



Classification Unit:	Field and Office
Last Revision:	May 20, 2024

ELECTRICAL/ELECTRONIC TECHNICIAN

The specific statements shown in each section of this job description are not intended to be all-inclusive. They represent typical elements and criteria necessary to successfully perform the job.

DEFINITION

Under general supervision install, repair, replace, calibrate, test, overhaul, design, construct or modify various electrical and electronic systems and equipment; and perform related work as required.

DISTINGUISHING CHARACTERISTICS:

This is a skilled working level class required to perform a variety of complex repairs, adjustments, maintenance, installation, and testing of electrical and electronic equipment and instrumentation, process control and data acquisition, and communications systems.

SUPERVISION RECEIVED AND EXERCISED

Exercises no supervision.

ESSENTIAL FUNCTION STATEMENTS

Essential responsibilities and duties may include, but are not limited to, the following:

- ❖ Inspects, maintains, repairs, installs, and tests electrical circuits, transformers, switches, street lights, lighting fixtures, motor starters, motors, generators, outlets, control panels, electrical components of telemetering systems, cathodic protection systems, communication networks and related electrical systems
- ❖ Installs, maintains, repairs, overhauls, calibrates, and tests a wide variety of pneumatic, hydraulic, photo-electric, electric, electromechanical, and electronic recording, indicating, controlling, telemetering, and test instruments, including: digital and/or analog computers, printed circuits, magnetic flow meters, pressure recorders, loss-of-head indicators, level indicators; pressure regulators, and gauges, chemical feeder controllers, pneumatic controllers and regulators, and telemetering receivers and transmitters.

- ❖ Performs troubleshooting and diagnostic work on a variety of electrical equipment; makes periodic preventive maintenance inspections of all metering control instruments, diagnosing existing or potential trouble; cleans, lubricates, calibrates, and adjust as conditions indicate.
- ❖ Installs conduit and pulls wire for motors, control panels, lighting fixtures, outlets, and other purposes; lays out, installs, aligns, and places into service new metering and recording devices, calibrating as required; may extend or connect related electrical circuits; makes cable splices of various sizes and difficulty as required.
- ❖ Performs balancing operations and may make load computations on a variety of electrical circuits.
- ❖ Reads and interprets wiring diagrams, mechanical drawings, manuals and specifications in making installations or performing major work; makes as-built drawings of electrical installations.
- ❖ Makes estimates of labor, materials, and supplies necessary for the performance of specific assignments; orders materials and supplies.
- ❖ Repair and replace a variety of communication equipment.
- ❖ May design simple electronic and electrical system circuits and simple design modifications for power, communications and control systems.
- ❖ Prepare reports and maintain records, such as preventative maintenance test and repair records.
- ❖ Locates underground conduits, pipelines and facilities.
- ❖ May order and maintain inventory control of parts and materials.
- ❖ May train new personnel as required.
- ❖ Perform related duties as assigned.
- ❖ Perform “on-call” and emergency work assignments.

Other Duties

- ❖ May inspect, maintain, repair, install and test emergency power generating equipment.
- ❖ Maintains accurate records; makes oral and written reports of work performed.
- ❖ Uses and maintains a wide variety of hand and power tools and test equipment related to the work; operates a truck on a daily basis.
- ❖ Complies with all District policies, procedures, rules and regulations including all safety standards.

EMPLOYMENT STANDARDS

Knowledge of:

- ❖ Basic understanding of hydraulic systems.
- ❖ Computer skills
- ❖ The theory and practice of electrical design, installation, repair, maintenance, testing and troubleshooting of low voltage up to 600 VAC systems, electrical motors, and electrical motor controls.
- ❖ Pneumatic, hydraulic, electronic and electro-mechanical systems.
- ❖ Modern radio and process control and data acquisition systems.

- ❖ Methods and principles used in the design and planning of process control and telemetry systems.
- ❖ Proper work safety standards.
- ❖ Principles, techniques, tools and materials used in the electrical trade.
- ❖ Electrical and electronic circuits, micro-computer applications related to the work.
- ❖ Operation and maintenance of a wide variety of hand and power tools, test equipment common to electrical and electronic work.
- ❖ Safe work methods and safety regulations pertaining to the work.
- ❖ Shop and electrical mathematics.
- ❖ Principals of operation and maintenance of mercury, solenoid, hydraulic, and bellows type actuating instruments and controls.
- ❖ Hydraulics as related to the operation of recording and metering instruments.

Ability to:

- ❖ Plan, design, modify control systems.
- ❖ Design and fabricate electrical and electronic circuits.
- ❖ Maintain accurate records and prepare reports.
- ❖ Establish and maintain cooperative working relationships.
- ❖ Work on low voltage up to 600 VAC electrical circuits safely.
- ❖ Diagnose mechanical, hydraulic, pneumatic, electrical, and electronic malfunctions in instruments and telemetering systems.
- ❖ Operate motor vehicles and a variety of hand, power, and shop tools and equipment used in electrical installation, maintenance, and repair work.
- ❖ Ability to read, comprehend, and write plans, specifications, Operation and Maintenance manuals, procedures, schematics, wiring diagrams, single line diagrams, logic diagrams, blueprints, mechanical drawings and electrical plans.
- ❖ Make extensive repairs and overhauls to metering and control instruments.
- ❖ Exercise independent judgment and initiate action without close supervision.
- ❖ Make estimates of labor, materials, and equipment necessary to complete assigned jobs.
- ❖ Maintain records, document modifications made to systems, make oral and written reports and presentations.
- ❖ Pass pre-employment physical and background check.

Experience and Training Guidelines:

Any combination equivalent to experience and training that would provide the required knowledge, skills and abilities would be qualifying. A typical way to obtain the knowledge, skills and abilities would be:

Experience:

Three years of responsible work experience in the installation, design, repair, maintenance and modification of electrical systems, electronic systems, radio, telemetry, microwave and landline communications and process control and data acquisition systems.

WORKING CONDITIONS

Essential duties require the following physical skills and work environment:

Environmental Conditions

- ❖ Operates District vehicles to travel between District plants and facilities.
- ❖ Works in an environment with exposure to dust, dirt, chemicals and significant temperature changes between cold and heat.
- ❖ Works in a confined space.

Physical Conditions

- ❖ Must be able to carry, push, pull, reach and lift equipment and parts weighing up to 50 lbs.
- ❖ Must be able to climb stationary ladders up to 135 feet in height, work in confined spaces.
- ❖ Stoops, kneels, crouches, crawls and climbs during maintenance and repair work on telemetry and communications systems.
- ❖ Communicates orally with District staff in face-to-face, one-on-one settings.
- ❖ Regularly uses a telephone and radio for communication.
- ❖ Uses office equipment such as computer terminals, copiers and FAX machines.
- ❖ Stands and walks for extended time periods.
- ❖ Hearing and vision within normal ranges.

SPECIAL REQUIREMENTS

- ❖ Possession of a valid California Driver's License, Class C, as issued by the State of California Department of Motor Vehicles; and a driving record acceptable to the District's auto insurance provider.
- ❖ Obtain and maintain defensive drivers training certification (training provided by the District)
- ❖ Obtain and maintain CPR and First Aid training certification (training provided by the District)
- ❖ Must reside within a thirty (30) minute response time by the end of probationary period.

Approved: May 20, 2024

/s/ Jeff Cattaneo
Interim General Manager