ELECTRICAL TECHNICIAN II

SUMMARY
Under general supervision of the Electrical Supervisor, this non-exempt position is the advanced working level in the Electrical Technician series. In addition to Electrical Technician I duties, performs advanced electrical, instrumentation, PLC, SCADA, HMI, telemetry, and industrial communications work throughout District facilities. Independently diagnoses complex control-system problems, implements approved modifications, and provides advanced technical support for operations and projects.

DISTINGUISHING CHARACTERISTICS
Electrical Technician II performs the full range of Electrical Technician I duties and independently handles complex PLC/SCADA/HMI programming, controls integration, telemetry and communications troubleshooting, and system commissioning. The classification may provide technical direction and training but does not exercise formal supervisory authority. Electrical Supervisor is distinguished by responsibility for assigning and evaluating staff and exercising first-line supervision.

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 classification:

Advanced Controls and Automation Duties:
- Troubleshoot, configure, program, test, and maintain PLCs, RTUs, HMIs, SCADA applications, industrial communications, telemetry systems, and associated field devices.
- Develop, modify, document, and implement approved PLC logic, HMI screens, alarms, control strategies, communications configurations, and automation improvements.
- Maintain control-system backups, configuration records, change documentation, and restoration procedures for PLC, HMI, SCADA, and telemetry systems.
- Integrate instrumentation and controls for motors, VFDs, generators, transfer equipment, actuators, analyzers, and process instruments.

Electrical and Instrumentation Work Duties:
- Perform advanced troubleshooting, testing, installation, maintenance, and repair of industrial electrical, instrumentation, and control equipment.
- Read, interpret, prepare, and update electrical and control-system drawings, loop diagrams, P&IDs, control narratives, network drawings, as-builts, and specifications.
- Set up, calibrate, and maintain complex process instruments and analytical equipment using appropriate documentation, software, and test equipment.
- Analyze recurring equipment failures and recommend changes to improve reliability, maintainability, safety, and operational performance.

Projects, Planning, and Technical Leadership Duties:
- Provide technical input during planning, design, construction, startup, and commissioning of electrical, instrumentation, SCADA, and automation projects.
- Review plans, specifications, submittals, control narratives, and contractor work for consistency with District standards and operational requirements.
- Assist with system upgrades, replacement planning, budgeting, procurement, spare-parts planning, and technical standards.

- Provide technical guidance and training to Electrical Technician I staff and other District personnel within area of expertise.
- Plan, complete, and document maintenance and project work in the District CMMS and related records.
- Perform other duties as assigned.

Environmental Factor Activities:
- Work indoors and outdoors in varying weather and temperature conditions at water treatment, pumping, conveyance, and related facilities.
- Exposure to noise, dust, grease, lubricants, chemicals, water, uneven or slippery surfaces, and other industrial conditions.
- Work around energized electrical and rotating or pressurized equipment in accordance with applicable safety procedures and required protective equipment.

Typical Physical Activities:
- Operate District vehicles and travel to treatment, pumping, conveyance, and remote facilities.
- Stand and walk for extended periods; climb ladders and stairs; stoop, kneel, crouch, crawl, reach, push, and pull during maintenance work.
- Lift and carry tools, parts, and equipment weighing up to 50 pounds, with assistance or lifting devices used when appropriate.
- Work at heights and in permit-required confined spaces when assigned and properly trained.
- Use computers, radios, telephones, test instruments, and other tools required for the work.
- Respond to emergency call-outs and work overtime, nights, weekends, or holidays when required.

EMPLOYMENT STANDARDS

Knowledge of:
- Advanced industrial electrical, instrumentation, process-control, PLC/HMI/SCADA, telemetry, and industrial communications principles and practices.
- Electrical theory; motor controls; VFDs; generators; transfer equipment; instrumentation; and process-control loops.
- PLC programming, HMI development, alarm and control strategies, SCADA configuration, industrial networking, and troubleshooting methods.
- NEC, NFPA 70E, Cal/OSHA, lockout/tagout, arc-flash requirements, and other applicable codes and safety standards.
- Methods for preparing and interpreting electrical drawings, P&IDs, loop diagrams, control narratives, network diagrams, specifications, and as-builts.
- CMMS work management, maintenance documentation, equipment history, and reliability practices.

Ability to:
- Independently diagnose complex electrical, instrumentation, PLC/SCADA/HMI, telemetry, and communications problems and implement corrective actions.
- Program and configure PLC/SCADA/HMI components within approved District standards and change-control practices.

- Plan complex electrical and controls work, coordinate outages and commissioning, and manage multiple priorities.
- Communicate technical information clearly to District staff, contractors, vendors, and management.
- Prepare accurate technical records, reports, procedures, drawings, and configuration records.
- Provide effective technical guidance and training without exercising formal supervisory authority.

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:

Required Certification/Education/Experience/License:

- Certification:
  - Possesion of a Electrical & Instrumentation Technologist Grade 2 (ET2) Certificate from California Water Environement Association (CWEA).
  - Possession of a California State Electricians License.

- Education:
  - Completion of a High School Diploma or equivalent: College, technical school coursework in controls, electrical technology, instrumentation, electronics, or industrial automation is desirable.

- Experience:
  - Completion of a recognized electrical, instrumentation, electronics, or controls apprenticeship or technical program, or equivalent experience.
  - Five (5) years of progressively responsible journey-level experience in industrial electrical, instrumentation, process control, PLC/SCADA/HMI, or related work. Water/wastewater or comparable industrial process experience is highly desirable.

- 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.

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