

Job Description

Please note this job description is not designed to cover or contain a comprehensive listing of activities, duties or responsibilities that are required of the employee for this job.

Job title	Senior Industrial Engine Technician
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GENERAL PURPOSE

Under direction, provides technical supervision and performs a wide variety of skilled duties in the installation, modification, maintenance, repair and servicing of large industrial stationary engines (natural gas and diesel); gearboxes and aeration blowers; ensures the timely completion of predictive and preventative maintenance activities; and performs related duties, as assigned.

DISTINGUISHING CHARACTERISTICS

This is the advanced-level classification in the Industrial Engine Technician series responsible for performing the most complex work assigned to the series. Incumbents regularly work on tasks which are varied and complex, requiring considerable discretion and independent judgment. Positions in the classification rely on experience and judgment to perform assigned duties. Assignments are given with general guidelines and incumbents are responsible for establishing objectives, timelines and methods to complete assignments. Work is typically reviewed upon completion for soundness, appropriateness, and conformity to policy and requirements.

This class is distinguished from the Industrial Engines Supervisor in that the latter is the full supervisory-level class in the series with accountability and ongoing decision-making responsibilities associated with the work.

Employees in this classification are subject to on-call, which may include rotating-duty schedule, weekends and 24-hour emergency call out with little or no notice.

SUPERVISION RECEIVED AND EXERCISED

Receives direction from the Industrial Engines Supervisor. Exercises technical and functional direction over and provides training to lower-level staff.

TYPICAL DUTIES AND RESPONSIBILITIES

The duties listed below are intended only as illustrations of the various types of work that may be performed. The omission of specific statements of duties does not exclude them from the position if the work is similar, related or a logical assignment to this position.

- Leads and instructs assigned staff to perform a full range of skilled and semi-skilled industrial engine work; identifies the skill development needs of lower-level Industrial Engine Technicians and provides training and quality control inspections as needed; assists and trains subordinates utilizing the District's computerized maintenance management work order system.
- Ensures the timely and accurate completion of preventive and predictive maintenance activities utilizing a computer maintenance system; processes daily work orders, time sheets, source test results, etc. as necessary in support of the supervisor.
- Designs, installs, wires, programs, troubleshoots, diagnoses, repairs, and maintains micro-processor-based engine controllers, speed controllers, engine monitoring systems and other proportional integral derivative (PID) loop controllers; calibrates and replaces sensors and input devices; operates test and repair stationary and portable generators; ensures the proper operation of all related equipment.
- Researches, analyzes, engineers and designs emission control and testing components for existing and new systems development; inspects, diagnoses, repairs, calibrates and maintains emissions test equipment; performs loop calibrations and ensures quality data acquisition.
- Installs, programs, services, develops and maintains air/fuel ratio controllers, digital speed controllers and other engine monitoring systems; installs, tunes, services, and adjusts engines catalytic converters and complete exhaust systems to ensure compliance with emissions standards, regulations, laws, and District policy.
- Designs and builds engines powered drive systems including, but not limited to, plumbing, low/high pressure gas, fuel, oil, air, exhaust systems, cooling system and heat exchanger piping, electrical conduits/wiring, engine speed controls, air to fuel ratio controls, and emissions systems.
- Performs a variety of skilled duties involved in the inspection, diagnosis, troubleshooting, maintenance, repair, and servicing of large industrial stationary natural gas and diesel engines; performs a wide variety of skilled tasks associated with tune-ups, preventive maintenance and servicing of large stationary industrial engines and related equipment and machinery; troubleshoots direct current (DC) electrical systems for engine and emission controls, including 24 VDC.
- Ensures that section activities are carried out in a safe manner and that established policies, procedures, and safety measures are followed.
- Assists in planning and implementing a predictive and preventative maintenance program for industrial engines and related appurtenances; assists in the development of plans and specifications for projected maintenance and construction projects.

- Diagnoses malfunctions and performs minor and major repairs and overhauls on large industrial stationary engines and related appurtenances, such as pumps, gear heads, gear boxes, aeration blowers, and fuel metering, air pollution control, solid state ignition, and lube oil cleaning systems; rebuilds diesel and natural gas engines, pumps, valves, and other mechanical equipment, through the use of specialized diagnostic, hand, and power tools.
- Tunes, services and adjusts engines and catalytic converters to ensure compliance with emissions standards, regulations, laws, and District policy; installs exhaust systems with catalytic converters.
- Researches and analyzes emission control and testing components for new systems development to meet mandated requirements.
- Millwrights engines and components on existing and new installations using dial indicators, laser alignment equipment, and other precision instruments; services, maintains, repairs and overhauls engine turbocharger; rebuilds electric and pneumatic starters for industrial engines.
- Operates overhead cranes, forklifts, compressors, pneumatic, hydraulic and electric tools, steam cleaners and related tools and equipment and maintains certifications.
- Cleans, maintains, and repairs tools and shop equipment; requisitions necessary tools, equipment and supplies; fabricates tools, parts, brackets, guards, and many other components needed to maintain the operation of obsolete equipment.
- Interacts, schedules and coordinates activities with vendors, contractors, engineers, inspectors, regulatory departments and agencies, Integrated Operations Center, sections, and divisions.
- May assist workers from other trades sections in the maintenance and repair of pumping station equipment and machinery.
- May assume office duties in the supervisor's absence.
- Observes and complies with all District and mandated safety rules, regulations, and protocols.
- Performs related duties as assigned.

REQUIRED QUALIFICATIONS

Knowledge of:

- Principles of providing functional direction and training.
- Principles, methods, techniques, tools, and equipment used in the installation, maintenance, repair and overhaul of large industrial stationary engines (natural gas and diesel) gear heads and related equipment and machinery.

- Federal, state, and local laws, codes, and regulations relevant to assigned areas of responsibility.
- Principles and practices of hazardous materials handling and transport.
- Stoichiometric and lean burn combustion theory.
- Principles and practices of power generation both stationary and portable.
- Internal combustion engine emissions control theory and analysis.
- Gas analysis theory and practices as they relate to natural gas engines.
- Machine shop practices and procedures.
- Shop mathematics.
- Use and operation of oxyacetylene and electric arc welding equipment and materials.
- Practices, methods, techniques, tools and equipment used in the design, installation, testing, calibration, maintenance, and repair of electrical and electronic equipment and devices.
- Operating characteristics of electronic components, including programmable controllers, feed back devices, and operator interface programs.
- District and mandated safety rules, regulations, and protocols.
- Techniques for providing a high level of customer service by effectively dealing with the public, vendors, contractors, and District staff.
- 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.

Ability to:

- Plan, organize, and coordinate the work of assigned staff.
- Effectively provide staff leadership and work direction.
- Assist in the development and implementation of predictive and preventative maintenance programs.
- Diagnose, troubleshoot, overhaul, service, and repair a wide variety of large industrial stationary engines (natural gas and diesel), gear heads, and related equipment and machinery.
- Use precision and diagnostic instruments to measure required tolerances of mechanical parts.
- Operate overhead cranes, forklifts, compressors and pneumatic, hydraulic, and electrical tools.
- Identify and implement effective courses of action to complete assigned work.
- Read and interpret plans, specifications, and manuals.
- Design, build and introduce new forms of air fuel ratio controls to keep the District compliant with mandated regulations.
- Exercise independent judgment and initiative within established guidelines.

- Coordinate work assignments with other sections, divisions, or departments.
- Understand, interpret, and apply all pertinent laws, codes, regulations, policies, and procedures, and standards relevant to work performed.
- Independently organize work, set priorities, meet critical deadlines, and follow-up on assignments.
- Follow and apply written and oral instructions.
- 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.

Experience:

Any combination of experience and education that provides the required knowledge and abilities is qualifying, along with the specific licenses/certifications as outlined below:

- Five (5) years of progressively responsible skilled experience in the diagnosis, troubleshooting, maintenance, overhauling, and repair of large industrial stationary engines (natural gas and diesel), of which two (2) years is equivalent to an Industrial Engine Technician II.

Education:

- Equivalent to completion of the twelfth (12th) grade.

Licenses/Certifications:

- A valid California driver's license, Class A, with hazmat and tanker truck endorsements, or the ability to obtain one within six months of date of hire, and the ability to maintain insurability under the District's Vehicle Insurance Policy. All District employees required to possess a valid Class A driver's license for the performance of their duties shall be subject to random drug and alcohol testing pursuant to District policy and federal law.

PHYSICAL DEMANDS

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

Must possess mobility to work in standard water and/or wastewater treatment plant and related facilities; strength, stamina, and mobility to perform medium to heavy

physical work, to work in confining spaces, around machines and to climb and descend ladders, and to operate varied hand and power tools and equipment; vision to read printed materials, a computer screen, and to operate a motor vehicle and visit various District sites; color vision to read gauges and identify colored wiring; and hearing and speech to communicate in person and over the telephone or radio. The job involves frequent walking in operational areas to identify problems or hazards which includes working on live electrical wires. Finger dexterity is needed to access, enter, and retrieve data using a computer keyboard or calculator and to operate above-mentioned tools and equipment. Positions in this classification bend, stoop, kneel, reach, and climb to perform work and inspect work sites. Employees must possess the ability to lift, carry, push, and pull materials and objects up to 50 pounds and heavier weights with the use of proper equipment and/or assistance from other staff.

WORK ENVIRONMENT

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this class. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

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, mechanical and/or electrical hazards, hazardous physical substances and fumes, dust and air contaminants. Employees may interact with upset staff and/or public and private representatives in interpreting and enforcing departmental policies and procedures.

Eastern Municipal Water District
Job Title: Senior Industrial Engine Technician
Last Update: January 2024

This job description has been reviewed and approved by all levels of management in cooperation with the union (if applicable):

Approved by:	<i>Board of Directors</i>
Date adopted:	<i>March 29, 2020</i>
Date modified:	<i>January 23, 2024</i>
FLSA determination:	<i>Non-Exempt</i>

Job Description Acknowledgment

I have received, reviewed and fully understand the job description for Senior Industrial Engine Technician. I further understand that I am responsible for the satisfactory execution of the essential functions described therein, under any and all conditions as described.

Employee Name (print): _____ *Date:* _____

Employee Number: _____

Employee Signature: _____