



City of Irving Job Description

Pumps and Motors Specialist

FLSA Status:	Non-Exempt	Job Department:	Water Utilities
Job Code:	36372	Reports To (Job Title):	Pumps and Motors Section Chief

PURPOSE

To perform the most specialized and highly skilled tasks in the construction, maintenance, repair, and servicing of water and wastewater distribution system facilities and equipment; to oversee and maintain operation of pumps, motors and related electrical equipment and valves throughout the water distribution and wastewater collection systems and to ensure the health, safety and well-being of internal and external customers as well as the environment.

ESSENTIAL DUTIES AND RESPONSIBILITIES

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily.*

- Conduct thermal imaging of all electrical feeds to locate and assess mechanical problems or the potential for problem development.
- Perform alignment evaluations including offset, angular, soft foot, and pipe strain checks; make appropriate adjustments on the full range of pumps from 125 hp to 500 hp.
- Measure mechanical vibration readings and troubleshoot, repair and monitor problems that result from high vibrations using ISO 10816 severity chart.
- Maintain and repair combination air/vacuum valves, pump control valves, surge valves, motor actuated valves, tilting disc check valves, plug valves and hydraulically controlled ball valves.
- Oversee maintenance of the emergency backup power electrical systems, generators, automatic transfer switch, portable generator cabinet, kirk key system, tie breakers, generator master controls; manage and oversee the service contract for load banks and generators.
- Install and program RTUs on lift stations, elevated storage tanks, and pressure points for SCADA.
- Troubleshoot electrical and communication problems for SCADA.
- Inspect, maintain, repair, and service machinery and equipment, including the most complex pumps, electrical systems, hydraulic systems, valves, motors, chlorine injectors, engines, compressors, computerized and pneumatic equipment and odor control systems; also, inspect welds, vents, hatches, security, and ladders on elevated towers and ground storage tanks.
- Coordinate activities with other departments, divisions, outside agencies and contractors to ensure continuity of service.
- Identify, evaluate, and recommend improvements to design, install, and maintain lift stations, pump stations, and related equipment.
- Troubleshoot mechanical, electrical, hydraulic and pneumatic problems.
- Monitor, prioritize, and schedule maintenance for pumping and lift stations on a regular basis; maintain and repair generators, valves, and motors and pumps.
- Fabricate parts and equipment to perform maintenance and repair work.
- Operate welding, cutting, drilling, metal bending, sanding, metal fabrications, painting/powder coating and machining equipment.

- Enter confined spaces using proper procedures and atmosphere monitoring equipment.
- Ensure the safety of work zones using cones, flags, barricades, signs, & personal safety equipment.
- Participate in on-call rotation for after-hours work; Regardless of on-call status, respond to after-hours and specialized emergency call-out in order to address problems at pump & lift stations, which is vital to maintain distribution & collection systems.
- Perform related duties as assigned.

OTHER DUTIES AND RESPONSIBILITIES

- Perform preventive maintenance on heavy equipment such as rubber tire loader, boring equipment, trailer mounted pumps, jack hammers, light towers, skid steer, air compressors and all excavation equipment.
- Monitor, maintain, and repair small engines and equipment used by field crews.
- Maintain and organize shop work areas.
- Perform preventive maintenance, inspections, and servicing of equipment.
- Perform plumbing, electrical, carpentry and welding duties as required.
- Maintain detailed records on maintenance work done.

SUPERVISORY RESPONSIBILITIES

Functional and Technical Supervision - Regular responsibility for giving direction and guidance to employees as a lead worker, project manager or internal advisor. As an ongoing part of the position, the employee can expect to supervise approximately 1-2 employees.

FINANCIAL / BUDGETARY RESPONSIBILITY

May make purchases of materials or equipment with the use of a P-Card or Purchase Order request.

QUALIFICATIONS:

The requirements listed below are representative of the knowledge, skill, and/or ability required.*

EDUCATION

- High School Diploma or GED to meet basic requirements established by the Texas Commission on Environmental Quality *plus* some college or vocational training.

EXPERIENCE

- At least two (2) years of experience in mechanical maintenance and repair work including electrical motors, control systems, pumps, and high voltage electrical circuitry demonstrating the ability to read and interpret electrical diagrams and pump curves.

CERTIFICATES, LICENSES, REGISTRATIONS

- Class A Texas Commercial Driver's License
- Class C Water Distribution Operator License issued by TCEQ
- Class II Wastewater Collection Operator License issued by TCEQ

KNOWLEDGE OF

- Environmental Laws and Regulations: Federal, state, and local environmental laws and the ability to apply current information to given situations.
- English Language: The structure and content of the English language, including the meaning of words and grammar.
- Maintenance Principles: Processes involved in upkeep of property and equipment to optimum state of cleanliness, repair, and efficiency.
- Public Safety & Security: Rules and regulations to protect people, data, and property.
- Regulations: Federal, state, and municipal restrictions, laws, and ordinances.
- Customer Service: Principles and processes for providing customer and personal services including a desire to help customers regardless of their circumstance.
- Schematics for one-line electrical drawings, pumps, and motors.
- Electricity, including how to troubleshoot all voltage problems up to 4160 volts, 3-phase systems.
- SCADA operations and trend analysis utilizing GANTT Charts.

SKILLS AND ABILITIES IN

- Technical Problem Analysis & Resolution: Identifying factors contributing to improper functioning of equipment and machinery and termination of one or more solutions. This includes troubleshooting electrical problems using a megger meter.
- Electrical Safety: Troubleshooting electrical problems safely, following OSHA regulations while working in high electrical hazard areas.
- Electricity Acumen: Accurately identifying potential electrical hazards and responding appropriately, performing lock-out/tag-out procedures.
- Operational Agility: Entering confined spaces using a rope harness, tripod, atmospheric monitors, cascade unit and SCBA system; also, performing high-angle climbs.
- Equipment Fabrication: Creating specialized parts & tools and/or retrofitting parts to enable or enhance appropriate functioning of the full scope of utilities equipment and machinery.
- Management of Material Resources: Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work.
- Part Sourcing: Identifying and locating specialized parts with limited availability.
- Active Learning: Working with new material or information to grasp its implications.
- Active Listening: Listening to what others are saying and asking questions as appropriate.
- Reporting: Researching, analyzing, and compiling data and preparing concise documents.
- Cooperation: Establishing and maintaining positive working relationships with those contacted in the course of work.
- Service Orientation: Actively looking for waters to help people.
- Technical Reasoning: Interpreting an extensive variety of technical instructions in mathematical or diagram form.
- Inductive Reasoning: Combining separate pieces of information or specific answers to problems to form general rules or conclusions. This includes coming up with a logical explanation for why a series of seemingly unrelated events occur together.

- Self-Management: Working well independently and without supervision.
- Judgment & Decision-Making: Weighing the relative costs / benefits of a potential action.
- Oral Expression: Communicating information and ideas in speaking so others will understand.
- Oral Comprehension: Listening to and understanding information and ideas presented through spoken words and sentences.
- Reading Comprehension: Reading and interpreting documents.

GUIDANCE RECEIVED

General Instructions and Established Precedent/Procedures

Follows general supervisory instructions, as well as policies and precedents open to judgment in some areas and more specific guidelines, policies and procedures in others. Based on knowledge of policies, precedents and procedures, may assist others with standard work methods and problems.

CONTACTS

Contacts include coordinating work activities with staff, supervisors and managers from other departments and visiting with manufacturers and vendors to learn more about materials and equipment used for assigned repair and maintenance operations.

EQUIPMENT AND PROPERTY

Employee must use a wide variety of manual and power tools and equipment which may include equipment such as calipers, micrometers, filler gauges, dial indicators, laser alignment devices, vibration analysis equipment, multi-processors, megger meters, thermal imaging tool, pneumatic or hydraulic tools, plasma cutter and torch, band saw, drill press, milling machine and others. In addition, office equipment such as computers, copiers and printers are used.

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.*

The employee constantly is required to see. Frequently, s/he is required to carry, drive a vehicle, grasp, feel, handle, kneel, lift up to 100 pounds, listen, pull, crawl, push, stand, stoop, talk, and/or walk. Occasionally, s/he is required to balance, climb, reach, and/or sit.

WORK ENVIRONMENT

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.*

The employee regularly is exposed to extreme vibration, blood-borne pathogens, confined and/or deep work space, hazardous and dirty environment, electrical hazards, extreme temperatures or weather conditions, air contamination, high and precarious work places, improper illumination, moving mechanical parts, noise, and/or toxic or caustic materials. This job requires the employee to make decisions directly affecting the safety of others. The noise level in the work environment is usually loud.

* Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Note: A class specification is a general listing of duties, responsibilities, knowledge, skills, and abilities required of an incumbent assigned to a particular class of work. There may be one or multiple positions assigned to a single classification; therefore, the class specification lists those work attributes that are common to every incumbent in the class.