JOB DESCRIPTION
Industrial Engine Technician I (Flex)
Industrial Engine Technician II
Code Number: 50006, 50007

GENERAL PURPOSE

Under general supervision, performs a wide variety of skilled, journey-level duties in the inspection, diagnosis, troubleshooting, overhaul, maintenance, repair and servicing of large industrial stationary engines (natural gas and diesel) powered drive systems; and performs related duties as assigned.

DISTINGUISHING CHARACTERISTICS

Industrial Engine Technician I is the skilled entry level class in the Industrial Engine Technician series. Initially under close supervision, incumbents perform the more routine duties while learning District policies and procedures and becoming familiar with the variety of departmental systems and practices. As experience is gained, duties become more diversified and are performed under more general supervision. This class is alternately staffed with Industrial Engine Technician II, and incumbents may advance to the higher level after gaining experience and demonstrating proficiency which meet the qualifications of the higher level.

Industrial Engine Technician II is the experienced/journey level class in the series, fully competent to independently perform duties. This class is distinguished from the lower classification of Industrial Engine Technician I by the relative independence with which duties are performed. Industrial Engine Technician II is further distinguished from Senior Industrial Engine Technician in that the latter serves as either a lead or advanced journey level in the series.

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. Any employee designated to serve on-call who repeatedly refuses to serve on-call, or report for emergencies, shall be subject to disciplinary action up to and including discharge.

ESSENTIAL 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 the class.

FLSA DETERMINATION: Non-exempt.
Performs a variety of skilled, journey-level duties involved in the inspection, diagnosis, troubleshooting, maintenance, repair and servicing of large industrial stationary natural gas and diesel engines, ranging in size up to 2000 horsepower.

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, fuel metering systems, air pollution control systems and lube oil cleaning systems.

Diagnoses malfunctions and performs minor and major repairs and overhauls on diesel, natural gas and propane generators and portable pumps.

Rebuilds diesel and natural gas engines, pumps, valves and other mechanical equipment, including valve reconditioning, cam bearing installation and piston pin fitting, using grinders, lathes, drill presses, MIG welders and other hand and power tools.

Performs a wide variety of semi-skilled and skilled tasks associated with tune-ups, preventive maintenance and servicing of large stationary industrial engines and related equipment and machinery; troubleshoots electrical systems for engine panels and emission controls, including 24 volt direct current and 110 volt alternating current.

Designs and builds engine powered drive systems from initial concept to start-up including; plumbing, low/high pressure gas, fuel, oil, air exhaust systems, electrical conduits/wiring, engine speed controls, and air to fuel ratio controls and emissions systems.

Installs, wires, programs, troubleshoots, diagnoses, repairs and maintains microprocessor based engine controllers, speed controllers, engine monitoring systems and many other types of Proportional Integral Derivative (PID) loop controllers.

Rebuilds altronic solid state ignition systems.

Installs, programs (utilizing computer software), services, develops and maintains air/fuel ratio controllers, digital speed controllers and other engine monitoring systems per manufacturer specifications; operates mobile exhaust emissions testing laboratory; 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.

**FLSA DETERMINATION:** Non-exempt.
Researches and analyzes emission control and testing components for new systems development to meet regulations implemented by South Coast Air Quality Management District (SCAQMD).

Services, maintains, repairs and overhauls engine turbocharger.

Rebuilds electric and pneumatic starters for industrial engines.

Plans and lays out work from equipment manuals, instructions and/or work orders, using blueprints, sketches and drawings.

Millwrights and performs precision alignments on engines and components on existing and new installations using laser fixture and other precision instruments (vibration analysis, dial indicators, micrometers).

Operates overhead cranes, forklifts, compressors, pneumatic, hydraulic and electric tools, steam cleaners and related tools and equipment.

Operates mobile truck hydraulic (telescopic) cranes, utilizing lifting/load-handling devices (e.g. slings, cables, spreader bars).

Rebuilds positive displacement blowers at water reclamation plants.

Schedules and coordinates activities with other sections and divisions.

Ensures the timely and accurate completion and documentation of preventive and predictive maintenance activities.

Cleans, maintains and repairs tools and shop equipment.

Requisitions necessary tools, equipment and supplies.

Researches and develops new operational methods, integrates field engineering techniques and equipment and recommends their application.

Plans and lays out work from equipment manuals, instructions and work orders using blueprints, sketches and drawings; maintains records in the form of blueprints, plans, specifications and records.

Works with and provides training to other department personnel on the proper operation and inspection of industrial equipment used in the water and wastewater industry.

**FLSA DETERMINATION:** Non-exempt.
Interacts regularly with vendors, contractors, engineers, inspectors, regulatory departments and agencies, and Integrated Operations Center.

Fabricates tools, parts, brackets, guards, and many other components needed to maintain the operation of obsolete equipment.

Ensures the timely and accurate completion of preventative maintenance activities utilizing a computer maintenance system.

Responds to emergency situations as necessary.

May assist in training or instructing others in the work; may lead the work of others as a project leader.

May assist workers from other trades sections as necessary in the maintenance and repair of pumping station equipment and machinery.

Performs related duties as assigned.

**DESIRED MINIMUM QUALIFICATIONS**

**Knowledge of:**

Principles, methods, techniques, tools and equipment used in the installation, maintenance, repair and overhaul of large industrial stationary engines (natural gas and diesel) gear boxes, gear heads and related equipment and machinery; internal combustion engine emissions control theory and analysis; gas analysis; machine shop procedures and practices; safety practices, safe work methods and safety regulations pertaining to the work; shop mathematics; use and operation of oxyacetylene and electric arc welding equipment and materials; Safe Drinking Water Act and relevant EPA regulations; computer applications related to the work; codes, ordinances and regulations pertaining to the work.

**Ability to:**

Diagnose, troubleshoot, inspect, overhaul, service and repair a wide variety of large industrial stationary engines (natural gas and diesel), gear heads, gear boxes and related equipment and machinery; use precision, electronic, laser 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; establish and maintain effective working

**FLSA DETERMINATION:** Non-exempt.
relationships with those contacted in the course of the work; coordinate work assignments with other sections, divisions or departments; follow and apply written and oral work instructions; communicate effectively, orally and in writing; make sound independent judgments within established guidelines.

Training and Experience:

A typical way of obtaining the knowledge, skills and abilities outlined above is graduation from high school or G.E.D. equivalent; and two years of journey-level experience in the diagnosis, troubleshooting, maintenance, overhauling and repair of large industrial stationary engines (natural gas and diesel).

An Industrial Engine Technician I may be considered for advancement to Industrial Engine Technician II after demonstrating proficiency to perform all major duties assigned to the class.

Typically, an Industrial Engine Technician I is expected to be capable of meeting the proficiency criteria within a 6-24 month period, depending on an individual’s prior experience and progression in performing the full range of Industrial Engine Technician II duties as described in the established performance criteria.

Licenses; Certificates; Special Requirements:

A valid California driver’s license, Class A with hazmat and tank 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. Fork Lift Operator’s Certification is required.

All employees exposed to electricity of 50 volts or more are required to be properly trained and provided with personal protective equipment to include requirements set forth in NFPA 70 E.

PHYSICAL AND MENTAL DEMANDS

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

FLSA DETERMINATION: Non-exempt.
Physical Demands

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools or controls; and reach with hands and arms. The employee frequently is required to stand and talk or hear; walk or sit; climb and balance; stoop, kneel, crouch or crawl.

The employee must regularly lift and/or move up to 50 pounds and frequently lift and/or move over 100 pounds. Specific vision abilities required by this job include close vision, distance vision, color vision, peripheral vision, depth perception and the ability to adjust focus.

Mental Demands

While performing the duties of this class, the incumbent is regularly required to use written and oral communication skills; read and interpret data, information and documents; analyze and solve problems; use shop mathematics; observe and interpret situations; deal with changing, intensive deadlines; and interact with officials and the public.

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.

The employee frequently works outside in a wide range of weather conditions, near moving mechanical parts, and on slippery and uneven surfaces. Employees may, at times, be required to wear appropriate personal protective equipment including respiratory protection while performing work in environments that could have the potential to contain wet or humid conditions, vapors or particulates, hazardous chemicals, and the risk of electric shock. The noise level in the work environment is frequently loud.

FLSA DETERMINATION: Non-exempt.
FLEX REQUIREMENTS
Industrial Engine Technician I (Flex)
Industrial Engine Technician II

LENGTH OF TIME REQUIRED

An Industrial Engine Technician I may advance or “flex” to the Industrial Engine Technician II class after 6-24 months of experience in the Industrial Engine Technician I class.

PERFORMANCE RATING

The incumbents must receive an overall performance rating of “Meets Expectations” or better on their most recent annual performance evaluation in order to flex to the higher class.

COMMENTS

The Industrial Engine Technician I must also demonstrate proficiency to perform the full range of duties as described in the Industrial Engine Technician I/II job description. This includes demonstrating proficiency in the overhaul of industrial gas and diesel engines, shaft alignments, turbochargers, catalytic converters, engine control system maintenance/repair, engine tune-up, troubleshooting/repair of rotating equipment, and use of hot tank and solvent cleaning tank.

A valid California driver’s license, Class A, with hazmat and tank 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. Fork lift operator’s license is required.