



JULY 2012
FLSA: NON-EXEMPT

LEAD INSTRUMENTATION TECHNICIAN

This class specification indicates, in general terms, the type and level of work performed as well as the responsibilities of employees in this classification. The job functions described are not to be interpreted as being all-inclusive to any specific employee.

DEFINITION

Under direction, leads, oversees, and participates in the work of staff responsible for the maintenance, calibration, and repair of process control instrumentation and related equipment; performs the more complex advanced-journey level functions and provides training to less experienced Instrumentation Technicians; oversees and implements additions or modifications of control systems; and troubleshoots and repairs the most complex electrical, electronic, microprocessor-based and pneumatic and mechanical process control components..

SUPERVISION RECEIVED AND EXERCISED

Receives direction from a Maintenance Supervisor. Exercises technical and functional direction over and provides training to lower-level staff.

CLASS CHARACTERISTICS

This is the lead level class that performs the most complex duties required to ensure that District process control instrumentation and related equipment to which assigned are maintained in a safe and effective working condition and provide the highest level of safety for District and public use. Responsibilities include inspecting and attending to assigned areas in a timely manner, and performing a wide variety of tasks in the maintenance and repair of assigned systems. Incumbents are expected to work independently and exercise judgment and initiative. Positions at this level receive only occasional instruction or assistance as new or unusual situations arise and are fully aware of the operating procedures and policies of the work unit. This class is distinguished from Maintenance Supervisor in that the latter is a full supervisory-level class responsible for organizing, assigning, supervising, and reviewing the work of assigned staff involved in District infrastructure maintenance and repair.

EXAMPLES OF ESSENTIAL JOB FUNCTIONS

The following essential job functions are typical for this classification. Incumbents may not perform all of the listed job functions and/or may be required to perform additional or different job functions from those set forth below to address business needs and changing business practices.

- Lead, plan, train, and review the work of staff responsible for the maintenance, calibration, and repair of process control instrumentation and related equipment; perform the most complex work of the unit including troubleshooting and repairing the PLC based system and a wide variety of very complex control instruments relating directly and indirectly to the control of the plant processes and their related support system.
- Train assigned employees in their areas of work including instrumentation maintenance, calibration and repair methods, procedures, and techniques.
- Supervise the use, care, and operation of process control instrumentation and related equipment.
- Verify the work of assigned employees for accuracy, proper work methods, techniques, and compliance with applicable standards and specifications; ensure adherence to safe work practices and

- procedures.
- Prepare complex job plans to support the addition or modification of control systems needed to enhance the operation of wastewater treatment process controls by researching existing control systems; implement additions or modifications by reprogramming software such as ladder logic that interfaces personal computers with programmable logic controllers (PLC's); customize application programs that interface PLC's with distributive control systems (DCS's); and reprogram man machine interface (MMI) software.
 - Perform the most complex installations of process control components, panels, cables, and systems; determine measurements and develop drawings for installations; order equipment, parts, and supplies for installation of systems; install parts, equipment, piping, and wiring per design specifications; calibrate the instruments; test the systems; correct any failures; document control cable routing; coordinate installation with other divisions as necessary.
 - Troubleshoot and repair the most complex electrical, electronic, microprocessor-based, pneumatic, and mechanical process control components; identify, isolate, and diagnose failures using various types of test equipment; interpret schematic and loop drawings; coordinate repairs with other divisions as necessary.
 - Maintain the most complex process control instrumentation and support systems throughout the plant and at off-plant pump stations; clean, calibrate, and lubricate control equipment and enclosures, tools, test equipment, vehicles, and instrument shop facilities.
 - Review as-built drawings during construction of plant facilities to verify accuracy and correct mistakes related to field wiring and loop control functions.
 - Oversee and participate in maintaining and updating all applicable documents including software and application programs, instrumentation loop drawings, piping and instrument drawings (P&ID), and electrical ladder schematics; maintain summary of daily repairs and calibration tasks; enter into computer database.
 - Work with contractors to solve problems regarding new installation of equipment and control systems and to maintain proper adherence to all safety procedures.
 - Respond to inquiries in a courteous manner; provide information within the area of assignment; resolve complaints in an efficient and timely manner.
 - Order parts and materials for repairs and projects using the computer based warehouse purchasing program; contact outside vendors pertaining to new products and procedures that may enhance present business practices; contact outside vendors and manufacturers to locate appropriate parts and equipment necessary to maintain plant operation at peak performance.
 - Confer with field staff to determine the extent of repairs needed and apply correct repair procedures to complete the task in a timely, safe, and professional manner; check all repair work orders to assure correct asset assignment necessary to maintain accurate data base.
 - Perform related duties as required.

QUALIFICATIONS

Knowledge of:

- Operations, services, and activities of an instrumentation maintenance program.
- Principles of lead supervision and training.
- Advanced electrical and electronic technology principles and practices.
- Principles, methods, materials, and tools used in instrumentation repair and maintenance work.
- Advanced principles of hydraulic and pneumatic control systems.
- Advanced principles of fiber optic cable maintenance.
- Operational characteristics of process control instrumentation, equipment, and components.
- Principles, methods, materials, and basic tools used in process control instrumentation installation and repair.
- Advanced methods and techniques of maintaining, installing, troubleshooting, and repairing process control instrumentation.

- Advanced preventive and corrective maintenance techniques.
- Principles of analog and digital theory.
- Office procedures, methods, and equipment including computers and applicable software applications such as word processing, spreadsheets, and databases.
- Applied physics.
- Advanced mathematical principles.
- Principles and procedures of record keeping.
- NFPA-70E (National Fire Protection Association)
- Occupational hazards and standard safety practices.
- English usage, spelling, vocabulary, grammar, and punctuation.
- Techniques for providing a high level of customer service by effectively dealing with the public, vendors, contractors and District staff.

Ability to:

- Lead, organize, and review the work of staff.
- Independently perform the most difficult installation, repair, troubleshooting, and maintenance of process control instrumentation equipment.
- Interpret, explain, and enforce department policies and procedures.
- Operate a variety of process control instrumentation and related equipment in a safe and effective manner.
- Read, interpret, and understand plans, schematics, technical manuals, ladder logic, diagrams, blueprints, and drawings.
- Perform necessary mathematical calculations.
- Perform complex logic programming and interpret data derived from testing equipment.
- Correctly scale calibration.
- Operate test equipment and interpret critical data to solve complex problems.
- Operate a variety of office equipment including computers.
- Work independently in the absence of supervision.
- Prepare clear and concise technical reports and purchase requisition forms.
- Organize and prioritize a variety of projects and multiple tasks in an effective and timely manner; organize own work, set priorities, and meet critical time deadlines.
- Use English effectively to communicate in person, over the telephone, and in writing.
- Establish, maintain, and foster positive and effective working relationships with those contacted in the course of work.

Employment Standards:

Any combination of education and experience that provides the required knowledge, skills, and abilities may be qualifying as determined by OCS&D.

1. High school diploma or equivalent supplemented by college level course work or trade school training in instrumentation technology or a related field; AND
2. Four (4) years of experience installing, maintaining, calibrating, troubleshooting, and repairing electrical, pneumatic, and mechanical process control instrumentation equipment with at least two (2) years performing duties at a level comparable to an Instrumentation Technician II with the District.

License or Certificate:

- Possession of a valid Grade III Electrical/Instrumentation Certificate from the California Water Environment Association or comparable Instrumentation Society of America (ISA) certification is desirable.
- Possession of a valid California class C driver's license.

Disaster Service Workers:

All Orange County Sanitation District employees are designated Disaster Service Workers through state law (California Government Code Section 3100-3109). Employment with the Orange County Sanitation District requires the affirmation of a loyalty oath to this effect. Employees are required to complete all related training as assigned, and to return to work as ordered in the event of an emergency.

PHYSICAL DEMANDS

Must possess mobility to work in and around wastewater treatment plants and pump/lift stations and related utility systems and facilities; strength, stamina, and mobility to perform light to medium physical work, to work in confined spaces and around machines, to climb and descend ladders, and to operate varied hand and power tools and equipment, and to operate a motor vehicle and visit various District sites; vision to read printed materials and a computer screen; and hearing and speech to communicate in person and over the telephone or radio. The job involves fieldwork requiring frequent walking in operational areas to identify problems or hazards. Finger dexterity is needed to access, enter, and retrieve data using a computer keyboard or calculator and to operate above-mentioned tools and equipment. Positions in this classification bend, stoop, kneel, reach, and climb to perform work and inspect work sites. Employees must possess the ability to lift, carry, push and pull materials and objects weighing a minimum of 40 pounds, or heavier weights with the use of proper equipment.

ENVIRONMENTAL ELEMENTS

Employees work in and around wastewater utilities and in the field and are exposed to loud noise levels, cold and hot temperatures, inclement weather conditions, road hazards, vibration, confining workspace, chemicals, mechanical and/or electrical hazards, and hazardous physical substances and fumes. Employees may interact with upset staff and/or public and private representatives and contractors in interpreting and enforcing departmental policies and procedures.