

## UNDERSTANDING 2023 NFPA 70B Standard for electrical equipment maintenance

New language making mandatory the practice of development, implementation, and operation of an Electrical Maintenance Program (EMP)

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### MAINTENANCE INTERVALS

Chapter 9 in NFPA 70B now provides mandatory scopes of work and maintenance intervals broken out by product type and based on an equipment condition assessment.

Table 9.2.2 references these requirements alphabetically and provides the corresponding reference chapter for maintenance procedures specifics.

\*It's important to note these maintenance intervals DO NOT supersede manufacturer's guidelines; they provide guidance only in the absence of information from the manufacturer.

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### EQUIPMENT CONDITION ASSESSMENT

NFPA 70B Chapter 9 prescribes maintenance intervals based on an equipment condition assessment, which depends on the following:

1. Equipment physical condition
2. Criticality
3. Operating environment

The equipment condition assessment (ECA) is based by the HIGHEST value of these three conditions\*.

NFPA 70B also requires a decal system at the conclusion of maintenance to provide a visual indication for electrical workers of the electrical equipment condition of maintenance.

\*for example, if equipment is designated "Condition 1" for electrical equipment and criticality, but a "Condition 3" for operating environment, then the equipment would use "Condition 3" durations for the ECA maintenance intervals.

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### ELECTRICAL MAINTENANCE PROGRAMS

NFPA 70B 4.2 provides clearly defined requirements for what the EPM shall include:

- An electrical safety program addressing the condition of maintenance
- Identification of responsible personnel
- Survey & analysis of electrical equipment & systems to determine maintenance requirements & priorities
- Developed & documented maintenance procedures
- A plan of inspections, servicing & suitable tests
- Maintenance, equipment & personnel record policy
- A process to prescribe, implement, & document corrective measures based on data
- A process for incorporating design for maintainability in electrical installations
- A program review and revision process that considers failures & findings for continuous improvement

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### FIELD TESTING AND TEST METHODS

Chapter 8 now provides detailed, prescriptive scopes for preventive maintenance. Clearly defining test category types in Section 8.3:

**1 - Online Standard Test**  
performed while equipment is connected to source supply.

**1A - Online Enhanced Test**  
Not typically performed in normal electrical maintenance activities and provides additional diagnostic information

**2 - Offline Standard Test**  
Performed while equipment is disconnected for source supply or is connected to external test voltage supply.

**2A - Offline Enhanced Test**  
Typically not required testing that may be useful based on the equipment application or if there is a problem with the equipment.

**NOTE:** NFPA 70B provides minimum requirement for PM, which are superseded by manufacturer guidelines.

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### SYSTEM STUDY INTERVALS

In alignment with NEC and NFPA 70E, the 2023 NFPA 70B Chapter 6 provides detailed requirements for system studies, including up-to-date single-line diagrams and short-circuit studies.

Mandatory intervals for studies shall not exceed 5 years, including:

- **Section 6.3 - Short-circuit studies**
- **Section 6.4 - Coordination studies**
- **Section 6.7 - Incident Energy Analysis**

**NOTE:** When each study is performed, the electrical system (including overcurrent protective devices & equipment ratings) may need to also be reviewed, verified and potentially modified to align with the scope of the standard. Additionally, if the utility or a facility makes electrical or infrastructure updates, it's critical that all drawings & studies are updated.

This aligns closely with NFPA 70E Standard for Electrical Safety in the Workplace, which indicates that even if equipment is installed properly, it may not be safe to work on unless it is "properly maintained" per the manufacturer's instructions or industry consensus standards.



### Applying NFPA 70B to electrical equipment

NFPA 70B Equipment Chapters 11-38 provide guidance on the periodic maintenance procedures for all equipment categories in Chapter 9, including:

- **Visual Inspection**
- **Lubrication (when applicable)**
- **Electrical tests**
- **Cleaning**
- **Mechanical Servicing**



### Protective Devices

Circuit breakers and protective relays are important when understanding this process, because their performance is dependent on proper maintenance and incident energy calculations are invalid per NFPA 70E if they are not properly maintained.



## WHY SCHULER-HAAS?

We believe the new NFPA 70B standard is a step forward for electrical worker safety. As stated in NFPA 70E, electrical worker safety relies on properly maintained overcurrent protective devices and electrical equipment. Equipment that has not been properly maintained has a higher chance of failure, increasing incident energy, which could result in increased damage to property and jeopardize electrical worker safety.

We help customers develop and implement preventive maintenance strategies to improve safety, uptime and compliance with local, state and national requirements.

### What you should know about the new **NFPA 70B** standard?

- NFPA 70B requirements are considered the minimum consensus requirements for safe electrical work procedures and OSHA may use them as the basis for issuing citations.
- NFPA 70B maintenance practices defers to manufacturers' published instruction manuals for data.
- Manufacturers are qualified to test their own equipment
- Facilities can outsource maintenance services
- Systems and equipment covered are typical of those installed for industrial plants, institutional and commercial buildings, and large multifamily residential complexes.



### Here's how Schuler-Haas can help:

- Perform maintenance services
- Create customized EMP programs
- Implement continuous monitoring and predictive technologies
- Provide mitigation and resolution to issues found
- Provide training and support

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Rochester

(585) 325-1060



Ithaca

(607) 257-6670



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(607) 722-3312

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