



AWP Electrician and Instrumentation Technician

Department: AWP

FLSA Status: Non-Exempt

Salary Grade: 26 & 28

SUMMARY DESCRIPTION

Under the general supervision of the Maintenance Supervisor incumbents are responsible for performing skilled electrical/electronic installations, repairs and maintenance on the AWP's electrical and instrumentation infrastructure; tests, troubleshoots, calibrates, repairs and performs preventive/predictive/corrective maintenance on a variety of electrical, electronic, telecommunication and instrumentation systems, components and devices associated with the operation of a large, state-of-the-art Advanced Water Purification Facilities, wastewater pump stations and remote dechlorination facilities; rebuilds equipment to manufacturer's specifications, including motor controllers, analog and digital flow, temperature and pressure transmitters, data radios, metering control systems, valve actuators, digital modems, programmable logic controllers (PLCs), remote terminal units (RTUs), emergency generators, devices and scientific instruments using operational performance standards, and standard and specialized testing equipment; corrects defects in instrumentation. Must be willing to work on or around medium voltage equipment, basic troubleshooting and remedies, and attend associated training on a frequency to be determined; must be willing to work on fiber optic systems and implement basic repairs and mitigation measures; implementing emergency response actions, and any other duties as assigned for the East County Advanced Water Purification (AWP) Joint Powers Authority (JPA).

ESSENTIAL DUTIES

1. Tests, troubleshoots, calibrates, programs and performs preventive, corrective, and predictive maintenance on a wide variety of complex electrical and electronic instruments and devices, such as programmable logic controllers, including soft-start, across the line motor controls and variable frequency drives, motors, electrical machinery, .
2. Installs, maintains, repairs and calibrates a wide variety of electronic recording and indicating instruments such as differential pressure flow meters, sonic flow meters, pressure and temperature recorders, signal conversion modules, level-sensing devices and valve actuator controllers.
3. Performs a variety of skilled, technical duties in the development, installation, modification and maintenance of telecommunication (radio and fiber optic), process control, supervisory control and telemetry systems.

4. Inspects and assists in troubleshooting new control and communication systems and installations.
5. Plans and lays out jobs from blueprints, drawings, sketches, work orders or verbal instructions; maintains records in the form of blueprints, plans and specifications, and record documents.
6. Coordinates with Planner/Scheduler and Maintenance Supervisor to perform all maintenance and associated documentation in accordance JPA's Computerized Maintenance Management System (CMMS).
7. Schedules and coordinates activities with other staff, sections, departments or agencies; ensures the timely and accurate completion of all maintenance activities; performs project management on special projects and keeps information updated.
8. Installs conduits, conductors, wires, pull boxes, switchboards, controllers and switches required in making additions, extensions or alterations in electrical systems; installs motors, controls, transformers and generators.
9. Test, diagnose, calibrate and repair a wide variety of electrical and electronic instrumentation devices, motors, motor control systems, machinery and equipment common to a large wastewater/waterworks systems.
10. Use modern, state-of-the-art precision and diagnostic instruments to test, calibrate and repair complex electrical, electronic, telemetry and telecommunication devices and equipment.
11. Plans, coordinates, constructs/installs, rebuilds equipment to manufacturer's specifications. Maintains spare parts inventory.
12. Repairs and replaces defective electrical and electronic parts in motors, motor control systems, storage batteries, controllers, conductors, switches and other industrial devices; makes additions, extensions and modifications in electrical systems; installs, maintains and repairs electromechanical, electronic and electrical components of equipment and machinery, including transformers, generators, and hydraulic devices.
13. Provide basic assessment and remedies for medium voltage systems and coordinate, manage and oversee medium voltage maintenance contractor's work.
14. Organize, plan, lead and complete projects efficiently and in accordance with electrical standards.
15. Identify departmental needs and develop and implement alternatives and solutions consistent with the department's strategic focus areas.
16. Uses personal computer to perform computerized maintenance management tasks and specialized functions as directed.
17. Plans tasks, keeps records of work performed, and provides estimates of labor and material necessary for the performance of the work. Conducts research on asset repair/replacement prices and supplies as directed.
18. Performs operational tests on motors, valves and pump stations to determine the condition of equipment and, based on test data, makes recommendations.
19. Perform work safely and follow established procedures.
20. Performs other duties as required.

QUALIFICATIONS

The following generally describes the knowledge and ability required to enter the job and/or be learned within a short period of time in order to successfully perform the assigned duties.

Knowledge of:

1. Electrical theory and principles and practices;
2. Current National Electrical Code (NEC);
3. OSHA Standards for Lockout/Tagout;
4. National Fire Protection Association (NFPA) 70E Standard for Electrical Safety in the Workplace;
5. Operation, troubleshooting and maintenance of electric motors and controls;
6. 480-volt three phase electrical systems;
7. Instrumentation & Control Processes;
8. Diesel powered electrical generator operation and maintenance;
9. Electronic equipment such as Programmable Logic Controllers and modems;
10. Radio and communication systems and related equipment;
11. Supervisory Control and Data Acquisition (SCADA) systems;
12. Industrial automation and control systems including SCADA, PLC's and motor controls;
13. Single and three phase AC and DC electrical power systems below 600 volts nominal;
14. Electronics, pneumatics, and hydraulics along with the mathematics commonly used in each field;
15. Safety practices and regulations pertaining to the work;
16. Windows-based computers, computer hardware and common business applications related to the work;
17. Codes, ordinances, OSHA, EPA, NFPA and other regulations and specifications pertaining to the work;
18. Record keeping techniques;

Skills/Abilities:

1. Installing, repairing, maintaining and troubleshooting electrical and electronic equipment, electric motors and controls
2. Ability to identify electrical hazards and work safely around electrical equipment and construction sites
3. Performing major electrical work;
4. Calibrating electronic equipment;
5. Reading maps, blueprints, ladder, and wiring diagrams;
6. Using electrical and electronic equipment such as volt meters, megger, IR camera, tone testing equipment and hand and power tools;
7. Using computers and related software applications;
8. Communication, interpersonal skills as applied to interaction with coworkers, supervisor, the general public, etc. sufficient to exchange or convey information, and to receive work direction
9. Identify and implement effective courses of action to complete assigned work.
10. Read and interpret plans, specifications and manuals.
11. Exercise independent judgment and initiative within established guidelines.
12. Establish and maintain effective working relationships with those encountered in the course of the work.
13. Coordinate work assignments with other sections, divisions or departments.
14. Interpret and apply federal state, and local policies, laws and regulations related to electrical repairs, installation, and safety;
15. Managing multiple tasks and responsibilities;
16. Administering contracts;
17. Understand, interpret, and apply applicable District and JPA policies, procedures and operational standards related to electrical maintenance;

18. Safely operate various gas, diesel and electric powered vehicles;
19. Using computers and related software applications;
20. Communication, interpersonal skills as applied to interaction with co-workers, supervisor, the general public, etc. sufficient to exchange or convey information and to receive work direction.

Training/Experience Required:

1. High School Diploma or General Equivalency Diploma (G.E.D.);
2. Formal training in college, vocational school, or industry-recognized apprenticeship program;
3. State of California Electrical Apprenticeship Certificate;
4. 5 years of progressively responsible experience in the maintenance, repair, rebuild, and service of electrical, instrumentation, and control systems found in the water/wastewater industry or closely related industry;
5. Medium voltage training/certifications preferred but not required.

Licensing Requirements:

1. Possession of a Valid California Driver's License;
2. Current State of California General Electrician Certificate;
3. CWEA Electrical & Instrumentation Certificate 2 (within 18 months from date of hire)
4. Plant Maintenance Grade I certification from CWEA (within one year from date of hire).

Safety Priorities:

1. Knowledge of general office and field safety,
2. Use and care of Personal Protective Equipment specifically related to electrical safety and mechanical safety, arc flash hazard per NFPA 70E and chemical exposure,
3. Safety when working around traffic in the public right of way,
4. Defensive driving techniques,
5. Safe use and care of hand and power tools.
6. Understanding of: Padre Dam's Safety Rules and Regulations and accident and injury reporting policies.
7. Ability to: complete safety training and work in a safe and efficient manner at heights and under other adverse conditions.

Physical Requirements:

1. Positions in this class typically require: climbing, balancing, stooping, kneeling, crouching, crawling, reaching, standing, walking, pushing, pulling, lifting, grasping, feeling, talking, hearing, seeing, and working on elevated surfaces.
2. Incumbents may be subjected to moving mechanical parts, electrical currents, vibrations, fumes, heat, odors, dusts, gases, poor ventilation, chemicals, oils, inadequate lighting, workspace restrictions, intense noises, infectious substances, and travel.
3. Heavy Work: Exerting up to 100 pounds of force occasionally, and/or up to 50 pounds of force frequently, and/or up to 20 pounds of forces constantly to move objects.

Classification History:

New 06/2023