



## Maintenance Technician III

### DEFINITION:

Under the general supervision of the Maintenance Technician Lead, performs all duties required by a Maintenance Technician I / II and includes general maintenance, calibration, repair, and programming of Supervisory Control Data Acquisition (SCADA) instrumentation equipment, such as radios, HMIs, PLCs, and process control and instrumentation equipment.

### SUPERVISION RECEIVED AND EXERCISED:

Receives immediate supervision from assigned supervisory or management staff. Exercises no direct supervision over staff.

### CLASS CHARACTERISTICS:

This is an advanced journey-level classification in the maintenance technician series. Positions at this level are distinguished from the Maintenance Technician I/II level by the performance of the full range of duties as assigned, working independently, and exercising judgment and initiative. Positions at this level receive only occasional instruction or assistance as new or unusual situations arise and are fully aware of the operating procedures and policies of the work unit. Additionally, this position will work independently and with the GIS and SCADA System Engineer on maintaining, repairing, and replacing of SCADA related components.

### EXAMPLES OF ESSENTIAL FUNCTIONS (Illustrative Only):

*Reasonable accommodations may be made, on a case-by-case basis, to enable individuals to perform the essential functions of the job.*

- Participates in the operation and maintenance of water treatment and related equipment; calibrates and repairs instruments; inspects pumps for proper operation; services pumps and pumping equipment.
- Reads meters, gauges and charts; regulates water flows in accordance with established procedures; maintains operating logs and records.
- Monitors water quality; performs operational adjustments to the treatment system to ensure compliance with quality and regulatory requirements; adjusts and calibrates feed machinery for a variety of chemicals to keep treatment at prescribed standards.
- Performs the operation, maintenance and troubleshooting of mechanical and electrical functions of sewer collection facilities.
- Performs a variety of skilled duties involved in the inspection, operation, diagnosis, troubleshooting, maintenance, repair and servicing of field and shop equipment, components, facilities, and machinery used in water production and distribution systems, and sewer collection systems.
- Maintains a diverse range of mechanical equipment and appurtenances in sewage lift stations, pumping stations, and deep wells to ensure proper system operation.

- Installs and/or rebuilds existing pumps and valves at lift stations, wells, tanks, pumping plants and water process facilities; fabricates and installs piping for new pump installations which may include plumbing, pipe fitting, welding and machine tool operations.
- Operates and maintains sewer lift station facilities, equipment, and machinery by using manual, electronic and computer control systems.
- Tests, troubleshoots, locates and calibrates, repairs and performs preventive maintenance on a variety of electrical and electronic systems, components and devices used in water production and distribution. Installs, maintains, repairs, and replaces electromechanical, electronic, and electrical components of equipment and machinery; troubleshoots, aligns, and calibrates equipment; rebuilds equipment to manufacturer's specifications.
- Makes changes and program modifications to various programmable logic controllers (PLC) and their operator interface terminals; corrects defects in instrumentation.
- Troubleshoots, repairs and programs remote terminal units, including the replacement of hardware components, circuit boards, power supplies, and electronic components.
- Performs preventive maintenance and repair of plant, field and shop electrical and electronic systems, components, devices and equipment, including hazardous chemical feed, storage systems, motors, pumps, and electrical-mechanical valves.
- Makes daily visits to all operating feed wells to collect metering data and ensure proper operation of oil dippers; clears well fails and performs minor troubleshooting duties as needed; samples and monitors well production.
- Tests solid state circuitry to locate defective parts in analog and digital equipment.
- Installs conduits, wires, pull boxes, switchboards, controllers and switches required in making additions, extensions or alterations in industrial electrical systems.
- Inspects and oversees equipment installation work performed by contractors and District personnel.
- Operates District vehicle to travel to various facilities; follows established regulations, guidelines, policies and procedures in the handling and transporting of hazardous materials.
- Works on a personal computer; uses software to create and maintain a variety of records and reports.
- Responds to emergency situations as necessary, including after hours
- Observes and complies with all District and mandated safety rules, regulations, and protocols.
- Performs and/or oversees programming changes to system software; develops and maintains software and control system logic.
- Develops required inventory for replacement parts and consumables for assigned systems.
- Organizes and maintains assigned systems and technical documentation; updates as necessary.
- Researches and evaluates new developments in the field of SCADA systems.
- Performs related duties as assigned.

MINIMUM QUALIFICATIONS:
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*Any Combination of education and/or experience that provides the required knowledge, skills, and abilities to perform the essential functions of the position. A typical combination includes:*

#### EDUCATION AND EXPERIENCE:

Maintenance Technician III – Equivalent to completion of the twelfth (12<sup>th</sup>) grade, and four (4) years of progressively responsible experience in the design, installation, maintenance and repair of electrical and electronic equipment and devices common to water production and distribution, and sewer collection systems, or two (2) years as a District Maintenance Technician II with demonstrated ability and knowledge.

*Positions at the Maintenance Technician I level may exercise some of these knowledge and abilities statements in a learning capacity.*

#### KNOWLEDGE OF:

- Principles, methods, techniques, tools, and equipment used in the installation, maintenance (predictive, preventive, and corrective) and repair of industrial/ mechanical equipment and machinery used in the operation of water distribution and production t stations and facilities.
- Basic tools and equipment used in the operation and maintenance of motors, engines, pumps, and other water treatment plant equipment.
- Principles, practices, tools, equipment, and supplies used in the maintenance and repair wastewater collection systems, including underground wastewater collection lines.
- Proper water quality sampling techniques for physical and micro-biological sampling; chemical storage and dosing.
- Basic mechanical, electrical, and hydraulic principles.
- Operational and maintenance practices of electrical motors, pumps, and circuitry
- Use and operation of a diverse range of tools and equipment used in machine shops.
- Methods and techniques of configuring communication between devices such as Programmable Logic Controllers (PLC), Remote Telemetry Units (RTU), and field devices, and the tools used in installing, servicing, and repairing various electronic equipment.
- Practices, methods, techniques, tools and equipment used in the design, installation, testing, calibration, maintenance and repair of electrical and electronic equipment devices, and components, including those utilized in process control.
- Basic construction knowledge as it related to facilities and components maintenance.
- Operating characteristics of electronic components, including programmable logic controllers, feedback devices, variable frequency drives and operator interface programs.
- Mathematical principles.
- Pertinent federal, state, and local laws, codes and safety regulations.
- Working knowledge of computers and computer software such as word processing, spreadsheets.
- Record-keeping principles and procedures.
- District and mandated safety rules, regulations, and protocols.
- The structure and content of the English language, including the meaning and spelling of words, rules of composition, and grammar.

- Modern equipment and communication tools used for business functions and program, project, and task coordination, including computers and software programs relevant to work performed.
- Techniques for providing a high level of customer service by effectively dealing with the public, vendors, contractors, and District staff.
- Industry standard communication protocols for SCADA, including telemetry and networking.
- The methods, materials, and techniques commonly used with electrical and instrumentation maintenance and repair at a novice level.
- Operational characteristics of programmable logic controllers (PLC) and Human Machine Interface (HMI) as they relate to SCADA system design and implementation.
- Network system (radios, software, and affiliated components) security measures related to SCADA.

**ABILITY TO:**

- Test, diagnose, program, modify, calibrate and repair a wide variety of electrical and electronic instrumentation devices, motors, machinery and equipment.
- Install, diagnose, maintain, and repair a wide variety of industrial/mechanical equipment, systems, and machinery used in the operation of water production and distribution and sewer collection systems.
- Monitor and adjust plant processes to maintain water quality standards.
- Collect a variety of samples and conduct appropriate tests.
- Design, fabricate, replace, and repair system equipment and components.
- Use precision and diagnostic instruments in assigned areas of responsibility.
- Operate a diverse range of tools and equipment in trade areas such as electrical, pipefitting, mechanical, cranes, and rigs.
- Read and interpret plans, specifications, manuals and blueprints.
- Use a variety of hand tools, such as pipe-threaders, taps, dies, measuring instruments, and laser alignment equipment.
- Respond effectively to emergency situations and troubleshoot such situations.
- Operate a variety of vehicles and equipment in a safe and effective manner.
- Maintain accurate records and prepare appropriate reports.
- Make accurate arithmetic computations.
- Organize own work, set priorities, and meet critical time deadlines.
- Understand, interpret, and apply all pertinent laws, codes, regulations, policies and procedures, and standards relevant to work performed.
- Effectively use computer systems, software applications relevant to work performed, and modern business equipment to perform a variety of work tasks.
- Communicate clearly and concisely, both orally and in writing, using appropriate English grammar and syntax.
- Establish, maintain, and foster positive and effective working relationships with those contacted in the course of work.

## LICENSES AND CERTIFICATIONS:

### Maintenance Technician III

#### Required

- Possession of a valid driver's license along with a driving record acceptable to the District and the District's insurance carrier.
- Possession of a California State Water Resources Control Board (SWRCB) Water Distribution Operator Grade 1 (D1) certification.
- Possession of a California State Water Resources Control Board (SWRCB) Water Treatment Plant Operator Grade 2 (T2) certification.
- Possession of a California Water Environment Association (CWEA) Electrical / Instrumentation Technician Grade 2 (E/I II).

#### Desirable

- California Water Environment Association (CWEA) Collection System Operator Grade 1 (C1) certification desirable.
- California State Water Resources Control Board (SWRCB) Water Treatment Plant Operator Grade 3 (T3) certification desirable.

Failure to obtain and maintain required license(s)/certification(s) may result in disciplinary action up to and including dismissal from the position.

### TOOLS AND EQUIPMENT USED:

Trucks, and power tools, scientific instruments, computers, grinders, drills, air compressors, log books, charts, graphs, radios, VFD's and PLC.'s, telephones, cell phones, two-way radio; traffic control devices; personal computers, word processing, and other office support systems and various related hand, electronic, and/or power tools used in utility operations maintenance, data gathering, and/or record keeping.

### PHYSICAL DEMANDS:

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 in compliance with the Americans with Disabilities Act (ADA) requirements. Reasonable accommodations may be made, on a case-by-case basis, to enable individuals with disabilities to perform the essential functions.

Must possess mobility to work in the field; strength, stamina, and mobility to perform medium to heavy physical work; to sit, stand, and walk on level, uneven, or slippery surfaces; frequently reach, twist, turn, kneel, bend, stoop, squat, crouch, grasp and make repetitive hand movement in the performance of daily duties; possible entry into confined spaces and the use of confined entry equipment, to climb and descend ladders, to operate varied hand and power tools and construction equipment, and to operate a motor vehicle and visit various District sites; and vision to inspect and operate equipment. The job involves fieldwork requiring frequent walking in operational areas to identify problems or hazards. Finger dexterity is needed to operate and repair tools and equipment. Employees must possess the ability to lift, carry, push, and pull materials and objects averaging a weight up to 50 pounds and frequently in excess of 75 pounds to a maximum of 100 pounds, all cases with the use of proper equipment and/or assistance from other staff.

Requires the ability to get and maintain an air tight seal with Self-Contained Breathing Apparatus for confined space entry.

<b>ENVIRONMENTAL CONDITIONS:</b>
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Employees work in the field and are exposed to loud noise levels, cold and hot temperatures, inclement weather conditions, road hazards, vibration, confining workspace, chemicals, vermin, insects, and parasites, mechanical and/or electrical hazards, and hazardous physical substances and fumes. Employees may interact with upset staff and/or public and private representatives in interpreting and enforcing departmental policies and procedures.

Works with hazardous chemicals such as but, not limited to, sodium hypochlorite, and various acids. Exposed to fumes and odors from sewer wet wells. Frequently works in confined spaces above and below ground, including wet and dry wells, storage tanks, vaults, and manholes. The incumbent works near moving mechanical parts; on slippery and uneven surfaces; and the risk of electric shock. The noise level in the work environment is frequently loud. May be required to wear a confined space entry breathing apparatus. Works at computer workstation on regular basis.