

Sacramento Suburban Water District Classification Specification

Job Class: Electrical & Instrumentation Technician

FLSA Status: Non Exempt

Supervisor: Superintendent, Production

Effective Date: March 2010

Definition/Distinguishing Characteristics

Under general supervision, this journey level position performs basic work in the operation, installation, maintenance and repair of water production electrical and instrumentation systems.

Examples of Duties

The following duties are typical for this classification. Depending upon the assignment, the employee may not perform all of the listed duties and/or may be required to perform additional or different duties from those set forth below to address business needs and changing business practices. Management retains the right to add, remove, or change duties at any time.

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

- Directs the work of sub-journey level employees; ensures that proper safety precautions and safe work methods are followed, with particular emphasis on work performed on energized equipment.
- 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.
- Maintains regular attendance and adheres to prescribed work schedule to conduct job responsibilities.

Mental and Physical Requirements

The conditions herein are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential job functions.

- Operates District owned or rented vehicles and equipment in the performance of field installations, maintenance and repair work.
- Travels frequently by automobile or truck in conducting District business.
- Communicates both written and orally with District management, coworkers, and vendors, both one-to-one, and in group settings.
- Regularly uses a telephone for communication.
- Regularly uses office equipment such as computers, copiers, and fax machines.
- Ability to carry, reach and lift supplies and equipment weighing up to 50 pounds.
- Ability to push, pull and maneuver supplies and equipment of varying weights and configurations.
- Ability to stoop, kneel, crouch, crawl and climb during field repair work.
- Ability to work in elevated positions and underground in confined places.
- Works out-of-doors as needed in all weather conditions with exposure to dust, dirt, water and significant temperature changes between cold and heat.
- Hearing within normal ranges with or without correction.
- Must wear CalOSHA approved protective footwear with a minimum ANSI I/75 rating.
- Must possess good color vision.
- Occasionally required to change working hours or work overtime.

Qualifications

Knowledge of:

- Principles, techniques, tools and materials used in the electrical trade.
- Electrical and electronic circuits, micro-computer applications, and telemetry 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.
- AC/DC theory and control circuits.
- Mechanical linkage related to electronic or electrical systems.
- Codes, laws and ordinances 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:

- Work on electrical circuits up to 600VAC or 1000VDC safely.
- Diagnose mechanical, hydraulic, pneumatic, electrical, and electronic malfunctions in instruments and telemetry systems.
- Operate motor vehicles and a variety of hand, power and shop tools and equipment used in electrical installation, maintenance and repair work.
- 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.
- Establish and maintain effective work relationships.
- Pass pre-employment physical, drug and alcohol examination, and background check.

Education, Experience, Licenses and Certifications

Required:

- High school diploma or equivalent.
- Valid California Driver's License issued by the California Department of Motor Vehicles.
- Proof of good driving record as evidenced by freedom from multiple or serious traffic violations or accidents for at least two (2) years duration. The driving record will not contribute to an increase in the District's automobile insurance rates. Individuals who do not meet this requirement due to a physical disability will be considered for accommodation on a case-by-case basis.
- Minimum of two years experience working on electrical systems and/or instrumentation controls.

Desirable:

Any combination of education and experience which would likely provide the desired knowledge and abilities is acceptable. A typical way to obtain the knowledge and abilities would be:

- Completion of a recognized apprenticeship in the electrical trade.
- College or technical school coursework in electrical theory and practice.
- Experience working on electrical or instrumentation controls in the Water or Wastewater Utility industry is highly desirable.
- Possession of State of California Water Treatment Operator Certificate Grade T1 and/or Water Distribution Operator Certificate Grade D1 is highly desirable.