4 Hour NFPA 70 E Safety Electrical Renewal

Course Outline and Objectives

Section 1: Fundamentals of Electrical Safety and NFPA 70E (1 Hour)

1. **Purpose and Scope of NFPA 70E** – Understanding its role in protecting personnel from electrical hazards
2. **Relationship Between OSHA and NFPA 70E** – How NFPA 70E supports OSHA enforcement and employer responsibilities
3. **Key Definitions and Terminology** – Arc flash, arc blast, shock hazard, approach boundaries, etc.
4. **Hierarchy of Risk Controls** – Elimination, substitution, engineering controls, administrative controls, and PPE
5. **Responsibilities of Employers and Employees** – Safety program development, documentation, and training obligations
6. **Applicable Work Environments** – Facilities, job sites, industrial and commercial applications of NFPA 70E

Section 2: Shock and Arc Flash Hazard Identification and Risk Assessment (1 Hour)

1. **Identifying Electrical Hazards** – Distinguishing shock, arc flash, and arc blast hazards
2. **Shock Risk Assessment** – Voltage, approach boundaries, and likelihood of injury
3. **Arc Flash Risk Assessment Process** – Determining incident energy and likelihood of occurrence
4. **Establishing and Using Boundaries** – Limited, restricted, and arc flash boundaries explained
5. **Labeling and Signage Requirements** – Proper equipment labeling per Article 130.5
6. **Documentation and Risk Assessment Records** – Maintaining compliance and audit trails

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Section 3: Safe Work Practices and Energized Work Requirements (1 Hour)

1. **Justification for Energized Work** – When de-energizing is not feasible or introduces increased risk
2. **Energized Work Permits** – When required, what must be included, and who authorizes them
3. **Establishing an Electrically Safe Work Condition** – Lockout/tagout procedures and verification steps
4. **Job Briefings and Pre-Task Planning** – Communication, scope of work, PPE, and hazard control
5. **Tools and Test Equipment Safety** – Use of insulated tools and voltage-rated instruments
6. **Human Error and Situational Awareness** – Preventive practices and behavioral safety

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Section 4: Personal Protective Equipment (PPE) and Emergency Response (1 Hour)

1. **Arc-Rated PPE Categories and Selection** – Understanding arc ratings, clothing layers, and Category 1–4
2. **Shock Protection PPE** – Insulated gloves, mats, shields, and dielectric footwear
3. **Proper Use, Care, and Maintenance of PPE** – Inspection, testing, cleaning, and replacement timelines
4. **Electrical Incident Response Planning** – Arc flash injuries, burns, and emergency medical protocols
5. **Training and Retraining Requirements** – Frequency, documentation, and qualification standards
6. **Recent Changes in NFPA 70E (2021–2024 Editions)** – Summary of important updates and how they affect field practices

Course Objectives – 4 Hour NFPA 70E Safety Electrical Renewal

Upon successful completion of this course, the licensee will be able to:

1. **Explain the purpose, structure, and scope of NFPA 70E**, including its relationship to OSHA regulations, and articulate its role in reducing electrical injuries in the workplace.
2. **Identify and define key electrical safety terms and hazard types**, including shock hazards, arc flash, and arc blast, and describe their implications in various work environments such as industrial facilities, commercial buildings, and construction job sites.
3. **Conduct a shock and arc flash hazard risk assessment**, including the evaluation of voltage exposure, incident energy levels, likelihood of occurrence, and the establishment of appropriate approach and arc flash boundaries.

4. **Apply safe work practices when energized work is justified**, including procedures for lockout/tagout, the use and authorization of energized work permits, job briefings, and minimizing human error through planning and situational awareness.
5. **Select appropriate arc-rated personal protective equipment (PPE)** based on incident energy analysis or PPE category tables, and ensure proper inspection, use, and maintenance of insulated tools and protective gear.
6. **Demonstrate understanding of emergency preparedness**, including planning for arc flash injuries, coordinating emergency response protocols, and complying with training and retraining requirements under the most recent NFPA 70E updates.