Safety

NFPA 70E® – Electrical Safety and ARC Flash Compliance Course Description

COURSE AGENDA

Day 1

- Arc Flash Ruling
- Operational Voltage
- Arc Flash Hazard
  - Requirements
  - Facts and Statistics
  - Thermal Intensity
  - Pressure
  - Auditory
  - Projectile
  - Inhalation
- Flash Hazard Statistics
- Protecting the Electrical Worker
  - Company Safety Programs
  - Electrical Safety Program
  - Government Regulations
  - OSHA 29 CFR 1910.333(a)(1)
  - OSHA 29 CFR 1910.335
  - OSHA 29 CFR 1910.132(d)(1)
  - Enforcement
- Applicable Standards
  - 2002 NEC Article 110.16 Flash Protection
  - NFPA 70E® 2009 110.8(A)
  - Electronically Safe Work Conditions
  - Qualified Person
  - NFPA 70E® 2009 130.3
- Arc Flash Hazard Boundary Terms
  - Flash Protection
  - Limited Approach
  - Restricted Approach
  - Prohibited Approach
- Energized Work Permit
- Article 130 Tables
- Personal Protective Equipment
  - Flash Protection Boundary Established
  - Determining Appropriate PPE
  - Incident Energy Table
  - Risk Categories

COURSE NUMBER: SAF-SFT112

Course Purpose

The purpose of this course is to provide the student with an in-depth understanding of the current requirements of 2009 NFPA 70E®. A complete presentation of the standard will be provided, along with the examples and exercises covering the calculation methods and tables used in the standard for establishing ARC Flash Boundaries and proper personal protective equipment (PPE).

This course will present the following major topics:

- NFPA 70E® Electrical Safety Requirements
- Safe Electrical Practices
- Calculating Flash Protection Boundary
- Personnel Protective Equipment

Who Should Attend

Individuals responsible for ensuring compliance with, developing training on, or supervising employees who are required to work in accordance with NFPA 70E® or who will be exposed to work areas designated by the flash protection boundary should attend this course.

COURSE AGENDA

Day 2

- Arc Flash Calculations (NFPA 70E®)
  - Energy Calculation
  - Arcing Current Calculations
  - Incident Energy Calculations
  - Brief Introduction of 1584 – IEEE Guide and Methodology
- PPE Calculations
  - PPE Selections Through Tables
  - PPE Selections Based on Calculating the Cal/cm^2
- Maintenance
- Arc Flash Hazard Study
  - A Turnkey Solution
  - Arc-Flash Study Benefits
  - Typical Third Party Vendor Arc-Flash Study
- Mitigation
  - Labeling
  - Arc-Flash Reduction System Design Considerations
  - Thermal Intensity
  - Pressure
- Over-current Protective Devices
  - Considerations
  - Selective Trip Coordination
  - Arc Flash Energy
  - Trip Coordination
  - Arcing Faults & Bolted Faults
- Arc Flash Considerations

Prerequisites

To successfully complete this course, the following prerequisites are required:

- Familiarity with basic electricity
- Proficiency in Student's Respective Classification

OR

- Enrolled in an Up-grader/Apprentice Program

Technology Requirements

All technology is provided for student use in the classroom by Rockwell Automation. It is not necessary for students to bring any technology with them when attending this course.

Student Materials

To enhance and facilitate your learning experience, the following materials are provided as part of the course package:

- *Student Manual,* which contains the topical outlines and problem-solving exercises.
- *NFPA 70E®: Standard for Electrical Safety in the Workplace®, 2009 Edition,* which provides key concepts, definitions and certification requirements.

Hands-On Practice

Throughout this course, you will have the opportunity to practice the skills you have learned through class interaction and observational exercises. The interactive exercises focus on awareness, safe work practices, maintenance requirements, calculation methods, boundaries, and regulations learned during the lessons.

Course Length

This is a two-day course.

Course Number

The course number is SAF-SFT112.

To Register

To register for this or any other Rockwell Automation training course, contact your local authorized Allen-Bradley Distributor or your local Sales/Support office for a complete listing of courses, descriptions, prices, and schedules.

You can also access course information via the Web at http://www.rockwellautomation.com/training

www.rockwellautomation.com

Power, Control and Information Solutions

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