

## Job Description

*Please note this job description is not designed to cover or contain a comprehensive listing of activities, duties or responsibilities that are required of the employee for this job.*

<b>Job title</b>	Senior Controls Technician
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### 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 water and wastewater systems and facilities; tests and calibrates a diverse range of electronic control system equipment, devices and components; and performs related duties, as assigned.

### DISTINGUISHING CHARACTERISTICS

This is the advanced-level classification in the Controls Technician series responsible for performing the most complex work assigned to the series. Incumbents regularly work on tasks which are varied and complex, requiring considerable discretion and independent judgment. Positions in the classification rely on experience and judgment to provide direction to lower level staff including assigning, directing, and reviewing the work of staff. Assignments are given with general guidelines and incumbents are responsible for establishing objectives, timelines and methods to complete assignments. Work is typically reviewed upon completing for soundness, appropriateness, and conformity to policy and requirements.

This class is distinguished from the Electrical Services Supervisor in that the latter is a full-supervisory class with accountability and ongoing decision-making responsibilities associated with the 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.

### SUPERVISION RECEIVED AND EXERCISED

Receives direction from the Electrical Services Supervisor. Exercises technical and functional direction over and provides training to lower-level staff.

## **TYPICAL 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 this position.*

- Tests, troubleshoots, locates and calibrates, repairs and performs preventive maintenance on a variety of medium and low voltage 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.
- Tests, troubleshoots, corrects, 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.
- Develops engineering and equipment standards to ensure District goals and objectives are met on new and upgrade projects; develops engineering, design and modification on systems ranging from 12 volts to 12000 volts.
- 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; inspects and oversees equipment installation work performed by contractors.
- 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.
- 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.
- 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.
- 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, and related devices and components.
- Disconnects electrical sources (up to 12,000 volts), uses lockout/tagout procedures and current OSHA requirements; racks and unracks the 12kv breakers to lock out and perform maintenance, following appropriate safety procedures.
- 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.
- Designs and modifies motor control equipment circuits, ladder logic, planning, laying out and wiring the work; upon completion, draws modifications made to the system.
- Reads and interprets blueprints, complex wiring and control schematic diagrams; 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 equipment, as well as radio telemetry and other related devices; schedules and coordinates activities with other sections and divisions.
- 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.
- 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; corrects defects in instrumentation.
- Researches new operational methods, techniques and equipment and recommends their application; performs proactive measures and make modifications to the control systems; corrects design or installation issues and makes improvements to match evolving/changing process conditions and control strategies.
- 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; May provide back up for CMMS planning and scheduling.
- Responds to emergency situations as necessary, including after hours.
- Observes and complies with all District and mandated safety rules, regulations, and protocols.
- Performs related duties as assigned.

## **REQUIRED QUALIFICATIONS**

### Knowledge of:

- Principles of providing functional direction and training.
- Principles, techniques and theory of radio telecommunication, radio wave propagation, test equipment, and tools used in installing, servicing, and repairing various electronic equipment.
- A diverse range of communications protocols used in the industry.
- Methods and techniques of configuring communication between devices such as Programmable Logic Controllers (PLC), Remote Telemetry Units (RTU), and field devices.
- 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.
- Advanced construction knowledge and experience with industrial power design, including medium and low voltage electrical power distribution, motor control, VFDs, lighting systems, equipment layout and related activities.
- Electrical and electronic shop procedures and practices.
- Scientific mathematics associated with process controls.
- District and mandated safety rules, regulations, and protocols.
- Techniques for providing a high level of customer service by effectively dealing with the public, vendors, contractors, and District staff.
- The structure and content of the English language, including the meaning and spelling of words, rules of composition, and grammar.
- Modern equipment and communication tools used for business functions and program, project, and task coordination, including computers and software programs relevant to work performed.

Ability to:

- Plan, organize, and coordinate the work of assigned staff.
- Effectively provide staff leadership and work direction.
- 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.
- Understand, interpret, and apply all pertinent laws, codes, regulations, policies and procedures, and standards relevant to work performed.
- Independently organize work, set priorities, meet critical deadlines, and follow-up on assignments.
- Use tact, initiative, prudence, and independent judgment within general policy and procedural guidelines.
- Effectively use computer systems, software applications relevant to work performed, and modern business equipment to perform a variety of work tasks.
- Communicate clearly and concisely, both orally and in writing, using appropriate English grammar and syntax.
- Establish, maintain, and foster positive and effective working relationships with those contacted in the course of work.

Experience:

*Any combination of experience and education that provides the required knowledge and abilities is qualifying, along with the specific licenses/certifications as outlined below:*

- Five (5) years of progressively responsible experience in the design, installation, maintenance and repair of complex electrical and electronic equipment and devices common to a large waterworks system and wastewater treatment plant including at least three (3) years as a Controls Technician II with the District.

Education:

- Equivalent to completion of the twelfth (12<sup>th</sup>) grade. Specialized technical training in electronics and/or electrical technologies is desirable. Completion of a recognized electrical apprenticeship such as those offered by IBEW-NECA, ABC, WECA or the United States Armed Forces is desirable.

Licenses/Certifications:

- 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 DEMANDS**

*The physical demands described here are representative of those that must be met by employees to successfully perform the essential functions of this class. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.*

Must possess mobility to work in the field; strength, stamina, and mobility to perform medium to heavy physical work; to sit, stand, and walk on level, uneven, or slippery surfaces; frequently reach, twist, turn, kneel, bend, stoop, squat, crouch, grasp and make repetitive hand movement in the performance of daily duties; possible entry into confined spaces and the use of confined entry equipment, to climb and descend ladders, to operate varied hand and power tools and construction equipment, and to operate a motor vehicle and visit various District sites; vision to inspect and operate equipment; and color vision to read gauges and identify appurtenances. The job involves fieldwork requiring frequent walking in operational areas to identify problems or hazards, which may include working on live electrical wires. Finger dexterity is needed to operate and repair tools and equipment. Employees must possess the ability to lift, carry, push, and pull materials and objects averaging a weight of 50 pounds or heavier weights, in all cases with the use of proper equipment and/or assistance from other staff.

Employees must wear and use the proper Personal Protective Equipment (PPE).

**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.*

Employees work in the field and are exposed to loud noise levels, cold and hot temperatures, inclement weather conditions, road hazards, vibration, confining workspace, chemicals, exposure to vermin, insects, and parasites, mechanical and/or electrical hazards, hazardous physical substances and fumes, dust and air contaminants. Employees may interact with upset staff and/or public and private representatives in interpreting and enforcing departmental policies and procedures.

Eastern Municipal Water District  
Job Title: Senior Controls Technician  
Last Update: June 2023

This job description has been reviewed and approved by all levels of management in cooperation with the union (if applicable):

<b>Approved by:</b>	<i>Board of Directors</i>
<b>Date adopted:</b>	<i>March 29, 2020</i>
<b>Date modified:</b>	<i>June 23, 2023</i>
<b>FLSA determination:</b>	<i>Non-Exempt</i>

**Job Description Acknowledgment**

*I have received, reviewed and fully understand the job description for Senior Controls Technician. I further understand that I am responsible for the satisfactory execution of the essential functions described therein, under any and all conditions as described.*

*Employee Name (print):* \_\_\_\_\_ *Date:* \_\_\_\_\_

*Employee Number:* \_\_\_\_\_

*Employee Signature:* \_\_\_\_\_