

**Electrical Equipment Maintenance Frequencies - Based on CSA Z463-18 Guideline on Maintenance of Electrical Systems**

**Table M.6**

**Protection, control and metering devices**

Maintenance activities	Type of equipment — Tests to be performed							Maintenance priority			
	Low-voltage breaker relays	Electromechanical relays	Static microprocessor relays	Metering	Current transformers	Voltage transformers	Communication equipment	Minimal Frequency	Good electrical practice	Optimized program for critical or severe-duty applications	Factory testing
<b>Legend:</b> X = a test or inspection should be performed Y = factory testing should be performed - = factory testing not required n/s = not specified; testing frequency is at the discretion of user n/a = not applicable a/n = as needed											
Visual inspection	X	X	X	X	X	X	X	1	1	1	-
Cleaning	X	X	X	X	X	X	X	12	12	12	-
Verify current and voltage readings	X	X	X	X	X	X	X	1	1	1	Y
Verify correct settings	X	X	X	X	X	X	X	12	12	12	-
Ensure that backup power supplies and batteries are operational			X	X			X	1	1	1	Y
<b>Requiring specialized training, equipment, and safety precautions</b>											
Trip testing using primary injection	X	X	X					12	12	12	Y
Trip testing using secondary injection	X	X	X					12	12	12	Y
Calibration check via secondary injection	X	X	X	X				12	12	12	Y
Test inputs	X		X	X			X	12	12	12	Y
Test outputs	X	X	X	X			X	12	12	12	Y
Function test all protection and control schemes	X	X	X	X			X	12	12	12	Y
Verify connection tightness of wiring	X	X	X	X	X	X	X	12	12	12	-
Insulation resistance tests	X	X	X	X	X	X	X	24	24	12	Y
Ratio and polarity tests					X	X		24	24	12	Y
Excitation tests					X	X		24	24	12	Y
Measure winding resistance					X			24	24	12	Y
Measure burden or load					X	X		24	24	12	Y
Cleaning	X	X	X	X	X	X	X	12	12	12	-

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Table M.7						
Instrument Transformers						
<b>Legend:</b> x = a test or inspection should be performed y = factory testing should be performed - = factory testing not required n/s = not specified; testing frequency is at the discretion of user n/a = not applicable a/n = as needed						
	Type of equipment —			Maintenance priority level,		
	Current Transformers	Voltage transformers	Coupling capacitor voltage transformers	Minimal Frequency	Good electrical practice	Optimized program for critical or severe-duty applications
<b>Maintenance activities</b>						
Visual inspection and cleaning	X	X	X	12	6	6
Visually check the grounding	X	X	X	12	12	12
Check that the nameplate remains legible	X	X	X	24	12	12
Check withdrawable mechanisms and grounding	X	X	X	12	12	12
Verify fuse size	X	X	X	12	12	12
Lubricate moving or sliding connections and joints	X	X	X	24	24	24
<b>Requiring specialized training, equipment, and safety precautions</b>						
Check bolted connections for tightness	X	X	X	24	24	24
Infrared survey	X	X	X	18	12	12
Insulation resistance test	X	X	X	12	12	12
Ratio test	X	X	X	12	12	12
Overpotential test	X	X	X	36	24	12
Polarity test	X	X	X	36	24	12
Power factor test	X	X	X	36	24	12
Excitation test	X	X	X	12	12	12
Primary injection test	X	X	X	24	12	12
Burden test	X	X	X	a/n	a/n	a/n
(1) Prior to testing ensure that all requirements for safe access to the equipment are met [e.g., permits, safety hazard and risk analysis] (2) The following safety concerns and precautions should be taken into consideration: (a) It is sometimes necessary to work on bushings at heights; fall restraints should be used. (b) Residual voltages can be present, which can be a shock hazard. Grounding or discharging is recommended. (3) The information shown above is based on: CSA Z463-18 Guideline on Maintenance of Electrical System and is not necessarily identical to the source.						