



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.

Job title	Controls Technician I/II
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GENERAL PURPOSE

Under immediate (Controls Technician I) to general (Controls Technician II) supervision, performs a wide variety of skilled duties in the design, development, installation, modification, maintenance and repair of industrial electrical and electronic 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

Controls Technician I: This is the entry-level classification in the Controls Technician series. Initially under close supervision, incumbents learn and perform routine a variety of skilled duties in maintaining and repairing electronic systems control equipment, devices and components. As experience is gained assignments become more varied, complex, and difficult; close supervision and frequent review of work lessen as an incumbent demonstrates skill to perform the work independently. Positions at this level usually perform most of the duties required of the positions at the Controls Technician II level but are not expected to function at the same skill level and usually exercise less independent discretion and judgment in matters related to work procedures and methods. Work is usually supervised while in progress and fits an established structure or pattern. Exceptions or changes in procedures are explained in detail as they arise.

Controls Technician II: This is the fully qualified journey-level classification in the Controls Technician series responsible for performing the full range of duties as assigned, working independently, and exercising judgment and initiative. Positions at this level receive only occasional instruction or assistance as new or unusual situations arise and are fully aware of the operating procedures and policies of the work unit. The Controls Technician II class is distinguished from the Senior Controls Technician level in that the latter class performs the more complex work assigned to the series, such providing technical and functional direction over lower level staff.

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 immediate (Controls Technician I) to general (Controls Technician II) supervision from assigned supervisory and management personnel. Exercises no direct supervision over 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.

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

- 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 desalters, micro-filtration plants, 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.
- Troubleshoots, aligns, and calibrates equipment; rebuilds equipment to manufacturer's specifications.
- Installs, maintains, repairs, and replaces electromechanical, electronic, and electrical components of equipment and machinery.
- Develops and writes control programs for state of the art water treatment facilities; makes program modifications to various programmable logic controllers (PLC) and their operator interface terminals; corrects defects in instrumentation.
- Troubleshoots, repairs and programs remote terminal units, including the replacement of hardware components, circuit boards, power supplies, and electronic components.
- Performs preventive maintenance and repair of plant, field and shop electrical and electronic systems, components, devices and equipment, including hazardous chemical feed, storage systems, and leak detection equipment, laboratory equipment, flow stations, reservoirs, motors, pumps, and electrical-mechanical valves.
- 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.

- Maintains inventory of electrical/electronic parts for equipment; checks pricing and availability of parts and submits purchase requests.
- Coordinates arc flash mitigation; works with electrical engineers to analyze and mitigate hazards; schedules utility outages with Southern California Edison, makes corrections/modifications as recommended, and generates reports; updates and maintains file sharing database with latest studies, reports and changes to sites pertaining to arc flash hazard mitigation program.
- Tests solid state circuitry to locate defective parts in analog and digital equipment.
- 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.
- Reviews all plans for upgrade, installation, and construction projects; inspects projects for safety and code compliance; 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.
- 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.
- Replaces equipment and devices which have reached or exceeded their life span; retrofits and replaces obsolete equipment with upgraded equipment.
- Participates in developing annual plant budget for electrical and instrumentation needs.
- Responds to emergency situations as necessary, including after hours.
- May assist in training or instructing others in the work; provides safety training to others within the District along with performing pre-job safety meetings with contractors and others outside of the District.
- Observes and complies with all District and mandated safety rules, regulations, and protocols.
- Performs related duties, as assigned.

REQUIRED QUALIFICATIONS

Positions at the Controls Technician I level may exercise some of these knowledge and abilities statements in a learning capacity.

Knowledge of:

- 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.
- Principles, techniques and theory of radio telecommunication, radio wave propagation, test equipment, and tools used in installing, servicing, and repairing various electronic equipment.
- Practices, methods, techniques, tools and equipment used in the design, installation, testing, calibration, maintenance and repair of electrical and electronic equipment devices, and components, including those utilized in process control.
- Basic 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.
- Operating characteristics of electronic components, including programmable logic controllers, feedback devices, variable frequency drives and operator interface programs, microprocessor controls.
- Electrical and electronic shop procedures and practices.
- Scientific mathematics associated with process controls.
- Codes, ordinances and regulations pertaining to the work.
- 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:

- Test, diagnose, program, modify, calibrate and repair a wide variety of electrical and electronic instrumentation devices, motors, machinery and equipment.
- Use modern, state-of-the-art precision and diagnostic instruments to test, calibrate, and repair complex electrical and electronic devices and equipment.
- Work on or around hazardous chemical containment areas on dosing and metering equipment, leak detection equipment, and analyzers.

- Acquire, interpret, and apply Materials Safety Data Sheets (MSDS) to identify hazards and select appropriate Personal Protective Equipment (PPE).
- Apply electronic theory, principles of electrical circuits, electrical testing procedures, engineering mathematics, physics, and related knowledge to layout, build, test, troubleshoot, and repair production 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.
- 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:

- Controls Technician I: Two (2) years of 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.
- Controls Technician II: Four (4) 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, or two (2) years as a Controls Technician I with the District.

Education:

- Controls Technician I/II: Equivalent to completion of the twelfth (12th) grade. Specialized technical training in electronics and/or electrical technologies is desirable. Completion of a recognized electrical apprenticeship program 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 standard water and wastewater treatment plant and related facilities; strength, stamina, and mobility to perform medium to heavy physical work, to work in confining spaces, around machines and to climb and descend ladders, and to operate varied hand and power tools and equipment; vision to read printed materials, a computer screen, and to operate a motor vehicle and visit various District sites; color vision to determine wire coloring and designation and recognize safety color codes; 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 up to 50 pounds and heavier weights 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 partially indoors and partially outdoors and are exposed to loud noise levels, cold and hot temperatures, inclement weather conditions, vibration, confining workspace, chemicals, mechanical and/or electrical hazards, exposure to insects, vermin, and parasites; and hazardous physical substances, odors, and fumes. Employees may interact with upset staff and/or public and private representatives in interpreting and enforcing departmental policies and procedures.

FLEX REQUIREMENTS

Positions in the Controls Technician I/II class series are flexibly staffed; positions at the Controls Technician II level are normally filled by advancement from the Controls Technician I level; progression to the Controls Technician II level is dependent on (i) management affirmation that the position is performing the full range of duties

Eastern Municipal Water District
Job Title: Controls Technician I/II
Last Update: June 2023

assigned to the classification; (ii) satisfactory work performance; (iii) the incumbent meeting the minimum qualifications for the classification including any licenses and certifications; and (iv) management approval for progression to the Controls Technician II level.

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

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

Job Description Acknowledgment

I have received, reviewed and fully understand the job description for Controls Technician I/II. 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: _____