

Electrical Tester (7512)
Task List 2016

Testing and Repairing

1. Inspects (visually) and performs tests (e.g., Alternating Current (AC) high potential (Hipot), Series Resonance, Very Low Frequency (VLF), 60 Hertz, Power Factor, Transformer Ratio and Winding Resistance, Acoustic and Partial Discharge) on electrical apparatuses (e.g., cables, transformers, power circuit breakers, instrument transformers, generators, capacitors, voltage regulators, and switches) using alternating current/direct current (AC/DC) Hipot test set and Doble Power Factor test set devices to ensure equipment and apparatuses are in operable condition.
2. Calibrates self-contained single-phase watthour meters in the laboratory by performing standard laboratory tests on electromechanical and microprocessor based watthour meters such as injecting current and voltage into both single-phase watthour meters and a standard reference meter, and comparing the readings from both meters in order to obtain percentage accuracy, register ratio and capacity, and transformer ratio data.
3. Modifies and repairs instruments and apparatuses in the field and laboratory such as supervisory control and data acquisition (SCADA), remote terminal units, digital fault recorders, and temperature chart recorders using various testing devices such as ammeters, voltmeters, meggers, frequency meters, and oscilloscopes and handtools such as screwdrivers, sidecutters, crimping tools, and soldering tools in order to restore instruments and apparatuses to working condition.
4. Tests, inspects, adjusts, and repairs metering equipment (e.g. self-contained single-phase watthour meters), electricity metering equipment (e.g. voltmeters, ammeters, megawatts, megavars), instrument transformers, protective relay equipment (e.g., differential relays, frequency hertz relays, voltage relays, power relays, demand meters, intelligent electronic devices (IED), programmable logic controllers (PLC), overcurrent relays), totalizers, load survey equipment (e.g., power recorders, voltage recorders), and interchange metering systems in the field using AC/DC current and voltage test sets to ensure equipment are in operable condition.
5. Inspects electrical protective devices and equipment such as rubber gloves, blankets, and line hoses for cuts, scratches, and other defects by performing dielectric-withstand tests using dielectric-withstand test sets to determine the quality of the insulation and whether the protective devices and equipment are suitable for future use.
6. Tests (dielectric) transformers, oil circuit breakers, and regulators by performing dissolved gas analysis (DGA) using oil Hipot test sets to identify furan and to adhere to Department of Water and Power, Institute of Electrical and Electronic Engineer (IEEE), and manufacturer standards.

7. Tests buried and submerged structures in the power system such as underground vaults and ground grids for corrosion, resistance, and temperature using resistance bridge test sets to ensure adherence to design standards and specifications.
8. Calibrates and repairs protective equipment such as relays, carrier frequency oscillators, coupling devices, wave traps, and their associated electrical circuits at generating, switching, receiving, distributing, commercial, and industrial stations using variable signal generators, multimeters, oscilloscopes, and power recorders to ensure proper operation.
9. Ensures power system equipment purchased by the Department of Water and Power (DWP) such as power transformers, circuit breakers, reactors, generators, and high voltage regulators meets DWP specifications by performing acceptance testing (e.g., applying an overvoltage to cable systems for a short duration) of the equipment using AC/DC Hipot test sets and Doble Power Factor test sets.
10. Conducts protective relay maintenance (e.g., cleaning surface of electromechanical devices such as a meter using equipment and material such as a burnisher or sand paper in order to remove oxidation from electromechanical devices; calibrating overcurrent relay devices such as a short circuit detector by injecting secondary test current or voltage using a laboratory power supply) on overcurrent relay, differential relays, frequency hertz relays, voltage relays, power relays, demand meters, and IED's at Department of Water and Power electrical substations such as the Generation, Transmission, and Distribution power system facilities in order to comply with Protection Reliability Control (PRC), North American Electric Reliability Corporation (NERC), and Critical Infrastructure Protection (CIP) regulatory requirements.
11. Documents work performed such as testing, calibration, and data entry using paper and pencil and Microsoft Office to create a record of the work being performed in order to submit documentation to supervisor for review and to establish performance benchmarks for future tests.

Customer Service

12. Answers inquiries from DWP customers and personnel regarding power quality and billing complaints by telephone, email, and in-person, and performs necessary steps to resolve issues independently (e.g., replacing a faulty meter with a new meter) or refers the inquirers to appropriate personnel (e.g., Field Investigation, Major Account, Rates Group) better suited to respond to such inquiries in order to provide quality customer service.