



AT-A-GLANCE

TWO DAY OVERVIEW

- What is Arc Flash?
- Flash Protection Boundary and Limits of Approach
- Personal Protection Equipment (PPE)
- NFPA Methods of Selecting PPE
- 2024 NFPA 70E Chapter 2 – Safety Related Maintenance Requirements
- 2019 NETA Maintenance Testing Specification
- 2023 NFPA 70B

Day One – 2024 NFPA 70E Chapter 1: Electrical Safe Work Practices



WHAT IS ARC FLASH?

- Definition
- Reasons and Overview of Changes to 2024 NFPA 70E
- Methods of Reducing Arc Flash Potential



FLASH PROTECTION BOUNDARY AND LIMITS OF APPROACH

- Electric Shock Potential
 - Unintended Contact with Electricity
 - Electric Shock and Effects on the Human Body
 - Current Limit Tolerances
- Definition of Boundaries and Spaces
 - Flash Protection Boundary
 - Limited Approach Space Boundary
 - Restricted Approach Space Boundary
- Applying Boundaries and Spaces to Electrical Tasks
- OSHA/NEC Distinctions between Qualified and Unqualified Persons
 - Applying the Approach Limits for Unqualified Persons
 - Applying the Approach Limits for Qualified Persons
- Energized Work Permits
 - Work Conditions Requiring Energized Work Permits



PERSONAL PROTECTION EQUIPMENT (PPE)

- Protective Clothing
 - Rating Systems of Clothing
 - Thermal Characteristics of Clothing
 - Flame Resistant vs. Flame Retardant
 - Clothing Care and Wear
 - Characteristics
- Arc Flash Protection
 - Single Layer vs. Multi-Layer
 - Protective Systems
 - Eye/Ear Protection
 - Gloves and Footwear
 - High Visibility Apparel



NFPA METHODS OF SELECTING PPE

- NFPA Methods of Selecting PPE
 - PPE Category Classification
 - Simplified, 2 Category Response
 - Arc Flash Hazards of Electrical Work Procedures
 - Selection of PPE based upon Arc Flash Risk Assessment

Day Two – 2023 NFPA 70B Standard For Electrical Equipment Maintenance



2023 NFPA 70B STANDARD FOR ELECTRICAL EQUIPMENT MAINTENANCE

- Equipment owner responsibilities for EMP Program in a facility (2023 NFPA 70B 4.2 Electrical Maintenance Program)
- Planned inspections requirements of an EMP program
 - (1) Potential of equipment failure to endanger or threaten personnel safety
 - (2) Manufacturer's recommended service and maintenance practices and procedures
 - (3) Operating environment
 - (4) Operating load conditions and equipment rating
 - (5) Failure and repair of equipment causing extensive downtime and lost production dollars
 - (6) Equipment condition
 - (7) Production and operating schedules
 - (8) Failure history
 - (9) Inspection history

- Chapter 7 Fundamental Tests requirements
- Chapter 8 – Field Testing and Test Methods
 - 8.3 – Testing Categories
 - 8.4 – Qualifications of Testing Personnel
 - 8.5 – Test Equipment and Tools
 - 8.6 – Test Records
 - 8.7 – Condition of Maintenance Indication
- Chapter 9 – Maintenance Intervals
 - 9.2 – Frequency of Maintenance
 - 9.3 – Equipment Condition Assessment



2024 NFPA 70E CHAPTER 2 – SAFETY RELATED MAINTENANCE REQUIREMENTS

- Practical safety-related maintenance requirements for electrical equipment and installations in workplaces as included in 90.2
- Identify maintenance directly associated with employee safety
- Impacts on arc flash energies
- Specific equipment types
- Owner responsibilities
- Qualifications of testing personnel



2019 NETA MAINTENANCE TESTING SPECIFICATION – RESULTS INTERPRETATION

- Maintenance testing frequencies
 - Visual/mechanical inspections
 - Electrical tests
 - Functional tests
 - Specific test instruments
 - Results-limits and interpretations
 - Positive results
 - Developing action plans
- Courses of actions
Negative results

