

NEVADA IRRIGATION DISTRICT

Job Description

Job Title:	Hydroelectric Systems Technician I/II	Reports To:	Hydroelectric Maintenance Supervisor
Salary Range:	B56 / B76	Approved by Board of Directors:	07/12/2017
FLSA Status:	Non-Exempt	Unit:	Field
<p><i>Class specifications are intended to present a descriptive list of the range of duties performed by employees in the class. Specifications are not intended to reflect all duties performed within the job.</i></p>			

Definition

To perform a variety of semi-skilled and skilled duties related to the operation of the District's hydroelectric generation plants; to install, maintain, troubleshoot and repair electrical, electronic, electro-mechanical, and instrumentation associated with the District's hydroelectric facilities; and to ensure work is performed in a safe manner.

Distinguishing Characteristics

Hydroelectric Systems Technician I: This is the entry level class in the Hydroelectric Systems Technician series. Positions in this class typically have little or no directly related work experience. The Hydroelectric Systems Technician I class is distinguished from the II level by the performance of less than the full range of duties assigned to the II level. Incumbents work under immediate supervision while learning job tasks, progressing to general supervision as procedures and processes of assigned area of responsibility are learned.

Hydroelectric Systems Technician II: This is the journey level class in the Hydroelectric Systems Technician series and is distinguished from the I level by the assignment of the full range of duties. Employees at this level receive only occasional instruction or assistance as new, unusual or unique situations arise and are fully aware of the operating procedures and policies within the work unit. Positions in this class are flexibly staffed and are normally filled by advancement from the I level.

Supervision Received and Exercised

Hydroelectric Systems Technician I

Receives general supervision from the Hydroelectric Maintenance Supervisor; receives technical and functional supervision from Senior Hydroelectric Systems Technician.

Hydroelectric Systems Technician II

Receives general supervision from the Hydroelectric Maintenance Supervisor; receives technical and functional supervision from Senior Hydroelectric Systems Technician.

Essential Functions Statements

Essential and other important responsibilities and duties may include, but are not limited to, the following:

1. Install, maintain, troubleshoot, and repair instrumentation, distributed control systems, programmable logic controllers, electrical circuits, and electrical equipment associated with the operation of hydroelectric facilities.
2. Maintain electrical equipment such as motors, contactors and other devices typical to hydroelectric facilities and keep records of work performed and repairs made.

3. Create, correct, and maintain electrical designs, drawings, schematics, and diagrams; read and interpret mechanical and electrical drawings.
4. Assist with the research and purchase of parts, materials, supplies and equipment necessary for repairs.
5. Program and operate a variety of complex test equipment used in troubleshooting complex equipment; monitor equipment performance to forecast possible failures.
6. Install, inspect, test, adjust, repair and maintain a variety of equipment in power stations including protective relays (both electro-mechanical and microprocessor multifunction), generators, transformers, control equipment, wiring, motors, starters, governors, pressure switches, electronic and electro-mechanical equipment.
7. Design and install electrical systems; run conduit, pull and size wire, and components.
8. Maintain complete calibration/test records as required by NERC Reliability Standards.
9. Install, repair, troubleshoot and maintain power generation systems including generators, transfer switches and station batteries.
10. Assist the Hydroelectric Communications Technician with the maintenance and repair of communications equipment.
11. Perform related duties as assigned

Qualifications

Hydroelectric Systems Technician I

Knowledge of:

- Principles of hydroelectric power generation and transmission of electricity.
- Principles of working safely with electricity and electrical equipment.
- Basic electrical theory and principles.
- Standard practices, tools, and terminology used in the electrical trade.
- Basic principles and practices of inspecting, troubleshooting and repairing of electrical and electronic components or telecommunications.
- Materials, tools and equipment used in the installation, maintenance, and repair of electrical and electronic components or telecommunications.
- Applicable codes, regulations, and procedures governing the electrical, electronic or telecommunication industry including the National Electric Code (NEC), National Fire Protection Association (NFPA) documents, and Occupational Safety and Health (OSHA) rules and regulations.
- High voltage electrical equipment and properties.
- Principles and practices of effective customer service.

Ability to:

- Learn principles and practices of installing, troubleshooting and repairing electrical and electronic components or telecommunications.
- Keep complete and accurate records.
- Learn to read and understand blueprints and technical drawings, plans and diagrams.
- Perform mathematical calculations accurately.

- Establish and maintain effective working relationships with those contacted in the course of work.
- Communicate clearly and concisely, both orally and in writing. Respond to after-hours emergency situations.

Responsibility to:

- Obey safe work practices, procedures, and regulations including wearing protective equipment and safety devices.
- Operate equipment in a careful and safe manner.
- Acknowledge the use of safeguards by other employees.
- Report any removal, displacement, damage, destruction, or tampering of safety devices, safeguards, notices or warnings.
- Report any safety risks or hazards to your supervisor or other management personnel.
- Report to your supervisor or other management personnel any work assignment that you feel would require you to perform the work in an unsafe manner.

Hydroelectric Systems Technician II

In addition to the qualifications for the Hydroelectric Systems Technician I:

Knowledge of:

- Supervisory Control and Data Acquisition (SCADA) systems
- NERC Reliability Standards
- Principles and practices of installing, troubleshooting and repairing electrical and electronic components.
- Methods, materials and tools used in the repair, maintenance, and adjustment of electrical and electronic equipment or instrumentation.
- Practices associated with the use, maintenance and troubleshooting of sophisticated testing equipment.
- Pertinent local, State and Federal laws, ordinances, rules and codes.
- Applications, methods, standards and tools as they relate to the repair and maintenance of electronic, hydraulic and pneumatic power plant instrumentation and control systems.
- Modern office equipment including use of applicable computer applications.

Ability to:

- Independently perform semi-skilled and skilled duties involving the installation, adjustment, maintenance, troubleshooting and repair of electrical, electronic, electro-mechanical equipment, instrumentation or telecommunications.
- Analyze complex electrical, electronic, electro-mechanical, or telecommunication systems.
- Accurately read blueprints, schematics, instrument diagrams and systems, part lists, schematics and diagrams to determine appropriate action.
- Troubleshoot, isolate and make repairs to electrical, electronic and electro-mechanical equipment, or telecommunications.
- Use modern electrical, electronic and instrumentation diagnostic instruments.
- Operate and maintain a variety of tools and equipment used in the testing and repair of equipment.
- Operate and use modern office equipment including a computer and applicable software.
- Respond to after-hours emergency situations.

Experience and Education Guidelines

Any combination of experience and education that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:

Experience:

Hydroelectric Systems Technician I: One year of electrical or electronic experience is desirable.

Hydroelectric Systems Technician II: Three years of responsible experience similar to Hydroelectric Systems Technician I with the Nevada Irrigation District.

Education:

Equivalent to the completion of the twelfth grade supplemented by course work in electrical theory, electronics, or related field.

License and Certificate:

Possession of a valid California driver's license.

Working Conditions

Environmental Conditions:

Work is normally performed in a temperature controlled room environment subject to typical plant operation noise. Some duties require field visits in an outdoor environment subject to outdoor conditions including extreme heat and cold and wet, humid conditions, fumes and/or airborne particles. Duties may be performed near moving mechanical parts and on slippery and uneven surfaces with exposure to toxic or caustic chemicals and risk of electric shock. Occasional work at heights from platforms and/or manlifts.

Physical Conditions:

Essential functions may require maintaining physical condition necessary to sit while studying or preparing reports; bend, squat, climb, kneel and twist when performing installation/repair of equipment; perform simple and power grasping, pushing, pulling, and fine manipulation; and lift or carry weight of 50 pounds or less.

Mental Conditions:

Essential functions may require maintaining mental condition necessary to know and understand maintenance activities, and observe safety rules; intermittently analyze problem equipment; identify and locate equipment; interpret work orders; remember equipment location; and explain jobs to others; handle conflict.