

ELECTRICIAN

DEFINITION

Under general supervision, performs a variety of skilled electrical work in the installation, maintenance, inspection, testing, troubleshooting, and repair of a variety of electrical, electronic, and instrumentation equipment and systems associated with production, treatment, and distribution of potable water and water reclamation operations, as well as City facilities, buildings, and related infrastructure; and performs related work as required; all work per California Electrical Code requirements. This position is assigned to the Water Reclamation Facility and supports the Water, Streets and Facilities on as needed basis.

SUPERVISION RECEIVED AND EXERCISED

Receives direct or general supervision from the Chief Plant Operator. No direct supervision is exercised. May exercise technical and functional direction over assigned staff.

EXAMPLES OF ESSENTIAL JOB FUNCTIONS

- Inspects, installs, repairs, maintains, tests, and troubleshoots electrical, electronic, and associated instrumentation, control systems and power circuits, power generating equipment, switchgear, and emergency systems used in water production and wastewater collection and treatment facilities.
- Maintains, tests, and repairs low and high voltage electrical equipment, including circuits, transformers, high voltage switches, motor control centers, variable frequency drive (VFD's), switchboards, and electrical components of process control, telemetering, cathodic protection systems, and electronic equipment boards.
- Repairs, installs, tests, services, and maintains electrical systems, including conduit, wiring, light and power circuits, motor appliances, generators and switches; ensures compliance with building codes applicable to the electrical trade.
- Performs preventive maintenance on City-wide electrical panels; checks and services circuit breakers, distribution panels, and transformers; replaces parts as needed.
- Participates in electrical design for new or altered buildings and facilities.
- Performs skilled electrical and electronic work on traffic signal and related equipment; adjusts and replaces electronic, electrical, and mechanical components.
- Inspects, removes, and repairs street light standards and auxiliary equipment such as control boxes, light fixtures, lamps, and circuitry.
- Reads and interprets electrical and electronic schematics, mechanical and instrumentation drawings, wiring diagrams, and construction drawings necessary to install, service, and repair equipment in accordance with related regulations and vendor specifications.
- Estimates labor, material, and equipment needed for assigned projects; monitors inventory levels of materials and equipment; orders, receives, and maintains inventory of materials and equipment as needed.

QUALIFICATIONS

Knowledge of:

- Principles, practices, methods, equipment, materials, and tools used in electrical maintenance and repair of City electrical systems, including applicable electrical codes.
- Principles, practices, tools, and materials for maintaining and repairing electrical motors, lighting circuits, electrical control equipment, transformers, conduit and duct systems, and other types of electrical equipment.
- Electrical theory, work methods, tools, and testing equipment used in the City's water, collections, wastewater, and associated facilities.
- Basic principles, practices, and methods related to the maintenance and repair of various data acquisition and control instrumentation.
- Safe application, operation, and maintenance of tools and equipment used in the electrical trade.

Ability to:

- Inspect, operate, diagnose problems, and perform preventive maintenance and repair work on electrical and electronic circuits and systems; take appropriate action when failures occur.
- Use electrical tools and equipment skillfully and safely.
- Perform basic preventative maintenance of electrical equipment and systems.
- Read and follow plans, blueprints, schematic diagrams, and specifications for electrical work.
- Troubleshoot electrical and maintenance problems and determine materials and supplies required for repair.

EDUCATION AND EXPERIENCE

Any combination of training and experience which would provide the required knowledge, skills and abilities is qualifying. A typical way to obtain the required qualifications would be:

Equivalent to the completion of the twelfth (12th) grade. Three (3) years of experience of mechanical and electrical maintenance of water reclamation equipment and water treatment and/or distribution equipment in a plant environment or equivalent mechanical and electrical maintenance plant experience.

License:

- Valid California class C driver's license with satisfactory driving record. A class B driver's license may be required.

PHYSICAL DEMANDS

Must possess mobility to work in standard water and water reclamation operations facilities; strength, stamina and mobility to perform light to medium physical work, to work in confined spaces, around machines and to climb and descend ladders, and operate varied hand and power tools and equipment; vision to read printed materials and a computer screen; color vision to read gauges and identify appurtenances; and hearing and speech to communicate in person and over the telephone or radio. The job involves frequent walking in operational areas to identify problems or hazards. Finger dexterity is needed to access, enter and retrieve data using a computer keyboard or calculator and to operate above-mentioned tools and equipment. Positions in this classification bend, stoop, kneel, reach and climb to perform work and inspect work sites. Employees must possess the ability to lift, carry, push, and pull materials and objects necessary to perform job functions.

ENVIRONMENTAL ELEMENTS

Employees work primarily outdoors and are exposed to loud noise levels, vibration, confining workspace, chemicals, mechanical and/or electrical hazards, and hazardous physical substances and fumes. Employees may interact with upset staff and/or public and private representatives, and contractors in interpreting and enforcing departmental policies and procedures.

WORKING CONDITIONS

May be required to work on evenings, weekends and holidays. Participates in after-hours emergency response and on-call and callback assignments.