

BUILDING OPERATING ENGINEER, 5923
SENIOR BUILDING OPERATING ENGINEER, 5925
CHIEF BUILDING OPERATING ENGINEER, 5927

Summary of Duties: Operates and maintains high pressure gas or oil fired boilers, gas or steam turbines, energy recovery boilers and heat exchangers, other heating systems, and their auxiliaries in supplying steam or high temperature hot water for space heating and similar purposes; operates and maintains large air conditioning machinery and other building service equipment; tests and monitors fire and life safety alarms and systems; or works with and supervises a small group of employees engaged in such work; or plans, coordinates and directs the work of employees engaged in such work; applies sound supervisory principles and techniques in building and maintaining an effective work force; fulfills affirmative action responsibilities; and does related work.

Distinguishing Features: The work of a **Building Operating Engineer** involves firing and maintaining high pressure steam boilers and other heating systems to supply steam for space heating and similar purposes; operating and maintaining high temperature hot water boilers, which may operate beyond 160 pounds psi and exceed 205 degrees Fahrenheit; operating ventilation equipment; testing, monitoring, and responding to fire and life safety systems and alarms; and operating and maintaining air conditioning plants including compressors, pumps, cooling towers and fans. In addition a Building Operating Engineer may monitor and adjust energy management computers and perform routine maintenance or make minor emergency repairs on plumbing, air conditioning, refrigeration, and electrical fixtures, and related equipment. An employee of this class may work rotating shifts. On night and weekend shifts, supervision received may be general and consist only of an evaluation of effectiveness as indicated by the efficiency with which building systems operate.

A **Senior Building Operating Engineer** normally works with and supervises a small group of Building Operating Engineers and is responsible for the safe, efficient and economical operation of building service equipment. Senior Building Operating Engineers may be required to work rotating shifts, but most work the day shift. An employee of this class may stand a regular operational shift, may do maintenance work on the building service equipment, and may issue keys in large buildings.

A **Chief Building Operating Engineer** is responsible for planning, coordinating, and directing the work of employees engaged in operating and maintaining building service equipment in several large buildings or a central operating plant, preparing budget estimates, compiling cost reports, recommending operating improvements, and may be responsible for the operation of elevator and escalator equipment.

Incumbents in both the classes of Senior Building Operating Engineer and Chief Building Operating Engineer, as bona fide supervisors, are distinguished from lead workers in that they are responsible for the full range of supervisory activities including: application of discipline, processing and resolution of grievances, evaluation of performance, and approval of time off requests.

Examples of Duties:

Building Operating Engineer:

- * Operates and services high pressure, high temperature, hot water and steam boilers, preheaters, vacuum and condensate systems, valves, pumps, and other boiler room machinery and equipment.
- * Fires automatic and manual, natural and forced draft boilers, which includes adjusting fuel and air ratios, regulating water levels, adjusting steam flow, and lighting burners with automated or manual methods in order to ensure safe and efficient boiler operation.
- * Secures automatic and manual, natural and forced draft boilers by shutting off fuel, turning off main stop valve, maintaining system steam flows, water levels, steam pressure and temperature, ensuring safe boiler shut down.

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- * Performs steam boiler and related equipment operating inspections including testing boiler safety equipment, reviewing temperature and pressure logs, and visually inspecting equipment such as controls, valves, and auxiliary pumps, to insure optimal equipment operation.
- * Tests boiler water and chemically corrects for hardness, suspended solids, hydrogenion concentration, and for phosphate and carbonate content.
- * Tests cooling tower water for algae and hydrogen ion concentrations.
- * Tests chilled and hot water systems for corrosion.
- * Mixes and adds chemicals to boiler and cooling water for prevention of scale and corrosion, and purges boiler water.
- * Repairs boilers and related equipment, to include cleaning boiler internal and preparing them for inspection, cleaning boiler burners, tubes, and strainers, repacking and replacing valves, checking for and repairing leaks, replacing pipes if necessary, cleaning and repacking sight glasses, checking steam traps, and related fittings.
- * Checks, replaces, and adjusts fan belts, cleans screens, lubricate bearings, replaces defective bearings, changes filters, and take differential pressure readings to ensure proper operation of ventilation equipment.
- * Operates, lubricates, maintains and replaces parts, and performs both major and minor repairs on large air conditioning refrigeration compressors, condensers, evaporators, cooling towers, pumps, electronic and pneumatic controls, heat exchangers, package units, and water softeners.

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- * Regenerates water softeners, including adjusting water flow timing, renewing brine solution, and washing out the softener.
- * Maintains proper refrigerant charge in refrigeration units.
- * Regulates acid pumps to maintain proper pH of system water.
- * Keeps logs and records of operations, including temperatures, pressures, water, and fuel consumed, power consumed and co-generated, meter readings, maintenance work performed, and Air Quality Management District reports.
- * May be responsible for the operation and maintenance of building service equipment in outlying buildings.
- * May perform miscellaneous minor emergency trouble shooting on piping and plumbing fixtures, electrical equipment, and special equipment such as radiators, laundry washers and dryers, floor cleaners, and refrigerated air conditioning units.
- * Tests the running of emergency equipment such as generators, fire pumps, air conditioning equipment, and power supplies in order to assure systems will function when needed.
- * Monitor and may operate fire, life safety, and energy management computers.
- * Responds to fire alarms by notifying appropriate agency and investigating incident.
- * Compiles energy expenditure, electrical cogeneration output, and water consumption data, for heating and cooling systems.

Senior Building Operating Engineer: Works with and supervises a small group of Building Operating Engineers performing the above work, and:

- * Inspects work in progress and upon completion for conformance to standards and for satisfactory operation of the units.
- * Inspects building service equipment to determine repair needs.
- * Estimates cost of repair work.
- * Determines which repair and maintenance tasks fall within the capabilities of the operating personnel and which require specialists.
- * Makes reports of equipment operation, installation, and maintenance work performed and of materials, supplies, and equipment used.
- * Schedules testing and maintenance of fire and life safety equipment, alarm systems, and computer based control systems.
- * Requisitions tools, materials and supplies.
- * Keeps time and other related records.
- * May stand a regular operational shift.
- * May personally perform maintenance work or the more complicated repair work on building service equipment, except elevators.
- * May do minor emergency trouble shooting on plumbing and electrical equipment.
- * Oversees or personally performs operations in a central control room setting including monitoring data received from remote locations, controlling equipment, responding to

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occupant complaints to ensure effective building systems operations.

- * Reprograms computer based building controls systems.
- * Performs mathematical conversions such as cubic feet per minute to pounds per hour, gallons per minute, and horsepower conversions in order to calculate usages, determine efficiency, and make reports to outside agencies.
- * Oversees testing of emergency generators.
- * May issue keys for a large building.

Chief Building Operating Engineer: Plans and coordinates the operation and maintenance of building service equipment in several large buildings or at a large central operating plant, and:

- * Prepares specifications for tools, materials, and supplies.
- * Reviews and compiles cost reports.
- * Prepares budget estimates for operation and maintenance costs.
- * Verifies appropriateness and accuracy of water, power, and fuel use records, AQMD reports, and reports the operation and maintenance of building heating, cooling, and electrical systems.
- * Analyses incident reports of emergencies to determine causes, evaluate appropriateness of responses, and formulate preventive measures.
- * Inspects in-progress and completed work involved in operation, maintenance and repair of building systems, excepting elevators, ensuring proper completion, and reporting progress to management.
- * May perform emergency trouble shooting on piping, plumbing, electrical, and refrigeration systems in order to assist subordinates in trouble diagnosis.
- * Reviews records or personally observes the test running of emergency equipment such as generators, fire pumps, smoke, fire, and flow alarms, air conditioning equipment, and power supplies in order to ensure systems will function when needed.
- * Recommends service improvements.
- * May direct the preparation of schedules for elevator operations in several large buildings.
- * May supervise Instrument Mechanics engaged in the maintenance and repair of building service and related equipment.

Senior Building Operating Engineer and Chief Building Operating Engineer:

- * May inspect repair work performed by outside contractors on service equipment.
- * Communicates equal employment/affirmative action information to employees.
- * Applies job-related criteria in selecting, orienting, assigning, training, counseling, evaluating and disciplining subordinates.
- * Assists employees in preparing for promotion, as described in the City's Affirmative Action Program.

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All Classes: May occasionally be assigned other duties for training purpose s or to meet technological changes or emergencies.

Qualifications: Incumbents must have the following knowledges and abilities:

Knowledges of:

	Building Operating Engineer	Senior Building Operating Engineer	Chief B u i l d i n g Operating Engineer
Principles and practices used in the operation of high and low pressure gas or oil fired boilers, including high temperature hot water boilers, and their auxiliaries.	Good	Good	Good Tools, methods and practices involved in the cleaning and maintenance of steam and high temperature hot water boilers, including the replacing of pipes and valves. Hazards and proper safety precautions involved in high pressure boiler operation.
	Good	Good	Principles and practices involved in the operation and maintenance of air conditioning and ventilating systems, refrigeration systems, water softeners, and similar equipment.
	Good	Good	Procedures involved in the testing of boiler and cooling tower water for undesirable qualities, and the chemicals used in water treatment.

Working	Working	Good	Operating principles of compressed air system service and control including pressure regulators, air control valves, driers, safety devices, and valve replacement techniques sufficient to operate, maintain, and repair them if necessary.
Good	Good	Working	Fire alarm systems, fire pumps, and emergency generator operation sufficient to run the equipment when necessary.
Working	Working	General	Principles of electricity such as wiring and connections at a level sufficient to work on electrical equipment in safety and without causing equipment damage.
Working	Working	Working	Operation of computer based building control systems sufficient to perform trouble shooting.
Working	Good	Good	Supervising principles, and practices including: planning, delegating, and controlling the work of subordinates.
	Good	Good	Techniques of training, instructing and evaluating subordinate's work performance.
	Good	Good	Techniques of counseling, disciplining, and motivating subordinate personnel.
	Good	Good	The procedures for grievance handling.
	Good	Good	Supervisory responsibility for EEO/AA as set forth in the City Affirmative Action Program.
General	Good	Good	Effective safety principles and practices
	Good	Good	City personnel rules,

General	General	General	<p>policies, and procedures. Memoranda of understanding as they apply to subordinate personnel.</p> <p>Problems involved in elevator operations.</p> <p>Ability to:</p> <p>Use safely the hand and power tools such as grinders, drills, and pneumatic tools commonly used in maintenance and repair of various building operating equipment.</p> <p>Interpret trouble calls and make appropriate corrective decisions.</p> <p>Keep routine operation records.</p> <p>Analyze indications of building system problems and anticipate malfunctions to determine preventive action.</p> <p>Perform arithmetic calculations (addition, subtraction, multiplication and division) sufficient to calculate fuel use, power, water consumption, and BTUs.</p> <p>Read and understand manufacturers manuals and brochures of instructions used in the repair and replacement of defective thermostats sufficient to effectively use them when making repairs.</p>
	Working	Working Working	
X	X		
X	X		
X	X		
X	X	X	
X	X	X	
X	X	X	
			X
X	X	X	Read schematic

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		diagrams and drawings of equipment in order to use them when necessary to maintain or repair equipment.
x	x	Supervise a group of employees engaged in the operation and maintenance of building service equipment.
x	x	Inspect building equipment and determine maintenance and repair needs, estimate time, cost, and materials, and plan and schedule work.
x	x	Inspect contract repair work on building service equipment for conformance to specifications.
x	x	Read blueprints and make drawings of layouts.
x	x	Keep operating and maintenance cost reports;
x	x	Prepare rough specifications for tools, materials, and supplies.
x	x	Prepare elevator and escalator operation schedules for a large building.
	x	Prepare budget and comprehensive administrative reports.
	x	Interact effectively with a variety of individuals, including coworkers, vendors, building tenants, and the public.
x	x	Communicate clearly, concisely, and effectively orally and in writing.
x	x	Establish and maintain a work environment to enhance both employee morale and productivity.
x	x	Apply sound supervisory principles and techniques.

Physical Requirements:

Building Operating Engineer and Senior Building Operating Engineer: Strength to perform average lifting up to 35 pounds and occasionally over 70 pounds; back and leg coordination involved in such activities as stooping, kneeling, crouching, climbing, and crawling to an unusual extent; arm, hand, and finger dexterity with both hands in such activities as reaching and handling; and good eyesight and hearing.

Chief Building Operating Engineer: Strength to perform lifting up to 5 pounds and occasionally over 15 pounds; and good eyesight and hearing.

Those with medical limitations may be able to perform the duties of some positions with reasonable accommodation. The decision to accommodate someone's limitations will be made on an individual basis and depends on the types of limitations, what the hiring department can reasonably do to accommodate them, and the specific qualifications for the job.

As provided in Civil Service Commission Rule 2.5 and Section 4.55 of the Administrative Code, this specification is descriptive, explanatory and not restrictive. It is not intended to declare what all of the duties and responsibilities of any position shall be.