

THE CITY OF LOS ANGELES



CIVIL SERVICE COMMISSION

CLASS SPECIFICATION

03-27-03

WASTEWATER TREATMENT ELECTRICIAN, 5615
 WASTEWATER TREATMENT ELECTRICIAN SUPERVISOR, 5613

Summary of Duties: Performs skilled electrical work in the installation, maintenance, overhaul, repair, and testing of power generating and distribution equipment, rotating equipment and their associated digital and analog logic controls including microprocessor based controls, devices, and systems; utility protective relays and controls; fiber optic cable, terminations and devices; communications and signaling systems; standby and emergency power sources, and other electrical equipment found in wastewater collection and treatment facilities and on adjacent grounds; and may serve as a lead worker for other employees engaged in this work.

Distinguishing Features: A Wastewater Treatment Electrician is a journey-level employee whose work is not limited to a particular branch of the electrical field. An employee of this class performs a wide range of duties which may include the installation, maintenance, and repair of low and high voltage power generation and distribution equipment, SF6 gas insulated switchgear, utility protective relays and control circuits, AC and DC motors and motor control circuits, including programmable logic controllers, micro-processor based speed controls and uninterruptible power supplies; the maintenance and wiring of fire alarm annunciation and signaling systems and components, security and surveillance systems, and the installation and maintenance of plant process and facility lighting and power circuits and equipment.

A Wastewater Treatment Electrician Supervisor's primary responsibility is to plan and supervise work. An employee of this class inspects the work of journey-level employees for quality, quantity, and conformance to electrical and building codes, and safety-related work practices for working on, or in proximity to, open energized low and high voltage conductors and equipment. Assignments for new installations and alterations are usually in the form of plans or wiring diagrams, while instructions for other maintenance work are general in nature. Review of a Wastewater Treatment Electrician Supervisor's work is typically through conferences with management and supervisors.

Employees in these classes are distinguished from classes in the Electrician series in that they work in steam turbine and gas turbine electric generating plants and industrial substations in wastewater treatment facilities only and normally work with high voltage circuits and equipment. They are also exposed to hazards in working on, or in proximity to, open energized conductors and equipment and occasionally from scaffolding, ladders and hydraulic lifts.

Example of Duties: Wastewater Treatment Electrician:

- Installs, maintains, overhauls and repairs high voltage (4.16 KV – 34.5 KV) power generation and distribution switchgear, protective relays and control wiring, fiber optic cables and devices, and auxiliary equipment;
- Utilizes safe work practices for the de-energizing, lockout, testing, and grounding of electrical circuits and equipment in low and high voltage electrical distribution stations, SF6 gas insulated switchgear; steam, gas, and diesel generating stations, motor control centers, and other electrical installations;
- Inspects, maintains, overhauls, tests, and repairs rotating and other electrical equipment and

- their associated electrical and electronic control devices including programmable logic controllers and microprocessor-based controls, components, devices and systems;
- Arranges for and participates in rigging and hoisting heavy electrical equipment in electrical installations;
 - Installs and maintains power electrical systems, plant and facility lighting, switchboards and panelboards, electronic surveillance equipment, fire alarm and signaling systems, public address and inter-plant communications, low voltage and line voltage lighting controls and systems;
 - Installs and maintains industrial electrical equipment, electric motors, conventional and solid state control devices and systems for electrical installations and associated electrical equipment;
 - Tests circuits for shorts, grounds, open conditions and insulation integrity; makes electrical tests utilizing equipment such as meggers, volt meters, ohm meters, hi-pot, OTDR, scope meters, phase rotation meters, and oscilloscopes;
 - Inspects, cleans, lubricates, and replaces bearing, brushes and auxiliary equipment on large high voltage motors and generators;
 - Cleans and replaces control apparatus and associated equipment on all types of electrical devices, motors, controls, panels and switchboards;
 - Reads and interprets wiring diagrams, schematics, loop diagrams, plans and sketches;
 - Keeps routine work records and utilizes basic computer skills for access to work order and warehouse inventories;
 - May drive a light truck between job locations and operate forklifts and hydraulic lifts;
 - Troubleshoots, maintains, and repairs power, lighting, controls and electronic supervisory systems; coordinates these activities with other crafts and trades;
 - Repairs portable electric tools and other small or portable electric equipment;
 - May act as a lead person to Wastewater Treatment Electricians and Electric Craft Helpers;
 - May prepare wiring diagrams, material lists and cost estimates;
 - May prepare reports and requisitions materials and tools;
 - Ensures that proper safety precautions are utilized by subordinates;
 - May prepare required plans and secure permits; and
 - May inspect installations and alterations for building and electrical code compliance.

Wastewater Treatment Electrician Supervisor:

- Plans, lays out, assigns, coordinates, schedules, reviews, and inspects the work of one or more crews of Wastewater Treatment Electricians and helpers;
- Determines that power generating and distribution equipment, panelboards, conduits, wiring, motor control centers, all electrical installations and associated electric equipment have been properly installed, repaired, and/or maintained;
- Inspects electrical installations to determine maintenance requirements and procedures and prepares maintenance work schedules for journey-level employees;
- Investigates trouble calls;
- Makes sketches and layouts for electrical construction, alterations, replacement, or extension;
- Recommends changes to improve existing facilities and upgrade equipment and systems;
- Prepares required plans and secures electrical permits;
- Prepares material lists and cost estimates;
- Requisitions materials and supplies;
- May inspect work of progress of contractors for conformance to plans and specifications;
- Conducts training and safety meetings for subordinates;
- Ensures that safety-related work practices are utilized to protect subordinates, other trades, contractors, and the public during work on low and high voltage circuits and equipment.
- Reviews and evaluates the work of subordinates;
- Makes recommendations pertaining to procedures and personnel issues for the work of subordinates;
- Approves vacation and sick time usage;

- Represents the first level of review in the grievance process;
- Disciplines employees; and
- Fulfills supervisory equal employment opportunity responsibilities as set forth in City Equal Employment Opportunity and discrimination free workplace policy resolutions and Mayoral Directives.

Employees in these classes may occasionally be assigned to other duties for training purposes or to meet technological changes or emergencies.

Qualifications: Incumbents must have the following knowledges and abilities:

A knowledge of:

- Methods, materials, tools and equipment used in the installation, maintenance, testing and repair of transformers, oil, air, vacuum, SF6 circuit breakers and switchgear; meters, protective relays, controls and wiring, electrical equipment used in industrial stations, generating plants, pumping plants, motors and small power generators, electric lighting and wiring installations, switchboards, signaling systems, public address and inter-plant communications systems and other electrical installations and equipment;
- Hazards involved and the applicable safety procedures for working on or in proximity to open energized conductors and equipment, including CPR, first aid and pertinent provisions of the California Electrical Safety Orders;
- Fundamentals of electricity and electronics as related to the installation, maintenance and repair, of electrical equipment in industrial stations and plants; and to the installation, maintenance and repair of electronic solid state devices, circuits, wiring and equipment in industrial stations and plants;
- Electrical plans, circuit diagrams, loop drawings, and schematics as used in installation and maintenance work;
- Internal functioning and connections motors, generators, and other rotating electrical equipment;
- Electrical and mechanical characteristics of electrical equipment;
- Los Angeles City Electrical Code, California Electrical Code, National Electrical Code, and National Electrical Safety Code;
- Strength of materials used and the methods of moving or hoisting heavy electrical equipment in electrical installations and maintenance;
- Bureau of Sanitation Hazardous Energy Control Program, including lockout/tagout procedures and safety working practices on, or in proximity to, energized low and high voltage conductors and equipment;
- Bureau of Sanitation Operating Orders;
- Wastewater treatment plant processes;
- Supervisory principles and practices;
- Laws, policies and regulations related to EEO and discrimination free workplaces;
- City personnel rules, policies and procedures;
- Department of Public Works personnel policies, rules, and directives;
- Memoranda of Understanding as they apply to subordinate personnel; and
- Policies and procedures related to electrical construction.

The ability to:

- Use tools and protective equipment for work on, in or proximity to, energized high voltage conductors and equipment (4.16KV to 34.5KV);
- Read and interpret blueprints, electrical drawings, schematics, and loop diagrams;
- Understand and follow directions;
- Prepare time, work and material reports;
- Estimate time and material required for electrical installations and maintenance;

- Deal tactfully and effectively with subordinates, other employees and the public;
- Prepare plans, sketches, schematics, and electrical diagrams for permits and work layouts for subordinates; and
- Supervise and layout the work of journey-level Electricians and Electrical Craft Helpers.

Minimum Requirements:

Completion of a recognized four-year electrical apprenticeship program or the attainment of journey-level rank as an Electrical Mechanic or as an Electrician with experience in the installation and/or maintenance of industrial electrical circuits and equipment, including large power transformers from 4.16KV to 34.5KV power circuit breakers, SF6 gas insulated switchgear, steam and gas turbine powered, and diesel powered electrical generating equipment; or five years as an Electrical Craft Helper assisting a Wastewater Treatment Electrician, Electrician, or Electrical Mechanic in the above work is required as a Wastewater Treatment Electrician.

Four years of experience as a journey-level Wastewater Treatment Electrician, or in a class which is at least at that level and provides journey-level Wastewater Treatment Electrician experience, is required for a Wastewater Treatment Electrician Supervisor.

License: Both Classes: A valid California driver's license and a good driving record may be required for some or all positions.

Physical Requirements: Wastewater Treatment Electrician: Strength to perform average lifting of 35 pounds and occasionally over 70 pounds; agility and equilibrium necessary for activities such as climbing and balancing under precarious conditions; back and leg coordination involved in activities such as stooping, kneeling, crouching, and crawling; arm, hand and finger dexterity with both hands involved in activities such as reaching, handling, and feeling; good speaking and hearing ability; and good eyesight. Certain color blindness may preclude employment in this class.

Wastewater Treatment Electrician Supervisor: Strength to perform average lifting of less than 5 pounds and occasionally over 15 pounds; good speaking and hearing ability; and good eyesight.

Persons with medical limitations may, with reasonable accommodations, be capable of performing the duties of some of the positions in these classes. Such determination must be made on an individual basis in consideration of the person's limitations, the requirements of the position, and the appointing authority's ability to effect reasonable accommodations to the person's limitations.

As provided in Civil Service Commission Rule 2.5 and Administrative Code Section 4.55, this specification is descriptive, explanatory and not restrictive. It is not intended to declare what all of the duties and responsibilities of any position shall be.