



Job Classification

Title: Instrumentation/ Electrical System Operator (IESO)

FLSA Status: Non-Exempt

Job Code: 115

POSITION OVERVIEW

Under limited supervision, performs a variety of skilled duties including, but not limited to design, construction, installation, modification, maintenance and repair of electrical and electronic circuits including machinery, motors, instrumentation, plant control system components and related devices. Monitors electrical equipment and system for operating condition and performance, including predictive and advanced diagnostic testing, calibration, preventive and corrective electrical maintenance used in the operation and maintenance of the District's water system including water treatment plants, pipeline transmission systems, hydroelectric facilities, water quality laboratory and related facilities and equipment.

OVERSIGHT

Supervision Received: Reports to the Operations Supervisor(s)

Supervision Given: More experienced staff may exercise functional and technical supervision over less experienced operations staff

ESSENTIAL FUNCTIONS

Maintenance:

- Operates valves, gates, pumps, motors and generators in controlling treatment processes.
- Inspects transmission pipeline for leaks and potential hazards; inspects hydroelectric units for proper operation, power and efficiency and records control panel readings.
- Performs preventive maintenance, including cleaning and lubricating plant equipment, pump stations and hydroelectric stations.
- Makes emergency repairs to plant equipment; records failures of and problems with equipment and writes repair work orders.

Electrical & Instrumentation:

- Designs, modifies and changes control systems; programs equipment used for water blending, changes set points and other system parameters, and performs PLC programming to change control logic on a permanent or temporary basis.
- Tests, troubleshoots, calibrates, repairs and performs preventive maintenance on a variety

of industrial electrical and electronic systems, components and devices.

- Performs daily electrical/electronic preventive maintenance and repair of the District's water systems, motor controls, programmable logic controllers, industrial networking hardware, turbidity meters, electronic flow meters, pH meters, chlorine analyzers, automatic chemical and chlorination equipment, and other associated instrumentation.
- Installs conduits, wires, pull boxes, switchboards, controllers, and switches required in making additions, extensions, or alterations in industrial electrical systems
- Estimates time, materials, and equipment needed for jobs assigned; requisitions materials and works with outside contractors and vendors used to provide instrumentation services or materials.
- Reads and interprets a variety of technical manuals, charts, schematics, blueprints, and gauges to troubleshoot instrumentation equipment.
- Uses, operates and maintains electronic test equipment, computer hardware, and software associated with the testing and adjusting of equipment.
- Participates in discussions and research relating to the acquisition, upgrading, and installation of new or modified telemetry and electronic control systems and equipment.
- Provides technical assistance and advice to other District staff in connection with the operation of computerized telemetry equipment and other electrical or electronic systems.
- Works safely with a variety of voltages from 12VDC to 480VAC, including UPS power supplies.
- Observes safe work methods and safety practices related to work and complies with current electrical safety standards and practices.
- Performs related duties as assigned.

QUALIFICATION REQUIREMENTS

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the background, knowledge, skill or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Knowledge of:

- Theory, principles, hardware, testing equipment and procedures common to the repair and maintenance of electronic devices and electrical systems.
- Operational characteristics of telemetry equipment, meters, controls, treatment plant instruments, and other electrical/electronic equipment.
- Programmable Logic Controllers (PLC) programming theory for testing, troubleshooting and repairs of PLC components and highway systems.
- Methods and techniques used to diagnose operational defects in telemetry systems.
- Hazards involved in working on energized equipment and the proper safety precautions to use Principles of preventive maintenance governing electrical/electronic systems.
- Pertinent Federal, State, and local laws and regulations, including electrical codes.
- Instrumentation calibration and adjustment procedures.
- Operational use of a personal computer and related software including common Microsoft business computer applications such as Word, Excel, Outlook, and the Internet.
- Materials, methods, equipment, and procedures for the operation and maintenance of water treatment facilities, transmission systems, hydroelectric facilities, and water quality laboratory.
- Functions and purposes of water purification systems.
- Standard principles of and mathematics as related to water purification treatment.
- Occupational hazards, and standard safety practices.
- Principles and procedures of record keeping and basic report preparation techniques.

Ability to:

- Use control logic software, including Wonderware, to program SCADA system and associated programmable logic controllers (PLCs).
- Use electrical and electronic test equipment, hand and power tools, and equipment.
- Operate machinery and equipment utilized in the water treatment facilities, transmission systems, and hydroelectric stations.
- Make routine adjustments to telemetry equipment, motors, pumps and other equipment
- Read meters and gauges correctly.
- Make necessary documentation and act quickly and competently; maintain records and compile data into written logs and reports.
- Recognize and react to treatment process changes and demands.
- Recognize and troubleshoot mechanical problems.
- Communicate clearly and concisely, both orally and in writing.
- Work effectively with a diversity of individuals, personalities, and organizations.
- Demonstrate initiative, task-orientation and follow-through in the approach to and completion of assignments.
- Comply with District policies and safety requirements.
- Be on-call and respond to emergencies as required.

EDUCATION AND EXPERIENCE

The ideal Instrumentation/Electrical System Operator will possess a combination of education and experience equivalent to:

- Two (2) years of experience in a water treatment facility or like facility with SCADA

automation.

- Completion of the twelfth grade, supplemented by specialized training in the electrical field.
- Programming experience with SCADA/PLC (supervisory control and data acquisition), preferred.
- Wonderware software experience is preferred.
- Completion of an electrical training program approved by the State of California or equivalent certification is desirable.

PHYSICAL DEMANDS AND WORKING CONDITIONS

Requires the ability to receive, understand, and act upon verbal and written communication from others, and to communicate with others. Requires the ability to distinguish between colors. Requires ability to use hands and fingers to handle or feel objects, tools, or controls; to reach with hands and arms; to sit, stand and climb (e.g., a ladder); and to talk and hear. Must be able to carry, push, pull, reach, and lift equipment and parts up to 55 lbs. and heavier weights with the use of proper assistance.

Requires working with and handling hazardous chemicals; working in confined spaces; use of respiration equipment and the manual operation of heavy equipment. Valid certification to use and wear a respirator must be obtained from the District's designated occupational physician within twelve months of hire. Requires ability to pass respirator and physical/fit test as well as a background check and drug screening.

Must be able to participate in job-related activities at times other than normal business hours, i.e., evenings and weekends, and at various locations that will require operating a motor vehicle.

CERTIFICATES, LICENSES, AND REGISTRATIONS

Certificates

- Electrical certification is desirable.

Licenses

- Must have and maintain a current Class C California driver's license, acceptable driving record, and proof of auto insurance in compliance with the District's Vehicle Insurance Policy standards.

Registrations

- None

This job description has been revised and approved by all levels of management.

Approved by:	Matthew Litchfield
Date last modified:	3/2/23
Date approved:	3/21/23

I have received, reviewed, and fully understand the job description for IESO. I further understand that I am responsible for the satisfactory execution of the essential functions described therein, under any and all conditions as described.

Employee Name (print): _____ Date: _____

Employee Signature: _____

Supervisors Signature: _____ Date: _____

Job classifications are intended to cover or contain a comprehensive listing of activities, duties, or responsibilities that are performed by the incumbent. Classifications are not intended to reflect all duties performed within the job.