

# NEVADA IRRIGATION DISTRICT

## Job Description

Job Title:	Hydroelectric Compliance and Protection System Specialist	Reports To:	Hydroelectric Maintenance Superintendent
Salary Range:	<a href="#">C30</a>	Approved by Board of Directors:	03/09/2022
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**

Responsible for maintaining documentation and testing all electrical protective relaying schemes, metering, transformers, breakers, and associated equipment. This position will assist to maintain electrical testing documentation for compliance reporting to NERC. This position will support routine and complex electrical projects from inception to completion; and to provide administrative support to assigned supervisor.

### **Distinguishing Characteristics**

A Hydroelectric Compliance and Protection System Specialist is the advanced journey level with extensive knowledge of substation protection, control, and metering equipment. Employees at this level are distinguished from other classes 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 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 to perform the most complex electrical, electronic, electro-mechanical, and protective relaying 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 the Hydroelectric Maintenance Superintendent. May also receive direction from the Hydroelectric Compliance Administrator.

May exercise technical and functional supervision over assigned technical personnel, consultants, and contractors.

### **Essential Functions Statements**

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

1. Assist in developing written standard commissioning, testing and maintenance procedures for all protective relaying and generation facility electrical testing.
2. Perform end-to-end mechanical and digital relay testing of SEL, Beckwith, Westinghouse, General Electric or similar equipment.
3. Conduct differential and distance relay testing. Perform power factor testing, transformer turns ratio testing, megger and hi-pot testing.
4. Performs evaluations of equipment and makes recommendations for maintenance, repair, or replacement.

5. Actively participate in Hydroelectric Department compliance issues. Principal backup responsibility to the compliance administrator/analyst in NERC electrical compliance reporting.
6. Provides advanced guidance and support on compliance issues with industry standards (NERC, WECC) and assists to develop compliance related maintenance programs.
7. Provides assistance to staff with appropriate design criteria and calculations, ensures proper checking, design reviews, approvals and documentation.
8. Under direction, evaluates and makes recommendations to resolve plant equipment problems. Assists with creating start-up plans and tests as assigned.
9. Assists in conducting performance evaluations of power plant systems, major components and to conduct equipment performance tests as needed.
10. Maintains Doble, Megger, and Enoserve, etc. documentation of test results.
11. Directs and works with technicians and contractors in the office and in the field to complete required maintenance and testing tasks at stated intervals including but not limited to: breaker and transformer maintenance, protective relays, DC control system testing, and current sensing device testing.
12. Program and operate a variety of complex test equipment used in troubleshooting complex equipment; monitor equipment performance to forecast possible failures.
13. 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.
14. Estimate time, materials, and equipment required for assigned jobs; research and order parts, materials, supplies and equipment necessary for repairs.
15. Coordinates with District personnel and departments to ensure compliance with federal, state, and industry reliability standards; assists in the preparation of applicable reports.
16. Assist with the development and modification of the preventative maintenance schedule.
17. Participate in evaluating the activities of staff, recommending improvements and modifications.
18. Assists with developing training programs specific to procedures and processes and assists in training apprentice level technicians.
19. Ensures electrical drawings are accurate and are updated as necessary.
20. Performs related duties as assigned.

### **Qualifications**

#### **Knowledge of:**

- Advanced practices associated with the use, maintenance, and troubleshooting of sophisticated substation test equipment.
- Modern office equipment including use of applicable computer applications.
- Advanced principles and practices, tools, and terminology used in the electrical, electronic trade.
- Applicable codes, regulations and procedures governing the electrical, or electronic industry.
- Principles and practices of effective customer service.

- Advanced understanding of differential and phase angles.

**Ability to:**

- Ability to help calculate relay settings for all station automatic schemes, transmission line relaying, transformer bank protection, bus protection, generator protection, and breaker failure schemes.
- Ability to analyze relay operations and determine fault locations.
- Provide technical and functional supervision of assigned staff; effectively train staff.
- 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.
- Ensure the safety of employees and equipment.
- Respond to after hour emergency call outs.
- Troubleshoot, isolate and make repairs to electrical, electronic and electro-mechanical equipment.
- Work within proximity and with voltages ranging from 120V to 115KV and to understand and avoid AC and DC electrical hazards.
- Communicate clearly and concisely, both orally and in writing.
- To diagnose problems on complex equipment or systems and determine urgency of corrective actions.

**Responsibility to:**

- Maintain written documentation necessary to demonstrate compliance for NERC Standards including PRC-005, PRC-019, PRC-024, PRC-025, and PRC-027.
- Coordinate testing for protective relays, generators, and substation equipment; maintain documentation and evidence for auditing purposes.

**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:**

Five years of progressive experience in generation and/or transmission substation maintenance as a journeyman technician or equivalent experience in a related power industry field.

**Education:**

Associates degree or certificate in Electric Power Technology or a related field or equivalent combination of experience and education.

**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.

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. Requires working with arc flash protection clothing, masks, and related safety gear. Requires climbing structures and working in confined spaces.

Mental Conditions:

Essential functions may require maintaining mental condition necessary to know and understand all aspects of the job, and observe safety rules; analyze drawings, reports, and special projects; identify and locate equipment; interpret work orders; remember equipment location; and explain jobs to others; handle conflict.