

ELECTRICAL TECHNICIAN II

SUMMARY

Under direct or general supervision of the Maintenance Supervisor, this non-exempt position is the advanced working level for Electrical Technicians. In addition to the technician duties of Electrical Technician I, this classification is distinguished by performing duties relating to overall oversight of control system, SCADA, electronic, and telemetry associated systems.

EXAMPLES OF DUTIES

The duties listed below are illustrative only and are not meant to be a complete, exhaustive listing of all of the duties and responsibilities of the Electrical Technician classification:

Technician Duties:

- Performs various installations, maintenance, and repairs of electronic and control system equipment to support operations systems found in the water treatment plant, water supply system, District buildings, and related facilities.
- Troubleshoots and corrects Programmable Logic Controller (PLC's) programming and/or SCADA configuration problems and develops new or expanded SCADA functions.
- Analyzes equipment failures and makes recommendations to improve the reliability of equipment and systems.
- Reads and interprets wiring diagrams, mechanical drawings, electrical drawings, control systems diagrams, piping and instrumentation diagrams (P&ID), and specifications in making installations or performing major repair work; utilizes vendor manuals and drawings to set up and maintain complex instruments; assists in planning the layout and field installation details for new equipment.
- Makes and updates as-built and shop drawings of electrical installations.
- Installs, maintains, and performs basic to intermediate field modification of PLCs, RTUs, other Human-Machine Interface (HMI) screens, and various telemetry equipment, including radio and ethernet communication systems.
- Designs, installs, programs, and maintains process control systems for electrical equipment such as motors, motor control centers, VFDs, transformers, and power-generating equipment.
- Develops, designs, and installs new Programmable Logic Controller programs when required to add new control system or management information system capabilities; participates in the design of instrumentation systems including the District-wide SCADA system.
- Performs minor repairs and software/hardware installation on personal computers.
- Assists in system upgrade planning and budget planning.
- Assists Electrical Technician I and staff as required.
- Performs other duties as assigned.

Typical Physical Activities:

- Operates District vehicles for District purposes.
- Carries, pushes, pulls, reaches, and lifts equipment weighing up to 50 lbs.

- Stoops, kneels, crouches, crawls, and climbs during vehicle and equipment maintenance and repair work.
- Communicates orally with individuals and/or groups of District staff.
- Regularly uses a telephone for ordering parts and coordinating work.
- Exposure to dust, lubricants, cleaning solutions, and chemicals.
- Hearing and vision within normal ranges with or without correction.
- Stands and walks for extended periods of time.

EMPLOYMENT STANDARDS

Knowledge of:

- Electrical theory and the methods, tools, equipment, and materials used in the electrical trade and their applications
- Understanding of the NEC, local, State, and other applicable laws, regulations, codes, and standards.
- Safety practices, installation techniques, and the hazards involved in working with the full spectrum of voltages ranging from 12 volts DC to 12,000 volts AC.
- Instrumentation and process control loops.
- PLC programming methods and standards.
- HMI development and configuration methods and standards.

Ability to:

- Use and wear safety equipment, protective gear, and respirators.
- Recognize, diagnose and repair electrical and instrumentation problems with electrical and instrumentation systems and equipment.
- Recognize, diagnose and repair process control problems with SCADA systems and equipment.
- Plan, layout, and perform difficult electrical and instrumentation work involving the maintenance, repair, and installation of various electrical and instrumentation equipment types.
- Plan, layout, and perform difficult control system work involving the programming and configuration of various SCADA components.
- Read, interpret, and prepare electrical diagrams, loop diagrams, P&IDs, control strategy descriptions, process overviews, specifications, and list material requirements.
- Establish and maintain cooperative working relationships with co-workers, outside agencies and the public.

Foundational abilities:

- Must possess good verbal and written communication skills, including writing reports and developing written Standard Operating Procedures and maintaining detailed records.
- Communicates well with individuals and/or groups of District staff.
- Must be computer literate. Possess experience with Microsoft Word, Excel, and Outlook.
- Familiar with the use of a modern CMMS.
- Respond to emergency call-outs on nights, weekends, and holidays.

Environmental factors:

- Exposure to the sun: 50% to 100% spent outside a building and exposed to the sun.
- Work above floor level: Some work done on ladders other surfaces from 4 to 12 feet above the ground.
- High Temp: Some work time spent in temperatures between 80 to 90 degrees.
- Humidity: Occasional work in areas with unusually high humidity.
- Wetness: Occasional work time getting part of the body and /or clothing wet.
- Noise: Some work time spent in areas with a noise level requiring the use of hearing protection.
- Slippery Surfaces: Occasional work on unusually slippery surfaces.
- Oil: Some parts of the body in contact with oil or grease occasionally.
- Dust: Works in or around areas with minor amounts of dust.
- Occasional irregular or extended work hours.

DESIRABLE QUALIFICATIONS

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

- College or technical school courses in control theory and practices are desirable.
- Possession of a California Water Environment Association (CWEA) Electrical/Instrumentation Grade II or III certification, or equivalent.

License/Certificate/Registration/Experience Requirement:

- Driver's License: Possession of a valid California (Class "C") Driver's License may be required at the time of appointment. Failure to obtain or maintain such required license(s) may be cause for disciplinary action. Individuals who do not meet this requirement due to a physical disability will be considered for accommodation on a case-by-case basis.
- Possession and proof of a driving record free of multiple or serious traffic violations or accidents for two (2) consecutive years.
- Four (4) years of journeyman level work experience in at least one of the following areas: Instrumentation and process control, SCADA systems (HMI and PLC).
- Five (5) years experience working on process control systems and automation at water/wastewater treatment plant automation.

The specific statements in each section of this job description are not intended to be all-inclusive. They represent typical elements that are necessary to successfully perform the job.