

OPERATING ENGINEER SERIES

Code No.	Class Title	Occ. Area	Work Area	Prob. Period	Effective Date	Last Action
1393	Assistant Operating Engineer	15	170	6 mo.	03/01/16	Rev.
1392	Operating Engineer	14	170	6 mo.	03/01/16	Rev.
1402	Operative Crane Engineer	14	170	6 mo.	03/01/16	Rev.
1759	Operating Engineer Foreman	14	170	6 mo.	03/01/16	Rev.

¹*Promotional Lines: 32; 219*

Series Narrative

Employees in this series operate and/or supervise the operation of power equipment used in construction or maintenance work.

DESCRIPTION OF LEVELS OF WORK

Level I: Assistant Operating Engineer **1393**

Employees at this level operate lighter duty power equipment under general supervision and learn to operate heavy-duty power equipment under direct supervision.

An Assistant Operating Engineer typically –

1. operates light-duty construction equipment, such as tractors, hydraulic sprayers, pumps, rollers, winches, and other husbandry equipment.
2. learns to run a skid loader, backhoe, and air compressor.
3. learns to properly maintain and perform minor repairs on light and/or heavy-duty construction and husbandry equipment.
4. performs ice and snow removal duties as required.
5. performs other related duties as assigned.

Level II: Operating Engineer **1392**

Employees at this level operate heavy-duty power equipment used in construction and maintenance work. They work under general supervision from a designated supervisor.

An Operating Engineer typically

1. operates heavy-duty power equipment such as backhoes, forklifts, telehandlers, front-end loaders, bulldozers, trackhoes, and power graders, used in construction and maintenance work.

¹ See the Index of Classes to determine which line(s) the individual classes of the series are a part of. See the Promotional Line List for listing of the classes in each promotional line.

2. loads and unloads coal, sand, gravel, steel, and other heavy materials with power equipment; performs below-grade excavation.
3. provides general overview and guidance, such as that relating to site safety, to other employees including other Operating Engineers.
4. performs minor repairs and preventative maintenance on power equipment such as, backhoes, forklifts, telehandlers, front-end loaders, bulldozers, trackhoes, and power graders.
5. may receive guidance on techniques, methods, and best practices in the safe and proper operation of power equipment.
6. performs ice and snow removal using heavy-duty power equipment as required.
7. performs duties consistent with the next lower level of the series.
8. performs other related duties as assigned.

Level III: Operative Crane Engineer**1402**

Employees at this level utilize a high level of skill and precision to operate heavy-duty power equipment used in construction and maintenance work, including cranes. They work under general supervision from a designated supervisor.

An Operative Crane Engineer typically

1. operates heavy-duty power equipment such as cranes, backhoes, forklifts, telehandlers, front-end loaders, bulldozers, trackhoes, and power graders, used in construction and maintenance work.
2. loads and unloads coal, sand, gravel, steel, and other heavy materials with power equipment; performs below-grade excavation.
3. shares techniques, methods, and best practices with Operating Engineers or other employees in the operation of heavy-duty power equipment.
4. performs minor repairs and preventative maintenance on power equipment such as cranes, backhoes, forklifts, telehandlers, front-end loaders, bulldozers, trackhoes and power graders.
5. performs duties consistent with the next lower level of the series.
6. performs other related duties as assigned.

Level IV: Operating Engineer Foreman**1759**

Employees at this level supervise the work of operating engineers and other assigned personnel performing construction and/or maintenance work. They work under general supervision from a designated supervisor.

An Operating Engineer Foreman typically

1. supervises operating engineers and other assigned personnel, with responsibility for recommending hiring, discipline, and performance evaluation.
2. coordinates work assignments, such as cost and time estimates, scheduling, and distribution of work and equipment, as well as coordinating assignments with other work areas.
3. coordinates and/or supervises the training of operating engineers and other assigned personnel.
4. prepares and maintains records, such as amount of work completed, time spent per assignment, costs, materials used, attendance at and completion of training programs, etc.
5. ensures that safety procedures are followed at all times.
6. is accountable for the maintenance, use, and repair of assigned equipment.
7. performs duties consistent with the next lower level of the series.
8. performs other related duties as assigned.

MINIMUM ACCEPTABLE QUALIFICATIONS REQUIRED FOR ENTRY INTO:

Level I: Assistant Operating Engineer

1393

CREDENTIALS TO BE VERIFIED BY PLACEMENT OFFICER

1. One year of experience and/or vocational training in the operation, maintenance, and minor repair of lighter duty power equipment used in construction and maintenance work, such as tractors, hydraulic sprayers, pumps, rollers, winches, and other husbandry equipment.
2. Possession of a valid driver's license appropriate to the equipment to be driven.

KNOWLEDGE, SKILLS AND ABILITIES (KSAs)

1. Building and Construction — Knowledge of materials, methods, and the tools involved in the construction or repair of houses, buildings, or other structures such as highways and roads.
2. Coordination — Adjusting actions in relation to others' actions.
3. Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.
4. Troubleshooting — Determining causes of operating errors and deciding what to do about it.
5. Depth Perception — The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object.

6. Multilimb Coordination — The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing, or lying down. It does not involve performing the activities while the whole body is in motion.
7. Near Vision — The ability to see details at close range (within a few feet of the observer).
8. Far Vision — The ability to see details at a distance.
9. Manual Dexterity — The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.
10. Arm-Hand Steadiness — The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.
11. Reaction Time — The ability to quickly respond (with the hand, finger, or foot) to a signal (sound, light, picture) when it appears.
12. Operating Vehicles, Mechanized Devices, or Equipment — Running, maneuvering, navigating, or driving vehicles or mechanized equipment, such as forklifts, passenger vehicles, aircraft, or water craft.
13. Inspecting Equipment, Structures, or Material — Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
14. Getting Information — Observing, receiving, and otherwise obtaining information from all relevant sources.
15. Controlling Machines and Processes — Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
16. Handling and Moving Objects — Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
17. Communicating with Supervisors, Peers, or Subordinates — Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
18. Processing Information — Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data.

Level II: Operating Engineer**1392****CREDENTIALS TO BE VERIFIED BY PLACEMENT OFFICER**

1. Successful completion of a recognized Operating Engineer apprenticeship program or four (4) years of journey-level operating engineer experience that includes two (2) years of below-grade excavation experience.
2. Possession of a current Forklift certification and a Rough Terrain certification.

3. Possession of a valid driver's license appropriate to the equipment to be driven.

KNOWLEDGE, SKILLS AND ABILITIES (KSAs)

1. Building and Construction — Knowledge of materials, methods, and the tools involved in the construction or repair of houses, buildings, or other structures such as highways and roads.
2. Mechanical — Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
3. Operation and Control — Controlling operations of equipment or systems.
4. Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.
5. Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
6. Coordination — Adjusting actions in relation to others' actions.
7. Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.
8. Troubleshooting — Determining causes of operating errors and deciding what to do about it.
9. Control Precision — The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions.
10. Depth Perception — The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object.
11. Multilimb Coordination — The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing, or lying down. It does not involve performing the activities while the whole body is in motion.
12. Near Vision — The ability to see details at close range (within a few feet of the observer).
13. Far Vision — The ability to see details at a distance.
14. Manual Dexterity — The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.
15. Problem Sensitivity — The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
16. Rate Control — The ability to time your movements or the movement of a piece of equipment in anticipation of changes in the speed and/or direction of a moving object or scene.

17. Arm-Hand Steadiness — The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.
18. Reaction Time — The ability to quickly respond (with the hand, finger, or foot) to a signal (sound, light, picture) when it appears.
19. Operating Vehicles, Mechanized Devices, or Equipment — Running, maneuvering, navigating, or driving vehicles or mechanized equipment, such as forklifts, passenger vehicles, aircraft, or water craft.
20. Inspecting Equipment, Structures, or Material — Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
21. Getting Information — Observing, receiving, and otherwise obtaining information from all relevant sources.
22. Controlling Machines and Processes — Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
23. Monitor Processes, Materials, or Surroundings — Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.
24. Handling and Moving Objects — Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
25. Making Decisions and Solving Problems — Analyzing information and evaluating results to choose the best solution and solve problems.
26. Communicating with Supervisors, Peers, or Subordinates — Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
27. Processing Information — Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data.
28. Repairing and Maintaining Mechanical Equipment — Servicing, repairing, adjusting, and testing machines, devices, moving parts, and equipment that operate primarily on the basis of mechanical (not electronic) principles.

Level III: Operative Crane Engineer**1402****CREDENTIALS TO BE VERIFIED BY PLACEMENT OFFICER**

1. Successful completion of a recognized Operating Engineer apprenticeship program or four (4) years of journey-level operating engineer experience that includes two (2) years of below-grade excavation experience.

2. Two (2) years of experience in the operation, maintenance, and minor repair of cranes or certification by the National Commission for the Certification of Crane Operators (NCCCO), Crane Institute of America or similar accrediting body in the area(s) of Mobile Crane Operator, Overhead Crane Operator, or similar certification.
3. Possession of a current Forklift certification and a Rough Terrain certification.
4. Possession of a valid driver's license appropriate to the equipment to be driven.

KNOWLEDGE, SKILLS AND ABILITIES (KSAs)

1. Building and Construction — Knowledge of materials, methods, and the tools involved in the construction or repair of houses, buildings, or other structures such as highways and roads.
2. Mechanical — Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
3. Operation and Control — Controlling operations of equipment or systems.
4. Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.
5. Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
6. Coordination — Adjusting actions in relation to others' actions.
7. Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.
8. Troubleshooting — Determining causes of operating errors and deciding what to do about it.
9. Control Precision — The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions.
10. Depth Perception — The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object.
11. Multilimb Coordination — The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing, or lying down. It does not involve performing the activities while the whole body is in motion.
12. Near Vision — The ability to see details at close range (within a few feet of the observer).
13. Far Vision — The ability to see details at a distance.
14. Manual Dexterity — The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.

15. Problem Sensitivity — The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
16. Rate Control — The ability to time your movements or the movement of a piece of equipment in anticipation of changes in the speed and/or direction of a moving object or scene.
17. Arm-Hand Steadiness — The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.
18. Reaction Time — The ability to quickly respond (with the hand, finger, or foot) to a signal (sound, light, picture) when it appears.
19. Operating Vehicles, Mechanized Devices, or Equipment — Running, maneuvering, navigating, or driving vehicles or mechanized equipment, such as forklifts, passenger vehicles, aircraft, or water craft.
20. Inspecting Equipment, Structures, or Material — Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
21. Getting Information — Observing, receiving, and otherwise obtaining information from all relevant sources.
22. Controlling Machines and Processes — Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
23. Monitor Processes, Materials, or Surroundings — Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.
24. Handling and Moving Objects — Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
25. Making Decisions and Solving Problems — Analyzing information and evaluating results to choose the best solution and solve problems.
26. Communicating with Supervisors, Peers, or Subordinates — Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
27. Processing Information — Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data.
28. Repairing and Maintaining Mechanical Equipment — Servicing, repairing, adjusting, and testing machines, devices, moving parts, and equipment that operate primarily on the basis of mechanical (not electronic) principles.

Level IV: Operating Engineer Foreman**1759****CREDENTIALS TO BE VERIFIED BY PLACEMENT OFFICER**

1. Successful completion of a recognized Operating Engineer apprenticeship program or six (6) years of journey-level operating engineer experience that includes two (2) years of below-grade excavation experience.
2. Two (2) years of experience in the operation, maintenance, and minor repair of cranes or certification by the National Commission for the Certification of Crane Operators (NCCCO), Crane Institute of America or similar accrediting body in the area(s) of Mobile Crane Operator, Overhead Crane Operator, or similar certification.
3. Possession of a current Forklift certification and a Rough Terrain certification.
4. Possession of a valid driver's license appropriate to the equipment to be driven.

KNOWLEDGE, SKILLS AND ABILITIES (KSAs)

1. Building and Construction — Knowledge of materials, methods, and the tools involved in the construction or repair of houses, buildings, or other structures such as highways and roads.
2. Mechanical — Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
3. Operation and Control — Controlling operations of equipment or systems.
4. Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.
5. Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
6. Coordination — Adjusting actions in relation to others' actions.
7. Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.
8. Troubleshooting — Determining causes of operating errors and deciding what to do about it.
9. Control Precision — The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions.
10. Depth Perception — The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object.

11. **Multilimb Coordination** — The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing, or lying down. It does not involve performing the activities while the whole body is in motion.
12. **Near Vision** — The ability to see details at close range (within a few feet of the observer).
13. **Far Vision** — The ability to see details at a distance.
14. **Manual Dexterity** — The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.
15. **Problem Sensitivity** — The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
16. **Rate Control** — The ability to time your movements or the movement of a piece of equipment in anticipation of changes in the speed and/or direction of a moving object or scene.
17. **Arm-Hand Steadiness** — The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.
18. **Reaction Time** — The ability to quickly respond (with the hand, finger, or foot) to a signal (sound, light, picture) when it appears.
19. **Operating Vehicles, Mechanized Devices, or Equipment** — Running, maneuvering, navigating, or driving vehicles or mechanized equipment, such as forklifts, passenger vehicles, aircraft, or water craft.
20. **Inspecting Equipment, Structures, or Material** — Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
21. **Getting Information** — Observing, receiving, and otherwise obtaining information from all relevant sources.
22. **Controlling Machines and Processes** — Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
23. **Monitor Processes, Materials, or Surroundings** — Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.
24. **Handling and Moving Objects** — Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
25. **Making Decisions and Solving Problems** — Analyzing information and evaluating results to choose the best solution and solve problems.
26. **Communicating with Supervisors, Peers, or Subordinates** — Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.

27. Processing Information — Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data.
28. Repairing and Maintaining Mechanical Equipment — Servicing, repairing, adjusting, and testing machines, devices, moving parts, and equipment that operate primarily on the basis of mechanical (not electronic) principles.
29. Supervisory ability – Lead and supervise staff and student workers.