



Regulatory Compliance

## Keeping Up With Changing Electrical Safety Standards: The 2024 NFPA 70E

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Honeywell Salisbury electrical safety personal protection equipment (PPE) provides the products you trust, the quality you expect, and the safety you need. They work hard to stay in accordance with standards and regulations dealing with electrical safety. The 2024 edition of the National Fire Protection Association (NFPA) 70E, Standard for Electrical Safety in the Workplace, 13th edition, has been released. This standard is used to assist electrical workers in reducing injuries and fatalities from electrical hazards. Below, you'll find some changes that are important to be aware of.

There have been some term changes in this edition. One of those is the phrase "Electric Shock," where the word "electric" is placed before "shock" to help ensure consistent use of the term. "Hearing protection boundary" and "lung protection boundary" are exceptions, where the term "shock" refers to "shock wave," not electric shock. As a manufacturer of *leather protectors for rubber insulating gloves*, note that the word "leather" was deleted to permit the use of protectors other than leather. NFPA 70E will now just use the term "Protectors." To make the standard more user-friendly, "Scope" has been added to the beginning of each article.

Some of the changes in the articles are generally described below:

Article 110 General Requirements for Electrical Safety-Related Work Practices, Article 110.2(B) When required, Exception No. 1, Normal operation of electric equipment," was changed to "Normal Operating Condition. A seventh normal operating condition was added; Normal operation of electric equipment shall be permitted where a normal operating condition exists.

A normal operating condition exists when all the following conditions are satisfied:

- The equipment is properly installed.
- The equipment is properly maintained.
- The equipment is rated for the available fault current.
- The equipment is used in accordance with instructions included in the listing and labeling and in accordance with manufacturer's instructions.
- The equipment doors are closed and secured.
- All equipment covers are in place and secured.
- There is no evidence of impending failure. (New note: water damage)

Note: The available fault current should be listed inside the electrical equipment on the manufacturer's information label and on circuit breakers.

Another example of "evidence of impending failure" has been added. Informational Note No. 2: See NEMA GD 1-2019, Evaluating Water-Damaged Electrical Equipment, as an example of a document that provides further information on evaluating electrical equipment that may have been exposed to water.

110.3 Electrical Safety Program, (I) Job Safety Planning and Job Briefing, a new item, an emergency response plan," was added to the list of required information for the job safety planning. The emergency response plan should address what to do in the case of electrical shock or if an arc flash occurs.

Article 120 Establishing an Electrically Safe Work Condition, Article 120.5 Lockout/Tagout Procedures, (A) Planning, (1) Locating Sources, A new informational note was added: "Locating sources of supply could include identifying situations where a neutral conductor continues to carry current after phase conductors have been de-energized." An example of this could be the removal of a light ballast from a 277-volt 3 phase multi-wire branch circuit.

Article 120 Establishing an Electrically Safe Work Condition, 120.6 Process for Establishing and Verifying an Electrically Safe Work Condition, an additional step has been added to the process of Establishing and Verifying an Electrically Safe Work Condition to: (7) Use an adequately rated portable test instrument to test each phase conductor or circuit part at each point of work to test for the absence of voltage. Test each phase conductor or circuit part both phase-to-phase and phase-to-ground. Before and after each test, determine that the test instrument is operating satisfactorily through verification on any known voltage source.

Article 130 Work Involving Electrical Hazards, 130.5 Arc Flash Risk Assessment, (B) Estimate of Likelihood and Severity, an Informational note has been added: In most cases, closed doors do not provide enough protection to eliminate the need for **PPE** in situations in which the state of the equipment is known to readily change (e.g., doors open or closed, rack in or rack out).

Article 130 Work Involving Electrical Hazards, 130.5 Arc Flash Risk Assessment, (G) Incident Energy Analysis Method, Informational notes were added to provide examples of changes that could affect an "incident energy analysis." According to such Informational Notes: changes that could affect the results of the incident energy analysis include changes made by utilities or other entities, such as transformer sizing, as well as modifications to protective devices or changes to protective settings.

Article 130 Work Involving Electrical Hazards, 130.7 Personal and Other Protective Equipment, (C) Personal Protective Equipment (PPE), (1) General, Informational Note: Where the estimated incident energy exposure is greater than the arc rating of commercially available arc-rated PPE, then Article 130 suggests that for the purpose of testing for the absence of voltage, the following examples of risk reduction methods could be used to reduce the likelihood of occurrence of an arcing event or the severity of exposure: (1) Use of noncontact capacitive test instrument(s) or a permanently installed metering device(s) in the equipment for indication, before using a contact-type test instrument to test for the absence of voltage. The term "Proximity test instrument" is removed, and the 1000-volt limitation removed.

Article 130 Work Involving Electrical Hazards, 130.7 Personal and Other Protective Equipment, (C) Personal Protective Equipment (PPE), (15) Arc Flash PPE Category Method (b) Direct Current (dc) Equipment, Table 130.7(C)(15)(b) Arc Flash PPE Categories for DC Systems. The voltage parameters in the table were increased from "Greater than 100 volts and less than 250 volts" to "Greater than 150 volts and less than or equal to 600 volts." Recent arc flash data has indicated that the potential arc flash incident was not sustainable below 250 volts.

Article 130 Work Involving Electrical Hazards, 130.8 Other Precautions for Personnel Activities, (M) Reclosing Circuits After Protective Device Operation, New wording has been added to Article 130.8(M) to

clarify who can manually reset circuit breakers.

The article says:

After a circuit is de-energized by the automatic operation of a circuit protective device, the circuit shall not be manually re-energized until a qualified person or persons determines the equipment and circuit can be safely energized. Manually reclosing circuit breakers or re-energizing circuits through replaced fuses shall be prohibited until the fault has been cleared.

The Articles also adds an exception: When it is determined from the design of the circuit and the overcurrent devices involved that the automatic operation of a device was caused by an overload rather than a fault condition, examination of the circuit or connected equipment shall not be required before the circuit is re-energized.

New Informative Annex S—Assessing the Condition of Maintenance.

Annex S—has been added to help assess the condition of maintenance of electrical equipment. The 2024 NFPA 70B is referenced in Annex S (S.8) as a standard for electrical equipment maintenance which provides additional information on assessing the condition of maintenance. NFPA 70B Standard provides a means to establish and maintain an acceptable condition of maintenance of electrical equipment and systems to address safety and reliability.

<sup>1</sup> Group, SEAM. (2023). NFPA 70E 2024 Changes Worth Discussing.

<sup>2</sup> NFPA. (2024). 2024 NFPA 70E Standard for Electrical Safety in the Workplace.

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