



JULY 2012
FLSA: NON-EXEMPT

LEAD ELECTRICAL TECHNICIAN

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 direction, leads, oversees, and participates in the work of staff responsible for the maintenance, repair, and installation of electrical equipment up to 12K volts including lighting systems, sump pumps, controls, motors, transformers, generators, batteries, cranes, variable frequency drives, air conditioners, and switch gears; oversees and performs predictive, preventive, and corrective maintenance on assigned equipment; and oversees and assists contractors as necessary.

SUPERVISION RECEIVED AND EXERCISED

Receives direction from a Maintenance Supervisor or assigned supervisor. Exercises technical and functional direction over and provides training to less experienced Electrical Technicians.

CLASS CHARACTERISTICS

This is the lead-level class in the Electrical Technician class series that performs the most complex duties required to ensure that the District's high-voltage electrical infrastructure, systems, and facilities are maintained in a safe and effective working condition and provide the highest level of safety for public use. Responsibilities include inspecting and attending to assigned areas in a timely manner, and performing a wide variety of tasks in the maintenance and repair of assigned facilities, systems, and appurtenances. This class is distinguished from Maintenance Supervisor in that the latter is a full supervisory-level class responsible for organizing, assigning, supervising, and reviewing the work of assigned staff involved in a wide variety of maintenance functions.

EXAMPLES OF ESSENTIAL JOB FUNCTIONS

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.

- Lead, plan, train, and review the work of staff responsible for the maintenance, repair, and installation of electrical equipment; perform the most complex work of the unit including the maintenance, repair, and installation of lighting systems, sump pumps, controls, motors, transformers, generators, batteries, cranes, variable frequency drives, air conditioners, and switch gears.
- Train assigned employees in their areas of work including electrical maintenance, repair, and installation methods, procedures, and techniques.
- Supervise the use, care, and operation of electrical maintenance and repair equipment including power tools, cranes, and test equipment.
- Verify the work of assigned employees for accuracy, proper work methods, techniques, and compliance with applicable standards and specifications; ensure adherence to safe work practices and procedures.
- Perform the most complex preventive maintenance duties; inspect equipment; check voltage and

- amperage; tighten, clean, and lubricate equipment; locate potential problems.
- Perform the most complex corrective maintenance; isolate power and ground equipment; troubleshoot problems and make necessary repairs; restore power and check equipment for proper operation.
- Perform the most complex electrical circuit installation for additions or modifications; bend and install conduit; pull wire, and wiring in circuit as shown on blueprint; test system for proper installation.
- Oversee and participate in the maintenance and repair of electrical equipment at pump stations such as motors, switchgears, substations and control equipment; generate power at pump stations during outages by connecting emergency generator to pump stations.
- Record data regarding electrical equipment, including voltage and amp readings and dates and type of work performed, on daily work schedule form; update data in an online maintenance management system for back logs, lockout tag-out, and other equipment information that is necessary.
- Participate in a full featured predictive maintenance program using condition monitoring, recording new baselines for newly installed equipment and continuing to periodically monitor for future trends.
- In collaboration with a supervisor, utilize condition assessment equipment including; dissolved gas analysis, infrared thermography, ultra sound scans, and vibration analysis for electrical switchgear, power transformers, motor control centers, motors and generators.
- Inspect and audit work processes, review task procedures and update the preventive maintenance based on the findings.
- Working with 12K volt equipment, must be capable of isolating, testing and grounding electrical equipment while wearing personal protective equipment (PPE).
- Working on up to 12K volt generators, operate, synchronize, parallel and transfer plant load.
- Drive generator truck, hook up power, transfer load at pump stations.
- Maintain and update all electrical drawings, schematics and single line drawings.
- Troubleshoot and repair electrical, electronic and microprocessor based electrical control equipment.
- In collaboration with a supervisor, perform preventive, predictive and corrective maintenance on electrical, generation and distribution systems including 12K volt generators, exciters, 12K volt circuit breakers, generator controls, 12K volt power transformers and motors up to 2,600 horsepower.
- Perform predictive, preventive and corrective maintenance on uninterruptible power supplies (UPS) and DC power system for generator and switchgear controls.
- Prepare clear and concise purchase requisition forms for electrical equipment.
- Assist contractors as necessary by switching electrical power, factory acceptance testing (FAT) on newly installed electrical system.
- Oversee and assist contractors as necessary.
- Respond to inquiries in a courteous manner; provide information within the area of assignment; resolve complaints in an efficient and timely manner.
- Estimate time, materials, and equipment required for jobs assigned; contact other departments involved in the maintenance or repair of equipment; lay out job plans; requisition materials as required.
- May perform routine maintenance work in plant or at pump stations including painting, cleaning and digging; drive District vehicles and generator truck.
- Perform related duties as required.

QUALIFICATIONS

Knowledge of:

- Operations, services, and activities of an electrical maintenance program.
- Principles of lead supervision and training.
- Advanced electrical and electronic technology principles and practices.
- Advanced principles of electrical theory as applied to electrical circuits and wiring systems.
- Principles, methods, materials, and tools used in electrical repair and maintenance work.
- Advanced methods and techniques of maintaining, installing and repairing electrical systems and

equipment.

- Advanced methods and techniques of troubleshooting electrical equipment and components.
- Advanced methods and techniques of high voltage electrical system maintenance and repair.
- Operating characteristics and application of electrical test equipment.
- Advanced preventive and corrective maintenance techniques.
- Electrical safety regulations, practices, and procedures.
- National Electrical Code.
- NFPA-70E (National Fire Protection Association)
- Principles of diesel engine operation and troubleshooting.
- Testing and calibrating electrical protective relays.
- Office procedures, methods, and equipment including computers and applicable software applications such as word processing, spreadsheets, and databases.
- Advanced mathematical principles.
- Principles and procedures of record keeping.
- Occupational hazards and standard safety practices.
- English usage, spelling, vocabulary, grammar, and punctuation.
- Techniques for providing a high level of customer service by effectively dealing with the public, vendors, contractors and District staff.

Ability to:

- Lead, organize, and review the work of staff.
- Independently perform the most difficult electrical maintenance and repair.
- Interpret, explain, and enforce department policies and procedures.
- Operate a variety of electrical repair, maintenance and installation equipment in a safe and effective manner.
- Inspect, troubleshoot, diagnose, and repair electrical and electronic malfunctions.
- Use electrical test equipment.
- Perform a variety of complex electrical system and component installation.
- Read, interpret, and understand plans, schematics, technical manuals, diagrams, drawings, and operating and maintenance manuals.
- Prepare clear and concise technical reports.
- Design electrical controls.
- Perform complex mathematical calculations necessary for electronic and electrical troubleshooting.
- Work independently in the absence of supervision.
- Organize and prioritize a variety of projects and multiple tasks in an effective and timely manner; organize own work, set priorities, and meet critical time deadlines.
- Ensure adherence to safe work practices and procedures.
- Use English effectively to communicate in person, over the telephone, and in writing.
- Use tact, initiative, prudence, and independent judgment within general policy and legal guidelines.
- 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 OCSD.

1. High school diploma or equivalent supplemented by college level course work or trade school training in electrical technology, or completion of an electrical apprenticeship program, or a related field; AND
2. Four (4) years of experience maintaining, repairing and installing electrical equipment with at least two (2) years of experience performing duties at a level comparable to an Electrical Technician II with the District.

License or Certificate:

- Possession of a valid Grade III Electrical/Instrumentation Certificate from the California Water Environment Association is preferred.
- Possession of 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

Must possess mobility to work in and around District facilities, to operate a motor vehicle and drive on surface streets; strength, stamina, and mobility to perform light to medium physical work, to work in confined spaces and around machines, to climb and descend ladders, and to operate varied hand and power tools and equipment; vision to read printed materials and a computer screen; color vision to discerns electrical wires and gauges; and hearing and speech to communicate in person and over the telephone or radio. The job involves fieldwork requiring frequent walking in operational areas to identify problems or hazards. Finger dexterity is needed to access, enter, and retrieve data using a computer keyboard or calculator and to operate above-mentioned tools and equipment. Positions in this classification bend, stoop, kneel, reach, and climb to perform work and inspect work sites. Employees must possess the ability to lift, carry, push and pull materials and objects weighing a minimum of 40 pounds, or heavier weights with the use of proper equipment.

ENVIRONMENTAL ELEMENTS

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