



07/24/08

**PORT ELECTRICAL MECHANIC APPRENTICE, 3756**

**Summary of Duties:** Works under close supervision assisting journey-level Port Electrical Mechanics in the electrical, mechanical, and rigging maintenance and repair of marine terminal structures including wharf-side, ship based, and barge mounted high voltage electrical power connections, container cranes, and draw bridges; attends approved classroom training during off duty hours; and does related work.

**Distinguishing Features:** The primary purpose of this class is to train individuals in the Port Electrical Mechanic trade, after which the employee is experienced to promote to journey-level.

The apprenticeship program consists of closely supervised on-the-job training assisting a journey-level Port Electrical Mechanic in performing work ranging from performing diagnostic checks on a variety of electrical equipment to performing electrical work on energized high voltage electrical conductors with a qualified electrical worker.

Employment is limited to 5 years for an Apprentice. A Port Electrical Mechanic Apprentice is expected to maintain continuous enrollment in a Harbor Department approved Electrical Apprentice Program.

**Examples of Duties:** An Port Electrical Mechanic Apprentice assists journey-level Port Electrical Mechanics in:

- Placement, installation, erection, or connection of any electrical wires, fixtures, appliances, instrumental apparatus, raceway systems, conduit systems, and solar photovoltaic systems;
- Operation, maintenance, and repair of related equipment to facilitate the Alternative Maritime Power (AMP) ship to shore electrical power, high voltage, marine terminal power distribution and other control systems;
- High voltage splicing and terminations;
- Maintenance, troubleshooting, and repair of linear, digital and fiber optic electronics integrated into industrial systems;
- Removal, repair, and replacement of electric motors including motor brushes, cleaning motors, cleaning and stoning commutators, and bearings;
- Fabrication, repair, and modification of parts for marine terminal structures and equipment;
- Maintenance and repair of gear boxes which includes checking fit and tolerance of gear boxes, precision alignment, adjustment of motor couplings, lubricating open gears, and checking mesh and wear patterns; and
- Maintenance and repair of hydraulic and pneumatic systems using various instruments.

**Qualifications:****Knowledge of:**

- Functions and principles of electrical, electronic, mechanical, pneumatic, hydraulic, and microprocessor-based instruments and control systems;
- Tools, methods and techniques used to disassemble, service, adjust, repair, test, calibrate and assemble automatic controls, indicating and recording equipment;
- High voltage cable splicing and switchgears;
- Programmable logic controls (PLC) and relay logic;
- Electric motors and motor controls;
- Blueprint, electrical schematic and diagram reading;
- AC/DC circuit analysis, trade theory, series and parallel circuits;
- CAL-OSHA Title 8 low and high voltage electric safety orders;
- Basic machine, tool, and trade theory; and
- Basic mathematics including algebra, geometry, and trigonometry.

**Ability to:**

- Use tools skillfully;
- Read blueprints, electrical schematics, and diagrams;
- Develop necessary skills;
- Make elementary arithmetic calculations;
- Understand and follow oral and written directions; and
- Get along with others.

**Requirements:**

1. A High School Diploma, G.E.D, or H.S.P.E; and
2. One year (two semesters) of High School Algebra or one semester of College Algebra.

**Physical Requirements:** Persons in these classes must be able to lift at least twenty-five pounds and sometimes over seventy pounds. Some positions require frequent or extended standing or frequent bending, stooping, and reaching.

Persons with disabilities may be able to perform the essential duties of this class with reasonable accommodation. Reasonable accommodation will be evaluated on an individual basis and depend, in part, on the specific requirements for the job, the limitations related to the disability, and the ability of the hiring department to reasonably accommodate the limitations.

**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 all of the duties, responsibilities, and required qualifications of any position shall be.**