

**VALLEY CENTER MUNICIPAL WATER DISTRICT**  
**ELECTRICAL TECHNICIAN I, II**

**DEFINITION**

Initially under direct supervision while progressing towards general supervision, incumbents shall perform and learn a variety of duties related to installing, maintaining, inspecting, troubleshooting and repairing electrical and electronic components.

**CLASS CHARACTERISTICS**

Electrical Technician I is the entry-level class in the Electrical Technician series. Incumbents are responsible for assisting senior personnel and performing routine activities while acquiring the knowledge and skills to perform higher-level work to include: installing, maintaining, inspecting, troubleshooting and repairing electrical and electronic components at Water and Wastewater facilities.

Electrical Technician II is the journey level class in the Electrical Technician series. Incumbents are fully competent in 120-volt electrical work and are expected to perform basic journey level duties, while acquiring and retaining the knowledge and skills to perform higher-level work to include: installing, maintaining, inspecting, troubleshooting and repairing electrical and electronic components at Water and Wastewater facilities.

Incumbents may work a varied work week, different shifts, stand duty and must be able to respond to emergencies as deemed necessary by the District.

**ESSENTIAL DUTIES**

*The duties listed below are intended only as illustrations of the various types of work that may be performed. The omission of specific statements of duties does not exclude them from the position if the work is similar, related, or a logical assignment to this position.*

*Positions at the Electrical Technician I level may perform some of these duties and responsibilities in a learning capacity.*

Follows safe work methods as defined in the District's qualification requirements for Energized Electrical Work and the use of safety equipment and precautions related to the work being performed, particularly when dealing with live electrical circuits.

Assists and learns to test, troubleshoot, repair and perform preventive maintenance on a variety of industrial electrical and electronic systems, components and devices; utilizes appropriate electrical testing equipment.

Installs, tests, troubleshoots, and repairs communication radios, transducers, security cameras, lighting equipment and simple electrical controls.

Assists and learns to plan, purchase and install various electrical equipment and components in accordance with the National Electric Code. Equipment includes motor control centers and components, motor starters, variable frequency drives, programmable logic controllers, photovoltaic inverters and modules, back-up generation systems, transformers, circuit breakers, relays, security cameras, communication radios, lighting and control systems, and/or other related equipment.

Assists and learns to plan and lay out jobs from blueprints, drawings, sketches or verbal instructions; maintain electrical system drawings, "as-built" drawings and records of electrical work performed by in-house personnel and outside contractors.

Learns to read and interpret electrical schematic drawings and instruction manuals to install, troubleshoot, and repair or replace electrical equipment, electronic components, and circuits.

Assist and learns to test, troubleshoot and calibrate, repair and perform preventive maintenance on a variety of mechanical equipment in relation to the operation of water and wastewater facilities.

Assists and learns to design, build and modify motor control panels and equipment circuits, supervisory control and instrumentation panels and industrial electrical circuits.

Learns to inspect, test, and maintain the safety of the District's portable electric tools and acquires parts for repairs.

Maintains sites in a clean and orderly condition; prepares and keeps records of all repairs and inventory of parts for electrical equipment.

Assists in the repair and maintenance of water distribution and wastewater reclamation systems and facilities.

Performs other duties as assigned.

### **QUALIFICATIONS GUIDELINES**

**Knowledge of:** Electrical circuits, control panels, motor starters, variable frequency drives, programmable logic controllers, photovoltaic systems and distribution systems for various types of pumps; preventive maintenance practices and procedures as applied to electrical systems; methods used in the installation, maintenance, repair and operation of electrical circuits and related equipment; electrical theory and applied mathematics; applicable laws and regulations to include CAL-OSHA, OSHA, District safety regulations and current National Electrical Code; principles, methods and application of electrical theory as used in the installation, maintenance, troubleshooting and repair of electrical systems up to 600 volts; telephone and radio communications; using a computer and related software applications, including Word, Excel, and Email; basic first aid and CPR techniques; and, safe work methods and safety precautions related to the work.

**Ability to:** Perform varied electrical maintenance and repair work; program motor starters, variable frequency drives, and photovoltaic systems; diagnose problems and determine appropriate course of action; interpret and work from sketches, blueprints and specifications; estimate labor and materials; identify and implement effective courses of action to complete assigned work; maintain, troubleshoot, repair, inspect, test and install a wide variety of electrical components and equipment; prepare "as-builts" of work performed; determine proper shut-down procedures for pump, motor, and engine operations; perform Lock-Out, Tag-Out procedures for electrical equipment; install, troubleshoot and repair or replace circuit breakers up to 240 volts, electric motors up to 240 volts, low water probes, and relays; install PVC, EMT, and Ridged Conduit and associated components; operate and maintain a wide variety of shop equipment and tools used in the performance of the work; install, troubleshoot, and replace communication radios, lighting equipment, pressure transducers, simple electrical controls, security cameras and motion sensors; communicate clearly and concisely and be understood while using the District's radio communication system; and establish and maintain effective working relationships with other employees and those contacted in the course of the work.

### **EDUCATION, EXPERIENCE, LICENSES AND CERTIFICATIONS**

**Education:** Electrical Technician I and II: Equivalent to a High School Diploma.

**Experience:** Electrical Technician I- An equivalent combination of education and experience sufficient to successfully perform the essential duties of the job such as those listed above.

Electrical Technician II- A minimum of two years of experience working with pumps, motors and electrical controls; or an equivalent combination of education and experience sufficient to successfully perform the essential duties of the job such as those listed above

**Licenses and Certifications:** Electrical Technician I- California Class C Driver's License; *Ability to obtain within two years as a condition of employment:* SWRCB (State Water Resources Control Board) Water Distribution Operator's Certificate, Grade D2, Enrollment in a California approved Electrician Certification Program.

Electrical Technician II- California Class C Driver's License; SWRCB (State Water Resources Control Board) Water Distribution Operator's Certificate, Grade D2; Completion of one year of a California approved Electrician Certification Program; *Ability to obtain within four years as a condition of employment:* Journeyman General Electrician Training Program Certification of Completion from an approved California Electrician Certification Program School.

#### **PHYSICAL DEMANDS AND WORK ENVIRONMENT**

*The physical demands and work environment described here are representative of those that must be met by an incumbent to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.*

**Physical Demands:** While performing the duties of this job, the incumbent is regularly required to use hands and fingers to grasp, feel, and reach; climb, balance, stoop, kneel, crouch, crawl, talk, hear, and smell. The incumbent frequently is required to sit, stand and walk. The incumbent must regularly lift and/or move from 25 to 50 pounds and occasionally lift and/or move up to 100 pounds. Specific vision abilities required by this job include close vision, distance vision, color vision, peripheral vision, depth perception, and ability to adjust focus. May be required to medically qualify and wear a District approved respirator.

**Work Environment:** While performing the duties of this job, the incumbent is regularly exposed to high, precarious places; fumes or airborne particles; outside weather conditions; and risk of electrical shock. The incumbent is frequently exposed to wet and/or humid conditions and moving mechanical parts. The incumbent is occasionally exposed to vibration. The noise level will range from moderate to very loud.

POSITION DESCRIPTION APPROVED:

  
General Manager

  
Date