



July 2019
FLSA: Non-Exempt

ELECTRICAL / INSTRUMENTATION TECHNICIAN

DEFINITION

The Electrical/Instrumentation Technician position performs preventative maintenance, repairs, makes adjustments, overhauls, calibrates, replaces and installs new electrical, instrumentation, computerized control systems, and computer network equipment in the wastewater treatment plant, sanitary and storm pumping stations; and performs other related work as required.

SUPERVISION RECEIVED AND EXERCISED

This position receives general supervision from the Electrical/Instrumentation Supervisor.

CLASS CHARACTERISTICS

Works under the appropriate applicable provisions of NFPA70, NFPA70E approved plans and specifications and standard industry practice.

EXAMPLES OF TYPICAL JOB FUNCTIONS (Illustrative Only)

Management reserves the right to add, modify, change, or rescind the work assignments of different positions and to make reasonable accommodations so that qualified employees can perform the essential functions of the job.

- Repairs, replaces, installs and maintains electrical equipment located at the plant and at 40 pump stations located within the District.
- Inspects, repairs, installs and maintains switch gear, motor control centers, transformers, relays, motors, generators, and a variety of other types of electrical/electronic equipment for proper operation.
- Designs, lays out, assembles, installs and tests electrical/electronic apparatus, equipment and wiring for power, lighting, instrumentation, telemetry, variable frequency drives, and control circuits.
- Estimates time and materials needed to perform various tasks under his/her control.
- Calibrates and maintains meters, analyzers, recorders, control and feed systems of the following nature, but not limited to, electric, electronic pneumatic, hydraulic and mechanical.
- Maintains an inventory of parts, materials and supplies used in the electrical/instrument shop.
- Keeps accurate maintenance records.
- Reviews plans and project designs.
- Installs and maintains telemetry systems.
- Performs programming of computerized control equipment (PLC's, SCADA, DCS,).
- Utilizes a variety of hand and power tools including drills, wire cutters, pliers, long nose pliers, wire strippers, combination square, pry bar, tape measure, torpedo level, pipe wrench, socket adapters, pipe wrenches, crimpers, ratchets, wrenches, screwdrivers, drills, reciprocating saw, testing equipment, hammers, diagnostic tools, hex head wrenches, and other related items.
- Installs conduit and wiring, includes utilizing screw guns and drills to secure conduit and fasteners. The employee, thereafter with or without assistance of coworkers, feeds wiring, up to 500 mcm, through the conduit and retrieves the wiring at the opposing end.
- Utilizes a manual bender to bend pipe. Includes placing the pipe on the bender and utilizing a pole to bend the pipe.
- Utilizes an electric drill press located in the shop, includes setting the material/item on the drill press fixture, and utilizing a handle in a downward motion to drill a hole.

- Utilizes an electrical conduit bender positioned on 3 wheels, includes relocating the bender, retrieving and inserting conduit, pressing a button to activate the electric conduit bender.
- Operates an automated pipe threader located at the plant shop. Includes retrieving and inserting a pipe, turning and securing a clamp, turning knobs and activating the machine to thread or cut the pipe.
- Operates an electric overhead crane to retrieve and relocate parts or equipment within the shop. Includes connecting a crane hook to the part and utilizing a control box to relocate the desired item.
- Performs confined space entries, includes working with a crew of 2 to 3 employees. Includes setting a tripod over an opening, wearing safety equipment, and utilizing specialized testing equipment including gas detectors, lowering tools, parts and equipment to inspect, service or repair equipment, as needed.
- Works in a railed man lift to access higher parts/equipment located within the plant, as needed.
- Reads books, manuals, sketches or plans.

Marginal Functions:

- Maintains a clean work shop, including utilizing a push broom to sweep the shop floor and dustpan to retrieve trash/debris.

QUALIFICATIONS

Knowledge of:

- Principles, theory and practices of electricity, electronics, instrumentation, computers, communication systems, pneumatics, radio communication, hydraulics and mechanics as they apply to maintenance and repair of equipment and machinery commonly found in a wastewater treatment facility, tools, materials, methods and practices of electrical, electronic and instrumentation trade.

Ability to:

- Handle a variety of tasks without close supervision.
- Handle emergency situations.
- Recognize and correct unsafe working conditions.
- Order and request materials, supplies and services as required.
- Recognize, define and solve a variety of mechanical, instrumentation and electrical/electronic problems.
- Apply principles of logic to define and solve complex problems.
- Perform ordinary arithmetic, algebraic, and geometric procedures in standard practical applications.
- Interpret a wide variety of manuals, drawings, and specifications, including layouts, blueprints and schematics, in book, manual and mathematical or diagrammatic form.
- Communicate clearly and concisely in English both orally and in writing.
- Walk on uneven surfaces.
- Wear a respirator.
- Enter and perform work in a confined space.
- Work in inclement weather.
- Accept criticism from supervisors, coworkers and subordinate employees.

Education and Experience:

Any combination of training and experience that would provide the required knowledge, skills, and abilities may be qualifying. A typical way to obtain the required qualifications would be:

Minimum four (4) years paid full-time experience in electrical and instrument repair. Two (2) years vocational or technical school, shop courses, or equivalent in-plant or on-the-job training.

Licenses and Certifications:

California Certificate of Completion of Electrical Apprenticeship or a current Grade I or higher Electrical/Instrumentation certificate issued by the California Water Environment Association at the time of application. A current Grade II Electrical/Instrumentation certificate issued by the California Waster Environment Association is desirable.

Must possess a valid California Class C Driver's License at the time of employment. The ability to drive District vehicles is a specific requirement for this position. For that reason it is the employee's responsibility to maintain a driving record that is acceptable to the District's insurance carrier or be subject to dismissal.

[Minimum Eligibility Standards for District Vehicle Insurance Coverage.](#)

PHYSICAL DEMANDS

[LINK to Electrical/Instrumentation Technician Physical Demands](#)

ENVIRONMENTAL CONDITIONS

May work outdoors in all weather conditions.

WORKING CONDITIONS

The Electrical/Instrumentation Technician classification must possess the physical characteristics to perform the critical and important duties of the class, including sufficient agility to stand, walk, sit, kneel, crawl, perform work in a confined space, climb stairs, and use ladders. Must possess sufficient strength to carry 100+ pounds (manhole cover, battery) a short distance.

ADDITIONAL INFORMATION

Disaster Service Worker:

Employees of Vallejo Flood and Wastewater District are, by State and Federal law, Disaster Service Workers. In the event of a declaration of emergency, any employee may be assigned activities which promote the protection of public health and safety or the preservation of lives and property either at the District or within the local area, or your own community.