

ELECTRICAL TECHNICIAN I

This class specification indicates, in general terms, the type and level of work performed as well as the responsibilities of employees in this classification. The job functions described are not to be interpreted as being all-inclusive to any specific employee.

DEFINITION

Under general supervision, maintains, repairs, and installs electrical equipment up to 480 volts and assists in maintaining, repairing, and installing electrical equipment up to 12K volts; performs predictive, preventive, and corrective maintenance on assigned equipment; and performs duties as assigned.

SUPERVISION RECEIVED AND EXERCISED

Receives general supervision from assigned supervisory and/or managerial staff. Exercises no direct supervision over staff.

CLASS CHARACTERISTICS

This classification is the second of five levels within the electrical maintenance job series. Positions at this level are assigned to independently maintain, repair, and install electrical equipment up to 480 volts and may assist with equipment up to 12K volts, and are not expected to function with the same amount of knowledge or skill level as positions allocated to Electrical Technician II. Positions at this level exercise less independent judgment and initiative in matters related to work procedures and methods. As experience is gained, assignments become more varied and are performed with more independence. This class is distinguished from the Electrical Technician II in that the latter is responsible for maintenance, repair, and installation of more complex and high voltage electrical systems.

EXAMPLES OF ESSENTIAL JOB FUNCTIONS (Illustrative Only)

The following essential job functions are typical for this classification. Incumbents may not perform all of the listed job functions and/or may be required to perform additional or different job functions from those set forth below to address business needs and changing business practices.

- Performs preventive, predictive, and corrective maintenance on electrical, generation, and distribution systems up to 480 volts; assists in performing maintenance on systems up to 12K volt.
- Inspects equipment by performing a variety of tests, samples, and readings to determine if equipment is showing any signs of deterioration; checks voltage and amperage; tightens, cleans, and lubricates equipment; locates potential problems; and implements appropriate corrective action.
- Assists in isolating and testing power and ground wires; troubleshoots problems and makes necessary repairs; restores power and checks equipment for proper operation.
- Assists in installing electrical circuits for additions or modifications; bends and installs conduit; pulls wire and wiring in circuit as shown on blueprints; tests system for proper installation.
- Performs predictive, preventive, and corrective maintenance on uninterruptible power supplies (UPS) and direct current (DC) power system for generator and switchgear controls.
- Assists in maintaining and repairing heating, ventilation, and air conditioning (HVAC) and/or electrical equipment at pump stations such as motors, switchgears, substations, and control equipment; drives generator truck, hooks up power, and transfers load at pump stations; connects emergency generator to

- pump stations to generate power during outages.
- Assists in maintaining, troubleshooting, and repairing open loops, closed loop, and flow-through water systems including evaporative condensers, cooling towers, chilled water loops, and heating water loops; tests and adjusts water system chemical levels to provide protection against corrosion and scaling.
- Assists in maintaining and repairing pneumatic variable air volume (VAV) systems and electronic building automation systems.
- Works on generators, operates, synchronizes, parallels, and transfers plant load.
- Performs infrared testing, oil analysis, high voltage testing of switchgears and cables, and protective relay calibration.
- Uses condition monitoring, records new baselines for newly installed equipment, and monitors for trends.
- Troubleshoots and repairs electrical, electronic, and microprocessor-based electrical control equipment.
- Records data and maintains records of work performed and materials used in accordance with OC San policies and procedures and reporting requirements; updates data in an online maintenance management system for back logs, lockout/tagout, and other equipment information that is necessary.
- Assists with coordinating work with other departments and assists contractors as necessary.
- Reads, interprets, and follows blueprints, drawings, specifications, and/or verbal instructions; gathers parts and materials for assigned jobs.
- Operates and maintains various hand and power tools, equipment, and vehicles.
- Performs routine maintenance work in plant or at pump stations including painting, cleaning, and digging.
- Ensures safety and health procedures and precautions are adhered to, corrects unsafe work conditions/practices, and/or reports unsafe work conditions/practices to assigned supervisory or managerial staff.
- Performs duties as assigned.

QUALIFICATIONS

Knowledge of:

- Operational characteristics of electrical systems, equipment, and components.
- Basic electrical theory and electronic technology principles as applied to electrical circuits, hardware and cabling technologies, and wiring systems.
- Basic principles, methods, materials, and operational characteristics and proper use of tools used in electrical repair, testing, calibration, and maintenance work.
- Basic methods and techniques of installing, troubleshooting, maintaining, and repairing electrical systems, equipment, and components including high-voltage systems.
- Operational principles of a wastewater treatment facility.
- Applicable federal, state, and local laws, codes, and ordinances relevant to area(s) of responsibility.
- Mathematical principles and calculations.
- Principles and procedures of record keeping.
- Safety principles, practices, and procedures of all facilities, equipment, and materials used in the maintenance and repair of equipment.
- The structure and content of the English language to effectively perform the work.
- Current equipment and communication tools used for business functions and program, project, and task coordination, including computers and software programs relevant to work performed.

Ability to:

- Perform a variety of preventive, predictive, and corrective maintenance duties on electrical equipment and systems up to 480 volts.
- Assist in installing, inspecting, troubleshooting, diagnosing, maintaining, and repairing electrical

- systems, equipment, and components including high-voltage systems.
- Safety and effectively operate a variety of electrical repair, maintenance, installation, and testing equipment.
 - Read, interpret, and understand blueprints, drawings, specifications, plans, schematics, technical manuals, diagrams, and operating and maintenance manuals.
 - Perform mathematical calculations necessary for electronic and electrical troubleshooting.
 - Organize work, set priorities, meet critical deadlines, and follow-up on assignments.
 - Understand, interpret, and apply all pertinent laws, codes, regulations, policies and procedures, and standards relevant to work performed,
 - Prepare clear and concise technical reports.
 - Operate a motor vehicle and travel to various OC San sites, projects, and/or meetings.
 - Use tact, initiative, and prudence within general policy and legal guidelines.
 - Comply with safe work practices and procedures in the workplace.
 - Provide a high level of customer service by effectively dealing with the public, vendors, contractors, and OC San staff.
 - Effectively use computer systems, software applications relevant to work performed, and modern business equipment to perform a variety of work tasks.
 - Communicate clearly and concisely, both orally and in writing, using appropriate English.
 - Establish, maintain, and foster positive and effective working relationships with those contacted in the course of work.

Employment Standards:

Any combination of education and experience that provides the required knowledge, skills, and abilities may be qualifying as determined by OC San.

1. High school diploma or G.E.D. supplemented by specialized training or coursework such as relevant trade school in electrical technology or a related field.
2. Two (2) years of experience maintaining, repairing, and installing electrical equipment.

Licenses and/or Certifications:

- Must possess a valid California Class C Driver's License.

Disaster Service Workers:

All Orange County Sanitation District employees are designated Disaster Service Workers through state law (California Government Code Section 3100-3109). Employment with the Orange County Sanitation District requires the affirmation of a loyalty oath to this effect. Employees are required to complete all related training as assigned, and to return to work as ordered in the event of an emergency.

PHYSICAL DEMANDS

- Mobility to work in and around wastewater treatment plants, pump/lift stations, and related utility systems and facilities; to sit, stand, and walk on level, uneven, or slippery surfaces; frequently reach, twist, turn, kneel, bend, stoop, squat, crouch, grasp, and make repetitive hand movement in the performance of daily duties; to climb and descend ladders, to operate varied hand and power tools and equipment, and to operate a motor vehicle and visit various OC San sites, projects, and/or meetings.
- Perform moderate to heavy physical work; to lift, carry, push, and pull materials and objects averaging a weight of 51 pounds or heavier weights, in all cases with the use of proper equipment and/or assistance from other staff.
- Possible entry into confined spaces and the use of confined entry equipment and protective safety equipment.
- Vision to inspect and operate equipment.
- Field work requiring frequent walking in operational areas to identify problems or hazards.

- Finger dexterity to operate and repair tools and equipment.

ENVIRONMENTAL ELEMENTS

- Field work in and around facilities with exposure to loud noise levels, cold and hot temperatures, inclement weather conditions, road hazards, vibration, confining workspace, heights, chemicals, mechanical and/or electrical hazards, hazardous physical substances and fumes, dust, and air contaminants.
- Employees may interact with upset staff and/or public and private representatives in interpreting and enforcing departmental policies and procedures.

OTHER REQUIREMENTS

- May be required to work extended hours, including nights, weekends, and holidays when necessary.
- Standby and Call Back: Employees in this classification may be required to participate in standby duty and are subject to call back, which may include nights, weekends and 24-hour emergency call out with little or no notice. Any employee designated to serve on standby, or report to an emergency, and refuses to do such, shall be subject to disciplinary action up to and including termination.
- Probationary Period: All OC San employees, except classifications considered “at-will”, are subject to the probationary period provisions as specified in the applicable Memorandum of Understanding, policies, and/or resolutions. Employees who have not yet successfully completed their initial probationary period serve “at-will” and may be released from employment without cause or recourse to any appeal or grievance procedures.
- Pre-Employment: All employment offers are contingent upon successful completion of OC San’s pre-employment process, which includes a background investigation, a physical examination, and a drug screen.
- Work Location Assignment: Employees will be assigned to a work location based on business needs which may be located at any/all of OC San locations; this work location may be changed at any time.