

Carpinteria Sanitary District

Job Description

Job Title: **Electrical & Instrumentation Technician**
Department: Operations
Reports To: Operations Manager
FLSA Status: Non-exempt
Prepared By: CMM
Prepared Date: July 31, 2026

SUMMARY

Under general supervision of the Operations Manager, installs, maintains, troubleshoots, repairs, calibrates, and programs electrical, instrumentation, control, and SCADA equipment used in wastewater collection, treatment, recycled water, pumping, and administrative facilities. Performs preventive and corrective maintenance on electrical systems, motor control equipment, PLCs, VFDs, telemetry systems, analyzers, and process instrumentation to ensure reliable operation of District facilities. Performs related work as required.

ESSENTIAL DUTIES AND RESPONSIBILITIES

The following duties are typical for this classification. Incumbents 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 District needs.

Electrical Maintenance:

- Install, maintain, troubleshoot, and repair electrical systems up to 480 volts.
- Install and maintain MCCs and variable frequency drives.
- Repair motors, generators, transformers, switchgear, lighting systems, and electrical distribution equipment.
- Install and troubleshoot conduit, wiring, junction boxes, and electrical panels.
- Maintain emergency power systems and automatic transfer switches.
- Perform infrared inspections and preventative maintenance.

Instrumentation:

- Install, calibrate, troubleshoot, and repair flow, level, pressure, temperature, pH, DO, ORP, turbidity, chlorine, and conductivity instruments.
- Configure smart instrumentation using HART or similar protocols.
- Perform loop checks and instrument verification.

Control Systems:

- Troubleshoot PLC-controlled equipment.

- Develop, modify, test, document, and troubleshoot PLC and HMI programming under established change-management procedures, independently and in coordination with outside consultants or contractors.
- Troubleshoot Supervisory Control and Data Acquisition (SCADA) systems, RTUs, industrial Ethernet, radio, fiber optic, and cellular telemetry.
- Develop and maintain SCADA systems, including configuring alarms, modifying HMI graphics, configuring historian tags and report generation.
- Assist with maintaining cybersecurity of industrial control systems, including user account management, network segmentation, software patch coordination, backup verification, and secure remote access consistent with District policies.

Mechanical/Process Equipment:

- Maintain electrical/control systems for pumps, blowers, compressors, valves, gates, chemical feed systems, lift stations, clarifiers, pumping and delivery systems, belt presses, screw presses, odor control systems, and recycled water facilities.

Preventative Maintenance:

- Perform scheduled PMs and develop preventative maintenance procedures.
- Maintain computerized maintenance management system records.
- Document repairs and calibration records.
- Recommend equipment improvements.

Safety:

- Follow OSHA and District safety rules.
- Perform Lockout/Tagout.
- Follow confined space procedures and PPE requirements.
- Participate in emergency response.

QUALIFICATIONS

The qualification requirements listed below are representative of the knowledge, skill and/or ability required to perform the job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

1. Knowledge of industrial electrical systems, electrical safety and standards, including NEC and NFPA 70E.
2. Knowledge of industrial networking, PLCs and SCADA systems.
3. Knowledge of instrumentation process control, and schematics including P&IDs.
4. Knowledge of wastewater treatment and preventative maintenance.
5. Ability to troubleshoot electrical and instrumentation systems.
6. Ability to read schematics and P&IDs.

7. Ability to use electrical test equipment and calibrate instruments.
8. Ability to work independently.
9. Ability to establish and maintain a variety of filing, record keeping, and tracking systems.
10. Ability to establish, maintain, and foster positive and harmonious working relationships with those contacted in the course of work.

EDUCATION and/or EXPERIENCE

Education: High school diploma or equivalent. Technical coursework in Electrical Technology, Instrumentation, Industrial Electronics, Mechatronics, or Industrial Automation is desirable.

Experience: Four years of progressively responsible experience maintaining industrial electrical, instrumentation, automation, or process control systems, including PLCs and SCADA, preferably in wastewater, water, industrial manufacturing, or power generation.

CERTIFICATES, LICENSES, REGISTRATIONS

Possession of a valid California driver's license and a high school diploma or GED is required. It is desired that applicants have the following certificates: CWEA Electrical & Instrumentation Technologist Grade I+, ISA CCST, NFPA 70E, CPR/First Aid, Confined Space, Forklift. The successful candidate must also pass a post-offer, pre-employment physical and background check.

DESIRABLE QUALIFICATIONS

Experience with Allen-Bradley ControlLogix PLCs, FactoryTalk View, Allen-Bradley and other VFDs, Ethernet/IP, Modbus, Profibus, fiber optics, radio telemetry, and industrial cybersecurity.

COMPETENCIES

Technical Expertise; Problem Solving; Safety Focus; Attention to Detail; Accountability; Teamwork; Initiative; Adaptability; Customer Service; Communication.

PHYSICAL DEMANDS

The physical demands described on the accompanying sheet are representative of those that must be met by an employee to successfully perform the essential functions of this job. Lift up to 50 pounds; climb ladders; work at heights; enter confined spaces; stand, walk, bend, kneel; distinguish wiring colors; work outdoors. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

WORKING ENVIRONMENT

Work at treatment plants, pump stations, maintenance shops, electrical rooms, and outdoors. Exposure to wastewater, chemicals, high voltage, rotating equipment, noise, biological hazards, odors, confined spaces, and weather. Overtime, standby, emergency call-out, weekends, and holidays may be required.

CARPINTERIA SANITARY DISTRICT
Physical Requirements and Potential Hazards
Position: **Electrical & Instrumentation Technician**

NA: Not Applicable, NE: Requirement is present but Not Essential, O: Occasional. F: Frequent, C: Continuous	NA	NE	O	F	C
Sitting				X	
Walking				X	
Standing				X	
Running	X				
Bending or twisting				X	
Squatting or kneeling				X	
Reaching above the shoulder level			X		
Climbing (e.g. ladders)				X	
Driving cars, light duty trucks				X	
Driving heavy duty vehicles		X			
Using foot controls		X			
Repetitive motion of hands/fingers				X	
Grasping with hand, gripping				X	
Lifting/carrying no more than 50 pounds			X		
Pushing/Pulling			X		
Work in/exposure to inclement weather			X		
Exposure to dust, chemicals or fumes		X			
Use of hazardous equipment (e.g. chainsaws)		X			
Taste and Smell		X			
Work at heights (e.g., towers, poles)	X				
Exposure to infection, germs, or contagious diseases				X	
Exposure to needles or sharp implements		X			
Exposure to electrical current		X			
Seeing objects at a distance			X		
Seeing objects peripherally				X	
Seeing close work (e.g., typed print)				X	
Distinguishing colors			X		
Hearing conversations or sounds				X	
Hearing via radio or telephone				X	

ACKNOWLEDGMENT

I acknowledge that I have received, read, and sought clarification of any questions I have about the content of the job description.

Employee Signature

Date