Power Precision

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

Table M.2

Transformers

Legend:
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 — Tests to be performed							Maintenance priority		
Maintenance activities	Dry-type distribution class<500kVA	Liquid-filled distribution class<500 kVA	Liquid-filled distribution class <500 kVA pole mounted	Dry-type power class >500 kVA	Liquid-filled power class >500kVA	Transformer rectifier (TR) sets	Arc Furnaces	Minimal Frequency	Good electrical practice	Optimized program forcritical or severe duty applications
Read and reset temperature and pressure (T&P) gauges				X	X	X		12	6	6
Visually verify that the paint is in good condition (no corrosion or peeling)				X	X	X		12	12	12
Check for leaks (tank, valves, etc.)					X	X		24	12	12
Exercise radiator cooling fans				X	X			12	12	12
Exercise radiator cooling pumps					X			12	12	12
Visually check the ground connections on the tank				X	X	X		24	24	24
Check that the nameplate remains legible				X	X	X		36	36	36
Make sure that the enclosure prevents the entry of vermin				X				12	12	12
Requiring specialized training, equipment, and safety precautions										
Function test T&P gauges				X	X	X		18	12	12
Dust and clean the coils				X				24	24	24
Check lightning arrester connections				X	X			18	12	12
Test the high-voltage (HV) bushing (capacitance or dissipation factor)					X			12	12	12
Clean the low-voltage (LV) and high-voltage (HV) bushings				X	X	X		12	12	12
Perform an insulation resistance test for LV and HV windings				X	X			36	24	12
Ratio test				X	X			36	24	12
LV and HV winding resistance				X	X			36	24	12
Diode stack testing						X		12	12	12
Oil quality and dissolved gas analysis (DGA)					X	X		24	12	12
Furan test								a/n	a/n	a/n
Check LV and HV junction boxes for leaking gaskets					X	X		12	12	12
Doble power factor test								36	24	12
Capacitance and dissipation factor test								36	24	12
Frequency response analysis								a/n	a/n	a/n
Core ground test								36	24	12

(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) Transformer cores and windings can take a long time to cool down, which can be a burn hazard.
(c) Residual voltages can be present, which can be a shock hazard.
(d) Grounding or discharging is recommended.
(e) If the tap changer has not been used or serviced in recent years, ratio test only in the existing tap to prevent a failure.
(3) The information shown above is based on: CSA Z463-18 Guideline on Maintenance of Electrical Systems and is not necessarily identical to the source.