



CENTRAL MARIN SANITATION AGENCY

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JOB DESCRIPTION

Electrical/Instrumentation Technician (Trainee, I-III)

SUMMARY

Under general supervision, installs, repairs, replaces, and performs corrective, preventive, and predictive maintenance on a variety of electrical, electronic, pneumatic, hydraulic, heating, ventilation, air conditioning, and electro-mechanical systems. Calibrates and maintains circuitry specific to automated process information and control equipment and can read and interpret wiring diagrams.

ESSENTIAL DUTIES AND RESPONSIBILITIES

Duties may include, but are not limited to, the following:

- Inspects a variety of automated process information and control equipment and electrical, electronic, pneumatic, hydraulic, heating and air conditioning and electro-mechanical systems such as found in a wastewater treatment plant and/or related industrial facilities.
- Installs, performs preventive maintenance on, repairs, programs, and replaces such equipment.
- Troubleshoots equipment problems, and recommends time, equipment, and materials required to effect repairs; makes emergency repairs as required.
- Maintains power systems including cogeneration system tuning and controls, emergency generator transfer controls and switchgear, and various battery backup systems.
- Uses and performs maintenance on a variety of tools and electrical and electronic test equipment; calibrates equipment as required.
- Reads and interprets specifications, diagrams, manuals, and other documentation.
- Designs equipment installations and modifications; makes required mathematical calculations; prepares schematics and diagrams for documenting installations; determines supplies and materials required.
- Confers with facility staff to determine equipment problems; suggests methods of minimizing such problems.
- Recognizes and applies State of California and National electrical codes.
- Installs various types of conduit, understands conduit conductor fill allowances and proper conductors for amperage loads.
- Maintains accurate records and files of work performed, and materials and supplies used.
- Observes appropriate safety procedures, properly uses safety equipment (PPE), and works to applicable codes and guidelines.
- Attends training and safety sessions as assigned.
- Performs confined space entries as required.

SUPERVISORY RESPONSIBILITIES

This job has no supervisory responsibilities.

QUALIFICATIONS

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required.

Education/Experience & Certifications/Licenses

All positions in the E/I Technician classification require a high school diploma or general education degree (GED).

E/I Technician classification positions, except Trainee, require training from an electrical or instrumentation technology program, apprentice program, trade school, military experience, or equivalent work experience.

Electrical/Instrumentation Technician Trainee – No experience or certification is required.

Electrical/Instrumentation Technician I – Possession of a Grade I Electrical/Instrumentation Technician certificate issued by the California Water Environmental Association (CWEA), or ability to obtain Grade I certification within one year of employment, and a minimum of two years of experience in the maintenance and repair of a variety of electrical, electronic, and/or computer equipment such as found in a secondary wastewater treatment plant and/or related industrial worksites or facilities.

Electrical/Instrumentation Technician II – Possession of a Grade II Electrical/Instrumentation Technician certificate issued by the California Water Environmental Association (CWEA) or ability to obtain a Grade II certification within one year of employment, and a minimum of three years of experience in the maintenance and repair of a variety of electrical, electronic and/or computer equipment such as found in a secondary wastewater treatment plant and/or related industrial worksites or facilities.

Electrical/Instrumentation Technician III – Possession of a Grade III Electrical/Instrumentation Technician certificate issued by the California Water Environmental Association (CWEA) or ability to obtain a Grade III certificate within one year of employment, and four years of experience in the maintenance and repair of a variety of electrical, electronic and/or computer equipment such as found in a secondary wastewater treatment plant and/or related industrial worksites or facilities.

Possession of a technical diploma or associate's degree in electrical, instrumentation, or automation technology and/or a Journeyman Electrician License is highly desirable.

Must possess a valid California class C driver's license, have a satisfactory driving record, and continue to meet CSRM driving standards. Failure to maintain these standards may result in loss of employment.

Interpersonal Skills

Ability to effectively communicate and interact with co-workers, supervisors, vendors, contractors, consultants, and the general public in a professional manner; to accept constructive criticism from supervisors, and peers; to work as a team member or independently as needed; to prioritize assignments and meet deadlines; to prevent personal problems from adversely impacting your work or that of others around you; to arrive at work as scheduled and to work the shift hours as scheduled.

Language Skills

Electrical/Instrumentation Trainee - Technician I – Ability to read and comprehend circuit diagrams or drawings, simple instructions, short correspondence, and memos. Ability to write simple correspondence. Ability to effectively present information in one-on-one and small group situations to customers and other employees of the organization.

Electrical/Instrumentation Technician II – Ability to read and interpret wiring diagrams, P&ID and instrumentation diagrams, and documents such as safety rules, operating and maintenance instructions, and procedures manuals. Ability to write routine reports and correspondence. Ability to speak effectively before consultants, customers, or employees of the organization.

Electrical/Instrumentation Technician III – Ability to read, analyze and interpret schematic wiring diagrams, general business periodicals, professional journals, technical procedures, or governmental regulations. Ability to use Autocad to update electrical drawings, write reports, perform business correspondence, and update procedures or manuals if necessary. Ability to effectively present information and respond to questions from groups of managers, customers, and the public.

Mathematical Skills

Electrical/Instrumentation Trainee – Ability to add, subtract, multiply, and divide in all units of measure, using whole numbers, common fractions, and decimals. Ability to compute rate, ratio, and percent and to draw and interpret graphs.

Electrical/Instrumentation Technician I – Ability to calculate figures and amounts such as discounts, interest, commissions, proportions, percentages, area, circumference, and volume. Ability to apply concepts of basic algebra and geometry.

Electrical/Instrumentation Technician II & III – Ability to work with mathematical concepts such as probability and statistical inference, and fundamentals of plane and solid geometry and trigonometry. Ability to apply concepts such as fractions, percentages, ratios, and proportions to practical situations.

Reasoning Ability

Electrical/Instrumentation Trainee – Ability to apply common sense understanding to carry out simple one- or two-step instructions. Ability to deal with standardized situations with only occasional or no variables.

Electrical/Instrumentation Technician I – Ability to apply common sense understanding to problem solve and carry out detailed but uninvolved written or oral instructions. Ability to deal with problems involving a few concrete variables in standardized situations.

Electrical/Instrumentation Technician II – Ability to problem solve using critical thinking skills, and to carry out instructions furnished in written, oral, or diagram form. Ability to deal with problems involving several concrete variables in standardized situations.

Electrical/Instrumentation Technician III – Ability to comfortably work with highly detailed information and deal with a variety of concrete variables in situations where only limited standardization exists. Ability to interpret a variety of instructions furnished in written, oral, diagram, or schedule form.

PHYSICAL DEMANDS

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, or feel and talk or hear in person or on the telephone or radio. The employee frequently is required to stand, walk, sit, reach with hands and arms, and smell. The employee is occasionally required to climb or balance and stoop, kneel, crouch, or crawl. The employee must be able to lift and/or move up to 25 pounds to shoulder height, up 50 pounds to waist height, and up to 90 pounds up to 9" off the ground (such as for a manhole cover). Specific vision ability required by this job include close vision, distance vision, color vision, peripheral vision, depth perception, and ability to adjust focus.

Examples of the physical demands for this position, including their activity and duration, are available from Administration.

WORK ENVIRONMENT

The work environment characteristics described here are representative of those that an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee is frequently exposed to risk of electric shock; moving mechanical parts; fumes or airborne particles; wet and/or humid conditions; and outdoor weather conditions. The employee is occasionally exposed to high, precarious places; toxic or caustic chemicals; construction project site conditions; extreme heat; and vibration. The noise level in the work environment is usually moderate with occasional exposure to loud equipment. May be required to work overtime and off-shift hours, including weekends, on a project or emergency basis.

SPECIAL REQUIREMENTS

There are no special requirements for this job.

RIGHT TO WORK DOCUMENTATION

Before being hired, all new employees will be required to show documentation as proof of authorization to work in the United States.

Job Title: Electrical/Instrumentation Technician
Department: Maintenance - E/I
Reports To: Assistant Maintenance Supervisor
FLSA Status: Non-Exempt
Revised Date: March 2021