VALLECITOS WATER DISTRICT

ELECTRICAL/INSTRUMENTATION TECHNICIAN

DEFINITION

Under general supervision, performs maintenance and repair of District electrical systems, SCADA systems and other electronic control systems related to the operation of water and wastewater facilities.

CLASS CHARACTERISTICS

This is a skilled journey level class responsible for modification, installation, maintenance, and repair of a wide variety of electrical and electronic control systems, SCADA systems and related equipment, and electronic devices required for the continuous operation of water and wastewater pumping stations, treatment facilities, and related pipelines and facilities. This position is distinguished from the Mechanical/Electrical Supervisor, which oversees all functions of the department.

ESSENTIAL FUNCTIONS

Essential functions include, but are not limited to, the following:

▪ Tests, troubleshoots, calibrates, repairs, and performs preventive maintenance on a variety of electrical and instrumentation systems, components, and equipment associated with the operation of water and wastewater systems; repairs monitoring and indicating instruments such as flow, level and pressure sensing devices, metering control systems, valve actuators, and scientific instruments to manufacturer’s specifications using operational performance standards and specialized testing equipment;
▪ Tests, troubleshoots, calibrates, and performs preventive maintenance on a variety of complex electrical, SCADA, and instrumentation equipment. Installs, maintains, repairs, and calibrates a wide variety of pneumatic and electronic recording and indicating instruments;
▪ Isolates and resolves electrical and SCADA equipment and system failures in the field and in central control; performs bench repairs at the component level in a shop setting; troubleshoots, aligns, and calibrates equipment with a variety of devices such as milliamp generators, voltmeters, multimeters, logic analyzers, amp meters, analyzers, and other specialized test equipment;
▪ Plans and lays out jobs from blueprints, drawings, sketches, work orders, or verbal instructions; maintains records in the form of blueprints, plans, and specifications for equipment and devices; schedules and coordinates activities with other staff, departments, or agencies; responds to emergency situations as necessary including those occurring after normal working hours;
▪ Performs preventive maintenance and repair of plant, field, office, and shop electrical and instrumentation systems, components, devices, and equipment; disconnects electrical sources; uses lockout/tagout procedures to block electrical sources; reconnects and operates equipment for maintenance purposes;
▪ Installs conduits, conductors, wires, pull boxes, switchboards, controllers, and switches required in making additions, extensions, or alterations in electrical systems; installs
moms, controls, transformers, and generators; modifies, alters, upgrades, and installs motor control equipment circuits including planning, laying out, and wiring the work; reads and interprets blueprints, schematics, and wiring diagrams; upon completion, documents modifications made to the system;
- Utilizes the CMMS to generate work orders and purchase requisitions; enters applicable data tracking for preventative maintenance and equipment repair;
- Assists other departments with the inspection of electrical installations for compliance with codes and specifications;
- Operates assigned vehicles skillfully and safely; inspects and fuels vehicles; reports the need for repairs and service; observes safe driving practices; operates and maintains a wide variety of hand and power tools and equipment related to work assignments;
- Operates copiers and a variety of office equipment;
- Performs duties in a professional manner and works well with others or in a team setting;
- Establish and maintain cooperative working relationships with co-workers, outside agencies, and the public;
- Regular attendance and adherence to prescribed work schedule to conduct job responsibilities;
- Observes safe work practices and safety methods; performs other duties as assigned.

QUALIFICATIONS GUIDELINES

Knowledge, Skills, and Abilities

Knowledge of:
- Practices, theories, methods, techniques, tools, and equipment used in the design, installation, testing, calibration, maintenance, and repair of electrical, process, and instrument controls and SCADA systems, equipment and devices common to water and wastewater systems;
- SCADA configuration, diagnosis, and support;
- Operating characteristics of electronic components including microprocessor controls; practices, methods, techniques, tools, and equipment used in the design, installation, testing, maintenance, and repair of industrial electrical equipment used in water and wastewater systems;
- Electrical and electronic shop procedures, practices, and mathematics;
- Safety practices and regulations pertaining to the work;
- Codes, ordinances, and other regulations and specifications pertaining to the work.

Ability to:
- Test, diagnose, calibrate, and repair a wide variety of electrical and instrumentation devices, motor control systems, machinery, and equipment common to water and wastewater systems;
- Use diagnostic instruments to test, calibrate, and repair complex electrical and SCADA equipment;
- Read and interpret plans, specifications, and manuals;
- Exercise independent judgment and initiative within established guidelines;
- Establish and maintain effective working relationships with those encountered in the course of the work.

Education & Experience

Any combination of education or experience that would likely provide the necessary knowledge and abilities is qualifying. A typical way to obtain these knowledge and abilities would be: high
school graduation or equivalent; and two years of journey-level experience in the installation, maintenance, and repair of complex electrical equipment and devices. Experience performing electrical work on equipment and devices used in water/wastewater operations is desirable. Supplemental training or successful completion of a recognized electrical or instrumentation apprenticeship program, or California Department of Industrial Relations Certified General Electrical license, is desirable.

Licenses, Certificates, and Special Requirements

- Possession of a valid California driver’s license and a satisfactory driving record;
- Possession of a State Water Resources Control Board (SWRCB) Water Distribution Operator 1 (D1) Certificate desirable;

PHYSICAL DEMANDS AND WORK ENVIRONMENT

The physical demands and work environment described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Employees may be required to wear and/or use personal protective and other safety equipment. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this class, the employee is regularly required to use hands to finger, handle, feel, or operate objects, tools, or controls; reach with hands and arms; drive; stand; talk or hear; walk or sit; climb or balance; and kneel and crouch. The employee frequently is required to stoop or crawl. The employee must regularly lift and/or move up to 25 pounds, frequently lift and/or move up to 50 pounds, and occasionally lift and/or move up to 100 pounds. Specific vision abilities required by this job include close, distance, color, and peripheral vision; depth perception; and the ability to adjust focus.

Environment: Employee regularly: works outdoors, exposed to sun, temperatures above 80 degrees, and other weather conditions; exposed to potential electrical shock and hazardous materials. Employee frequently: exposed to unusually loud sounds. The employee occasionally: exposed to fumes and odors from wastewater; works in confined or cramped positions; gets part of body and/or clothing wet; works on wet or slippery surfaces. Some work done at a height of more than 12 feet above ground; some skin exposure to oil or grease. Infrequent exposure to common allergy-causing agents and minor amounts of dust.

I have reviewed this Job Description with my Supervisor and agree with its contents.
The specific statements shown in each section of this job description are not intended to be all-inclusive. They represent typical elements and criteria necessary to successfully perform the job.