



Water Resources Technician (Instrumentation/Electrical)

Summary

Maintain, calibrate, test, and troubleshoot instrumentation, process controls, programmable logic controllers, data acquisition systems, variable frequency drives, and electrical systems at the City's Water Recycling Facility.

Class Characteristics

General supervision is provided by the Water Resources and Conservation Engineering Manager; responsibilities may include the indirect supervision of support staff.

The Water Resources Technician is a single class advanced-journey level position. The incumbent applies considerable expertise, technical knowledge, and skill to ensure that the instrumentation and electrical systems at the water recycling facility are operational and meet regulatory requirements.

Essential Duties, Skills, and Demands of the Position

The duties, skills, and demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with a disability to perform the essential duties, skills, and demands.

Duties:

Maintain, calibrate, monitor, test, troubleshoot, install, and repair instrumentation, process controls, data acquisition systems, and electrical systems.

Monitor and maintain the Supervisory Control and Data Acquisition (SCADA) system and other facility operation software systems.

Maintain, test, and repair metering and recording instruments, control apparatus, data logging and display equipment, communications and telemetry systems, programmable logic controllers (PLCs), heating ventilation and air conditioning units (HVAC).

Inspect, install, repair, maintain and troubleshoot electrical, electronic and associated control systems and power circuits, switchgear, emergency systems, cathodic protection, corrosion control, electric motors and associated equipment; perform special pump maintenance and repairs on valve actuators, submersible pumps, diesel engine control circuits and variable speed and level control devices.

Install, test, troubleshoot, and repair automated telemetry equipment, including calibration of input sensors such as flow meters, level transducers, pressure transducers, analyzers, meters, probes, and other monitoring equipment.

Design and/or redesign electronic, hydraulic and pneumatic control systems, power circuits and control circuits, lighting systems and associated control systems, wire or rewire new or existing facilities, structures and equipment.

Plan for technology upgrades and system expansion and makes recommendations for capital investments.

Plan or assists in the planning of complex maintenance programs.

Maintain and develop files and records for electrical and instrumentation systems and equipment in a computerized maintenance management system (CMMS), create and maintain drawings; review SCADA system alarms for equipment failures, prepare special and daily reports utilizing SCADA, CMMS, or Microsoft products or similar products; order equipment repair parts and/or new upgraded equipment.

Prepare equipment specifications, service agreements and oversee outside contractor activities.

Train, instruct, and assist facility staff.

Perform related duties as assigned.

Abilities/Skills:

Maintain, calibrate, monitor, test, troubleshoot, install, and repair instruments, electrical, electronic, computer, telemetry, metering, and recording equipment.

Analyze, diagnose, and develop solution to system and equipment problems.

Read and interpret maps, sketches, drawings, PLC ladder logic, specifications, blueprints, schematic diagrams, and equipment manuals.

Operate standard office equipment, including a computer and a variety of word processing software applications, including SCADA systems; operate a variety of tools and equipment used in instruction, electrical, and facility control systems.

Communicate effectively both verbally and in writing.

Follow City protocols for contract work of high voltage equipment, generator maintenance, certified flow meter calibrations or other equipment as required.

Establish and maintain effective working relationships with those contacted in the course of the work.

Physical Demands and Work Environment:

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, or feel; reach with hands and arms; and talk and hear. The employee frequently is required to stand, walk, and sit. The employee is required to climb or balance; stoop, kneel, crouch, crawl; and smell. Specific vision abilities required by this job include close vision, distance vision, color vision, peripheral vision, depth perception, and ability to adjust focus. The employee must be able to intermittently lift or carry weight of 25 pounds or less; and occasionally lift or carry tools and materials weighing up to 75 pounds. While performing the duties of this job the employee is exposed to outside weather conditions, wet and/or hot conditions, moving mechanical parts, fumes or airborne particles, toxic or caustic chemicals, and vibration. Work unusual or prolonged work hours. In an emergency work after scheduled hours, on weekends and holidays. The noise level in the work environment may be moderate to loud depending on working area.

Must comply with respiratory program and Cal OSHA standards; will be required to enter confined spaces; will be required to wear Self Contained Breathing Apparatus (S.C.B.A.).

Qualifications

Knowledge of:

Theory, practice and principles of Water Recycling Facility instrumentation, controls, data acquisition systems, and electrical systems.

Methods, materials, tools, equipment, and practices used in the maintenance, calibration, testing, troubleshooting, and repair of instrumentation, controls, data acquisition systems and electrical systems and components.

PLC and SCADA programming as applied to systems, controls, and equipment used in the Water Recycling Facility.

Industrial occupational hazards and appropriate safety precautions.

Education and Experience

Any combination equivalent to the education and experience likely to provide the required knowledge and abilities would be qualifying. A typical way to gain such knowledge and abilities would be:

Education:

Equivalent to graduation from high school.

An Associate's degree with major work in a related field; and

A two-year Instrument Technician degree; and/or

An ISA Certified Control System Technician is highly desirable and preferred.

Experience:

Four years of journey level experience installing, maintaining, and repairing electrical, electronic, telemetry, metering and recording equipment and control systems, preferably in a manufacturing or production environment.

Modicon Quantum Concept Language is highly desirable.

Licenses/Certifications:

Possession of a valid California Class C driver's license.

A Grade III Electrical/Instrumentation Technician certificate issued by the California Water Environment Association (CWEA) or ability to obtain within one year of employment.

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