

ANSI/NETA MTS-2007
AMERICAN NATIONAL STANDARD

APPENDIX B

FREQUENCY OF MAINTENANCE TESTS

an excerpt from the

*ANSI/NETA Standard for Maintenance Testing Specifications for
Electrical Power Distribution Equipment and Systems
2007 edition*

© 2007

InterNational Electrical Testing Association



Approved by
American National Standards Institute



APPENDIX B

Frequency of Maintenance Tests

NETA recognizes that the ideal maintenance program is reliability-based, unique to each plant and to each piece of equipment. In the absence of this information and in response to requests for a maintenance timetable, NETA's Standards Review Council presents the following time-based maintenance schedule and matrix.

One should contact a NETA Accredited Testing Company for a reliability-based evaluation.

The following matrix is to be used in conjunction with Appendix B, Inspections and Tests. Application of the matrix is recognized as a guide only.

Specific condition, criticality, and reliability must be determined to correctly apply the matrix. Application of the matrix, along with the culmination of historical testing data and trending, should provide a quality electrical preventive maintenance program.

MAINTENANCE FREQUENCY MATRIX				
		EQUIPMENT CONDITION		
		POOR	AVERAGE	GOOD
EQUIPMENT RELIABILITY REQUIREMENT	LOW	1.0	2.0	2.5
	MEDIUM	0.50	1.0	1.5
	HIGH	0.25	0.50	0.75

APPENDIX B

Frequency of Maintenance Tests *(continued)*

Inspections and Tests Frequency in Months (Multiply These Values by the Factor in the Maintenance Frequency Matrix)				
Section	Description	Visual	Visual & Mechanical	Visual & Mechanical & Electrical
7.1	Switchgear & Switchboard Assemblies	12	12	24
7.2	Transformers			
7.2.1.1	Small Dry-Type Transformers	2	12	36
7.2.1.2	Large Dry-Type Transformers	1	12	24
7.2.2	Liquid-Filled Transformers	1	12	24
	Sampling	–	–	12
7.3	Cables			
7.3.2	Low-Voltage Cables	2	12	36
7.3.3	Medium- and High-Voltage Cables	2	12	36
7.4	Metal-Enclosed Busways	2	12	24
	Infrared Only	–	–	12
7.5	Switches			
7.5.1.1	Low-Voltage Air Switches	2	12	36
7.5.1.2	Medium-Voltage Metal-Enclosed Switches	–	12	24
7.5.1.3	Medium- and High-Voltage Open Switches	1	12	24
7.5.2	Medium-Voltage Oil Switches	1	12	24
7.5.3	Medium-Voltage Vacuum Switches	1	12	24
7.5.4	Medium-Voltage SF ₆ Switches	1	12	24
7.5.5	Cutouts	12	24	24
7.6	Circuit Breakers			
7.6.1.1	Low-Voltage Insulated-Case/Molded-Case CB	1	12	36
7.6.1.2	Low-Voltage Power CB	1	12	36
7.6.1.3	Medium-Voltage Air CB	1	12	36
7.6.2	Medium-Voltage Oil CB	1	12	36
	Sampling	–	–	12
7.6.2	High-Voltage Oil CB	1	12	12
	Sampling	–	–	12
7.6.3	Medium-Voltage Vacuum CB	1	12	24
7.6.4	Extra-High-Voltage SF ₆	1	12	12
7.7	Circuit Switchers	1	12	12
7.8	Network Protectors	12	12	24

APPENDIX B

Frequency of Maintenance Tests *(continued)*

Inspections and Tests				
Frequency in Months				
(Multiply These Values by the Factor in the Maintenance Frequency Matrix)				
Section	Description	Visual	Visual & Mechanical	Visual & Mechanical & Electrical
7.9	Protective Relays			
7.9.1	Electromechanical and Solid State	1	12	12
7.9.2	Microprocessor-Based	1	12	12
7.10	Instrument Transformers	12	12	36
7.11	Metering Devices	12	12	36
7.12	Regulating Apparatus			
7.12.1.1	Step-Voltage Regulators	1	12	24
	Sample Liquid	–	–	12
7.12.1.2	Induction Regulators	12	12	24
7.12.2	Current Regulators	1	12	24
7.12.3	Load Tap-changers	1	12	24
	Sample Liquid	–	–	12
7.13	Grounding Systems	2	12	24
7.14	Ground-Fault Protection Systems	2	12	12
7.15	Rotating Machinery			
7.15.1	AC Induction Motors and Generators	1	12	24
7.15.2	Synchronous Motors and Generators	1	12	24
7.15.3	DC Motors and Generators	1	12	24
7.16	Motor Control			
7.16.1.1	Low-Voltage Motor Starters	2	12	24
7.16.1.2	Medium-Voltage Motor Starters	2	12	24
7.16.2.1	Low-Voltage Motor Control Centers	2	12	24
7.16.2.2	Medium-Voltage Motor Control Centers	2	12	24
7.17	Adjustable Speed Drive Systems	1	12	24
7.18	Direct-Current Systems			
7.18.1	Batteries	1	12	12
7.18.2	Battery Chargers	1	12	12
7.18.3	Rectifiers	1	12	24
7.19	Surge Arresters			
7.19.1	Low-Voltage Devices	2	12	24
7.19.2	Medium- and High-Voltage Devices	2	12	24

APPENDIX B

Frequency of Maintenance Tests *(continued)*

Inspections and Tests Frequency in Months (Multiply These Values by the Factor in the Maintenance Frequency Matrix)				
Section	Description	Visual	Visual & Mechanical	Visual & Mechanical & Electrical
7.20	Capacitors and Reactors			
7.20.1	Capacitors	1	12	12
7.20.2	Capacitor Control Devices	1	12	12
7.20.3.1	Reactors, Dry-Type	2	12	24
7.20.3.2	Reactors, Liquid-Filled	1	12	24
	Sampling	–	–	12
7.21	Outdoor Bus Structures	1	12	36
7.22	Emergency Systems			
7.22.1	Engine Generator	1	2	12
	Functional Testing	–	–	2
7.22.2	Uninterruptible Power Systems	1	12	12
	Functional Testing	–	–	2
7.22.3	Automatic Transfer Switches	1	12	12
	Functional Testing	–	–	2
7.23	Telemetry/Pilot Wire SCADA	1	12	12
7.24	Automatic Circuit Reclosers and Line Sectionalizers			
7.24.1	Automatic Circuit Reclosers, Oil/Vacuum	1	12	24
	Sample	–	–	12
7.24.2	Automatic Line Sectionalizers, Oil	1	12	24
	Sample	–	–	12
7.27	EMF Testing	12	12	12