

ELECTRICIAN/HYDRO PLANT

Definition:

Under general direction, install service and maintain electrical and electro-mechanical systems and equipment in various Agency hydroelectric facilities. The work involves the performance of skilled tasks in accordance with standard trade practices in the installation, alteration, maintenance and repair of electrical/electronic systems and equipment. Assignments are made in the form of written or oral instructions and may be accompanied by sketches and/or blueprints. Work is ordinarily performed independently and subject to inspection in process or upon completion.

Distinguishing Characteristics:

This is a skilled, journey level, single classification, non-exempt position that is responsible for and requires specialized training in electrical design, installation, troubleshooting, maintenance and repair work. The work requires independent judgment, initiative and action within established operational parameters. The duties require travel to various remote sites in Placer County, including work outside in all types of weather as well as inside with prolonged periods of sitting; regularly walking on uneven surfaces which may be slippery or wet, bending, stooping, reaching lifting and carrying 50 lbs., ability to discern colors and focus sight close and distant and ability to do fine manipulation of small controls. Operates a vehicle on a regular basis.

Examples of Duties:

- perform preventative maintenance and repair of major hydro electrical and mechanical equipment up to 230kV (power transformers, generators, circuit breakers, and switches).
- inspecting, testing, trouble-shooting and calibrating of hydroelectric facilities, equipment and devices.
- equipment wiring and installation, modification, and documentation.
- work under the supervision of a higher classified employee.
- installs conduit, transformers, wire, pull boxes, switchboards, and switches and other electrical equipment.
- performs oil sampling of transformers and related equipment.
- services, repairs and maintains pumps and motors, including industrial motor controls and control circuits, and various other types of electrical equipment and apparatus.
- repairs and/or replaces broken or defective parts in motors, generators, pumps, circuit breakers, transformers, storage batteries, switchgear, controllers, contactors, switches and other fixtures and appliances.
- tests, locates, and repairs trouble in electrical overhead and underground circuits including high voltage up to 12kV.

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- performs limited troubleshooting, repair, and modifications to PLC hardware and software;
- troubleshoots electrical control schemes and equipment;
- researches and identifies replacement parts and prepares purchase orders;
- reads and interprets blueprints and schematics;
- works with, provides support, and inspects the work of outside contractors;
- compiles materials list;
- may supervise the work of helpers;
- other duties as assigned.

Qualifications:

Knowledge of:

- the theory of electricity, of standard practices, tools, materials and equipment of the electrical trade;
- occupational hazards and safety precautions of the trade;
- local and national electrical codes;
- installation, operation and maintenance of electrical/electronic equipment, apparatus, and instruments used in generation distribution and power transmission;
- the laws, rules and standards pertaining to electrical construction and maintenance, and of the hazards involving in working around energized lines and equipment;
- standard safety practices as prescribed by the California Occupational Safety and Health Act and the California Division of Industrial Safety;
- knowledge of PG&E standards and safety codes as they relate to hydropower generation.

Ability to:

- understand and follow oral and written instructions and to read and interpret blueprints, sketches, and diagrams of electrical circuits;
- plan electrical wiring systems;
- compile material lists;
- modify drawings to current as-built status;
- submit as-builts for modification and updating by computer assisted drawing;
- communicate orally and in writing clearly and effectively;
- work independently;
- analyze problems and develop practical solutions;

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- organize and prioritize work to handle multiple projects simultaneously;
- follow oral and written instructions;
- establish and maintain effective working relationships with those contacted in the course of work;
- locating, adjusting and repairing defects in electrical systems and equipment;
- installing, maintaining, troubleshooting, and repairing a wide variety of electrical and electronic equipment used in power generation, distribution, transmission and industrial process control;
- reading and interpreting wiring diagrams and specifications;
- making estimates of labor and materials;
- the use and care of tools and equipment of the electrical trade;
- the use of personal computers and typical office software;
- operating a motor vehicle safely.

Education/Experience:

Sufficient education, training and experience to demonstrate the knowledge, skill and abilities listed above. These would normally be acquired with two years experience as a journeyman electrician, including experience with power generating equipment, high voltage distribution systems, motor controls and control circuits. Journey level is the completion of a recognized apprenticeship (State of California Department of Industrial Relations, Certificate of Completion of the Electrician Apprenticeship or the International Brotherhood of Electrical Workers Apprenticeship Certificate).

License/Certificates:

Must possess and maintain a valid California driver's license with an acceptable driving record.