

Oro Loma Sanitary District
2655 Grant Avenue
San Lorenzo, CA 94580
(510) 276-4700

Updated: 07/07/2010

ELECTRICAL & INSTRUMENTATION TECHNICIAN

DEFINITION

Under general direction of the Supervisor of Plant Maintenance, to perform professional work involving all the process control and electrical systems at the District's Water Pollution Control Plant and pumping stations, including troubleshooting, preventative and corrective maintenance, installation, calibration and repair of electrical and instrumentation equipment.

SUPERVISION EXERCISED

Exercises no supervision.

IMPORTANT AND ESSENTIAL DUTIES

1. Repair, calibrate and maintain various electronic and pneumatic process control system components.
2. Prepare plans and make modifications to existing system(s) where such modifications would be desirable for the improvement of the system(s).
3. Maintain automatic speed control equipment at the wastewater treatment plant, and various lift stations throughout the District.
4. Maintain and repair the electrical, electronic, pneumatic or hydraulic equipment throughout the treatment plant, pump stations, and the administrative buildings.
5. Perform and update electrical/instrumentation Computerized Maintenance Management System preventative maintenance duties as required.
6. Coordinate, monitor, and perform instrumentation or electrical installation and repair with District staff and/or service vendors.
7. Perform work on and around 480-volt power systems and multi-phase motors.
8. Respond to emergency situations.
9. Operate and maintain radio equipment.
10. Perform other related duties as assigned.

JOB RELATED AND ESSENTIAL QUALIFICATIONS

Knowledge of:

- Principles, theory and practices of electricity, electronics, pneumatics, hydraulics, and mechanics used in the maintenance and repair of equipment and instruments in a wastewater treatment facility.
- Tools, materials, methods and practices of electrical, electronic, and instrumentation repair and maintenance.
- Applicable provisions of the National Electric code; related plans, specifications and standard industry practices.
- Mathematics, including standard applications of arithmetic, algebra, and geometry in electronic and instrumentation design, calibration, maintenance and repair work.
- Proper safety precautions related to instrumentation and electrical maintenance and repair.
- Safety methods and procedures for tools, supplies and equipment.

Skill to:

- Operate a motor vehicle safely.
- Operate a wide variety of tools and equipment including electronic testing equipment, meters, hand tools, calibrators and related tools and equipment.

Ability to:

- Meet respiratory requirements and use of self-contained breathing apparatus (SCBA) when necessary in accordance with the District's Standard Procedure No.I.E.13.
- Troubleshoot a variety of complex instrumentation, electronic and mechanical problems.
- Read, draw and interpret electrical schematics.
- Design and install control systems.
- Repair and calibrate sophisticated telemetry systems.
- Perform arithmetic, algebraic, and geometric functions for standard applications in instrumentation design, calibration, repair and maintenance work.

- Interpret and apply a wide variety of technical information from manuals, drawings, specifications, layouts, blueprints, and schematics for instrument systems and electrical components.
- Estimate time, materials, and supplies required for assigned work.
- Work independently in the absence of supervision.
- Understand and follow oral and written instructions.
- Establish, maintain, and foster positive and harmonious working relationships with those contacted in the course of work.

EXPERIENCE AND EDUCATION GUIDELINES

Any combination of experience and training that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:

Experience:

Three years recent journey-level experience in electrical circuitry, methods, materials, tools and equipment used in maintaining, repairing, testing, and installing electro-mechanical metering and recording instruments.

Training:

Equivalent to the completion of the twelfth grade. Two years of college level course work covering technical material necessary for this type of work is desirable.

License or Certificate:

Possession of, or ability to obtain, a valid California driver's license from the California Department of Motor Vehicles; and a DMV record which meets the District's Driving Standards.

Possession of, or ability to obtain, within three years of appointment, a California Water Environment Association (CWEA) Technical Certification, Electrical/Instrumentation in Technology Grade II.

WORK ENVIRONMENT/PHYSICAL DEMANDS

The work environment characteristics are representative of those an employee encounters while performing the essential functions of this job. The physical demands are representative of those that must be met by an employee to successfully perform the essential functions of the job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is frequently required to stand; sit; use hands to finger, handle, or feel; reach with hands and arms; walk, climb or balance; stoop, squat, twist, kneel, crouch, or crawl; and talk or hear. The employee must frequently lift and/or move up to 50 pounds and occasionally lift and/or move up to 75 pounds. Specific vision abilities required by this job include close vision, distance vision, and depth perception, adjust focus and distinguish colors.

Additionally, the employee is frequently exposed to outside weather conditions. The employee is occasionally exposed to confined spaces; fumes or airborne particles; fumes, dust, toxic or caustic chemicals; extreme cold; extreme heat; vibration and risk of electrical or mechanical hazards. Employees in this classification may perform duties that involve a potential risk of exposure to blood borne pathogens. In addition, employees use power and noise producing tools and equipment. The noise level in the work environment is usually loud.

Effective Date: April 1993

Updated by A. Simion on 02/11/04
Updated by: A. Simion on 07/07/10