

**W/WW ELECTRONICS AND SCADA SYSTEM ADMINISTRATOR**

**Summary**

The purpose of this classification is to perform work functions associated with the installation, repair and maintenance of electronics, instrumentation and supervisory control and data acquisition (SCADA) systems for water and sewer pump stations, water storage tanks, treatment plants, raw water pumping facilities and distribution pressure reducing stations.

**DUTIES AND RESPONSIBILITIES**

* Performs maintenance and repair assignments for electronics, instrumentation and SCADA systems in Water & Sewer; Fabrications to include SCADA modules such as programmable logic controllers (plc), radio transmitter (rtu) panels, and general programming of central SCADA program to provide visual interface of new assets to be added to existing central SCADA control programs; directs and participated in installation and fabrication projects.
* Formulates a work plan to accomplish assigned tasks efficiently and safely based on available personnel and equipment, obtains equipment, tools and materials required for the project.
* Trains and assists staff in performing repair and maintenance work functions associated with assigned maintenance and repair project; inspects work upon completion to ensure standards are met; and processes employee concerns and problems.
* Inspects all work sites and ensures proper safety precautions are implemented by staff to include the use of proper procedures and use of any necessary safety equipment; observes condition of workers health and welfare.
* Inspects all equipment to ensure safe and proper operating condition prior to use; inventories equipment, materials and supplies; ensure tools and equipment remain clean and in good working order.
* Prepares, maintains and inspects daily logs, reports and records on maintenance and repair activities; submits reports as appropriate, maintains file system of departmental records; prepares and/or receives forms, reports, work orders, maps, charts, diagrams, or documentation; completes, process and/or forwards.
* Operates a computer to enter, retrieve, review, or modify data; verifies accuracy of entered data and make corrections; utilizes word processing, spreadsheet, database, excel spreadsheets, i.e. Access, SQL, Visual basic, Crystal reports, Graphic Editing, Adobe Photoshop, Vista Software for Particle Counters, Microso0ft word, email and other programs.
* Operates and maintains Computer Maintenance Management software which includes writing work orders for repairs and preventative maintenance tasks, tracking work orders, managing parts inventories, tracking purchases, tracking equipment histories, tracking equipment costs, and tracking labor use; generates work orders, schedules, forms, records and inspection reports via computer.
* Prepares budget recommendations for electronics, instrumentation and SCADA needs; maintains inventory and related files, requests and/or orders needed materials.
* Communicated via telephone and/or two-way radio; provides information; takes and relays messages; responds to requests for service, after-hour emergencies, emails, and call-outs.
* Responds to requests for information from employees, officials, and the public; works closely with engineering, inspection, and other water and sewer department personnel, various city departments, local water authorities, industry (where information is shared) and government agencies.
* Consults with supervisors, contractors, and engineers to review SCADA systems operations, discuss problems, collaborate on collection system, distribution systems and lift station plans and specifications for new asset additions requiring SCADA connectivity; coordinates activities and provides technical expertise and give/receive advice/direction.
* Consults with sales representatives; contacts outside repair services, solicits bids for equipment repair or replacement; submits purchase orders; prepares purchase requisitions.
* Prepares personnel forms/reports and maintains records and documentation for reference.
* Oversees preventative maintenance tasks; ensures trucks, equipment and tools are cleaned and serviced regularly; performs maintenance work on electronic devices, process instrumentation and SCADA systems.
* Operates equipment and tools associated with repairing, maintaining, installation, and testing equipment specifically; diagnostic instruments, mechanical tools, electrical tools, computers, and other associated machinery and equipment.
* Oversees and plans for transportation of materials and equipment, loads and unloads various equipment and materials used in projects, picks up and receives supplies from vendors.
* Generates SCADA interface screens on computer for operators to manage systems (plants, pumps stations, water tanks, and pressure regulating stations (PRV) in distribution system, lake levels and temperatures.
* Inspects, diagnoses, maintains and performs mechanical and electrical repair and preventive maintenance of control systems or control loops for WSD operations.
* Additional tasks include Tasks include: Installing, maintaining  and rewiring electrical panels, motor controls (VFD's, soft starts, soft stops, across the line starters) motor controls centers (single phase & three phase up to 4160vac and higher, switch gear, & vacuum breakers; Installing, calibrating, maintaining, and programming PLC's, transmitters, recorders, flow meters, pressure devices, rtd's, transducers, telemetry, control valves, controllers, analyzers, turbidimeters, lab equipment & instrumentation, particle counters, instrumentation for flow controls, chemical feed tank level controls.
* Oversees the installation and upgrade of pump stations, treatment plants and water tanks mechanical and electrical equipment, the installation of related controls, conduits, etc.; performs welding fabrication and repair tasks; tests machinery and equipment for proper operation.
* Incorporates continuous quality improvement principles in daily activities.
* Installs, maintains, and/or repairs communications equipment, specifically:   RTU, PLC & computer LAN's (peer to peer, remote bases, profibus, data highway, Ethernet, IPX/SPX, token ring networks, etc.), DSL, frame relay, radios, monitors and data terminals, video monitoring systems and other electronic systems.
* Creates, modifies, ladder diagrams, electrical blueprints, mechanical drawings for installations & changes.
* Installs, maintain, and/or repairs communications equipment, specifically:  cellular telephones, radio base stations, portable communications radios, public address systems, motorcycle communicators, dispatcher hand-sets, monitors and data terminals, dispatch/telephone and radio remote consoles, telephones, video monitoring systems and other electronic systems.
* Installs, repairs, and/or maintains an assortment of lighting and warning devices/systems including alarms, sirens, emergency lighting, spotlights, strobe light systems, National Attach Warning System (NAWAS) and related equipment.
* Installs, services, and/or repairs electronic equipment, desk top remotes, radio frequency links, antenna systems, portable chargers, and telemetry systems.
* Installs lines and cables to connect electronic systems, cable television systems, radio systems to recording devices, telephones, and lightning protection.
* Checks functioning of newly installed equipment to evaluate system performance under actual operating conditions.
* Coordinates with Telephone Company to install telephone lines, locate and correct telephone line problems, or confer on related matters, makes on-site calls to perform repairs and maintenance tasks on equipment.
* Converses with equipment end-user to ascertain problems with equipment before breakdown and to determine if breakdown is due to human error or mechanical problems.
* Troubleshoots equipment failures; reads work orders, test manuals, performance specifications, wiring diagrams and schematics to determine testing procedure and equipment to be used.
* Must be able to maintain good interpersonal relationships with staff, co-workers, managers and citizens.
* Must meet regular attendance requirements. May be required to work on various shifts, overtime, weekends, holidays, and/or during declared emergencies. Must accomplish the essential functions of the job, with or without reasonable accommodations, in a timely manner.
* Performs other related duties as required.

**JOB SPECIFICATIONS**

**Qualifications**:

* High school diploma or GED required.
* Specialty electrical and/or electronics training preferred.

* Five years of experience in water or wastewater operation & maintenance or equivalent industrial experience or industrial operations with at least three years of experience at the supervisory or project management level.
* Must have two years direct SCADA development and maintenance experience with proven capabilities to modify and update programming and hardware as needed.
* Must possess and maintain a valid driver’s license.

**Knowledge, Skills, and Abilities:**

* Ability to compare and/or judge the readily observable functional, structural, or compositional characteristics (whether similar to or divergent from obvious standards) of data, people or things which may include maps, forms, procedural manuals and operational manuals.
* Requires the ability to speak with and/or signal people to convey or exchange personnel, mechanical and construction-related information, including giving/receiving assignments and/or directions to/from co-workers, assistants, managers, or supervisors as well as communicating with the general public.
* Requires ability to read a variety of informational, personnel, and maintenance/repair related documentation, directions, instructions, and methods and procedures.
* Requires the ability to write basic job related documentation and reports with proper format; punctuation, spelling and grammar, using all parts of speech.
* Requires the ability to speak with and before others with poise, voice control, and confidence using correct English and a well-modulated voice.
* Requires the ability to learn and understand relatively basic personnel, engineering, mechanical, and utility construction related principles and techniques to understand departmental policies and procedures to make independent judgments in absence of supervision, and to acquire and be able to expound on knowledge of topics related to primary occupation.
* Requires the ability to record and deliver information, explain procedures, and to follow verbal and written instructions.
* Requires the ability to add and subtract, multiply and divide, calculate decimals and percentages, and determine time.
* Requires the ability to visually inspect items for proper length, width, and shape using job related equipment which may include electronic measuring devices, drafting instruments, tape measure, and other standard measuring devices.

* Requires the ability to deal with and relate to people beyond giving and receiving instructions.
* Must be able to adapt to and perform under minimal stress when confronted with an emergency.

* Ability to generate and maintain complex automated clerical records and reports.

* Ability to comprehend and execute oral and written instructions.
* Ability to establish and maintain effective working relationships with other employees and the public.
* Must maintain regular attendance on the job.

**Physical Characteristics:**

* Must be able to operate a variety of automated office equipment including computer, calculator, photocopier, telephone, measuring wheel, measuring tape, pipe horn, metal detector, valve box locator, pump, weed eater, and two-way radio as applicable to assigned department.  Physical demand requirements are at levels of those for heavy work.
* Requires the ability to coordinate hands and eyes in using maintenance/repair tools and equipment, mechanical, construction or other related equipment necessary to accomplish assigned project and to operate a motor vehicle.

* Requires the ability to handle a variety of items, maintenance/repair tools and equipment, mechanical, construction or other related equipment, motor vehicles, control knobs, switches, etc.
* Must have the ability to use one hand for twisting motion or turning motion while coordinating other hand with different activities.
* Must have average levels of eye/hand/foot coordination.
* Requires the ability to discern color.
* Requires the ability to talk, express, or exchange ideas by means of spoken words and/or hear and perceive nature of sounds by ear.