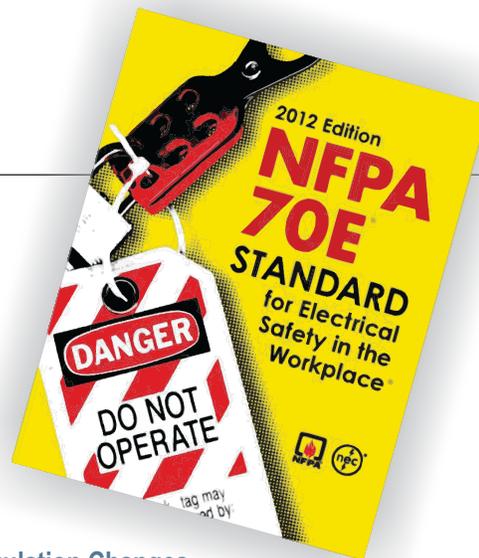


What is NFPA 70E?

JULY 2012



Both the Occupational Safety and Health Administration (OSHA) and the National Fire Protection Association (NFPA) have written standards and regulations that build on one another and help keep all workers safer from electrical hazards in the workplace. In this case, the OSHA regulations and NFPA standards work so well together it has been said that OSHA provides the "shall" while NFPA provides the "how." It is important to note that the NFPA 70E is a national consensus safety standard published by NFPA primarily to assist OSHA in preparing electrical safety standards. Federal OSHA has not incorporated it into the Code of Federal Regulations.

OSHA bases its electrical safety standards (found in subpart S part 1910 and subpart K part 1926) on the comprehensive information found in NFPA 70E. It focuses on protecting people and identifies requirements that are considered necessary to provide a workplace that is free of electrical hazards.

OSHA regulations and NFPA 70E electrical safety standards work together. OSHA mandates that all services to electrical equipment be done in a de-energized state. "Working live" can only be done under special circumstances. NFPA 70E defines those special circumstances and sets rigid electrical safety limits on voltage exposures, work zone boundary requirements and PPE necessary. If NFPA 70E is not used, the employer must prove to OSHA that the employer has developed their own procedures that are at least equal to the requirement that all services to electrical equipment be done in a de-energized state.

One major element of an electrical safety program is a hazard identification and risk assessment to determine protective equipment needs, including PPE. This risk assessment must be done before any work is started within a shock or arc flash boundary. Three basic methods can be employed to complete the PPE risk assessment:

1. Refer to NFPA 70E-2012 Article 130, tables 130.4(C)(a) or (b), 130.7(C)(15)(a) and 130.7(C)(16) or Annex D*
2. Use an industry accepted software program
3. Use a consulting firm to complete the risk assessment

Personal Protective Clothing Ratings

Building electrical safety personal protective equipment (PPE) lists for workers begins with selecting the right clothing. Flame retardant clothing is assigned an Arc Thermal Performance Value (ATPV) rating by the manufacturer. The ATPV value represents the amount of incident energy that would cause the onset of second-degree burns. It also signifies the amount of protection the clothing provides when an electrical arc comes in contact with the fabric.

Most people working with electricity only require clothing that meets category 1 or 2 protection characteristics. NFPA 70E electrical safety standards are aimed more towards those workers who work in category 3 or 4 hazard situations. Their clothing must meet ATPV rating minimums throughout the life of the garment. In other words, each piece of clothing must also be designed to withstand a cleaning process to remove soils and then be returned to service without damage to the fabric.

Regulation Changes

Here are highlights of changes from the 2009 70E edition to the 2012 70E edition:

1. Updated to correlate with the latest National Electric Code (NEC)—2011
2. Definitions of terms that are not used were deleted
3. Term "Flame-resistant" replaced by "arc-rated" (AR)
4. New Article 105, Application of Safety-Related Work Practices separated from Article 110
5. Three year retraining interval
6. Safe work practices added for use with Ground Fault Circuit Interrupters (GFCIs)
7. Article 110.8 moved to Article 130.3
8. New safety-related work practice for underground electrical lines added.
9. Individual qualified employee control procedure added
10. All requirements of Article 130 are required whether hazard/risk table or hazard risk analysis are used
11. New requirements and information regarding PPE use associated with enclosed electrical equipment
12. Content of an energized electrical work permit revised
13. Hazard/Risk tables analysis was added to address DC current
14. Hearing protection is required within the arc flash boundary
15. Arc-Flash protection for hands has been revised to specify "heavy-duty" leather gloves
16. Hazard/risk tables now address short-circuit current, fault clearing, and potential arc flash boundary info in each major category
17. Hazard/Risk table modified to eliminate 2* category and combines old tables 130.7(C)(10) & (11) into one table 130.7(C)(16)
18. New equipment labeling requirements were added
19. Documented meeting between the host employer and the contract employer is required

PPE and Hazard/Risk Table

NFPA added specific reference information addressing the use of PPE as a safe work practice around shock and arc flash hazards. As pointed out in numbers 11–17 above several changes were made to this edition to ensure PPE is more appropriately selected. The biggest change involves the new hazard/risk table being developed (#17 above). Once the hazard/risk category has been identified from table 130.7(C)(15)(a) and/or (b) and requirements of 130.7(C)(15) have been met, table 130.7(C)(16) will be used to determine the required PPE for the task. This method can only be used if the specific job task appears in the table.

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