



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	SCADA Electrical Technician
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GENERAL PURPOSE

Under direction, performs a wide variety of skilled duties in the programming and technical support of Supervisory Control and Data Acquisition (SCADA) hardware and software; performs technical tasks in modifying, installing, troubleshooting, repairing SCADA system assets to ensure 24/7 reliability and functionality including domestic and recycled water pump stations, domestic water production wells, membrane plants, lift stations and reservoirs; and performs related duties, as assigned.

DISTINGUISHING CHARACTERISTICS

This fully qualified journey-level classification is responsible for performing the full range of technical SCADA hardware and software support, 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 SCADA Technician class is distinguished from the Controls Technician class by its focus on system hardware and software support.

Employees who did not serve on-call duties prior to adoption of this classification, will not be required to do so. Employees hired after adoption of 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 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.

- Performs skilled programming, corrective and preventative maintenance on the District's SCADA system computers including servers, radio communication systems, mobile devices, telephone systems, networking and other telemetry and control systems.
- Troubleshoots and resolves SCADA programming problems and writes programs for new or enhanced SCADA functions; assists in troubleshooting system wide issues by tracing failed function from source to destination.
- Troubleshoots routine network and telecommunications hardware and devices including servers, routers and switches; resolves, or refers to higher level staff;
- Documents programming source code, and testing and upgrade work performed; develops technical documentation for user support; organizes and stores all documentation on system servers.
- Provides technical support in developing SCADA screens for the purpose of monitoring operational processes and field equipment; makes routine software changes; works with analysts and operators to test system performance.
- Maintains licenses for all software used in PLC programming; maintains technical library materials.
- Programs, maintains, and upgrades process controls from PLC ladder logic to field equipment for water/wastewater treatment and critical power distribution systems; installs, calibrates, and troubleshoots control system components and related instrumentation.
- Upgrades, maintains, and ensures consistent, reliable operation of critical power (up to 12kV) distribution and generation control systems including PLCs, power quality monitors (PQM), protective relays, HMIs, and RTUs.
- Installs, configures, and troubleshoots data communications equipment for critical SCADA, RF and plant PLC networks; assists in installing multi-platform interfaces.
- Installs, services and conducts preventive maintenance on District remote communications facilities and telecommunications systems including, two-way radio, spread spectrum, microwave wireless, voice, data and SCADA systems; sets up and manipulates alarm and alarm paging programs as needed
- Assists in the development and installation of new programs for system upgrades and/or expansion
- Programs and generates a variety of reports on system operations for end users.
- 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, methods, and techniques in the design and operation of SCADA system controllers and devices.
- A diverse range of programming languages used by the District and the SCADA industry.
- Methods and techniques of troubleshooting and diagnosing SCADA system hardware and software.
- Methods and techniques of PLC ladder logic programming, designing interfaces, and SCADA system device configuration.
- 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.
- Theory, concepts, principles and practices of process control technology.
- Operational characteristics of water and wastewater treatment and distribution systems.
- Operational characteristics of electronic components, including programmable logic controllers, feedback devices, variable frequency drives and operator interface programs, and microprocessor 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:

- Provide technical level support to the District's SCADA systems and devices.
- Perform skilled programming, screen development and communication tasks.
- Configure remote devices to communicate with the SCADA system.
- Troubleshoot, diagnose and resolve a diverse range of SCADA systems hardware and software.
- Configure and maintain data and voice communication networks and infrastructure to achieve optimal technical performance and user support.
- Develop and maintain system documentation.
- Install networked systems hardware and software and devices.

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- Read and interpret plans, specifications and manuals.
- 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:

- Four (4) years of progressively responsible experience in the installation, maintenance and repair of SCADA systems hardware and software.

Education:

- Equivalent to completion of the twelfth (12th) grade, supplemented by specialized training in process control technology.

Licenses/Certifications:

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

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.

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Last Update: March 2020

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:	
IBEW Review	
FLSA determination:	<i>Non-Exempt</i>

Job Description Acknowledgment

I have received, reviewed and fully understand the job description for SCADA 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: _____