



SCADA Technician

Department: Operations, AWP
FLSA Status: Non-Exempt
Salary Grade: 28

SUMMARY DESCRIPTION

Incumbent is responsible for performing skilled installations, maintenance, repairs and troubleshooting on Padre Dam's Supervisory Control and Data Acquisition (SCADA) systems; field security systems, field wireless network systems, and all related control, communications, and security sub systems and equipment. Duties include but are not limited to: Install, maintain, and service Padre Dam's Human Machine Interface (HMI) software and hardware, including software upgrades; design and development of new HMI screens; development and servicing of interfacing software and program historical software; design and develop complex Programmable Logic Controller (PLC) software programs; configure, diagnose, install, maintain, troubleshoot and repair PLC hardware and software programs, network equipment, radio hardware and software, cellular, fiber optic and other related operational control, networking and security hardware as necessary. Document and organize software and hardware procedures and programs in accordance with industry best practices; respond to emergencies as needed; and other duties as may be assigned.

ESSENTIAL DUTIES

1. Install, troubleshoot, maintain and repair control, communication and security systems including but not limited to: Remote Terminal Units (RTU's), PLC, radio and cellular equipment, fiber optic equipment, power supplies and various Input/output (I/O) components such as analog inputs and outputs and graphic touchscreen terminals; computer systems and related hardware for SCADA; components for security such as cameras, radio, cellular, and fiber optic communication; Power over Ethernet (POE) devices; and Local Area Network (LAN) hardware.
2. Programs Remote Terminal Unit (RTU) systems: designs both simple and complex PLC programs to fit the needs of Padre Dam; modifies PLC software to improve and/or enhance current operation or to provide for changes to existing operations, control strategies, and/or reliability. Designs graphic screens for touchscreen terminals. Performs needed organization, maintenance and back up of data to ensure proper documentation and reliability of systems.
3. Programs HMI systems: uses HMI software to design, implement, and maintain graphic screens, alarms, historical data, trending, enhance and/or improve current information presented in the HMI interface.

4. Researches and evaluates new operational methods, techniques and equipment and recommends their application. Provides control, communications and security related advanced technical assistance and advice to other departments.
5. Prepares and provides effective training classes for Padre Dam personnel. Creates schedules for preventative maintenance, work ordered, calibrations, and and documentation in CMMS. Recommends and purchases all hardware components for new installation and spare parts.
6. Sets up SCADA workstations, servers, routers, wired/wireless connections and security; Configures managed network switches and routers. Maintains and backs up managed network switches and routers configurations.
7. Designs, sources, and constructs complete Control systems and RTU's per District drawings and specifications. Creates, updates, and maintains District as-built drawings.
8. Maintains library of manuals, license agreements, license upgrades and product warranty information in both electronic and hardcopy format.
9. Maintains a working knowledge of computer operating systems to integrate hardware/software with SCADA systems. Has the ability to configure LAN and USB ports to interface with SCADA, security and configuration software. Installs and activates approved software on SCADA related computers. Uses programs such as Excel, Word, CAD, etc. to document and develop meaningful reports, drawings, etc. of software and hardware related to duties. Maintains all computers/servers related to SCADA.
10. Responds to both on-duty and after-hour systems emergencies; coordinates and completes any necessary repairs.
11. Attend additional training based on job needs and/or under supervisor direction.

Knowledge Required:

1. Supervisory Control and Data Acquisition (SCADA) systems;
2. Advanced knowledge of Electrical principles and practices; AC & DC power;
3. Electronic equipment including PLCs, radios, routers, switches, modems, cellular, security cameras, HMI displays, and associated I/O devices;
4. Advanced knowledge of computer operating systems
5. Ladder logic and PLC programming (moderate level);
6. Process control systems and related equipment
7. Electronic measuring equipment used in wastewater treatment plants and water distribution systems
8. Wireless Network Security
9. Knowledge of Allen Bradley Control Logix, Studio 5000, and HMI Software;
10. Network communication (HTTP, TCP/IP), network security (HTTPS, SSL, SFTP) and network management protocols (SNMP and ICMP).

Skills Required:

1. Installing, troubleshooting, and repairing problems with electronic equipment to the component level;
2. Proficient with PLC's and writing/modifying Ladder Aogic;
3. Calibrating and servicing of electronic equipment, as it relates to water and wastewater and treatment and distribution systems;
4. Ability to create, update and read drawings, specifications, maps, blueprints, ladder, and wiring diagrams;

5. Using electrical and electronic equipment such as digital volt meters, analog simulators, and hand and power tools;
6. Develop Standard Operating Procedures and other documentation as required;
7. Network Security (A)
8. Using computers and related software applications;
9. Communication, interpersonal skills as applied to interaction with coworkers, supervisor, the public, etc. sufficient to exchange or convey information and to receive work direction.

Training/Experience Required:

1. Minimum of an Associate's degree from an accredited college in water technology, electronics technology, computer sciences, information technology or related field, and three years journey level experience in the above duties OR;
2. High School Diploma or General Equivalency Diploma (G.E.D.) and five years of journey-level experience in the above duties OR;
An equivalent combination of education and experience sufficient to successfully perform the essential duties of the job such as those listed above.

Licensing Requirements:

1. Valid California Driver's License;
2. California Department of Public Health, Water Distribution Certification Grade I, (within eighteen months from date of hire) if working in Operations;
3. Water Treatment I Certification, (within eighteen months from date of hire) if working at WRF/AWP.
4. Certified Control Systems Technician, CWEA Electrical Instrumentation II or higher and Formal PLC training is highly desired.

Safety Priorities:

1. Knowledge of use and care of personal protective equipment specifically related to electrical safety and chemical exposure, safe use and care of hand and power tools, proper body mechanics when moving materials, safety when working around traffic in the public right of way, defensive driving techniques and general office and field safety.
2. Understanding of Padre Dam's Safety Rules and Regulations and accident and injury reporting policies.
3. Ability to complete safety training and work in a safe and efficient manner at heights and under other adverse conditions.

Physical Requirements:

Positions in this class typically require: climbing, balancing, stooping, kneeling, crouching, reaching, standing, walking, lifting, grasping, feeling, talking, hearing, seeing, sitting and repetitive motions.

Incumbents may be subjected to moving mechanical parts, electrical currents, vibrations, fumes, odors, dusts, oils, and work space restrictions. Incumbents may from time to time work at elevated levels up to 45 feet above ground. Heavy Work: Exerting up to 100 pounds of force occasionally, and/or up to 50 pounds of force frequently, and/or up to 20 pounds of forces constantly to move objects.

Classification History:

Date: 5/08; 8/09, 01/16, 06/19, 06/22