NFPA 70B Frequently Asked Questions

ERS
ELECTRICAL RELIABILITY SERVICES

The National Fire Protection Association (NFPA) 70B Standard for Electrical Equipment Maintenance provides guidance to help facilities establish and maintain effective electrical maintenance programs. With the 2023 update elevating NFPA 70B from a recommended practice to a mandatory standard, many organizations are working to understand how these changes impact their operations, compliance requirements, and safety programs. This FAQ is designed to answer common questions about NFPA 70B, what it means, why it matters, and how to align your maintenance practices to meet its requirements.

Q1: If there is an incident, is re-training required for all team members or only those involved in the incident?

70E and OSHA Subpart S do not directly address this scenario. However, 70E Section 110.4(A)(3) states the following regarding retraining:

Additional Training and Retraining.
Additional training and retraining in safety-related work practices and applicable changes in this standard shall be performed at intervals not to exceed 3 years. An employee shall receive additional training or retraining if any of the following conditions exists:

- The supervision or annual inspections indicate the employee is not complying with the safety-related work practices.
- New technology, new types of equipment, or changes in procedures necessitate the use of safety-related work practices different from those that the employee would normally use.
- The employee needs to review tasks that are performed less often than once per year.
- The employee needs to review safety-related work practices not normally used by the employee during regular job duties.
- The employee's job duties change.

While NFPA 70B does not prescribe a standalone retraining interval, it establishes that maintenance activities must be performed by a "qualified person," and defers to NFPA 70E for the definition and training requirements of qualified personnel. As such, maintaining qualified status under 70E—including periodic retraining and demonstrated competency—becomes a practical expectation for compliance with NFPA 70B maintenance programs.

Q2: Are there specific color requirements for NFPA 70E or 70B labels?

The label colors and design requirements fall under ANSI Z535. The required content is covered by NFPA 70E 130.5(H).

Equipment Labeling
Electrical equipment such as switchboards, panelboards, industrial control panels, meter socket enclosures, and motor control centers that are in other than dwelling units and that are likely to require examination, adjustment, servicing, or maintenance while energized shall be marked with a label containing all the following information:

- Nominal system voltage
- Arc flash boundary
- At least one of the following:
  - Available incident energy and the corresponding working distance, or the arc flash PPE category in Table 130.7(C)(15)(a) or Table 130.7(C)(15)(b) for the equipment, but not both
  - Minimum arc rating of clothing
  - Site specific level of PPE

Exception NO 1: Unless changes in electrical distribution system(s) render the label inaccurate, labels applied prior to the effective date of this edition of the standard shall be acceptable if they complied with the requirements for equipment labeling in the standard in effect at the time the labels were applied. The owner of the electrical equipment shall be responsible for the documentation, installation, and maintenance of the marked label.

Exception NO 2: In supervised industrial installations where conditions of maintenance and engineering supervision are intended to limit access to only qualified person monitor and service the system, the information required in 130.5(H)(1) through 130.5(H)(3) shall be permitted to be documented in a manner that is readily available to persons likely to perform examination, servicing, maintenance, and operation of the equipment while energized.

The method of calculating and the data to support the information for the label shall be documented. The data shall be reviewed for accuracy at intervals not to exceed 5 years. Where the review of the data identifies a change that renders the label inaccurate, the label shall be updated.

The label shall be of sufficient durability to withstand the environment involved.

Q3: What are the color coding requirements on arc flash labels?

The label colors and design requirements fall under ANSI Z535. The required content is covered by NFPA 70E 130.5(H).

For our projects, ERS takes the approach that, because these labels contain shock hazard information, death as a result of shock is always a danger and we have standardized on using danger/red labeling for our labels. ERS uses the most stringent interpretation since, at the time of label creation, we do not know if personnel will remove covers or not.

Q4: Is it suitable to work on equipment over 40 cal with a 100 cal suit on?

The blast percussion is primarily a factor of the rate of rise and amplitude of the arcing current. A very "stiif" system would have a high rate of rise of current and therefore would result in a much higher percussion than a "softer" system generating a slower rate of rise of current. There continues to be no standard or guideline governing this phenomenon, and the previous misunderstanding of higher IE means higher percussion continues to dominate the industry. There is no relationship between percussion and 40 calories. As it stands, there is no industry standard limiting the maximum level of Incident Energy (IE) a worker should be exposed to (with adequately rated PPE). However, with all that said, because of the severe heat and potential percussive hazards, many companies have adopted 40 cal/cm² as the maximum limit they are willing to put their employees at risk for and for providing PPE. requirements in 110.21(B) and shall be located so as to be clearly visible to qualified persons before examination, adjustment, servicing, or maintenance of the equipment.

Q5: If devices are not normally worked on live, do they require arc flash labels (especially smaller devices, specifically disconnect switches)?

The NFPA 70 (National Electrical Code) states the following in Section 110.16: 110.16 Arc-Flash Hazard Warning.

General.

Electrical equipment, such as switchboards, switchgear, enclosed panelboards, industrial control panels, meter socket enclosures, and motor control centers, that is in other than dwelling units, and is likely to require examination, adjustment, servicing, or maintenance while energized, shall be field or factory marked to warn qualified persons of potential electric arc flash hazards. The marking shall meet the **And Section 110.21(B) states:**

- **Field-Applied Hazard Markings.**
  Where caution, warning, or danger hazard markings such as labels or signs are required by this Code, the markings shall meet the following requirements: (1) The marking shall be of sufficient durability to withstand the environment involved and warn of the hazards using effective words, colors, symbols, or any combination thereof.

- **Informational Note No. 1:**
  See ANSI Z535.2-2011 (R2017), Environmental and Facility Safety Signs, which describes the design, application, and use of safety signs in facilities and in the environment.

- **Informational Note No. 2:**
  See ANSI Z535.4-2011 (R2017), Product Safety Signs and Labels, which details the design, application, use, and placement of safety signs and labels on a wide variety of products. (2) The marking shall be permanently affixed to the equipment or wiring method and shall not be handwritten.

Exception to (2): Portions of the markings that are variable, or that could be subject to changes, shall be permitted to be handwritten and shall be legible.

NFPA 70E echos the NEC requirements. The information below is from NFPA 70E 130.5(H). Note Exception No. 2.

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