

NFPA 70B: Equipment Condition Assessment

NFPA 70B, Standard for Electrical Equipment Maintenance, 2023 edition; Table 9.2.2 Maintenance Intervals

The NFPA 70B, Standard for Electrical Equipment Maintenance, 2023 edition, includes a new chapter identifying the required frequency of maintenance for electrical equipment. Section 9.2.2 states: "Where the manufacturer's recommendations are not provided or available and failure, breakdown, or malfunction of the equipment will present an unacceptable risk for personnel or the environment, equipment maintenance shall be performed at not greater than the intervals specified in Table 9.2.2." The physical condition of the electrical equipment is defined under section 9.3:

9.3.1.1

Equipment Physical Condition 1 shall be assigned where all the following criteria apply:

1. The equipment appears in like new condition.
2. The enclosure is clean, free from moisture intrusion, and tight.
3. No unaddressed notification from the continuous monitoring system has occurred.
4. There are no active recommendations from predictive techniques.
5. Previous maintenance has been performed in accordance with the EMP.

9.3.1.2

Equipment Physical Condition 2 shall be assigned where all of 9.3.1.1 apply, and where any of the following criteria apply:

1. Maintenance results deviate from past results or have indicated more frequent maintenance in accordance with manufacturer's published data.
2. The previous maintenance cycle has revealed issues requiring the repair or replacement of major equipment components.
3. There have been notifications from the continuous monitoring system since the prior assessment.
4. There are active recommendations from predictive techniques.

9.3.1.3

Equipment Physical Condition 3 shall be assigned where changes in operation are noted or where any of the following criteria applies:

1. The equipment has missed the last two successive maintenance cycles in accordance with the EMP.
2. The previous two maintenance cycles have revealed issues requiring the repair or replacement of major equipment components.
3. There is an active or unaddressed notification from the continuous monitoring system.
4. There are urgent actions identified from predictive techniques.

It is our recommendation that when determining the condition of the equipment, it is important to also consider the reliability/criticality the equipment has on your entire power system.

Product	Scope of Work	Condition 1	Condition 2	Condition 3
All equipment	Infrared thermography	12 months	12 months	6 months
Battery ESSs	Visual inspection	60 months	36 months	12 months
	Cleaning	60 months	36 months	12 months
	Lubrication		Reserved	
	Mechanical servicing		Reserved	
	Electrical testing	60 months	36 months	12 months
Busways	Visual inspection	60 months	60 months	12 months
	Cleaning	60 months	36 months	12 months
	Lubrication	60 months	36 months	12 months
	Mechanical servicing	60 months	36 months	12 months
	Electrical testing	60 months	36 months	12 months
Cable trays	Special	60 months	36 months	12 months
	Visual inspection	12 months	12 months	6 months
	Cleaning	60 months	36 months	12 months
	Lubrication	60 months	36 months	12 months
	Mechanical servicing	60 months	36 months	12 months
Electric vehicle power transfer systems	Electrical testing	60 months	36 months	12 months
	Visual inspection	60 months	36 months	12 months
	Mechanical inspection	60 months	36 months	12 months
Electronic equipment	Electrical testing	60 months	36 months	12 months
			Reserved	
Fuses	Visual inspection	60 months	36 months	12 months

Equipment Condition Assessment

Product	Scope of Work	Condition 1	Condition 2	Condition 3
	Cleaning	60 months	36 months	12 months
	Lubrication	60 months	36 months	12 months
	Mechanical servicing	60 months	36 months	12 months
	Electrical testing	60 months	36 months	12 months
GFCIs	Visual inspection	12 months	12 months	6 months
	Cleaning	60 months	36 months	12 months
	Lubrication	60 months	36 months	12 months
	Mechanical servicing		Reserved	
Grounding and bonding	Visual inspection	12 months	12 months	6 months
	Cleaning		Reserved	
	Lubrication		Reserved	
	Mechanical servicing		Reserved	
	Electrical testing	60 months	36 months	36 months
High-voltage substation insulators	Visual inspection	12 months	12 months	6 months
	Corona detection	12 months	6 months	4 months
	Maintenance and testing	60 months	36 months	12 months
Lighting	Visual inspection	60 months	36 months	12 months
	Cleaning	60 months	36 months	12 months
	Servicing	60 months	36 months	12 months
Lighting control systems			Reserved	
Low-voltage ground-fault protection systems	Visual inspection	12 months	12 months	6 months
	Cleaning	60 months	36 months	12 months
	Lubrication		Reserved	
	Mechanical servicing	60 months	36 months	12 months
	Electrical testing	60 months	36 months	12 months
Medium-voltage ground-fault protection systems	Visual inspection	12 months	12 months	6 months
	Cleaning	60 months	36 months	12 months
	Lubrication		Reserved	
	Mechanical servicing	60 months	36 months	12 months
	Electrical testing	60 months	36 months	12 months
Medium-voltage power circuit breakers	Visual inspection	60 months	36 months	12 months
	Cleaning	60 months	36 months	12 months
	Lubrication	60 months	36 months	12 months
	Mechanical servicing	60 months	36 months	12 months
	Electrical testing	60 months	36 months	12 months
Molded-case/insulated-case/ low-voltage power circuit breakers	Visual inspection	60 months	36 months	12 months
	Cleaning	60 months	36 months	12 months
	Lubrication	60 months	36 months	12 months
	Mechanical servicing	60 months	36 months	12 months
	Electrical testing	60 months	36 months	12 months
Motor control equipment	Visual inspection	60 months	36 months	12 months
	Cleaning	60 months	36 months	12 months
	Lubrication	60 months	36 months	12 months
	Mechanical servicing	60 months	36 months	12 months
	Electrical testing	60 months	36 months	12 months

Product	Scope of Work	Condition 1	Condition 2	Condition 3
Panelboards and switchboards	Visual inspection	60 months	36 months	12 months
	Cleaning	60 months	36 months	12 months
	Lubrication	60 months	36 months	12 months
	Mechanical inspections	60 months	36 months	12 months
	Electrical testing	60 months	36 months	12 months
Photovoltaic systems	Visual inspection	60 months	36 months	12 months
	Cleaning		Reserved	
	Lubrication		Reserved	
	Mechanical servicing		Reserved	
	Electrical testing	60 months	36 months	12 months
Portable electrical tools and equipment	Visual inspection	Before each use	Before each use	Before each use
	Cleaning	Before each use	Before each use	Before each use
	Lubrication	In accordance with the manufacturer's instructions	In accordance with the manufacturer's instructions	In accordance with the manufacturer's instructions
	Mechanical servicing	In accordance with the manufacturer's instructions	In accordance with the manufacturer's instructions	In accordance with the manufacturer's instructions
	Electrical testing	3 months	3 months	3 months
Power and distribution transformers	Visual inspection	12 months	12 months	6 months
	Cleaning	60 months	36 months	12 months
	Lubrication		Reserved	
	Mechanical servicing	60 months	36 months	12 months
	Electrical testing	60 months	36 months	12 months
Power cables	Visual inspection	60 months	36 months	12 months
	Cleaning	60 months	36 months	12 months
	Mechanical servicing	Reserved	Reserved	
	Electrical testing	60 months	36 months	12 months
Power-factor correction capacitors	Visual inspection	60 months	36 months	12 months
	Cleaning	60 months	36 months	12 months
	Lubrication		Reserved	
	Mechanical servicing	60 months	36 months	12 months
	Electrical testing	60 months	36 months	12 months
Protective relays, electromechanical	Visual inspection	36 months	24 months	12 months
	Cleaning	36 months	24 months	12 months
	Lubrication		Reserved	
	Mechanical servicing	36 months	24 months	12 months
	Electrical testing	36 months	24 months	12 months
Protective relays, solid state and microprocessor	Visual inspection	60 months	36 months	12 months
	Cleaning	60 months	36 months	12 months
	Lubrication		Reserved	
	Mechanical servicing	60 months	36 months	12 months
	Electrical testing	60 months	36 months	12 months
Public pools, fountains, and similar installations			Reserved	
Rotating equipment	Visual inspection	60 months	36 months	12 months
	Cleaning	60 months	36 months	12 months

Product	Scope of Work	Condition 1	Condition 2	Condition 3
	Lubrication	60 months	36 months	12 months
	Mechanical servicing	60 months	36 months	12 months
	Electrical testing	60 months	36 months	12 months
Stationary standby batteries	Visual inspection	60 months	36 months	12 months
	Cleaning	60 months	36 months	12 months
	Mechanical servicing		Reserved	
	Electrical testing	60 months	36 months	12 months
Substations	Visual inspection	12 months	12 months	6 months
	Cleaning	60 months	36 months	12 months
	Lubrication	60 months	36 months	12 months
	Mechanical servicing	60 months	36 months	12 months
	Electrical testing	60 months	36 months	12 months
	Special	60 months	36 months	12 months
	Mechanical checks	60 months	36 months	12 months
Switches	Visual inspection	60 months	36 months	12 months
	Cleaning	60 months	36 months	12 months
	Lubrication	60 months	36 months	12 months
	Mechanical servicing	60 months	36 months	12 months
	Electrical testing	60 months	36 months	12 months
Switchgear	Visual inspection	12 months	12 months	6 months
	Cleaning	60 months	36 months	12 months
	Lubrication	60 months	36 months	12 months
	Mechanical servicing	60 months	36 months	12 months
	Electrical testing	60 months	36 months	12 months
	Special	60 months	36 months	12 months
Uninterruptible power supplies	Visual inspection	6 months	3 months	1 month
	Cleaning	12 months	6 months	3 months
	Lubrication		Reserved	
	Mechanical servicing	12 months	6 months	3 months
	Electrical testing	12 months	6 months	3 months
	Special procedures	24 months	24 months	24 months
Wind power electric systems	Visual inspection	60 months	36 months	12 months
	Cleaning	60 months	36 months	12 months
	Lubrication		Reserved	
	Mechanical servicing	60 months	36 months	12 months
	Electrical testing	60 months	36 months	12 months
Wiring devices	Visual inspection	12 months	3 months	1 month
	Cleaning	60 months	36 months	12 months
	Lubrication		Reserved	
	Mechanical servicing	60 months	36 months	12 months
	Electrical testing	60 months	36 months	12 months

Reproduced with permission of NFPA from NFPA 70B, Standard for Electrical Equipment Maintenance, 2023 edition. Copyright© 2022, National Fire Protection Association. For a full copy of NFPA 70B, please go to www.nfpa.org.

ERS.vertiv.com | ERS Headquarters, 610 Executive Campus Drive, Westerville, OH, 43082, USA

© 2023 Vertiv Group Corp. All rights reserved. Vertiv™ and the Vertiv logo are trademarks or registered trademarks of Vertiv Group Corp. All other names and logos referred to are trade names, trademarks or registered trademarks of their respective owners. While every precaution has been taken to ensure accuracy and completeness here, Vertiv Group Corp. assumes no responsibility, and disclaims all liability, for damages resulting from use of this information or for any errors or omissions. Specifications, rebates and other promotional offers are subject to change at Vertiv's sole discretion upon notice.