

Reducing Risk Through
Hazard Awareness



electrical arc flash HAZARD TRAINING



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Siemens safety training to minimize risks from arc flash hazards...

NFPA70 E, 2004 Edition (Day One)

- Determining the Flash Hazard
- Determining the Flash Protection Boundary
- Preparation for Approach
- Safe Approach Distance
- Qualified Persons, Safe Approach Distance
- Unqualified Persons, Safe Approach Distance

Calculating Flash Protection Boundary

- Development of Arc Energy and Temperature on Exposed Skin
- Basic Equations for Calculating Flash Protection Boundary Distances
- Calculation of Incident Energy Exposure for Flash Hazard Analysis
- Sample Equations

Standards on Protective Equipment

- Head Protection
- Eye and Face Protection
- Gloves
- Sleeves
- Gloves & Sleeves
- Footwear
- Visual Inspection
- Apparel
- Determining the Appropriate Personal Protective Equipment (PPE)

Flash Boundary Levels

1. Energized electrical conductor
2. Prohibited Space
3. Prohibited Approach Boundary
4. Restricted Space
5. Restricted Approach Boundary
6. Limited Space
7. Limited Approach Boundary
8. Flash Protection Boundary

OSHA 29 CFR 1910, Subpart R,S (Day Two)

- Subpart R- Electrical Power Generation, Transmission and Distribution
- Subpart S- Safety Related Work Equipment
- Subpart I- Electrical Protective Equipment
- Subpart J- Lockout/Tagout

Electrical Safety Practices

- Causes of Electrical Power Accidents
- Effects of Electrical Shock & Burns
- First Aid for Electrical Shock Victims
- Mandated Responsibilities
- Selecting Sizes for Safety-Ground Cables
- Hazard/Risk Analysis
- Safe Work Clearances

Working Safely on Electrical Switchgear

- Interlock Devices
- Shutters
- Safe Lifting of Circuit Breakers
- Hazards of Removing Panels
- Instrument Transformer Hazards
- Control Circuit Hazards
- Mechanical Hazards
- Procedure for Locking, Tagging & Grounding

In addition to Siemens Electrical Arc Flash Hazard Study Program, we offer a 2-day electrical safety & OSHA requirements class. This class focuses on NFPA 70E and how to calculate the arc flash boundaries (AFB), incident energy levels and the specific level of personal protective equipment (PPE).

Course Title: Electrical Safety & OSHA Requirements
Course Code: EMSOMIA

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WARNING

Arc Flash and Shock Hazard Appropriate PPE Required

| | |
|------------------------------------|------------------|
| Flash Hazard Boundary | 21.8 Feet |
| Flash Hazard at 18 Inches | 31 cal/cm |
| PPE Category per NFPA 70E | 4 |
| Shock Hazard when cover is removed | 12,470 V |

| | |
|----------------|--------------------------|
| Location Name: | 12.47 kV Main Switchgear |
| Date: | 3/18/2004 |

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