San Juan Water District
9935 Auburn Folsom Road
Granite Bay, California
95746
(916) 791-0115
www.sjwd.org

Position Description
Electrical & Instrumentation Technician

Status:	FLSA Non-Exempt, Safety Sensitive
Supervisor:	Maintenance Chief
Effective Date:	February 10, 2022

Supervision Received and Exercised
Receives general supervision from the Water Treatment Plant Manager and receives technical and functional supervision from the Water Treatment Plant Maintenance Chief. Does not provide supervision to others.

Primary Function
To perform journeyman level work with specialized and technical duties primarily associated with troubleshooting, maintaining, and repairing electrical and electronic equipment, instrumentation controls and radio telemetry communications associated with a domestic surface water treatment plant, distribution system, wholesale meters and solar site components.

Essential Duties - *Duties may include, but are not limited to, the following:*
- Perform corrective and preventative maintenance on electrical switchgear, process control systems, flowmeters, transmitters, gauges and other instrumentation and control equipment.
- Perform skilled duties related to the troubleshooting, maintenance, repair and testing of instrumentation, Programmable Logic Controller's (PLC's), telemetry, electrical and electronic components and instruments used in treatment plants, distribution systems and solar fields. Recognize, identify and correct problems with control and instrumentation equipment.
- Plan, install, and maintain sophisticated electrical, instrumentation, and control systems; develop and use diagnostic problem solving techniques.
- Inspect, adjust, and repair electrical and electronic equipment such as Variable Frequency Drives (VFD's), motors, transducers, motor control centers, switches, wiring, electronic circuits, and related devices.
- Install, maintain, and troubleshoot control systems and water quality instruments, analyzers and electrical systems as they relate to water treatment and distribution systems.
- Work collaboratively with engineering to maintain and modify of drawings of District's Electrical Systems, PLC's and SCADA Systems.
- Assist in new project design, installation and troubleshooting of electrical systems including but not limited to; submittals, RFIs, change orders, site layout and planning of specific drawings.
- Meet with operations and engineering staff on new construction and other projects and manages/performs design and installation of equipment related to electrical and electronic systems and instrumentation and control systems.
- Purchase and maintain inventory necessary to carryout essential duties.

- Modify install, and support systems and networks as they relate to the Supervisory Control and Data Acquisition (SCADA) system.
- Utilize Computerized Maintenance Management System (CMMS) to plan, schedule, complete, and document maintenance activities.
- In an employee setting, teach staff electrical and instrumentation principles and applications.
- Participate and comply with District's Chlorine Program.
- Establish and maintain effective working relationships with those contacted in the courseof work.
- Assist in the development of budgets.
- Conduct safety inspections.
- Comply with and participate in the District's safety standards policies (PSM, PHA, IIPP, LOTO, Confined Space, RPP, HMBP, RMP, Heat Stress, ARC Flash, Hearing Protection, PPE, etc.) and all related safety requirements.
- Performs related duties as assigned.

Minimum Qualifications

Knowledge of:

- Principles and practices of electrical theory & electrical circuits. practices and techniques used in the design, installation, testing, calibration, maintenance, and repair of radio telemetry, solar field, electrical and electronic equipment, instrumentationand controls as they relate to water treatment and distribution systems.
- 480 Volt Arc Flash Safety Gear and the use of that equipment as required by NFPA 70E and Cal OSHA.
- Principles of operation and maintenance of motor starters, VFDs, motors, actuator, PLCs, electromagnetic flow meters, level sensors, pressure devices, instrumentation and analytical instrumentation devices.
- Principles associated with electrical and electronic circuitry, radio telemetry, plant analytical equipment.
- Treatment plant, pump stations, solar field and distribution facilities.
- National Electric Code (NEC) and other pertinent local, State and Federal laws, rules and regulations.
- Current trends in information technology including hardware, software, and networks.
- Techniques used in the calibration of instrumentation and controls.
- Modern office procedures and computer equipment including systems to update and report work order status.
- Principles and practices of good customer service.

Ability to:

- Maintain and repair electrical and electronic equipment, radio telemetry, solar field, instrumentation and controls.
- Independently perform technical work in maintaining, installing and calibrating digital, electronic and electrical system automated instruments, controls and measuring devices.
- Work on low and high voltage switchgear, motors and electrical equipment.
- Safely use equipment and tools appropriate to the repair and maintenance of automated instrumentation and controls systems.
- Test, diagnose, troubleshoot, and repair a variety of electrical and electronic equipment, instrumentation and controls.

- Read and interpret operating and maintenance instructions, procedure manuals, blueprints, drawings and electronic schematics, equipment specifications, vendor service manuals logic diagrams and piping and instrumentation diagrams.
- Maintain accurate records of preventative maintenance activities.
- Maintain and update electrical drawings
- Understand and carry out oral and written instructions.
- Initiate and maintain effective safety practices.
- Communicate effectively.
- Establish and maintain effective working relationships with District staff, outside organizations,and the public.
- Prepare and maintain records.
- Wear protective equipment.
- Provide training to staff

Experience and Education:
Any combination of training, education, and experience that has led to the acquisition of the knowledge, skills, and abilities as indicated above. A typical qualifying entrance background is:

Experience:
Three years of journey level experience in the design, construction, installation, modification, maintenance, and repair of electrical/electronic equipment, instrument systems and control devices common to an industrial water treatment plant and distribution systems.

Education:
Equivalent to graduation from high school.

License or Certificate:
- Possession of, or ability to obtain and maintain an appropriate valid California motor vehicle operator's Class C license. Individuals who do not meet this requirement due to a physical disability will be considered on a case-by-case basis.

Desired
- State Water Resources Control Board Division of Drinking Water (SWRCB DDW) Treatment License.
- State of California Certification as a General Electrician or completion of a recognized apprenticeship in the electrical trade.
- California Water Environment Association (CWEA) Grade II Electrical/Instrumentation (E/I) Technologist Certification

Physical Capabilities

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform functions.

Physical Requirements	*Rarely (0-12%)*	*Occasionally (12-33%)*	*Frequently (34-66%)*	*Regularly (67-100%)*
Seeing				✓
Hearing				✓
Standing/Walking		✓		✓
Climbing/Stooping/Kneeling			✓	
Lifting/Pulling/Pushing			✓	
Approximate Maximum Weight to Lift			60 Pounds	
Fingering/Grasping/Feeling				✓
Describe Working Conditions	50 Percent Indoors, 50 Percent Outdoors			