Hired: 4/1/92

SAUSALITO-MARIN CITY SANITARY DISTRICT

PLANT MAINTENANCE TECHNICIAN 7/2/01

DEFINITION

Under general supervision of the Operations and Maintenance Supervisor, performs journey level work involving the installation, maintenance, troubleshooting and repair of equipment at the wastewater treatment plant, pump stations and collection systems.

SUPERVISION EXERCISED

This class may exercise technical supervision over lower-level staff on a project basis.

IMPORTANT AND ESSENTIAL DUTIES (Illustrative Only)

- Installs, inspects, maintains, troubleshoots, adjusts and repairs, a variety of mechanical equipment at wastewater treatment, collection and disposal facilities, such as sluice gates, compressors, flights, drives, hydraulic controls, mechanical structural and plumbing, apparatus, belts, chains, and conveyors, diesel and/or gas engines and related co-generation equipment.
- From work orders, drawings, specifications, schematics, sketches, and/or verbal and written instructions, performs complex mechanical maintenance, repair, fabrication, and rebuilding of shop, field and plant equipment used in wastewater plants, pump stations and collection systems.
- Installs, inspects maintains, and repairs a variety of pumps, such as centrifugal, positive displacement, and diaphragm; services, lubricates, and adjusts chemical feed and processing equipment; determines excess wear and pump efficiencies; follows preventive and predictive maintenance practices.
- Performs horizontal and vertical welding, fabricating, silver soldering, hard facing, and brazing using acetylene, arc, mig, and tig welders on ferrous and nonferrous metals; makes specialized cuts and complex angles using a band saw; performs blacksmithing and parts fabrication.
- Installs, inspects, maintains, and repairs piping systems of PVC, black and cast iron, stainless steel, and copper tubing; installs, removes, and repairs larger pipes and valves; draws minor new designs; modifies existing piping systems and welded steel pipe, such as nozzles and saddles; taps, cuts, and threads pipes.
- Performs maintenance and repair tasks on a wide variety of internal combustion engines; adjusts valves and carburetors; repairs and maintains exhaust systems.
- Performs regularly scheduled inspection, maintenance, and repair tasks on comminuting and grinding devices; overhauls equipment, such as cutters, bearings, chains, mechanical seals, gear reducers; performs close tolerance checking and testing.
- Performs inspection, maintenance, and repair or overhaul tasks on drive components, such as right angle drive gears, reduction drives and variable speed and belt and chain drives.
- Installs, maintains, inspects, overhauls, and adjusts, repairs a variety of hydraulic and pneumatic systems and compressors.

- Properly uses and cares for hand and power tools such as grinders, saws, jacks, hydraulic presses and pullers and pipe threaders; inspects, tests, and measures equipment and material using precision instruments such as scales, height and depth gauges, calipers, verniers and micrometers of various types.
- Plans tasks, maintains records of work performed and makes estimates of labor and material necessary for the performance of the work.
- Follows proper safety practices, precautions, and procedures, such as confined space entry; the proper storing, handling, and transportation of materials in accordance with MSDS protocol; using correct lockout, tagout and rigging procedures, wearing flash protection when welding and other safety requirement as appropriate; and operating and maintaining hand and power tools and test equipment in a safe manner.
- Operates, cleans, services, lubricates, maintains, and paints equipment, machinery, vehicles, structures, buildings, pipelines, storage tanks and additional items found in wastewater collection, treatment and disposal facilities.
- Inspects, diagnoses, and performs routine servicing and repair of vehicles and a variety of diesel powered equipment.
- Performs basic preventive and corrective maintenance by isolating power, grounding wires, troubleshooting problems, making repairs, restoring power and checking for proper operation.
- Performs basic electrical and instrumentation circuit installation for additions or modifications by bending and installing conduit, pulling wire, wiring in circuits as shown on blueprint and testing system for proper installation.
- Operates dump and flatbed trucks, generators, and other types of machinery, equipment and vehicles.

OTHER DUTIES

- Performs cleaning and upkeep of plant grounds, buildings, vehicles and equipment.
- Assists in maintaining the currency of Operations and Maintenance manuals and prepares and updates standard maintenance procedures.
- Responds to emergencies.
- Performs other related duties as assigned.

QUALIFICATIONS

Knowledge of:

- Standard methods, theory, practices, materials, tools, and equipment used in installing, adjusting, maintaining and repairing mechanical equipment common to a wastewater treatment plant, collection and disposal systems.
- Characteristics and capabilities of common metals and alloys; uses and operation of electric, and gas cutting and welding equipment and rigging principles and techniques.
- Predictive and preventative maintenance techniques and procedures.
- Safety practices and procedures pertaining to the work performed.
- Electrical circuits, including sizing, installation, troubleshooting and repair.
- Shop mathematics.
- Computer applications related to the work.
- Basic wastewater treatment processes and operations.
- Basic record keeping practices.

Skill in:

- Operating and maintaining plant equipment and vehicles.
- Making repairs and performing preventive and predictive maintenance to the equipment used in the collection, treatment and disposal of wastewater.
- Troubleshooting and repairing a variety of mechanical equipment common to a wastewater facility.
- Inputting and retrieving data from automated systems with sufficient speed and accuracy to perform the work.
- Safely operating standard hands, electric and pneumatic tools and equipment of the mechanical trades.

Ability to:

- Wear personal protective equipment, including but not limited to safety glasses or goggles, hard hats, respirator protection (e.g. dust mask, self-contained breathing apparatus, etc.), safety steel toe boots, gloves, protective clothing and other safety protection as required.
- Perform mathematical calculations for maintenance and repair activities.
- Plan and organize a project from start to finish including purchasing of materials and supplies and scheduling of equipment rentals and specialty contractors.
- Estimate labor and materials for proposed work and maintain accurate and complete records and prepare reports.
- Read, understand and applying a working knowledge of construction drawings, diagrams, specifications and O&M manuals.
- Establish, maintain, foster a positive and harmonious working relationship with those contacted in the course of work.
- Effectively communicate, in both written and oral form, in English.

Experience and Education

Any combination of experience and training that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:

Experience:

Four years of experience in the installation, maintenance and repair of mechanical equipment such as found in wastewater or water treatment facilities and associated collection or distribution systems. Successful completion of college or technical school coursework related to the field may be substituted for the experience on a year for year basis to a maximum of two years.

Education:

Equivalent to graduation from high school.

LICENSES AND CERTIFICATES

Must possess a Grade II level certificate in mechanical technology issued by the California Water Environment Association. Possession of a Grade III level certificate is desirable.

Must possess a valid California class C driver's license and a satisfactory driving record.

PHYSICAL DEMANDS

Must possess stamina to walk, stoop, climb and work in confined spaces and a standard office setting; strength to lift and carry equipment, tools and supplies weighing up to 50 pounds and heavier weights with proper equipment; vision to read a printed page and a computer screen; color vision to discern color-coded wiring; and hearing and speech to communicate in person and over the telephone.

WORKING CONDITIONS

Must be willing to work under potentially hazardous conditions and with exposure to potentially hazardous chemicals. Must be available for emergency on-call and periodic off-shift work. Standby assignments may be required to fulfill the needs of the District.