



CLASSIFICATION NO. 808

Established: 10/03

Revised: 12/07, 8/24, 5/25

FLSA: Non-Exempt

EEO: 7

INSTRUMENTATION TECHNICIAN

CLASS CHARACTERISTICS

Under direction, to develop specifications and standards, to program, calibrate, maintain, tune, and install wastewater control and metering systems and supporting equipment and software; and to do other work as required.

DISTINGUISHING CHARACTERISTICS

Clackamas Water Environment Services (WES) produces clean water, protects water quality, and recovers renewable resources via the provision of wastewater services, stormwater management, and environmental education. Through the management of various resource recovery facilities, pumping stations, and compliance initiatives throughout the district, WES protects public health and supports the vitality of the communities serviced, the natural environment, and economy.

The Instrumentation Technician is responsible for installing, maintaining, and repairing hardware and software systems that control and meter wastewater treatment plant operations. Incumbents serve on project development teams to specify equipment and software needs, enforce programming standards, perform hardware and software maintenance for control systems and processes, and design and program systems for efficient and safe wastewater operations.

The Instrumentation Technician differs from the Wastewater Maintenance series which performs the inspection, installation, maintenance and repair of various machinery and equipment within wastewater treatment plants but not for electronic and electrical equipment. It is further distinguished from the Electronics Technician series which is responsible for maintaining telephone wiring, surveillance and alarm systems, and other electronic components but is limited for use in Technology Services (TS). Additionally, the Electronics Technician series does not have a specialized focus in wastewater operations.

TYPICAL TASKS

Duties may include but are not limited to the following:

1. Designs, upgrades, programs, installs, and tests new and repaired control and monitoring systems such as distributed control systems (DCS), human machine interface (HMI) and programmable logic controllers (PLC); calibrates instruments and installs or repairs equipment to prescribed specifications.
2. Inspects, monitors, repairs and replaces electrical equipment and components, including electric motors, motor control panels, electric monitoring and control systems, flow meters,

temperature, pressure and level sensors; examines, adjusts and replaces existing wiring motors, fuses, motor starters, switches, generator controls, transformers, sensors and electronic components.

3. Performs computer hardware and software maintenance for wastewater systems; adjusts control algorithms and troubleshoots computer systems, software and networks; upgrades firmware and software, recovers historical data, and organizes and backs up systems files.
4. Participates in the design and implementation of new construction and maintenance projects; Assists in the development of contract proposals and specifications; recommends cost-effective solutions to meet technical needs; develops time and cost estimates to complete projects; reviews network, instrumentation and electrical components for compliance to safety standards and operational effectiveness; prepares schematics and reports to reflect changes or alterations made in equipment, circuits, and systems.
5. Confers with end users to analyze and assess needs of the wastewater system resources; prepares and maintains operating manuals and training guides to support technical operations; generates reports regarding system optimization and usage.
6. Maintains records, supplies, and equipment for process and control systems; maintains inventory of instrumentation equipment.
7. Leads the work of other personnel assigned to large and/or complex electrical wastewater projects; checks work for compliance with safety, State electrical codes, and operational standards; provides feedback to supervisor as necessary.

REQUIRED KNOWLEDGE AND SKILLS

Working knowledge of: Applicable laws, and regulations related to OSHA, DEQ, MSDS, and Oregon Electrical codes; wastewater treatment processes and control strategies; electronic, hydraulic, pneumatic, and mechanical theory and practices; process control techniques; software applications for interfacing with remote plant equipment and retrieving data; physics of flow and level applications using basic math and algebra; schematics interpretation; recordkeeping techniques; basic supervisory and project management techniques.

Skill to: Program PLC's using various software packages; program control systems; upgrade firmware updates; back up system applications; purchase, inventory and maintain records for systems, equipment and software; install, troubleshoot, and repair DCS and PLC systems, hardware, equipment and programming; read and interpret P&ID loops, electrical schematics, technical manuals; calibrate and troubleshoot instrumentation; plan testing procedures; communicate effectively, both orally and in writing; coordinate the work of others; establish and maintain effective working relationships with contractors, officials of government agencies, County employees and the public.

WORKING CONDITIONS

Duties require physical labor, including walking, reaching, squatting, kneeling, bending, balancing, climbing, shoveling, fine motor control, and ability to lift up to 50 pounds, carry, and push/pull up to 70 pounds. Duties also involve exposure to bacteria, viruses and toxins in wastewater, chemicals, exhaust fumes and dust, loud noises, and vibration. Some duties

involve exposure to adverse weather conditions and hazardous locations, such as streets, live sewers, confined underground areas and on elevated platforms.

MINIMUM QUALIFICATIONS

Minimum qualifications are used as a guide for establishing the minimum experience, education, licensure, and/or certifications required for employment in the classification. The following minimum qualifications are established for this classification. Additional minimum qualifications and special conditions may apply to a specific position within this classification and will be stated on the job announcement.

Experience: A minimum of two (2) years of related experience that would provide the required knowledge and skills to perform the responsibilities of this position.

Licenses/Certifications:

The following licensure/certifications are required at the time of hire:

- State of Oregon Limited Maintenance Electrician License.

PRE-EMPLOYMENT REQUIREMENTS

Driving is required for County business on a regular basis or to accomplish work. Incumbents must possess a valid driver's license, and possess and maintain an acceptable driving record throughout the course of employment.

Employment is contingent upon passing a post-offer physical assessment. Accommodation requests will be reviewed on an individual basis in compliance with State and Federal legislation.

Edited: 6/16