subpart S Electrical and NFPA 70E® “Standard for Electrical Safety in the Workplace,” which requires this type of instructor-led training for anyone working with electrically energized equipment. This course will guide you through the information contained in NFPA 70E 2021. Overall, this program is designed to reduce liability for the employer while establishing a culture of safe work practices among employees; it is a key component of any electrical training program.

Classroom Hours: 16 hours

Presentation: Classroom and Virtual Classroom Online - lecture

Anticipated size: Maximum 20 students

Attendance Verification:

In the classroom, all students must sign in both days, provide their ID card, and note their state license number on the sign-in sheet to apply for Continuing Education Units in their state. The rosters are kept on file for three years at TPC Training headquarters and will be submitted in accordance with the state’s requirements.

In the virtual classroom, all students must log into the Virtual Training Room for both days and remain logged in for the entire session both days. These students are allowed and expected to participate fully in the classroom dialogue, exercises, and Q&A throughout the 2-day live course via a web link. The students engage with the instructor through an audio AND visual connection, so we know whether they are paying attention or not. Participation is also verified by a report after the completion of class that shows how long each participant was in the VTR.

Participant Evaluation:

Every student that attends the full training session will receive a three star certificate of completion at the end of the course, as well as complete a training evaluation form.

Fees: \$1195 for 2 days, all materials included

Material/Visual Aids: IPES 202 0920 ATMT Electrical Safety Powerpoint Presentation
WBES 301 0221 ATMT Electrical Safety Student Workbook
REES 202 0920 ATMT Electrical Safety Reference Guide

Training Outcomes

At the completion of the course, students will know:

- Identify Electrical Hazards
- Perform Risk Assessments to mitigate electrical hazards
- Establish an Electrically Safe Work Condition using animation
- Calculate Fault Current
- Determine the process for Qualifying an Electrical Worker
- Choose the correct meter for multiple applications
- Understand the requirements for a successful Electrical Safety Program
- Be able to interpret the information on an Arc Flash Warning Label
- Choose the correct PPE for specific hazards
- Understand the Maintenance Requirements for Electrical Equipment
- Understand Safety Requirements for Specific Equipment
- Understand OSHA's role with NFPA 70E

Course Outline

Electrical Safety & the Qualified Electrical Worker

- Responsibilities & Requirements for a Qualified Electrical Worker
- Who Sets Safety Standards?: NFPA 70E® & Others
- Understanding OSHA's Role in Electrical Safety Regulations
- Electrical Safety Culture in Your Facility

Electrical Hazards

- Severity of Electrical Injuries – Examples and Case Studies
- Shock, Arc-Flash & Arc-Blast
- Understanding GFCIs
- Primary Causes of Arc Flashes
- How to Identify Electrical Hazards
- Understanding Ratings of Arc-Rated Personal Protective Equipment (PPE)
- The Importance of Grounding Systems
- Risk Assessment Procedures
- Emergency Response

Safety Related Work Practices

- In-Depth Discussion of OSHA 29 CFR 1910 and NFPA 70E®
- Work Related Definitions
- Safe Operation of Electrical Meters – Ratings and Categories
- Establishing Safe Work Conditions
- Electrical Lockout / Tagout
- Working On or Near Energized Parts

- Determining Proper Approach Distances
- Completing Energized Electrical Work Permits
- Understanding an Arc Flash Analysis
- Interpreting Arc Flash Hazard Warning Labels
- Reading Arc Flash One Line Diagrams
- Personal Protective Equipment (PPE)

Safety Related Maintenance Requirements

- Understanding General Requirements
- Common Electrical Equipment
- Premises Wiring
- Controller Equipment
- Fuses & Circuit Breakers
- Rotating Equipment
- Hazardous (Classified) Locations
- Batteries & Battery Rooms
- Portable Electrical Tools & Equipment (PET)

Requirements for Special Equipment

- Electrolytic Cells
- Batteries & Battery Rooms
- Lasers
- Power Electronic Equipment

Electrical Safety Program

- Planning an Electrical Safety Program
- Training Requirements
- Complying with NFPA 70E®
- Interpreting Arc Flash Analysis Reports
- Determining your PPE Requirements
- Documentation of Records

Course Timeline

DAY ONE			
Start Time	End Time	Hours	Topic
7:30	8:00	0.5	Registration/Sign-In
8:00	9:30	1.5	Electrical Safety & Qualified Electrical Worker - OSHA & NFPA 70E Overview (General) - Articles 110.22 and 110.26 - Article 90.1, 90.2, 90.3, 90.4, 90.5, 90.6 - Qualified Electrical Worker/OSHA Subpart S
9:30	9:45	0.25	Break
9:30	12:00	2.25	Electrical Hazards - Article 130.4, 130.5, 130.6 - Arc Flash
12:00	1:00	1	Lunch
1:00	2:30	1.5	Safety-Related Work Practices - Article 110.1, 110.2, 110.3, 110.4 - Article 110.5, 110.6, 100.7
2:30	2:45	0.25	Break
2:45	4:30	1.75	Safety-Related Work Practices (Continued) - Article 110.8 - Article 110.9 (includes B and B(3)) - Article 120
DAY TWO			
Start Time	End Time	Hours	Topic
7:30	8:00	0.5	Registration/Sign-In
8:00	9:30	1.5	Safety-Related Maintenance Requirements - Article 200.1 & 300.1
9:30	9:45	0.25	Break
9:45	12:00	2.25	Safety Work Practices & Requirements for Special Equipment - Article 250
12:00	1:00	1	Lunch
1:00	2:45	1.75	Installation Safety Requirements
2:45	3:00	0.25	Break
3:00	4:30	1.5	Electrical Safety Program