

**JOB DESCRIPTION**  
**Senior Controls Technician**  
**Code Number: 46007**

**GENERAL PURPOSE**

Under direction, leads and participates in a wide variety of skilled, advanced journey-level duties in the design, construction, development, installation, modification, maintenance and repair of industrial electrical and electronic supervisory control systems, plant control systems, RF and fiber optic-based telecommunication systems used in the production, treatment, storage, transmission and distribution of potable and reclaimed water, the collection of wastewater, and the operation of a large state-of-the-art wastewater reclamation plant; and performs related duties as assigned.

**DISTINGUISHING CHARACTERISTICS**

This is the lead or advanced journey level in the Controls Technician series. In the lead assignments, incumbents provide direction to lower level staff including assigning, directing and reviewing the work of staff. In the advanced journey assignments, incumbents perform the more difficult and complex tasks and assignments. Positions at this level are distinguished from those in the lower level classification of Controls Technician II by the independence with which they perform their duties of handling the most difficult and complex work or by performing lead work.

Employees in this classification are subject to on-call, which may include rotating-duty schedule, weekends and 24-hour emergency call out with little or no notice. Any employee designated to serve on-call who repeatedly refuses to serve on-call, or report for emergencies, shall be subject to disciplinary action up to and including discharge.

**ESSENTIAL DUTIES AND RESPONSIBILITIES**

*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 the class.*

Provides training and monitors the work of lower level technicians and electricians to ensure high performance and a technically competent work force that can support the District in its efforts to achieve its mission, strategic plan, objectives and values; develops training plans and methods to meet individual training requirements.

Develops engineering and equipment standards to ensure District goals and objectives

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are met on new and upgrade projects.

Tests, troubleshoots, locates and calibrates, repairs and performs preventive maintenance on a variety of industrial electrical and electronic systems, components and devices associated with the reverse osmosis desalter, micro-filtration plants, production, treatment, storage, transmission and distribution of potable and reclaimed water, the collection and transmission of wastewater, and the operation of a large state-of-the-art wastewater reclamation plant; rebuilds equipment to manufacturer's specifications, including motor controllers, flow and pressure transmitters, level instruments, audio-tone transmitters, radio communication, process control and instrumentation, supervisory control, telemetry systems, devices and scientific instruments using operational performance standards, and standard and specialized testing equipment; corrects defects in instrumentation.

Services and performs preventive maintenance on remote terminal units used in the plant's treatment process control system; troubleshoots, repairs and programs remote terminal units, including the replacement of hardware components, circuit boards, power supplies and electronic components.

Diagnoses, troubleshoots and repairs coaxial, copper and fiber optic cables for communication systems; installs, relocates, modifies, designs, troubleshoots, performs preventive maintenance and repairs a wide variety of electronic communications, LAN and SCADA systems, equipment and components.

Repairs and replaces defective parts in motors, generators, storage batteries, solar-generating equipment, power transfer, regulation and phasing equipment, uninterruptible power supplies, switchboards, controllers, conductors, switches and other industrial electrical fixtures in making additions, extensions and modifications in electrical systems; installs, maintains and repairs electromechanical, electronic and electrical components of equipment and machinery, including transformers, exciters, generators and pneumatic and hydraulic devices.

Performs preventive maintenance and repair of plant, field and shop electrical and electronic systems, components, devices and equipment, including hazardous chemical feed, storage, and leak detection equipment, laboratory equipment, flow stations, reservoirs, motors, pumps and electrical-mechanical valves.

Disconnects electrical sources (up to 6,000 volts), uses lockout/tagout procedures and current OSHA requirements; reconnects and operates equipment at panel for maintenance purposes.

Tests, troubleshoots, calibrates and performs preventive maintenance on a variety of complex electrical and electronic instruments and devices, such as programmable logic controllers, analog and digital systems, telemetry-based controllers, fiber-optic telecommunication systems equipment, software-based control and instrumentation logic,

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including soft/start, VFD and Murphy microprocessor-based controllers.

Develops and writes control programs for wells, booster plants, and lift stations; makes program modifications to various programmable controllers (PLC's) and their operator interface terminals.

Isolates and resolves equipment and system failures in the field; performs bench repairs at the component level in a shop setting; troubleshoots, aligns and calibrates equipment with such devices as frequency generators, voltmeters, oscilloscopes, multimeters, logic analyzers, meggers, ammeters, computers, thermo-imaging devices, digital analyzers and other specialized test equipment.

Tests solid state circuitry to locate defective parts in analog and digital equipment; replaces defective parts.

Installs conduits, wires, pull boxes, switchboards, controllers and switches required in making additions, extensions or alterations in industrial electrical systems; installs motors, controls, telemetry equipment, transformers, exciters and generators.

Designs and modifies motor control equipment circuits, ladder logic, planning, laying out and wiring the work; reads and interprets blueprints, schematics and wiring diagrams; upon completion, draws modifications made to the system.

Schedules and coordinates activities with other sections and divisions.

Installs, maintains and repairs weather-station equipment.

Inspects and oversees equipment installation work performed by contractors and District personnel.

Researches new operational methods, techniques and equipment and recommends their application.

Plans and lays out jobs from blueprints, drawings, sketches or verbal instructions; maintains records in the form of blueprints, plans and specifications for industrial electrical and instrumentation, radio telemetry and other related devices.

Ensures the timely and accurate completion of preventive maintenance activities.

Submits requisitions for necessary tools, equipment and supplies; participates in developing annual plant budget for electrical and instrumentation needs.

Uses CMMS for tracking of work orders, data entry, status change, and tracking of equipment.

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Responds to emergency situations as necessary.

May provide back up for CMMS planning and scheduling.

Performs related duties as assigned.

## **DESIRED MINIMUM QUALIFICATIONS**

### **Knowledge of:**

Practices, methods, techniques, tools and equipment used in the design, installation, testing, calibration, maintenance and repair of electrical and electronic equipment and devices common to a large waterworks system and state-of-the-art wastewater reclamation plant, including devices used for automated process control; operating characteristics of electronic components, including programmable logic controllers, feedback devices, variable frequency drivers, operator interface terminals, and microprocessor controls; electrical and electronic shop procedures and practices; effective training methods; safety work methods and safety regulations pertaining to the work; shop mathematics; Safe Drinking Water Act and relevant EPA regulations; computer applications related to the work; codes, ordinances and regulations pertaining to the work.

### **Ability to:**

Effectively lead and train others to perform a full range of electrical and electronic equipment; test, diagnose, program, calibrate and repair a wide variety of electrical and electronic instrumentation devices, motors, machinery and equipment common to the waterworks field and state-of-the-art wastewater reclamation plant; program and modify programmable logic controllers as well as interface devices; use modern, state-of-the-art precision and diagnostic instruments to test, calibrate and repair complex electrical and electronic devices and equipment; identify and implement effective courses of action to complete assigned work; read and interpret plans, specifications and manuals; coordinate work assignments with other divisions or departments; operate and maintain scrubber and chlorine leak detector equipment, radio-based and fiber-optic telemetry and associated hardware and software equipment; establish and maintain effective working relationships with those contacted in the course of work; follow and apply written and oral work instructions; communicate effectively, orally and in writing; make sound independent judgments within established guidelines; train others in work processes and procedures.

### **Training and Experience:**

A typical way of obtaining the knowledge, skills and abilities outlined above is graduation from high school, or G.E.D. equivalent; and five (5) years of experience performing the full range of Controls Technician II duties; or an equivalent

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combination of training and experience.

**Licenses; Certificates; Special Requirements:**

A valid California driver's license and the ability to maintain insurability under the District's Vehicle Insurance Policy.

CWEA Electrical/Instrumentation certification is desired.

**PHYSICAL AND MENTAL DEMANDS**

*The physical and mental demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this class. 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 employee is regularly required to use hands to finger, handle, feel or operate objects, tools or controls; and reach with hands and arms. The employee frequently is required to stand and talk or hear; walk or sit; climb and work up to heights of 100 feet; stoop, kneel, crouch or crawl.

The employee must occasionally lift and/or move up to 50 pounds and frequently over 100 pounds. Specific vision abilities required by this job include close vision, distance vision, color vision, peripheral vision, depth perception and the ability to adjust focus.

**Mental Demands**

While performing the duties of this class, the incumbent is regularly required to use written and oral communication skills; read and interpret data, information and documents; analyze and solve problems; use shop mathematics; observe and interpret situations; deal with changing, intensive deadlines; and interact with officials and the public.

**WORK ENVIRONMENT**

*The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this class. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.*

The employee occasionally works in extreme outside weather conditions, near moving mechanical parts, and on slippery and uneven surfaces. The employee is frequently exposed to wet and/or humid conditions, fumes or airborne particles, toxic or caustic chemicals, and risk of electrical shock. The noise level in the work environment is frequently loud.

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