

**CITY OF LOS ANGELES
CIVIL SERVICE COMMISSION**



CLASS SPECIFICATION
POSTED JUNE 1999

6-12-98

ELECTRICAL MECHANIC, 3841

Summary of Duties: Receives training and works as a trainee under close supervision assisting journey-level Electrical Mechanics in installing and maintaining high- and low- voltage electrical and related equipment in electric generating stations and plants and in electric substations, including receiving, distributing, and customer stations; receives intensive classroom and on-the-job instruction and training; or as a journey-level Electrical Mechanic, performs skilled mechanical and electrical work in installing and maintaining electric equipment in electric stations, generating stations, pumping and chlorinating stations, converter stations, hydro electric plants, high-voltage switching stations, and similar facilities; and performs related work.

Distinguishing Features: Employees initially employed as Electrical Mechanics function as trainees and receive extensive on-the-job and classroom training to acquire the knowledges, skills and abilities required to perform all phases of journey-level duties. The trainee is supervised by an Electrical Mechanic Supervisor and is closely guided by a journey-level Electrical Mechanic. Employment is limited to three years during which time the trainees are expected to successfully complete an intensive course curriculum and qualify for promotion to the journey level.

A journey-level Electrical Mechanic does skilled mechanical and electrical work in installing, maintaining and repairing electrical and related equipment in electric generating stations and plants, electric substations, water system pumping stations, and similar facilities where electrical equipment is found, and provides guidance and on-the-job training to trainees. Much of the work is outdoors and in all kinds of weather. A good deal of the journey-level work is on energized equipment which involves hazards in addition to those normally found in construction crafts. An Electrical Mechanic may provide lead supervision and training to other Electrical Mechanics in trainee positions.

Examples of Duties:

- Constructs, installs, maintains, repairs, inspects and tests high- and low-voltage electrical equipment in pumping, chlorinating, and electric generating plants, electric stations, airport installations, and warehouses, office buildings, shops, and other buildings and structures, including station control, supervisory control and service wiring, conduit, starters, outlets, fixtures, motors, protective devices, overhead and underground signal lines, time, disconnect, grounding and other switches, relays, oil and air blast circuit breakers, feeder voltage regulators, transformers, condensers, busses, generators, switchboards, pressure recorders, telemeters and other metering equipment, communications and pole lines, capacitor systems, insulators, lightning arrestors, batteries and battery chargers, pumps, fans, underground services, runway, landing, approach and clearance lights, electric refrigeration, air conditioning, and heating equipment.

- Constructs, installs, maintains, repairs, inspects and tests various types of control systems, including high-and low-pressure air and hydraulic systems, electro-mechanical relay systems, solid state digital and analog controls, annunciation, and telemetering systems, remote controlled gates, yard lighting, fire detection and extinguishing systems, burglar alarms and other hard-wired power switchboards and devices.
- Constructs, maintains, repairs and installs conduits, high- and low-voltage electrical cables, and voltage rectifier equipment.
- Works on energized high- and low-voltage lines, cables and equipment in securing clearances on energized lines, cables, and equipment when necessary to remove them from service.
- Determines when safe to work on equipment and when to return it to service.
- Inspects contacts, connections, coils and motor windings for overheating.
- Tests and adjust relay and control apparatus.
- Inspects, maintains, and tests insulation for power circuits.
- Installs and maintains electric motors.
- Repairs and services cables, control apparatus, control overhead lines, motor and excitor windings, power tools, cranes, arc welders, shop equipment, automatic fire fighting equipment, kitchen and laboratory electric equipment, various remote and local alarm systems, electric locomotives, batteries, and battery charging equipment.
- Operates oxyacetylene welding equipment in welding, brazing and cutting work.
- Erects structural steel for switchracks.
- Repairs gas, oil and water leaks relating to transformers.
- Performs heliarc welding of aluminum busses.
- Investigates trouble complaints from industrial and commercial electric pumping stations.
- Performs switching operations and inspects, tests and maintains equipment at customer stations such as automatic throw over and trip mechanisms on oil circuit breakers, busses, insulators, and disconnect switches.
- Secures clearances to remove equipment from service, checks disconnect switches, and applies grounds to prevent injuries during construction and repair operations.
- Prepares time and equipment inspection reports.
- Works on aerial platforms, station racks and equipment at elevated heights.
- Works with hazardous materials and waste.
- 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:

- Tools, methods and materials used in the installation, maintenance and repair of transformers, oil and air blast circuit breakers and meters, controls, busses,

racks and other electric equipment used in electric stations and generating plants, pumping stations and other electrical plants and layouts;

- Hazards involved in working on or near energized equipment and the proper safety precautions and first aid treatment;
- Construction practices and the fundamentals of electricity and electronics as related to the installation and maintenance of electric equipment in stations, plants, and area headquarters;
- Electrical circuit plans and diagrams and civil, structural and other related drawings;
- Strength of materials used and the methods of moving or hoisting heavy electrical equipment in electrical installation and maintenance;
- Department procedures in obtaining clearances to work on high voltage electrical equipment;
- Work practices of related craft employees, such as laborers, carpenters, painters, plumbers, and building repairers;
- Equipment such as back hoes, cranes, generators, oil purification and degasification equipment, and sulfur hexafluoride (SF6) servicing equipment;
- CAL/OSHA Title 8 Electrical Safety Rules;
- Construction practices and the fundamentals of electricity;
- Applicable safety precautions and first-aid practices;
- Los Angeles City Electrical Code;
- Safety work principles and practices, including those related to the use of breathing apparatus and overhead cranes.

The ability to:

- Use tools needed in electrical mechanic work;
- Read and interpret plans and electrical diagrams;
- Understand and follow oral and written directions;
- Make routine work reports;
- Estimate time and materials to complete electrical construction and maintenance work;
- Work at elevated heights during construction and maintenance activities;
- Deal tactfully and effectively with subordinates, other employees, and the public.

Minimum Requirements: Six months of full-time paid experience as a helper in mechanical, electrical, or construction work is required.

Licenses: A valid California driver's license may be required prior to appointment. Some positions may require a Class A or Class B commercial driver's license. Some positions may require a license to operate a forklift or a crane.

In accordance with Section 608 of the Clean Air Act, an environmental Protection Agency approved Technician Certificate may be required for some positions prior

to appointment.

Because this class has been designated as Safety Sensitive in accordance with City Policy, a drug and alcohol screening test may be required prior to appointment.

Those with medical limitations may be able to perform the duties of some positions in this class with reasonable accommodation. The decision to accommodate someone's limitations will be made on an individual basis and depends on the types of limitations, what the hiring department can reasonably do to accommodate them, and the specific qualifications.

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