

WATER & WASTEWATER OPERATOR CERTIFICATION

This pamphlet contains a summary of the most commonly asked questions from operators and municipal officials concerning the OPERATOR CERTIFICATION LAW AND REGULATIONS. Answers to these questions should provide operators with needed information about the Operator Certification Program. The certification law is contained in SDCL Chapter 34A-3 and the regulations are contained in Section 74:21:02:01 through 71.

CERTIFICATION BOARD MEMBERS:

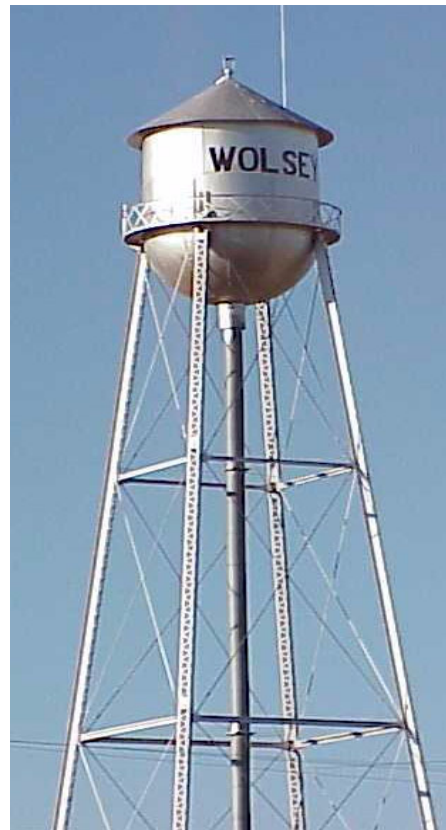
Chris Schmit-SDSU
Robin Bobzien-Aberdeen
Craig Wagner-Hartford
Bill Sarringar-Mid-Dakota RWS
Dave Van Cleave-Rapid City
Ryan Allen-Minnehaha RWS

OPERATOR TRAINING:

SD Association of Rural Water Systems
PO Box 287
Madison SD 57042-0287
Telephone: 605-556-7219

DANR

Rob Kittay-Secretary
Board of Operator Certification
Drinking Water Program
523 East Capitol Ave.-Foss Building
Pierre, SD 57501-3181
Telephone: 773-4208
Fax: 773-5286
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WATER AND WASTEWATER
OPERATOR CERTIFICATION IN SOUTH DAKOTA

1. Who must be certified?

An operator having the direct responsible charge of any of the following-

- A. Any wastewater treatment plant or wastewater collection system that serves 500 or more people (or a population equivalent of 500 people).
- B. ALL community and non-transient non-community water systems must have a certified water distribution operator. Any system that owns its own source and treats the water must have a certified water treatment operator.
- C. Any transient non-community water system using disinfection equipment or that uses surface water or groundwater under the influence of surface water.
- D. The following additional water operators must also be certified-
 - 1. An operator certified at the level of a particular water treatment plant or distribution system must be available for each operating shift.
 - 2. Any operator at a water treatment plant or distribution system making process control system integrity decisions about water quality or quantity that affect public health must be certified at any level.

2. Who may not become certified?

Municipal officials (mayors, municipal finance officers, auditors, public works directors, street department personnel, plant secretaries, plant maintenance workers, city engineers, etc.), engineers, students, and retired city employees who are not involved in the day-to-day water and wastewater operations may not take certification exams. A person must have work experience in the operational category (water treatment, distribution, wastewater treatment, collection) that he/she wishes to take an examination in. (A water distribution worker may not take an examination in water treatment.)

3. What about wastewater systems serving less than 500 people?

Wastewater treatment and collection systems that serve less than 500 people do not need to have certified operators at this time; however, the South Dakota Department of Agriculture and Natural Resources (DANR) recommends that these operators become certified voluntarily.

4. What do the terms "direct responsible charge" and "operator" imply?

"Direct responsible charge," in smaller facilities where shift operation is not required, refers to the person who is responsible and in active charge of the water or wastewater treatment plant's or distribution or collection system's performance and operation.

In larger facilities where shift operation is required, "direct responsible charge" shall mean both active daily on-site technical direction and supervision and active daily on-site charge of an operation shift or a major segment of a system or facility.

"Operator" is a person who does the day-to-day operational and technical activities of a water or wastewater treatment plant or water distribution system or a wastewater collection system. Plant maintenance is not operations work.

5. **Plants and systems are divided into four operational categories. The four categories are-**

1. Wastewater collection system;
2. Wastewater treatment plant;
3. Water distribution system; and
4. Water treatment plant.

Classes of plants and system- Each of the above categories are subdivided into four classes designated as Class I, II, III, or IV according to complexity of operation. Class IV is the highest or most complex.

6. **How do I become certified?**

To become certified, you must pass the required written examination. Certain education and experience requirements must be met in order to take an exam. Separate exams are given for each plant category and classification level. A passing grade is 70%. All exams have 110* Multiple Choice questions (one point each) except for the Stabilization Pond and Small Water Treatment System exams which have 50 Multiple Choice questions. The exams are provided by the Association of Boards of Certification (ABC).

*You are graded on 100 preset questions. The extra ten questions are experimental for ABC to see if they can be used on future exams. These ten questions are unknown to the examinee and the proctor.

The South Dakota Association of Rural Water Systems (SDARWS) presents training classes thru out the year on various topics pertaining to water and wastewater. These classes are usually one to three days in duration. These are excellent review sessions prior to the taking of an exam. Suggested study material is listed within this pamphlet. You do NOT have to attend a class to take an exam.

7. **When are the exams given?**

Water and wastewater examinations are given thruout the year at locations across the state. An operator may take more than one exam during an exam session; however, the exam session will last three hours. Exam dates and locations are available on Operator Certification web site, are published in Source-to-Stream*, and can be obtained by calling Rob Kittay at 605-773-4208.

Pre-registration is required for all operator certification exams. Applications with fee included must be received by the Secretary of the Board of Operator Certification two weeks before the test date. This two-week deadline is contained within the regulations. Applications will be accepted via FAX at 605-773-5286 or email with the fee to be mailed immediately afterwards. Applications may be obtained from the Secretary, the Operator Certification web site, and an application is contained as the last page of this pamphlet. (Feel free to copy as needed.)

Applications should be carefully filled out as this information is used to judge if a candidate is qualified to take an exam. Job duties described should be related to the exam that will be taken. For example, do not describe water distribution or street department activities if a water treatment exam is to be taken.

*A quarterly bulletin published by the SD Water and Wastewater Association, SD Section-American Water Works Association, and SD Water Environment Association and distributed to their members.

8. **What are costs to take an exam and to renew a certificate?**

As of July 1, 2021, all exams cost \$60.00, and there is no charge to renew the certificates.

9. **How often must my certificates be renewed?**

All certificates are renewed on February 1 of each year. Certificates are automatically renewed if the operator is still in the water/wastewater field and their contact hours are up to date in accordance with the chart below-

| Number and Type of Certificates | Contact Hours Required |
|--|------------------------------------|
| Operator has one certificate (Class I or II) | 10 contact hours every three years |
| Operator has one certificate (Class III or IV) | 20 contact hours every three years |
| Operator has more than one certificate and all are Class I and II | 15 contact hours every three years |
| Operator has more than one certificate and at least one certificate is a Class III or IV | 30 contact hours every three years |

Certificates not renewed for two consecutive years are then not renewable. Contact hours may be obtained by the attendance at training courses, seminars, etc. presented by various organizations.

10. How are water and wastewater treatment plants and systems classified?

Water and wastewater treatment plants are rated according to the technical difficulty to operate them. Each process within the plant is assigned a point value. The point system may be found in the regulations. Distribution and collection systems are rated by the number of people served.

If a groundwater system serves less than 500 people and chlorination is the only treatment, it is classified as a Small Water Treatment System and is required to have a Small Water Treatment System operator for its treatment system and a Class I Water Distribution operator for the distribution system.

If a groundwater system does **not** treat the water in any way, it is classified as a Water Distribution system.

If a water system does not have its own water source and is served by another public water system such as a rural water system, it is also classified as a Water Distribution system.

Class I Plants and Systems:

Wastewater collection systems and water distribution systems serving a population not over 1500 persons and wastewater and water treatment plants rated at 30 points or less.

Class II Plants and Systems:

Wastewater collection systems and water distribution systems serving a population from 1501 to 15,000 persons and wastewater and water treatment plants rated from 31 to 55 points.

Class III Plants and Systems:

Wastewater collection systems and water distribution systems serving a population from 15,001 to 50,000 persons and wastewater and water treatment plants rated from 56 to 75 points.

Class IV Plants and Systems:

Wastewater collection systems and water distribution systems serving a population 50,000 or more persons and wastewater and water treatment plants rated over 75 points.

11. What are the education and experience requirements for Class I operators?

- (1) Graduation from high school and
- (2) One year of experience without substitution.

Please note that operators are allowed to take an exam at any Class before they meet the education/experience requirements as long as they will be able to meet the full requirements within one year of passing an exam. If the operator passes an exam, he will receive the certificate when he meets the full education and experience required for the certificate.

12. **What are the education and experience requirements for Class II operators?**

- (1) Graduation from high school and
- (2) Three years of experience in a Class I facility or two years in a Class II or higher facility.

13. **What are the education and experience requirements for Class III operators?**

- (1) Completion of two years of college or vocational school majoring in engineering, environmental sciences, or related fields and
- (2) Four years of experience including at least two years of experience in a Class II or higher facility.*

OR

- (1) Graduation from high school and
- (2) Six years of experience including at least three years of experience at a Class II plant or higher.*

14. **What are the education and experience requirements for Class IV operators?**

- (1) Completion of a four year degree at a college or vocational school majoring in environmental engineering, environmental sciences, or related fields and
- (2) Four years of experience including at least two years of experience in a Class III or higher facility.*

OR

- (1) Graduation from high school and
- (2) Eight years experience including at least four years of experience in a Class III or higher facility.*

*Experience at the level below must be in the same exam category as the exam being taken with no substitution being allowed for these years. For example, if you are taking a Class IV Water Treatment exam and you do not have a college degree, you must have a total of eight years of water treatment experience with four of those years in water treatment at a Class III or higher water plant.

15. **Are there any substitutions for the education or experience requirements?**

The following substitutions are allowed:

- (1) The standard General Education Development Test (GED) shall be the equivalent of the graduation from high school.
- (2) One year of post-high school education may be substituted for one year of experience. One year of college or vocational education shall be thirty semester hours or forty-five quarter hours. Forty-five continuing education units (CEU's) are comparable to one year of college credit.
- (3) One year of operating experience may be substituted for two years of grade school or one year of high school (9th-12th grades) education.
- (4) Experience credited as an equivalent of education may not be applied to the qualification of "experience," nor may education credited as an equivalent of experience be applied to the qualification of "education." Only 50% of either the education or experience requirement may be substituted for.
- (6) Experience in construction dealing with water and wastewater plants and lines will usually be granted at one half the actual length of service. Situations are handled on a case-by-case basis.

The following definitions for experience requirements shall be used in determining the qualifications of operators:

- (1) Operating experience is time spent at a plant or system in satisfactory performance of duties. (Also see Question #4.)
- (2) Acceptable operation includes only work involved in operations. Reports made by DENR representatives will be used as a basis for determining whether or not operation is satisfactory.
- (3) For new systems, experience begins when a water system begins to pump water or a wastewater system begins to treat wastewater.

16. What about reciprocal certification?

Certificates of an equivalent grade may be issued without examination to any person who holds a certificate in any state, territory, possession of the United States, any foreign country, or from the Association of Boards of Certification (ABC) provided that the requirements for the certificate held do not conflict with the provisions of SDCL 34A-3, and are of a standard not lower than those in these regulations. Reciprocal privileges must be granted by that state to South Dakota certified operators. The operator should submit a copy of the certificate held along with \$60.00 and a completed Certification Thru Reciprocity Application. Reciprocity is judged on an individual basis by comparing the education and experience requirements for the out-of-state certificate with the requirements for South Dakota certificates. The application will be acted upon at the next Board of Operator Certification meeting.

17. If an operator leaves the water/wastewater field, may he/she keep the certificates?

An operator is allowed to renew the certificates twice after leaving the water/wastewater field (including retirement). If at the time of the third renewal, the operator is still out of the water/wastewater field, the certificates will be revoked. The operator may then regain the certificates thru examination.

A person maintaining some contact with the field (although not an operator such as a government employee, consulting engineer, etc. that deals with water/wastewater) may keep their certificates indefinitely. If the operator does not desire to keep the certificates, the Secretary should be notified.

18. Is there a wastewater treatment exam that deals solely with stabilization ponds?

Yes! To satisfy the requirements of a Class I Wastewater Treatment stabilization pond facility, an operator may take the Class I Stabilization Pond/Small Wastewater System exam. The Stabilization Pond exam has only 50 questions strictly dealing with ponds. The Class I Wastewater Treatment exam has 100 questions and deals with all types of wastewater treatment including mechanical plants.

19. Is there an examination for small water treatment systems?

Yes! To satisfy the requirements of a Class I Water Treatment facility that uses groundwater and has a population of less than 500 people, an operator may take the Class I Small Water Treatment System (SWTS) exam. The SWTS exam focuses on only the "need-to-know" for small water systems. Questions will be asked concerning chlorination, regulations, aeration, and general groundwater information. The SWTS goes into more depth in these areas than the regular Class I Water Treatment exam. The Class I Water Treatment exams also include questions on fluoridation, filtration, and surface water treatment.

20. What can a system do if its water/wastewater manager cannot become certified?

One option would be to contract with an operator that is certified. The Board can approve arrangements where a certified operator not under direct employment of a system can work as the system's certified operator. The contract operator must work a minimum number of hours per week and be in direct responsible charge of all operation and maintenance of the system.

21. **If one should desire to delve into the "ins" and "outs" of the certification program, where can these regulations be acquired?**

An oral or written request to the Secretary will get you a copy of the law (Chapter 34A-3) and/or the regulations (Chapter 74:21:01). The law and regulations are also available on the Web Site.

22. **If I do not agree with a decision made by the Secretary to the Board, what recourse or method of appeal do I have?**

The Secretary is accountable to the Board of Operator Certification. All decisions may be appealed to the Board that meets twice per year (September at the SDWWA Conference and in the spring). The Board may be addressed during any of its regular meetings. Operators desiring to address the Board must contact the Secretary to get on the meeting agenda.

23. **Does the Operator Certification Program have a Web Site?**

Yes, the Operator Certification Program maintains a web site on the Internet at <https://danr.sd.gov/OfficeOfWater/DrinkingWater/OperatorCertification/default.aspx>. The web site contains exam and reciprocity application forms, schedules of exams and training, the Operator Certification Law, and links to training/study material sites.

24. **What is a "Very Small Water System"?**

Any system serving less than 500 people that does not treat water is considered a "Very Small Water System". An operator must have a Water Distribution certificate.

25. **How long may a certified operator be away from his job before a system must hire another certified operator?**

If an operator goes on vacation or is away from the job for longer than one month, the system must hire another certified operator.

26. **Can non-certified operators take water samples?**

Yes-Non-certified operators can work under a certified operator that is in direct responsible charge (DRC) of a water system; however, the certified operator that is in DRC is ultimately responsible for any actions taken at a water system. It should be noted that a certified operator must take disinfect residuals that are required for compliance under the DBP Rule.

27. **What organizations provide training in South Dakota?**

SD Water and Wastewater Association
PO Box 353
Pierre SD 57501-0353
<http://www.sdwwa.org>

SD Association of Rural Water Systems
203 W Center
Madison SD 57042
605-556-7219
<http://www.sdarws.com>

SD Section-AWWA
<http://www.sdawwa.org>
sdawwa@yahoo.com

SD Water Environment Association

Midwest Assistance Program (MAP)
303 N Market-#2
Maryville MO 64468
605-690-5085
<http://www.map-inc.org>

28. **Are there study manuals available from the Operator Certification Program?**

Yes-The program obtained grant money from EPA to purchase some of the CSU-Sacramento Office of Water Programs study manuals (aka-Ken Kerri Manuals) to loan to small water systems to assist water operators in passing water exams. The available manuals are-

- Water Treatment Plant Operations Volumes I and II
- Water Distribution System Operation and Maintenance
- Small Water System Operation and Maintenance

To obtain any of the manuals, contact Rob Kittay at 605-773-4208.

Definitions of Operational Areas

Water Treatment includes all operations and activities from the source(s) to the point where water enters the distribution system.

Water Distribution includes all operations and activities from where the water leaves the plant or source and enters piping system.

Water Treatment Plant may range from a large surface water plant to a single chlorination unit.

Wastewater Treatment includes all operations and activities from where the wastewater enters the plant to the point of final discharge of effluent and sludge.

Wastewater Collection includes all operations and activities from discharge of wastewater from customers to the point where the wastewater enters the plant.

Wastewater Treatment Plant may range from a large, tertiary bio-mechanical plant to a one-celled lagoon (stabilization pond).

Operation is the day-to-day technical activities that are needed to run a water or wastewater treatment plant or water distribution system or a wastewater collection system. Plant maintenance (including but not limited to pump greasing, checking oil levels, grass cutting, floor sweeping, etc.) is not operations work. If you are working at a plant or system that is under construction and not being operated, this does not count as operating experience.

Water/Wastewater Exam Study Materials

Please call each of the mentioned organizations directly to order materials.

Office of Water Programs
CSU-Sacramento
6000 J Street-Modoc Hall
Sacramento CA 95819-6025
Phone: 916-278-6142 or 6366
Fax: 916-278-5959
Web site: <http://www.owp.csus.edu>
Email: wateroffice@owp.csus.edu

American Water Works Association (AWWA)
6666 W Quincy
Denver CO 80235
Phone: 303-794-7711 or 800-926-7337
Web site: <http://www.awwa.org>

Water Environment Federation (WEF)
601 Wythe
Alexandria VA 22314-1994
Phone: 703-684-2400
Web site: <http://www.wef.org>

For information on specific references and the need-to-know for each exam, please consult the following web site-

http://www.abccert.org/testing_services/2017StandardizedExamPilot.asp

Water Treatment

| | |
|---|----------------|
| <i>Water Treatment Plant Operation, Volumes 1 & 2</i> | CSU-Sacramento |
| <i>Utility Management</i> | CSU-Sacramento |
| <i>Manage for Success</i> | CSU-Sacramento |
| <i>WSO: Water Treatment Series (Grade 1, Grade 2, Grades 3 & 4)</i> | AWWA |
| <i>Water Treatment</i> | AWWA |
| <i>Water Quality and Treatment</i> | AWWA |
| <i>Basic Science Concept and Applications</i> | AWWA |
| <i>Water Sources</i> | AWWA |
| <i>Water Transmission and Distribution</i> | AWWA |
| <i>Water System Security-A Field Guide</i> | AWWA |
| <i>Operator Certification Study Guide</i> | AWWA |
| <i>Drinking Water Regulations</i> | AWWA |

Small Water Treatment

| | |
|--|----------------|
| <i>Small Water System Operation and Maintenance</i> | CSU-Sacramento |
| <i>Water Distribution System Operation and Maintenance</i> | CSU-Sacramento |
| <i>Utility Management</i> | CSU-Sacramento |
| <i>Manage for Success</i> | CSU-Sacramento |
| <i>Water Transmission and Distribution</i> | AWWA |
| <i>Water Distribution Operator Training Handbook</i> | AWWA |
| <i>Basic Science Concept and Applications</i> | AWWA |
| <i>Water Quality and Treatment</i> | AWWA |
| <i>Water System Security-A Field Guide</i> | AWWA |
| <i>Operator Certification Study Guide</i> | AWWA |
| <i>Drinking Water Regulations</i> | AWWA |

Water Distribution

| | |
|--|----------------|
| <i>Water Distribution System Operation and Maintenance</i> | CSU-Sacramento |
| <i>Water Treatment Plant Operation, Volumes 1 & 2</i> | CSU-Sacramento |
| <i>Utility Management</i> | CSU-Sacramento |
| <i>Manage for Success</i> | CSU-Sacramento |
| <i>WSO: Water Distribution Series (Grades 1 & 2, Grades 3 & 4)</i> | AWWA |
| <i>Water Transmission and Distribution</i> | AWWA |
| <i>Water Distribution Operator Training Handbook</i> | AWWA |
| <i>Basic Science Concept and Applications</i> | AWWA |
| <i>Water Quality and Treatment</i> | AWWA |
| <i>Water System Security-A Field Guide</i> | AWWA |
| <i>Operator Certification Study Guide</i> | AWWA |
| <i>Drinking Water Regulations</i> | AWWA |

Wastewater Treatment

| | |
|--|----------------|
| <i>Operation of Wastewater Treatment Plants, Volumes 1 and 2</i> | CSU-Sacramento |
| <i>Advanced Waste Treatment</i> | CSU-Sacramento |
| <i>Utility Management</i> | CSU-Sacramento |
| <i>Manage for Success</i> | CSU-Sacramento |
| <i>Operation of Municipal Wastewater Treatment Plants-MOP 11</i> | WEF |
| <i>Activated Sludge-MOP OM 9</i> | WEF |
| <i>Prime Movers: Engines, Motors, Turbines, Pumps, Blowers, ... MOP OM-5</i> | WEF |
| <i>Managing the W/WW Utility</i> | WEF |
| <i>Safety and Health in WW Systems-MOP 1</i> | WEF |
| <i>Wastewater System Regulations</i> | WEF |

Stabilization Ponds

| | |
|---------------------------------------|----------------|
| <i>Stabilization Pond Systems</i> | Minnesota PCA* |
| <i>Wastewater Stabilization Ponds</i> | WEF |

*Can be obtained at <https://www.pca.state.mn.us/sites/default/files/wq-wwtp8-22.pdf>

Wastewater Collection

| | |
|---|----------------|
| <i>Operation and Maintenance of Wastewater Collection Systems, Volumes I/II</i> | CSU-Sacramento |
| <i>Operation of Wastewater Treatment Plants, Volumes 1 and 2</i> | CSU-Sacramento |
| <i>Utility Management</i> | CSU-Sacramento |
| <i>Manage for Success</i> | CSU-Sacramento |
| <i>Operation of Municipal Wastewater Treatment Plants- MOP #11</i> | WEF |
| <i>Prime Movers: Engines, Motors, Turbines, Pumps, Blowers, ... MOP OM-5</i> | WEF |
| <i>Safety & Health in Wastewater Systems-MOP #1</i> | WEF |
| <i>Wastewater Collection Systems Management-MOP 7</i> | WEF |
| <i>WEF/ABC Collection Systems Operators' Guide to Preparing for the Certification Examination</i> | WEF |
| <i>Wastewater System Regulations</i> | WEF |

The CSU-Sacramento manuals are the prime references used for ABC exams.