

# NEVADA IRRIGATION DISTRICT

## Job Description

Job Title:	Hydroelectric Communication Technician I/II	Reports To:	Hydroelectric Maintenance Supervisor
Salary Range:	<a href="#">B55 / B75</a>	Approved by Board of Directors:	07/12/2017
FLSA Status:	Non-Exempt	Unit:	<a href="#">Field</a>
<p><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></p>			

### **Definition**

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

### **Distinguishing Characteristics**

**Hydroelectric Communication Technician I:** This is the entry level class in the Communication Technician series. Positions in this class typically have little or no directly related work experience. The Hydroelectric Communication 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 Communication Technician II:** This is the journey level class in the Communication 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 Communication Technician I**

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

#### **Hydroelectric Communication 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, document, and repair instrumentation, distributed control systems, telecommunication systems, computer networking, telephone wiring, supervisory control and data acquisition (SCADA), and basic electrical equipment.
2. Create, correct, and maintain communication and electrical designs, drawings, schematics, and diagrams; read and interpret mechanical and electrical drawings.

3. 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.
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. 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.
7. Maintain plant Local Area Network (LAN) and Wide Area Network (WAN) systems and related equipment.
8. Install, inspect, test, adjust, repair and maintain a variety of equipment in power stations including distributed computer control system software, graphics and databases.
9. Maintain licenses for microwave radios, two-way radios, and data transceivers.
10. Maintain and troubleshoot fiber optic communication equipment; coordinate for the repair of optical fiber cable.
11. Maintain an Emergency Action Plan (EAP) 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.
12. Assist the Hydroelectric Systems Technician with the maintenance and repair of electrical equipment.
13. Perform related duties as assigned.

### **Qualifications**

#### **Hydroelectric Communication Technician I**

##### **Knowledge of:**

- Principles of hydroelectric power generation and transmission of electricity.
- Principles of safety in working with electricity and electrical equipment.
- Basic electrical theory and principles.
- Standard practices, tools, and terminology used in the telecommunication trade.
- Basic principles and practices of inspecting, troubleshooting and repairing electronic components and telecommunications.
- Materials, tools and equipment used in the installation, maintenance, and repair of electronic components and 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.

- Principles and practices of effective customer service.
- Control system network software and equipment including Internet Protocol (IP), routers, switches, servers, and Human Machine Interface (HMI) workstations.
- SCADA and Programmable Logic Controllers hardware and software.
- Radio over Internet Protocol (ROIP) and Voice over IP (VOIP).

Ability to:

- Learn principles and practices of installing, troubleshooting and repairing electronic and telecommunications components.
- Learn public utilities rules and phone operation rules.
- Keep accurate records and write reports.
- 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 personal 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 Communication Technician II

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

Knowledge of:

- Programmable Logic Controllers (PLCs).
- Principles and practices of installing, troubleshooting and repairing electronic and telecommunications components.
- NERC Critical Infrastructure Protection (CIP) reliability standards.
- Methods, materials and tools used in the repair, maintenance, and adjustment of 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.
- California Independent System Operator (CAISO) requirement for powerhouse revenue metering.
- Maintenance of an Energy Communication Network (ECN).
- Working effectively with outside regulatory agencies for metering, inspections and repair of hydroelectric communications systems.

- FCC rules and regulations regarding radio communication.
- Public utility rules and phone operation rules including GO95, GO128, and Underground Service Alerts.
- Modern office equipment including use of applicable computer applications.

**Ability to:**

- Understand and manage secure multilevel networks.
- Independently perform semi-skilled and skilled duties involving the installation, adjustment, maintenance, troubleshooting and repair of electronic, instrumentation, and telecommunications equipment.
- Analyze complex electronic and 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 electronic and telecommunications equipment.
- Use modern electrical, electronic and instrumentation diagnostic instruments.
- Utilize underground pipe locating equipment.
- 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 Communication Technician I:** One year of electronic and/or telecommunications experience is desirable.

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

**Education:**

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

**License and Certificate:**

**Hydroelectric Communication Technician I:** Possession of a valid California driver's license.

**Hydroelectric Communication Technician II:** Possession of a valid California driver's license. Possession of, or ability to obtain, a valid General Class Radio-telephone License from the Federal Communication Commission.

**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 antenna towers, 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.