

Senior Water Plant Operator

SUMMARY/PURPOSE

To maintain the safe and efficient operation of the City's Water Treatment Plant and Water Supply System, including stations, towers, and reservoirs, in accordance with the Safe Drinking Water Act.

DISTINGUISHING FEATURES OF THE CLASS

Employees at the Senior Water Plant Operator level are distinguished from the Water Plant Operator level by possessing their Minnesota Class "A" or "B" Water Supply System Operator's certification. They are certified by the MDH, and possess the knowledge needed to perform duties as assigned, and are expected to function with the highest amount of plant and system knowledge. This level exercises independent discretion and judgment in matters related to work procedures and methods.

SUPERVISION RECEIVED

The supervisor makes assignments by defining objectives, priorities, and deadlines and assists incumbents with unusual situations which do not have clear precedents. Incumbents plan and carry out the successive steps and handle problems and deviations in the work assignment in accordance with instructions, policies, previous training, or accepted practices in the occupation.

SUPERVISION GIVEN

Does not have direct supervisory responsibility but does have significant oversight of employees or projects that require delegation and direction over the work of others.

ESSENTIAL DUTIES AND RESPONSIBILITIES

1. Complete regular rounds and inspections of all Water Division facilities to ensure proper operations and functioning of process equipment and security of all buildings and stations, including monitoring in extreme weather conditions, such as high winds, lightning, blizzards, extreme cold, and stormy conditions.
2. Control the volume and pressure of raw, intermediate, backwash filters, and treated water to the appropriate points within the water system by monitoring and operating pumps and valves in order to meet demand for finished water.
3. Controls coagulation, flocculation, sedimentation, fluoridation, and disinfection in the treatment process to meet all applicable standards for potable water treatment.
4. Provide safe, high quality water in adequate supply to meet health and sanitary needs of customers, and conduct laboratory testing and monitoring of the treatment plant process to ensure requirements of the Safe Drinking Water Act are met.
5. Operate second, third, weekend, and holiday shifts without supervision, and make decisions and maintain equipment and processes used in treating and delivering water to produce potable water in accordance with all applicable standards.
6. Prioritize and process information pertaining to emergency maintenance needs by coordinating personnel and equipment to worksites.
7. Make initial assessments of an emergency and determine degree of danger, damage, urgency, and inconvenience involved.
8. Provide direction and assistance to others involved in operational and project problem solving.
9. Troubleshoot and correct abnormal operating conditions in emergencies, and make split-second decisions without supervision, in mechanical process, instrumentation, electrical, equipment and call out appropriate personnel to repair.
10. Assist with the delivery of hazardous chemicals received at the treatment facility.
11. Record, update, and log all pertinent data and information in regards to operation, monitoring, dosages, chemicals, and records for the operations, towers, stations, and reservoirs.
12. Collaborate with other individuals, within and without the City, in order to conduct regular repairs, upgrades, services, and emergency repairs that effect operations.
13. Maintain the plant operations 24/7/365, including operating 12-hour shifts, holidays, and weekends.

14. Be available in emergency situations, shift substitutions, to assist in operations of treatment plant or system.
15. Coordinate repairs to plant, system, station, reservoirs, startup/shutdowns with other services and contractors.
16. Train new operators in procedures and operations until ready to operate (4-6 months).
17. Be an effective team member by exhibiting self-motivation, supporting other employees in handling tasks, interacting effectively and respectfully with others, showing a desire to contribute to the team effort, accepting assignments willingly, and completing tasks within agreed upon timelines.
18. Coordinate with various City departments, other government agencies, and community groups to develop methods of sharing resources, minimizing duplication, and simplifying procedures.
19. Provide training on new or modified procedures and policies to all affected parties.
20. Coordinate and perform startups/shutdowns and operations of station pumps, reservoir levels, filters for work-pm-upgrades for functions and programs for the City.
21. In collaboration with the supervisor, organize and direct the work activities of assigned team, and determine work priorities, assignments, and work schedules.
22. Provide input on decisions regarding the hiring processes and onboarding procedures of personnel.
23. Establish and maintain positive working relationship with the supervisor and employees by maintaining two-way communication, producing consistent results, advocating for the team when appropriate, and offering expertise to improve processes, systems, and the organization.
24. Other duties may be assigned.

JOB REQUIREMENTS

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed are representative of the knowledge, skills, and abilities required.

1. Education & Experience Requirements
 - A. A minimum of five (5) years of full-time, verifiable professional experience operating a potable water treatment plant (surface water preferred).
 - B. Associate's Degree in Water Resource Technology or comparable degree preferred.
2. License Requirements
 - A. Possession of a Minnesota Class "A" or "B", Water Supply System Operator's Certificate.
 - B. Possess and maintain a valid Minnesota Class D driver's license or privilege.
 - C. Must obtain a Minnesota Special Boiler Operator's License within six (6) months of appointment and maintain thereafter.
3. Knowledge Requirements
 - A. Extensive knowledge of the methods, tools, equipment, chemicals, and materials used in the treatment of water for consumption.
 - B. Knowledge of basic electricity.
 - C. Knowledge of mechanical systems and plumbing.
 - D. Knowledge of water chemistry.
 - E. Knowledge of Supervisory Control Data Acquisition (SCADA) operations.
 - F. Knowledge of lagoon operations.
 - G. Basic operation of process meters.
 - H. Knowledge of mathematics used to calculate chemical dosages, flows, volumes and other related calculations.
 - I. Basic knowledge of electronics.
 - J. Knowledge of safe work practices associated with chemicals, high voltage electricity, large, moving equipment, gasses and liquids under pressure, and other occupational hazards.
 - K. Knowledge of computer operations.
 - L. Knowledge of problem-solving and conflict-resolution techniques.
 - M. Knowledge of applicable safety requirements.

- N. Knowledge of, or the ability to learn, City policies and procedures.
 - O. Knowledge of federal, state, and local laws, statutes, regulations, codes, and standards related to the area of responsibility.
 - P. Knowledge of effective leadership and personnel practices.
4. Skill Requirements
- A. Extensive skill in troubleshooting, maintaining, and repairing mechanical plumbing, electrical, and electronic systems.
 - B. Skill in accurately measuring and recording data using various means, including electronic computers.
 - C. Skill to calculate and predict chemical dosages and volumes.
 - D. Skill in the operation of office equipment including, but not limited to, general computer systems, job required software applications, the internet, and modern office equipment.
 - E. Skill in managing one's own time and the time of others.
 - F. Skill in completing assignments accurately and with attention to detail.
 - G. Skill in mediation and dispute resolution.
 - H. Skill in using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.
5. Ability Requirements
- A. Ability to predict water demand, possible leaks, and issues affecting the treatment process, water system, and operations through SCADA monitoring.
 - B. Ability to monitor and maintain safe levels and pressure of potable water to all residents, businesses, and communities served by the treatment plant and water system.
 - C. Ability to repair/change parts on hazardous chemical feed systems using appropriate PPE.
 - D. Ability to operate and maintain all of the equipment used in the treatment plant and water system.
 - E. Ability to troubleshoot using schematics, blueprints, O & M manuals, and technical drawings.
 - F. Ability to operate an overhead crane.
 - G. Ability to process information needed in operations, troubleshooting, and correcting processes.
 - H. Ability to read and interpret information from charts, maps, diagrams, gauges, meters, and computers.
 - I. Ability to use good judgment in decision-making.
 - J. Exhibits leadership qualities of dependability and accountability.
 - K. Ability to work alone unsupervised and make sound split second decisions.
 - L. Ability to work shifts, Holidays, weekends, and overtime and be available for on-call duty as needed.
 - M. Ability to use good judgment during emergency situations, such as unexpected events, power outages, and sudden mechanical failures.
 - N. Ability to create and maintain a positive working environment that welcomes diversity, ensures cooperation, and promotes respect by sharing expertise with team members, fostering safe work practices, and developing trusting work relationships.
 - O. Ability to communicate and interact effectively with members of the public.
 - P. Ability to communicate effectively both orally and in writing.
 - Q. Ability to recognize, analyze, and solve a variety of problems.
 - R. Ability to organize and prioritize work while meeting multiple deadlines.
 - S. Ability to handle difficult and stressful situations with professional composure.
 - T. Ability to work successfully as a member of a team and independently with minimal supervision.
 - U. Ability to train and lead others.
 - V. Ability to interpret and apply laws, contracts, regulations, policies, and procedures.
 - W. Ability to enforce safety rules and regulations.
 - X. Ability to maintain confidential information.

- Y. Ability to demonstrate dependability, responsibility, and consistency in job performance.
- Z. Ability to attend work as scheduled and/or required.

Physical Demands

The work requires some physical exertion such as long periods of standing; walking over rough, uneven, or rocky surfaces; recurring bending, crouching, stooping, stretching, reaching, or similar activities; recurring lifting of moderately heavy items such as record boxes. The work may require specific, but common, physical characteristics and abilities such as above.

Work Environment

The work environment involves high risks with exposure to potentially dangerous situations or unusual environmental stress requiring a range of safety and other precautions (e.g., working at great heights under extreme outdoor weather conditions, or in similar situations in which conditions cannot be controlled).

HR: HD	Union: Basic	EEOC: Technicians	CSB: 10/03/2023	Class No: 3330
WC: 7520	Pay: 34	EEOF: Utilities/Transportation	CC:	Resolution:
<i>Job title change from Water Plant Operator "A"</i>				

WATER PLANT OPERATOR "A" Senior Water Plant Operator

SUMMARY/PURPOSE

~~This is the highest class within the Water Plant Operator series who maintains a safe, reliable, and cost-efficient supply of potable water.~~

To maintain the safe and efficient operation of the City's Water Treatment Plant and Water Supply System, including stations, towers, and reservoirs, in accordance with the Safe Drinking Water Act.

DISTINGUISHING FEATURES OF THE CLASS

~~Employees at this the Senior Water Plant Operator level are distinguished from other the Water Plant Operator levels by the Water Plant Operator level of by possessing their Minnesota Class "A" or "B" Water Supply System Operator's certification achieved. They are certified by the MDH, and possess the amount of guidance and instruction knowledge needed to perform duties as assigned, and are expected to function with the highest amount of knowledge comparative to positions with lower certifications. Positions at plant and system knowledge. This level exercise exercises independent discretion and judgment in matters related to work procedures and methods.~~

SUPERVISION RECEIVED

The supervisor makes assignments by defining objectives, priorities, and deadlines and assists incumbents with unusual situations which do not have clear precedents. Incumbents plan and carry out the successive steps and handle problems and deviations in the work assignment in accordance with instructions, policies, previous training, or accepted practices in the occupation.

SUPERVISION GIVEN

Does not have direct supervisory responsibility but does have significant oversight of employees or projects that require delegation and direction over the work of others.

ESSENTIAL DUTIES AND RESPONSIBILITIES (other duties may be assigned)

- ~~1. Complete regular rounds and inspections of all Water Division facilities to ensure proper operating operations and functioning of process equipment and security of all buildings and stations, including monitoring in extreme weather conditions, such as high winds, lightning, blizzards, extreme cold, and stormy conditions.~~
- ~~2. Control the volume and pressure of raw, intermediate, backwash filters, and treated water to the appropriate points within the water system by monitoring and operating pumps and valves in order to meet demand for finished water.~~
- ~~3. Adjust feed rates of various chemicals as necessary to maintain prescribed dosage rates and Controls coagulation, flocculation, sedimentation, fluoridation, and disinfection in the treatment process to meet all applicable standards for potable water treatment.~~
- ~~1. Ensure all phases of the water treatment process are in accordance with applicable standards.~~
- ~~4. Provide safe, high quality water in adequate supply to meet health and sanitary needs of customers, and conduct laboratory testing and monitoring of the treatment plant process to ensure requirements of the Safe Drinking Water Act are met.~~
- ~~4.5. Operate second, third, weekend, and holiday shifts without supervision, and make decisions and maintain equipment and processes used in treating and delivering water to produce potable water in accordance with all applicable standards.~~
- ~~2. Predict demand for finished, potable water in all water systems served by the City of Duluth.~~
- ~~3. Maintain a sufficient volume and pressure of finished, potable water delivered to all the water systems served by the City of Duluth sufficient to meet their demands.~~
- ~~6. Prioritize and process information pertaining to emergency maintenance needs by coordinating personnel and equipment to worksites.~~
- ~~7. Make initial assessments of an emergency and determine degree of danger, damage, urgency, and inconvenience involved.~~
- ~~8. Provide direction and assistance to others involved in operational and project problem solving.~~

- 5.9. Troubleshoot and correct abnormal operating conditions in emergencies, and make split-second decisions without supervision, in mechanical process, instrumentation, electrical, equipment and call out appropriate personnel to repair.
10. Operate and maintain all equipment used in ~~Assist with the delivery of hazardous chemicals received at the treatment facility.~~
- 6.11. Record, update, and log all pertinent data and supply of water by the City of Duluth information in regards to operation, monitoring, dosages, chemicals, and records for the operations, towers, stations, and reservoirs.
4. ~~Report transmission or distribution losses to the proper individuals or agencies for correction.~~
- 7.12. Collaborate with other individuals, within and without the City, in order to conduct regular repairs, upgrades, services, and emergency repairs that effect operations efficiently.
5. ~~Communicate with others, orally and in writing, within and without the City, in a respectful, appropriate manner.~~
13. Maintain the plant operations 24/7/365, including operating 12-hour shifts, holidays, and weekends.
14. Be available in emergency situations, shift substitutions, to assist in operations of treatment plant or system.
15. Coordinate repairs to plant, system, station, reservoirs, startup/shutdowns with other services and contractors.
16. Train new operators in procedures and operations until ready to operate (4-6 months).
17. Be an effective team member by exhibiting self-motivation, supporting other employees in handling tasks, interacting effectively and respectfully with others, showing a desire to contribute to the team effort, accepting assignments willingly, and completing tasks within agreed upon timelines.
18. Coordinate with various City departments, other government agencies, and community groups to develop methods of sharing resources, minimizing duplication, and simplifying procedures.
19. Provide training on new or modified procedures and policies to all affected parties.
20. Coordinate and perform startups/shutdowns and operations of station pumps, reservoir levels, filters for work-pm-upgrades for functions and programs for the City.
21. In collaboration with the supervisor, organize and direct the work activities of assigned team, and determine work priorities, assignments, and work schedules.
22. Provide input on decisions regarding the hiring processes and onboarding procedures of personnel.
23. Establish and maintain positive working relationship with the supervisor and employees by maintaining two-way communication, producing consistent results, advocating for the team when appropriate, and offering expertise to improve processes, systems, and the organization.
24. Other duties may be assigned.

JOB REQUIREMENTS

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, ~~skills~~skills, and/or ~~ability~~abilities required.

1. Education and Experience Requirements
 - A. Five years ~~A~~ minimum of five (5) years of full-time, verifiable professional experience operating a potable water treatment plant (surface water preferred).
 - A-B. Associate's Degree in Water Resource Technology or comparable degree preferred.
2. License Requirements
 - A. Possession of a Minnesota Class "A" or "B", Water Supply System Operator's Certificate.
 - B. ~~Possession of~~ Possess and maintain a valid Minnesota ~~driver's~~ Class D driver's license or ~~equivalent privilege.~~
 - C. Must obtain a Minnesota ~~Second Class AC~~ Special Boiler Operator's License within six (6) months of appointment and maintain thereafter.

3. Knowledge Requirements

- A. Extensive knowledge of the methods, tools, equipment, chemicals, and materials used in the treatment of water for consumption.
- B. Knowledge of ~~high voltage (2400 V)~~basic electricity.
- C. Knowledge of mechanical systems and plumbing.
- D. Knowledge of water chemistry.
- E. Knowledge of Supervisory Control Data Acquisition (SCADA) operations.
- F. Knowledge of lagoon operations.
- G. Basic operation of process meters.
- E-H. Knowledge of mathematics used to calculate chemical dosages, flows, volumes and other related calculations.
- F-I. Basic knowledge of electronics.
- G-J. Knowledge of safe work practices associated with chemicals, high voltage electricity, large, moving equipment, gasses and liquids under pressure, and other occupational hazards.
- K. Knowledge of ~~microcomputer operation~~computer operations.
- L. Knowledge of problem-solving and conflict-resolution techniques.
- M. Knowledge of applicable safety requirements.
- N. Knowledge of, or the ability to learn, City policies and procedures.
- O. Knowledge of federal, state, and local laws, statutes, regulations, codes, and standards related to the area of responsibility.
- H-P. Knowledge of effective leadership and personnel practices.

4. Skill Requirements

- A. Extensive skill in troubleshooting, maintaining, and repairing mechanical plumbing, electrical, and electronic systems.
- B. Skill in accurately measuring and recording data using various means, including electronic ~~and~~ computers.
- C. Skill to calculate and predict chemical dosages and volumes.
- D. Skill in the operation of office equipment including, but not limited to, general computer systems, job required software applications, the internet, and modern office equipment.
- E. Skill in managing one's own time and the time of others.
- F. Skill in completing assignments accurately and with attention to detail.
- G. Skill in mediation and dispute resolution.
- H. Skill in using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.

5. Ability Requirements

- A. Ability to predict water demand, possible leaks, and issues affecting the treatment process, water system, and operations through SCADA monitoring.
- B. Ability to monitor and maintain safe levels and pressure of potable water to all residents, businesses, and communities served by the treatment plant and water system.
- C. Ability to repair/change parts on hazardous chemical feed systems using appropriate PPE.
- D. Ability to operate and maintain all of the equipment used in the treatment plant and water system.
- E. Ability to troubleshoot using schematics, blueprints, O & M manuals, and technical drawings.
- A-F. Ability to operate an overhead crane.
- B-G. Ability to ~~read~~process information ~~from~~needed in operations, troubleshooting, and enter information into ~~computers~~correcting processes.
- G-H. Ability to read and interpret information from charts, maps, diagrams, gauges, meters, and computers.
- I. Ability to use good judgment in decision-making.
- J. Exhibits leadership qualities of dependability and accountability.
- K. Ability to work alone unsupervised and make sound split second decisions.

- ~~D-L.~~ Ability to work shifts, Holidays, weekends, and overtime and be available for on-call duty as needed.
- ~~E-M.~~ Ability to ~~think and act with~~use good judgment during emergency situations, such as unexpected events, power outages, and sudden mechanical failures.

1. ~~Physical Ability Requirements~~

- ~~A.~~ Ability to transport oneself and the tools and materials used in the job to various locations within and without pump stations, the water treatment plant, and the City of Duluth.
- ~~B.~~ Ability to lift and carry up to 100 pounds occasionally with assistance and 50 pounds frequently. Representative tasks include unloading and transporting bagged chemicals and carrying replacement parts and repair tools.
- ~~C.~~ Ability to walk, crawl, push, pull, balance, climb using ladders and stairs, to make routine rounds, unload and transport chemicals, and maintain equipment located at some height above the ground.
- ~~D.~~ Ability to stoop, bend, reach handle, finger, and feel while maintaining equipment.
- ~~E.~~ Ability to talk, hear, taste, and feel, while communicating and diagnosing equipment malfunction.
- ~~F.~~ Ability to see at near, mid, and far ranges and to perceive depth and distinguish colors. Representative tasks include driving, and making rounds to detect incorrect plant operation.
- N. Ability to create and maintain a positive working environment that welcomes diversity, ensures cooperation, and promotes respect by sharing expertise with team members, fostering safe work practices, and developing trusting work relationships.
- O. Ability to communicate and interact effectively with members of the public.
- P. Ability to communicate effectively both orally and in writing.
- Q. Ability to recognize, analyze, and solve a variety of problems.
- R. Ability to organize and prioritize work while meeting multiple deadlines.
- S. Ability to handle difficult and stressful situations with professional composure.
- T. Ability to work successfully as a member of a team and independently with minimal supervision.
- U. Ability to train and lead others.
- V. Ability to interpret and apply laws, contracts, regulations, policies, and procedures.
- W. Ability to enforce safety rules and regulations.
- X. Ability to maintain confidential information.
- Y. Ability to demonstrate dependability, responsibility, and consistency in job performance.
- Z. Ability to attend work as scheduled and/or required.

Physical Demands

The work requires some physical exertion such as long periods of standing; walking over rough, uneven, or rocky surfaces; recurring bending, crouching, stooping, stretching, reaching, or similar activities; recurring lifting of moderately heavy items such as record boxes. The work may require specific, but common, physical characteristics and abilities such as above.

Work Environment

The work environment involves high risks with exposure to potentially dangerous situations or unusual environmental stress requiring a range of safety and other precautions (e.g., working at great heights under extreme outdoor weather conditions, or in similar situations in which conditions cannot be controlled).

HR: HD	Union: Basic	EEOC: Technicians	CSB:	Class No: 3330
WC: 7520	Pay:	EEOF: Utilities/Transportation	CC:	Resolution:
<i>Job title change from Water Plant Operator A</i>				