

# NEVADA IRRIGATION DISTRICT

## Job Description

Job Title:	Senior Hydroelectric Systems Technician	Reports To:	Hydroelectric Maintenance Supervisor
Salary Range:	<a href="#">B97</a>	Approved by Board of Directors:	05/14/2014
FLSA Status:	Non-exempt	Unit:	<a href="#">Field</a>
<i>Class specifications are intended to present a descriptive list of the range of duties performed by employees in the class. Specifications are <b>not</b> intended to reflect all duties performed within the job.</i>			

### **Definition**

To organize, assign and review the work of assigned personnel engaged in semi-skilled and skilled duties related to the installation, maintenance, troubleshooting and repair of electrical, electronic, electro-mechanical equipment, and telecommunication equipment and instrumentation associated with the District’s hydroelectric facilities; to perform duties requiring specialized knowledge; and to provide administrative support to assigned supervisor.

### **Distinguishing Characteristics**

This is the advanced journey level in the Hydroelectric Systems Technician. Employees at this level are distinguished from other classes within the series by the level of responsibility assumed, complexity of duties assigned, independence of action taken, by the amount of time spent performing the duties, and the nature of the public contact. Employees perform the most difficult and responsible types of duties assigned to the classes within this series, including providing technical and functional supervision over assigned personnel and perform the most complex electrical, electronic, electro-mechanical, telecommunication, and instrumentation functions. Employees at this level are required to be fully trained in all procedures relating to the assigned areas of responsibility.

### **Supervision Received and Exercised**

Receives direction from Hydroelectric Maintenance Supervisor.

Exercises technical and functional supervision over assigned technical and maintenance personnel.

### **Essential Functions Statements**

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

1. Plan, Prioritize, and review the work of staff assigned to a variety of repair and maintenance duties associated with the operation of the District’s hydroelectric facilities.
2. Develop schedules and methods to accomplish assignments ensuring work is completed in a timely and efficient manner.
3. Participate in evaluating the activities of staff, recommending improvements and modifications.
4. Provide and coordinate staff training; work with employees to correct deficiencies.
5. Work closely with operations to ensure that all powerhouses are cleared, grounded and safe for maintenance activities to take place.

6. Conduct tailgate safety meetings to ensure the safety of crews working in and around powerhouses; ensure that all safety procedures, including but not limited to, confined space, fall protection, and hazardous materials are adhered to.
7. Maintain detailed records and reports of maintenance activities; maintain maintenance schedules.
8. Assist with the development and modification of the preventative maintenance schedule.
9. Coordinates with District personnel and departments to ensure compliance with federal, state, and industry reliability standards; assists in the preparation of applicable reports.
10. Install, maintain, troubleshoot, and repair instrumentation, distributed control systems, programmable logic controllers, telecommunication systems, computer networking, electrical circuits, telephone wiring and electrical equipment associated with the operation of hydroelectric facilities, depending on assignment.
11. Create and maintain designs, schematics, and diagrams; read and interpret mechanical, electrical and hydraulic drawings.
12. Estimate time, materials, and equipment required for assigned jobs; research and order parts, materials, supplies and equipment necessary for repairs.
13. Program and operate a variety of complex test equipment used in troubleshooting complex equipment; monitor equipment performance to forecast possible failures.
14. Service microwave and channeling equipment and associated power systems, flume intake gate controls and flume telemetry; service ultrasound flow meter equipment and make necessary repairs.
15. Participate in the coordination and installation of District communication systems and equipment including two-way radios, fiber optic terminals and channeling, microwave radios and channeling and related communications equipment.
16. Repair, design, modify, install, calibrate and maintain pneumatic, digital, analog, programmable and other auxiliary equipment.
17. Install, inspect, test, adjust, repair and maintain a variety of equipment in power stations including distributed computer control system software, graphics and databases.
18. Maintain licenses for microwave radios, two-way radios, and data transceivers.
19. Maintain and troubleshoot fiber optic communication equipment; coordinate for the repair of optical fiber cable.
20. Maintain a network of data transceivers, their associated databases, repeaters, and power equipment; troubleshoot issues associated with equipment and either make necessary repairs or coordinate with outside entities for the resolution.
21. Install, inspect, test, adjust, repair and maintain a variety of equipment in power stations including relays, generators, transformers, control equipment, wiring, motors, starters, governors, pressure switches, electronic and electro-mechanical equipment.
22. Design and install electrical systems; run conduit, pull and size wire, and components.

23. Install, repair, troubleshoot and maintain power generation systems including generators, transfer switches and station batteries.

### **Qualifications**

#### **Knowledge of:**

- Principles and practices of technical and functional supervision and training.
- Advanced principles and practices, tools, and terminology used in the electrical, electronic, or telecommunication trade.
- Advanced principles and practices of installing, inspecting, troubleshooting and repairing electrical and electronic components or telecommunications.
- Advanced practices associated with the use, maintenance and troubleshooting of sophisticated testing equipment.
- Advanced applications, methods, standards and tools as they relate to the repair and maintenance of electronic, hydraulic and pneumatic power plant instrumentation and control systems.
- Applicable codes, regulations and procedures governing the electrical, electronic or telecommunication industry.
- Principles and practices of effective customer service.
- Data telecommunication between PC's, between PC's and RTU's and between RTU's and mainframes.
- Modern office equipment including use of applicable computer applications.

#### **Ability to:**

- Provide technical and functional supervision over assigned staff; effectively train staff.
- Perform the most complex duties associated with the maintenance, troubleshooting and repair of electrical and electronic components or telecommunications.
- Independently operate a variety of tools and equipment in a safe manner.
- Accurately estimate time, materials, equipment and alternating factors to complete assigned work.
- Respond quickly and calmly in emergency situations.
- Read a variety of technical documentation, schematics, blue prints and related documents.
- Operate and use modern office equipment including a computer and applicable software.
- Ensure the safety of employees and equipment.
- Establish and maintain effective working relationships with those contacted in the course of work.
- Communicate clearly and concisely, both orally and in writing.
- 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.
- 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 afterhours 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.

**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:**

Two years of responsible journey experience similar to Hydroelectric Systems Technician II with the Nevada Irrigation District.

**Education:**

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

**License and Certificate:**

Possession of a valid California driver's license.

Possession of a valid General Class Radio-telephone License from the Federal Communication Commission, depending on assignment.

**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.

**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.