

HYDROELECTRIC PLANT TECHNICIAN I  
CALIFORNIA STATE PERSONNEL BOARD  
SPECIFICATION

Schematic Code: --  
Class Code: --  
Established: --  
Revised: --  
Title Changed: --

HYDROELECTRIC PLANT TECHNICIAN I

This is the trainee and first working level class in the Hydroelectric Plant Technician series. An incumbent works initially under close supervision and then under general supervision to perform the more routine and basic preventive and corrective maintenance tasks associated with protection schemes, monitoring and control equipment, communications and security systems, metering, sensors, computerized and related equipment used in State Water Project (SWP) generating/pumping plants, switchyards, and water conveyance facilities; performs shop or field work as needed to install, calibrate, maintain, operate, troubleshoot, repair and test electrical, electronic, and electromechanical equipment and devices; and does other related work as required.

TYPICAL TASKS

Assists with and learns to perform the testing, maintenance, and repair of all components of SWP electrical and mechanical systems, including pressure transducers and transmitters, accelerometers, instrument records, potentiometers, temperature devices, supervisory control equipment, bridge circuits, solenoid valves, and other electrical or electronic devices and protective devices utilizing industry standards; assists and learns to test, adjust, calibrate, modify, analyze operate, and correct malfunctions in pressure, temperature, flow, vibration, speed, level measuring, monitoring and control systems, which include pneumatic controllers, flow integrators, sensors, indicators, regulators, transmitters, gauges, valves, and aural-visual alarms. Conducts pre-job hazard identification, assessment and control; operates and reads test instruments; records and summarizes test data. Assists with and learns to perform preventive and corrective maintenance; helps install and test existing and replacement systems and equipment; verifies equipment malfunction; learns to troubleshoot, repair and predict areas of possible future failures. Assists with and learns to locate equipment or device failures in order to repair or replace defective components in response to trouble calls; assists and learns to troubleshoot excitation/voltage regulator equipment, vibration equipment, circuit breakers, governors, insulation tests, trip and alarm tests, and hydraulic systems. Assists with and learns specialized testing such as Doble Test, Hi-Pot Testing, and Corona Probe; assists with service interruption investigations after equipment failures. Assists with and learns to maintain SCADA applications on networks, including plant operator interfaces, programmable logic controllers, and protocol test sets; performs tests on computer systems in the field, including running diagnostics on computers to evaluate their operation and testing power supplies for proper voltage output, current, and low ripple content. Responds to trouble calls,

including after hours and on weekends, as necessary. Performs maintenance management tasks associated with reporting and historical data recording; maintains support documentation such as equipment specifications, drawings and manufacturer's manuals; prepares test reports and maintains hardware and software documentation, equipment history files, trouble reports, and inventory records; corrects and updates logic drawings and documentation of all equipment modifications and changes. Assists with the maintenance, modification, updating and documentation of LANs, WANs, data communication equipment, microwave equipment, and the Hub Front End Processor; installs network interfaces and software to bring computers onto the network; maintains and upgrades existing computers, software, and peripherals. Assists with the preparation of special test set-ups, including selecting instrumentation. Collaborates with other sections, outside agencies, and vendors to identify and correct problems with interconnected systems.

#### MINIMUM QUALIFICATIONS

Completion of an approved two-year (60 semester or equivalent quarter units) technical curriculum in electrical, electronic, mechanical or computer-science technology at the community college level, or equivalent. [Electrical, electronic, mechanical, or computer-science work experience in an electrical utility or equivalent industrial or military facility, may be substituted for the required education on the basis of one year of experience being equivalent to 15 semester units.]

#### KNOWLEDGE AND ABILITIES

Knowledge of: mathematics, algebra, trigonometry, and Boolean logic to solve electrical and electronic problems; use of test equipment and diagnostic devices (ex. oscilloscopes, multi-meters, counters, power system, logic, and network analyzers) to determine, diagnose, and isolate problems or malfunctions; electrical and electronic theory and its application to solve electrical and electronic system problems; testing, maintaining and repairing electrical and electronic equipment; technical drawings (ex. one line diagrams, schematics, wiring diagrams, logic diagrams); color code standards for electrical wiring and components used in the manufacture, configuration, and repair of electrical equipment; instrumentation for measuring flow, level, position, temperature, pressure, speed, and vibration.

Ability to: solve electrical and electronic problems; use a personal computer for standard office applications and specialized troubleshooting; work in an environment that requires strict adherence to instructions, standards, and procedures; follow written and oral instructions for completing work tasks; determine, diagnose, and isolate problems or malfunctions in order to make necessary repairs; apply electrical and electronic theory and application to solve electrical and electronic problems and to test, maintain and repair electrical components, equipment and systems; read and interpret technical drawings, documentation and procedures for testing and repairs, and to interpret test results; comprehend policies, procedures, orders, rules, and other related written documents/materials to perform the duties of the job; wire components and equipment following wiring diagrams or schematics; apply safety and security practices.

#### SPECIAL CHARACTERISTICS

Legally operate a motor vehicle; maintain cooperative working relationships with co-workers; pay close attention to detail in order to ensure the completeness and accuracy of work performed by oneself and/or others; work as a team when necessary to complete the duties of the job in a cohesive and professional manner; work quickly and accurately in a high-pressure work environment; be reliable and dependable to properly perform job duties.

#### SPECIAL REQUIREMENTS

The North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) Standard CIP-004 that is part of the Energy Policy Act of 2005 requires the completion of a thorough background investigation. Persons convicted of a felony may not be eligible to compete for, or be appointed to, positions in this class. Under the provisions of NERC CIP Standard CIP-004, any persons unsuccessful in the background investigation may be disqualified from having authorized cyber or authorized unescorted physical access to Critical Cyber Assets (CCA's).

*PROPOSED ALTERNATE RANGE CRITERIA FOR HYDROELECTRIC PLANT TECHNICIAN I*

Experience gained outside State service may be credited only if the appointing power believes the experience was satisfactory and comparable in type and quality to that of Hydroelectric Plant Technician I.

Range A. This range shall apply to incumbents who do not meet the criteria for payment in Range B.

Range B. This range shall apply to incumbents who either have satisfactorily completed one year of State service performing the duties of a Hydroelectric Plant Technician I, Range A; or have successfully completed the Hydroelectric Plant Electrician, Mechanic or Operator Apprenticeship program; or have two years of experience performing technical work in the installation, inspection, testing, calibration, trouble shooting, maintenance, and repair of control systems and associated equipment, one year of which shall have been in the field of electronic control systems or testing, calibrating, and maintaining electrical/electronic/mechanical equipment involving the use of instrumentation in an electrical utility facility or equivalent industrial facility and completed an approved technical curriculum in electrical/electronic/mechanical technology at the community college level or equivalent. (Work experience in the field of electronic control systems or electrical/electronic/mechanical may be substituted for the required education on the basis of one year of experience to one semester [15 units] of college.)

When the requirements for the particular criteria are met and upon recommendation of the appointing power, the employee shall receive a rate under the provisions of the California Code of Regulations 599.676.