

**COMPETENCY MODEL FOR  
BUILDING OPERATING ENGINEER  
CLASS CODE 5923**

The following competencies have been identified as those that best separate superior from satisfactory job performance in the class of **BUILDING OPERATING ENGINEER**. (Numbers refers to the order of competencies in the Competency Bank.)

- 8. Safety Focus
- 10. Physical Capability
- 16. Objectivity
- 20. Job Knowledge
- 23. Equipment Operation
- 24. Mechanical Aptitude
- 26. Electrical Understanding
- 35. Teamwork
- 45. Oral Communication

On the following pages are descriptions of each competency, including a definition, the level of the competency required for the class (*italicized*, **bolded**, and underlined), examples of behavioral indicators, and satisfactory and superior performance levels.

**8. SAFETY FOCUS** – Performs work in a way that minimizes risk of injury to self or others.

Level of Competency Required by Job:

Level 1: Maintain awareness of unsafe conditions and actions to avoid injury.

Level 2: Follow safety rules/procedures; avoid known hazards in the work environment.

**Level 3: Carefully follow safety rules and procedures and consistently use all necessary safety equipment.**

Examples of Behavioral Indicators:

- Wears seat belt.
- Ensures safe physical work environment by taking actions such as eliminating unstable stacks of materials, closing drawers so filing cabinets will not tip over, and keeping pathways clear of tripping hazards.
- Reviews safety procedures before beginning each job with known hazards.
- Follows safety procedures while performing work even when it takes more time.
- Uses safety equipment such as goggles, gloves, and earplugs as required or warranted.
- Frequently checks safety equipment for proper condition and operation.

Performance Levels:

Satisfactory

Maintains awareness of personal safety to avoid injury or property damage during all work activities.

Superior

“Safety first.” Places avoidance of injury or property damage above all other job requirements. Mentions the need to follow safe work practices to co-workers. Actively seeks ways to avoid injury.

### **Safety Focus Area**

1. Knowledge of potential safety hazards involved in high pressure boiler operation and the precautions that should be taken to mitigate them, including adhering to Department, City, and/or State safety regulations and procedures, such as those related to the proper use of tools and personal protective equipment (PPE) sufficient to ensure the safety of oneself and others.

**10. PHYSICAL CAPABILITY** – Strength, endurance, flexibility, and/or coordination.

Level of Competency Required by Job:

Level 1: Sitting and/or standing for extended periods of time.

**Level 2: Awkward body position and/or precise motions required; and/or repeated lifting, carrying, and/or manipulation of objects; and/or walking for extended periods of time.**

Level 3: Continuous or extreme exertion of physical effort.

Examples of Behavioral Indicators:

- Sits and may occasionally stand or walk for entire workday (except breaks).
- Walks for the duration of the workday.
- Repetitive motion required to perform task.
- Repeatedly lifts and carries heavy objects.
- Exerts maximal effort for extended periods of time.

Performance Levels:

Satisfactory

Performs tasks requiring physical capability satisfactorily and without undue physical stress or harm.

Superior

Performs tasks requiring physical capability correctly with relative ease. May be asked to perform the most physically demanding tasks or be sought by co-workers for assistance.

**16. OBJECTIVITY** – Demonstrates fairness and equity toward others; understands different perspectives; states sides of a conflict non-evaluatively; uses facts and logic.

Level of Competency Required by Job:

Level 1: Respond to the situation at hand and its specific circumstances as opposed to being influenced by previous encounters, stereotypes, or biases.

**Level 2: *Appropriately aligns self/organizational interest with objectives to benefit the overall organization and/or citizenry.***

Level 3: Appropriately aligns self/organizational interest with the “common good” (citizens, other public sector agencies, elected officials).

Examples of Behavioral Indicators:

- Notes facts and circumstances specific to the situation.
- Formulates plans for action based on the totality of factual information.
- Gives full attention to each task/issue within areas of responsibility.
- Clearly demonstrates the benefits of actions to the overall organization, citizens, and/or the “common good.”
- Does not take positions or promote actions/causes that reflect blatant self interest.

Performance Levels:

Satisfactory

Focuses on and reacts to all facts and information available for each situation/issue. Disregards personal preferences or biases in appraisal of situation/issue and response to it.

Superior

Strives to serve the “common good.” Responds in a manner contrary to self-interest when appropriate.

**20. JOB KNOWLEDGE –** Knows information required to perform a specific job. Includes both widely available courses of study (for example, chemistry, human resources management, graphic arts) and City-specific information (parking regulation and ticketing practices; purchasing procedures; provisions of the City Charter).

Level of Competency Required by Job:

Level 1: Knowledge is concrete, factual, and/or procedural and may be defined by the organization. Situations in which it is applied are quite consistent.

**Level 2: Knowledge is substantive and may be defined by an external trade, field, or profession. Situations in which it is applied vary and, as such, require breadth and depth of understanding.**

Level 3: Knowledge is abstract, conceptual, and/or complex and may be supported by a well-defined academic discipline or authoritative sources (e.g., laws, ordinances, government guidelines/regulations/ codes). Situations in which it is applied may vary greatly or be novel.

Examples of Behavioral Indicators:

- Performs work correctly/avoids technical (job content related) errors.
- Answers technical questions about work accurately.
- Asks few technical questions about the performance of routine work activities.
- Offers advice (“coaching”) to new employees regarding their work.
- Develops training programs for other employees.
- Sought out as a source of information by others.

Performance Levels:

Satisfactory

Sufficient job knowledge to perform work correctly independently. Answers technical questions about work correctly.

Superior

Expertise in technical job information sufficient to serve as a resource to others. May develop training manuals/programs and/or give internal and/or external presentations related to work.

## **Job Knowledge Areas**

1. Knowledge of the operating principles and construction of oil and gas-fired boilers, combustion turbine generators, auxiliary equipment, and pressure reducing stations including steam, heat recovery steam generators, high pressure, hot water and waste-heat boilers such as exhaust gas flow patterns, burner mounts, safety devices, firebox lining, gas passes, pressure reducing valves, gas compressors, and water flow patterns sufficient to ensure the effective and safe operation of such equipment, including their start up and shut down.
2. Knowledge of the methods and techniques used to clean and maintain oil, gas-fired, and waste-heat boilers, and related auxiliary equipment including burner tips, water tubes, forced draft fans, safety valves, and low level water cut-outs such as enclosed space entry safety procedures sufficient to maintain their continued operation, prevent breakdowns, and pass safety inspections.
3. Knowledge of water treatment processes including the proper use and handling of chemicals, and the methods for interpreting their associated test results sufficient to add the proper dosage of chemicals based on the results of the test, prevent equipment damage, and effectively conserve water.
4. Knowledge of the methods used to interpret blueprints, schematic diagrams, and online computer print-outs such as alarm signals, equipment malfunctions, temperature readouts, and other systems data sufficient to accurately diagnose and properly respond to potential equipment and machinery problems.
5. Knowledge of the methods and techniques used to identify and diagnose equipment issues, such boilers, air conditioning and chiller equipment, pumps, compressors, building systems, and other related equipment, including interpreting instrument readings and monitoring equipment for vibrations, sounds, abnormal temperatures, and leaks sufficient to effectively identify the cause of the issue and take appropriate, timely action.

**23. EQUIPMENT OPERATION –** Operates specialized equipment in performance of job duties.

Level of Competency Required by Job:

- Level 1: Operate equipment based on on-the-job training.
- Level 2: Operate equipment based on attendance at a training program and practice.
- Level 3: Operate equipment for which in-depth, complex training was required and which may require certification.**

Examples of Behavioral Indicators:

- Operates equipment proficiently.
- Operates equipment with strict adherence to safety procedures.
- Understands the operation of equipment used on the job and correctly answers questions about it.
- Willingly participates in any training necessary to maintain up-to-date knowledge of equipment operation.

Performance Levels:

Satisfactory

Operates equipment safely and with a high degree of proficiency.

Superior

Operates equipment with extreme proficiency and correctly answers questions about its operation. Trains and/or coaches others in the operation of equipment.

## **Equipment Operation Areas**

1. Operation and maintenance of air conditioning machinery, chiller plants, cooling towers, and air handling units including manual, mechanical, and chemical methods for tube cleaning, and the detection of failing bearing and fan belts sufficient to ensure their safe and continuous operation.
2. Operation of compressed air systems including their service and controls such as pressure regulators, air control valves, driers, safety devices, and valve replacement techniques sufficient to operate, maintain, and repair the systems when necessary.
3. Operation of emergency generators, fire alarm systems, and fire pumps including the use of a synchroscope sufficient to effectively respond to emergency situations and run the equipment when necessary.
4. Operation of computer based building control systems including building automation sufficient to analyze indications of building system problems, anticipate malfunctions, perform troubleshooting, determine preventative action, and inspect contract repair work on building service equipment for conformance to specifications.

**24. MECHANICAL APTITUDE** – Accurately predicts the impact of forces on objects and assesses the behavior of other physical phenomena (e.g., volume, weight, velocity). Readily learns work involving the application of mechanical principles.

Level of Competency Required by Job:

Level 1: Maintain a safe work environment by ensuring objects in it are stable, tools and equipment are properly used.

**Level 2: Know the physical properties of objects in the work environment and correctly anticipate the action of forces upon them; performs work accordingly (correctly and safely).**

Level 3: In-depth understanding of mechanical and physical phenomena sufficient to design and/or oversee the construction of systems.

Examples of Behavioral Indicators:

- Recognizes the impact of an earthquake on objects in the work environment and re-arranges them as possible to avoid possible damage or destruction and potential to cause injury.
- Uses tools properly to accomplish work correctly and safely.
- Recognizes the effects of various actions on objects and performs only those actions that will accomplish intended result and will not cause property damage or injury.
- Systems designed and/or for which construction is overseen operate as intended upon completion.

Performance Levels:

Satisfactory

Recognizes the operation of mechanical/physical phenomena sufficient to readily learn and perform work of a mechanical nature.

Superior

Displays exceptional insight into the operation of mechanical phenomena, and makes correct inferences regarding it. Promptly and accurately troubleshoots problems.

**26. ELECTRICAL UNDERSTANDING** – Comprehends the concept and the operation of flow of electrical current.

Level of Competency Required by Job:

Level 1: Know the properties of electricity relevant to the work environment and work to be performed in order to correctly perform work and recognize hazards that will be created by the failure to do so.

**Level 2: Sufficient understanding of electricity to recognize problems and determine repair needed to prevent disaster/restore operation.**

Level 3: In-depth understanding of electrical principles and phenomena sufficient to design and/or oversee the installation of complex electrical systems.

Examples of Behavioral Indicators:

- Ensures safe physical work environment by taking actions such as eliminating exposed electrical wire, faulty connections, empty sockets, and overloaded circuits.
- Recognizes the danger of fire from faulty electrical installations.
- Uses tools, equipment, and instruments properly to accomplish electrical work correctly and safely.
- Systems designed and/or for which installation is overseen perform as intended upon completion.

Performance Levels

Satisfactory

Understands the operation of electricity sufficient to readily learn and perform electrical work.

Superior

Displays exceptional insight into the operation of electrical systems, and makes correct inferences regarding them. Promptly and accurately troubleshoots problem.

### **Electrical Understanding Area**

1. Knowledge of the principles of electricity as they relate to wiring and connections sufficient to safely and efficiently perform work on electrical equipment without causing any damage.

**35. TEAMWORK** – Interacts effectively with others to achieve mutual objectives; readily offers assistance to others to facilitate their goal accomplishment.

Level of Competency Required by Job:

Level 1: Work effectively as a member of a work unit or project team. Readily offer assistance to others when they have too much work or have too little.

**Level 2: *Work effectively as a team member in which different people have different roles/responsibilities and perspectives. Identify points for collaboration with co-workers; readily offer and request assistance.***

Level 3: Work effectively as a part of an interdependent team (your work gets done only if the work of the whole team is done; evaluation of team performance is more relevant than individual performance).

Examples of Behavioral Indicators:

- Discusses work-related matters with co-workers.
- Offers and requests assistance readily.
- Offers and is receptive to suggestions.
- Identifies problems with workflow that will prevent team from accomplishing its goals.
- Provides constructive criticism and feedback to team members to improve overall functioning of team.
- Assigns credit to team for accomplishments.

Performance Levels:

Satisfactory

Cooperates with co-workers and fulfills responsibilities as a member of a project team. Maintains a focus on common objectives and offers and requests assistance readily.

Superior

Sees the team as a whole; acknowledges that performance of the team is what in reality is evaluated by others. If anyone fails, everyone on the team fails.

**45. ORAL COMMUNICATION** – Communicates orally in a clear, concise, and effective manner.

Level of Competency Required by Job:

Level 1: Exchange specific, job-related information orally with others in the immediate work environment or via telephone and/or radio.

**Level 2: Obtain/provide/present general and/or job-specific information orally to a variety of others in various situations.**

Level 3: Obtain/provide/present a diverse array of information orally at varying levels of complexity to a wide range of others across many different situations and circumstances.

Examples of Behavioral Indicators:

- Audience clearly understands the intended message.
- Rarely must repeat information in response to questions.
- Refrains from use of unnecessary words, phrases, or jargon.
- Provides a level of detail appropriate to the situation (avoids too much or too little detail).
- Speaks at a level appropriate to the audience in terms of terminology, sentence structure, and simplicity/complexity of ideas expressed.
- Uses words with precision (vocabulary) to convey exact information.

Performance Levels:

Satisfactory

Speaks clearly and audibly, providing the appropriate information and level of detail. Typically conveys the message on the first attempt. Answers questions accurately and directly.

Superior

Speech is direct and to the point. Speaks convincingly and with authority when appropriate. Maintains sensitivity to the audience while providing thorough information with the appropriate level of detail through the use of precise language.