VALLECITOS WATER DISTRICT

CONTROL SYSTEMS SPECIALIST

DEFINITION

Under general supervision, performs complex programming and analysis on programmable logic controllers (PLC), human machine interfaces (HMI), telemetry, Supervisory Control and Data Acquisition (SCADA) systems and related networks; installs and tests SCADA software applications and interfaces; analyzes processes and identifies user needs; may perform maintenance on a wide variety of electrical, instrumentation and electronic control systems and equipment within the District; performs related duties as required.

CLASS CHARACTERISTICS

This is a single incumbent, non-supervisory class with primary responsibility for performing complex analytical and programming duties for the District's SCADA software and interfaces; all aspects of installation, maintenance and repairs of telemetry, communication networks and SCADA systems, including electrical and instrumentation control systems. It 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:

- Maintains, optimizes, enhances, and administers SCADA systems; creates coding and scripting routines for assigned operations software; supports related software applications; installs, troubleshoots, tests, and evaluates functionality of control system software, hardware, and communication equipment; works closely with the Information Technology Department to adhere to network design and security requirements;
- Consults with managers and users to determine reporting needs; communicates project updates to internal customers; develops end user reports querying data from SCADA systems; trains staff on software as necessary;
- Maintains, programs, and administers the District’s SCADA database management systems; supports database applications; creates coding and scripting routines for database applications;
- Participates in developing long-term plans, goals, and objectives to achieve District and department technology and SCADA priorities; researches, evaluates, develops, and recommends control systems solutions and procedures applicable to areas of assigned responsibility;
- Coordinates and documents control systems application testing; creates application and database test environments and performs application software upgrades and migrations for SCADA system and related software;
- Inspects remote facilities and equipment, reviews operating procedures to ensure adherence to maintenance requirements; isolates and resolves electrical and SCADA equipment and system failures in the field; designs and maintains electrical and instrumentation drawings utilizing AutoCad software;
- Tests, troubleshoots, calibrates, repairs, and performs preventive maintenance on a variety of electrical, electronic, telecommunication and instrumentation systems,
components and devices associated with the operation of potable water, wastewater and reclaim water systems;

- Utilizes the Computerized Maintenance Management System (CMMS) to generate work orders and purchase requisitions; enters applicable data tracking for preventative maintenance and equipment repair;
- Provides technical assistance and suggestions in the development of policies and procedures related to system availability and security for the control system network;
- Plans jobs and assists with preparation of staffing, material, and equipment estimates for projects; coordinates and communicates with vendors on assigned projects; maintains records related to electrical equipment, including telemetry systems; schedules and coordinates activities with other staff, departments, or agencies; responds to emergency situations as necessary including those occurring after normal working hours;
- 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:
- Principles and methods of SCADA system analysis, including operational processes, methods, and database administration;
- Programming, configuration, troubleshooting, and support of SCADA software, such as Wonderware or Ignition;
- Coding and scripting routines for SCADA systems applications, including Structured Query Language, database design, theory and methods;
- Principles and practices of telecommunication and instrumentation systems, including radio networks;
- Electrical shop principles, practices, and mathematics;
- Principles and practices of network architecture theory and network design and integration;
- Safety practices and regulations pertaining to the work;
- Codes, ordinances, and other regulations and specifications pertaining to the work.

Ability to:
- Analyze, program and troubleshoot control system network, including SCADA hardware, software, and connectivity issues;
- Identify departmental SCADA needs and suggest solutions consistent with District standards;
- Develop improved processes and procedures related to data management SCADA applications; create and test changes within applications; manage upgrades for minimal disruption to operations;
▪ Read, interpret, explain, and apply technical information to SCADA processes, software, and hardware for technical and non-technical users;
▪ Use diagnostic instruments to test, calibrate, and repair complex SCADA, instrumentation and electrical equipment;
▪ Troubleshoot and maintain radio networks and other telecommunication systems;
▪ Test, diagnose, and repair a wide variety of electrical and instrumentation devices, motor control systems, machinery, and equipment common to water and wastewater systems;
▪ Identify and implement effective courses of action to safely complete assigned work; exercise independent judgment and initiative within established guidelines;
▪ Read and interpret plans, schematics, specifications, and technical manuals;
▪ Establish and maintain cooperative working relationships.

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 4 years’ experience in SCADA troubleshooting and programming, including some relevant electrical system work. Experience with a water or wastewater agency is preferred.

Licenses, Certificates, and Special Requirements

▪ Possession of, or ability to obtain, a Class C California driver’s license, and a satisfactory driving record;
▪ Possession of a California Water Environment Association (CWEA) Electrical/Instrumentation Technologist Grade 2 Certificate is highly desirable;
▪ Possession of an Instrumentation Society of America (ISA) Control Systems Technician I certification is desirable;
▪ Possession of a State Water Resources Control Board (SWRCB) Water Distribution Operator Grade 2 (D2) certificate is 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.

______________________________________________________________________
Employee Signature                                                                 Date

______________________________________________________________________
Supervisor Signature                                                               Date

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.