

## **ELECTRICAL/INSTRUMENTATION TECHNICIAN (Trainee, I-III)**

### **SUMMARY**

Under general supervision, installs, repairs, replaces and performs corrective, preventive and predictive maintenance on a variety of automated process information and control equipment, electrical, electronic, pneumatic, hydraulic, heating, ventilation, air conditioning and electro-mechanical systems as found in a wastewater treatment plant and related facilities; and performs related work as required.

### **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 related 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 co-generation 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 operations staff to determine equipment problems; suggests methods of minimizing such problems.
- Maintains accurate records and files of work performed and materials and supplies used.
- Observes appropriate safety procedures, uses safety equipment and works to applicable codes and guidelines.
- Attends training and safety sessions as assigned.
- Performs confined space entry and rescue.

### **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 & CERTIFICATION/LICENSES**

High School Diploma or general education degree ( GED ). Completion of some course work in an apprenticeship program or trade school in an electronics, electrical or computer field is desirable.

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

***Electrical/Instrumentation Technician I*** – EITHER possession of a Grade I Plant Maintenance Technologist certificate issued by the California Water Environmental Association (CWEA), OR one year 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 related pumping facilities and the ability to obtain a Grade I certificate within the first two test opportunities after start of employment in the position.

**Electrical/Instrumentation Technician II** – EITHER possession of a Grade II Electrical/Instrumentation Technician certificate issued by the California Water Environmental Association (CWEA), OR 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 related pumping facilities and the ability to obtain a Grade II certificate within the first two test opportunities after start of employment in the position.

**Electrical/Instrumentation Technician III** – EITHER possession of a Grade III Electrical/Instrumentation Technician certificate issued by the California Water Environmental Association (CWEA), OR 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 related pumping facilities and the ability to obtain a Grade III certificate within the first two test opportunities after start of employment in the position.

Must possess a valid California class C driver's license, have a satisfactory driving record and continue to meet CSRMA driving standards.

Failure to maintain these standards may result in loss of employment.

### **INTERPERSONAL SKILLS**

Ability to interact with others( co-workers, supervisors, subordinates, vendors, member agencies, and the general public) in a professional manner; to accept constructive criticism from supervisors, equals and subordinates; to work as a team member or independently as needed; to prioritize assignments and meet deadlines; to prevent personal problems from adversely affecting 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 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 documents such as safety rules, operating and maintenance instructions, and procedures manuals. Ability to write routine reports and correspondence. Ability to speak effectively before groups of customers or employees of the organization.

**Electrical/Instrumentation Technician III** - Ability to read, analyze and interpret general business periodicals, professional journals, technical procedures or governmental regulations. Ability to write reports, business correspondence, and procedure manuals. Ability to effectively present information and respond to questions from groups of managers, customers, and the general 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 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 apply common sense understanding 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 solve practical problems 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 100 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.

#### **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; to wet and/or humid conditions; and outdoor weather conditions. The employee is occasionally exposed 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.

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| <b>Job Title:</b>    | Electrical/Instrumentation Technician |
| <b>Department:</b>   | Maintenance - E/I                     |
| <b>Reports To:</b>   | Electrical/Instrumentation Supervisor |
| <b>FLSA Status:</b>  | Non-Exempt                            |
| <b>Revised Date:</b> | May 2007                              |