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NFPA 70b Training - Electrical Maintenance

View Course Details

COURSE DATES AND TIMES

October 19-20 , 2026

10:00 am - 4:30 pm ET

Why NFPA 70B Training Matters

The 2023 edition of NFPA 70B represents a major shift—from a “Recommended Practice” to a mandatory Standard. This change means facilities are now expected to maintain a documented, systematic Electrical Maintenance Program (EMP) that reduces electrical failures, unplanned downtime, arc-flash hazards, and equipment degradation.

Our NFPA 70B Training provides a detailed understanding of the Standard’s requirements for preventive maintenance of electrical, electronic, and communication systems in industrial, commercial, institutional, and utility environments. The course also explains how NFPA 70B integrates with NFPA 70E, NEC requirements, OSHA electrical rules, and modern reliability practices.

Participants learn how to apply North American Electrical Maintenance and Testing Specifications, including required field tests, diagnostic methods, inspection intervals, record-keeping procedures, and corrective-action processes used to evaluate equipment condition and maintain system reliability. The course also addresses troubleshooting practices and the proper use of electrical test equipment, condition-based maintenance tools, and predictive technologies such as infrared thermography.

Learning Outcomes

At the end of this course, participants will be able to:

• Develop, document, and implement a cost-effective, NFPA 70B-compliant Electrical Maintenance Program (EMP).

• Conduct condition-based, preventive, and predictive maintenance using accepted industry testing methods.

• Perform safe operation, testing, repair, and maintenance on major power system equipment in accordance with NFPA 70B.

• Integrate electrical maintenance practices with electrical safety programs per NFPA 70E.

• Interpret test results, trend equipment conditions, and schedule maintenance based on criticality and risk.

• Determine which maintenance tasks should be performed in-house and which require qualified service contractors.

• Establish documentation, inspection records, and maintenance audit procedures that align with the 2023 Standard.

WHO SHOULD ATTEND

This comprehensive 12-Hour (2-Day) NFPA 70B Training course is designed to benefit those working in maintenance who desire to increase their practical knowledge of electrical maintenance standards and practices.

- Electrical engineers
- Maintenance supervisors and managers
- Plant and facility electricians
- Reliability and safety professionals
- Electrical maintenance technicians
- Industrial, commercial, and institutional maintenance staff
- Field service and testing personnel
- Contractors and consulting engineers
- Facility operations and asset management staff

STUDENTS RECEIVE

- NFPA 70B Training Certificate of Course Completion
- 1.2 Continuing Education Unit (CEU) Credits (12 Professional Development Hours)
- **$100 Coupon** Toward any Future Electricity Forum Event (Restrictions Apply)
- **FREE** Magazine Subscription (Value $25.00)
- Course Materials in PDF Format

COURSE OUTLINE

NFPA 70B Training Course Outline

DAY ONE

1. Why Establish an Electrical Preventive Maintenance (EPM) Program

- Value and benefits of a properly administered EPM program
- Relationship between preventive maintenance, energy conservation, and equipment reliability

2. What an EPM Includes and Why It Matters

- Program structure and components
- Personnel safety and qualification
- Equipment loss prevention and reliability improvement
- Production economics and downtime reduction

3. Planning and Developing the EPM Program

- Survey of electrical installations
- Data collection and system information
- Single-line diagrams
- Equipment changes, retrofits, lighting systems, ventilation, HVAC, control, and monitoring
- Critical equipment identification

- Inspection frequencies
- Program documentation, forms, planning, and recordkeeping

4. Personal Safety and Electrical Safety Programs

- Qualified personnel
- Tools and test equipment
- Arc-flash considerations
- PPE selection
- Integration with NFPA 70E safety requirements

5. Fundamentals of Electrical Equipment Maintenance

- Maintenance scheduling
- Cleaning and environmental considerations
- Equipment retrofits and upgrades

6. Substations and Switchgear Assemblies

- Insulators and conductors
- Air-disconnecting switches
- Grounding equipment
- Enclosures and switchgear assemblies
- Air circuit breakers, interrupters, oil circuit breakers
- Gas-insulated substations and equipment (GIS/GIE)
- Surge arresters
- Instrument and auxiliary transformers
- Meters, relays, and instruments
- Ground-fault indicators
- Network protector maintenance

7. Power and Distribution Transformers

- Liquid-filled and dry-type transformer maintenance
- Readings, inspections, gauges, and temperature monitoring
- Oil testing: liquid maintenance, fault-gas analysis, dissolved-gas analysis

8. Power Cables

- Visual inspections
- Aerial and raceway installations
- Cable testing, insulation testing, hi-pot testing

9. Motor Control Equipment

- Preventive maintenance guidelines
- Contacts, relays, MCC components
- Enclosures, connections, breakers, fuses, interlocks

10. Electronic Equipment

- Care, cooling, surge protection, and special precautions

DAY TWO

11. Molded-Case Circuit Breakers

Types, tripping characteristics, overcurrent protection
Fault conditions
Inspection, cleaning, testing

12. Ground Fault Protection

Protection of personnel and equipment
Testing and verification

13. Fuses

- Low- and medium-voltage fuses
- Installation, removal, inspection, servicing

14. Rotating Equipment

- Stators, rotors, windings
- Brushes, collector rings, commutators
- Lubrication, testing, and cleaning

15. Lighting Systems

Cleaning, relamping, disposal, inspection

16. Wiring Devices and Portable Tools

- Industrial connectors
- Periodic inspections

- Cord care

17. Testing and Test Methods

- Acceptance and maintenance testing
- Testing frequency
- Safety precautions
- Qualifications of test operators
- Insulation resistance, dielectric absorption
- Circuit breaker tests
- Transformer tests
- Ground system impedance testing
- Infrared inspections
- Continuity and high-potential testing

18. Uninterruptible Power Supply (UPS) Systems

- Maintenance procedures
- Routine and special testing
- Battery inspections

19. Power Quality

- Harmonics
- Surges and transients
- Voltage sags, swells, undervoltages, interruptions
- Unbalanced voltage and single-phasing
- Grounding symptoms
- Flicker, fluctuations

20. Grounding Systems

- Causes of inadequate grounding
- Inspections, tests, monitoring
- Solutions and corrective maintenance

21. SCADA Systems

- Maintenance
- Testing
- Reliability-centered maintenance (RCM)

22. EPM From Commissioning Through Service Life

- Commissioning planning
- Functional performance tests
- Inspection checklists
- Cost considerations

23. Single-Line Diagrams and Symbols

24. Forms to Document All Tests and Inspections

- Battery tests
- Breaker inspections
- Transformer inspections
- Ground system tests
- Long-term maintenance guidelines

COURSE SCHEDULE

Both Days:

- START: 10:00 a.m. Eastern Time

- FINISH: 4:30 p.m. Eastern Time

Contact us Today for a FREE quotation to deliver this course at your company's location.

Request Quote