

# 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 69.

## CERTIFICATION BOARD MEMBERS:

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## OPERATOR TRAINING:

SD Association of Rural Water Systems  
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Sioux Falls, South Dakota 57106  
Telephone: 336-7219

## DENR

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Board of Operator Certification  
Drinking Water Program  
523 East Capitol Ave.-Foss Building  
Pierre, SD 57501-3181  
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WATER AND WASTEWATER  
OPERATOR CERTIFICATION IN SOUTH DAKOTA

1. Who must be certified?

An operator having direct responsibility of any of the following-

- A. A water or wastewater treatment plant or a water distribution or wastewater collection system that serves 500 or more people (or a population equivalent of 500 people).
- B. Any water treatment plant that uses surface water or groundwater under the influence of surface water.
- C. Any water system using disinfection equipment.
- D. Beginning July 1, 2000, ALL community and non-transient non-community water systems must have a certified water treatment and distribution operator. See Question #24.

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 water and wastewater systems serving less than 500 people?

Some water and wastewater systems presently do not need to have certified operators. However, the South Dakota Department of Environment and Natural Resources recommends that these operators become certified voluntarily. Also see Question #24.

4. What does "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.

Direct responsible charge cannot be substituted for and must be accumulated at a water or wastewater 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 preceding categories shall be subdivided into four classes designated as Class I, II, III, or IV according to complexity of operation. Class IV shall be the highest or most complex.

Classification of collection and distribution systems shall be based upon population served. Classification of treatment plants and systems shall be based upon a point system in accordance with Sections 74:21:02:26 and 74:21:02:27.

6. How do I become certified?

To become certified, you must pass the required written examination. Certain education and experience requirements must be met to take an exam. Separate exams are given for each plant category and classification level. A passing grade is 70 points out of total of 100 points. Class I and II exams have 25 True-False (one point each), 25 Multiple Choice (two points each), and five Math Problems (five points each). Class III and IV exam have 20 True-False (one point each), 25 Multiple Choice (two points each), and ten Math Problems (three points each).

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 two days in duration. These are excellent review sessions prior to the taking of an exam. Suggested study material is listed within this pamphlet and is available from SDARWS (Phone: 605-336-7219).

7. When are the exams given?

Water and wastewater examinations are given between 12-18 times per year usually at the completion of a formal training course. Exam sessions for individual operators will not be scheduled. The taking of more than one exam during a test session is discouraged. The exam session will last three hours. No extra time will be allowed for extra exams. Advance times and locations are available on Operator Certification web site and are published in Clarifier\*. Definite times and dates can be obtained by calling Rob Kittay at 605-773-4208.

Pre-registration is required for all operator certification exams (including retake 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 with the fee to be mailed afterwards. No "walk-in" exams will be allowed. Applications may be obtained from the Secretary, 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 and distributed to its members.

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

A Class I exam costs \$5.00 and \$3.00 to renew.  
A Class II exam costs \$7.00 and \$4.00 to renew.  
A Class III exam costs \$9.00 and \$5.00 to renew.  
A Class IV exam costs \$10.00 and \$6.00 to renew.

9. How often must I renew my certificates?

All certificates must be renewed by February 1 of each year. Renewal notices are sent by the Secretary in December of each year. Renewals are the responsibility of each individual operator. Certificates not renewed for two consecutive years are then not renewable. Criteria for yearly renewal include the operator obtaining ten contact hours every four years. 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?

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.
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 majoring in environmental engineering, environmental sciences, or related fields and
  - (2) Four years of experience including at least two years of direct responsible charge experience in a Class II or higher facility.
- OR
- (1) Graduation from high school and
  - (2) Eight years of experience including at least four years of direct responsible charge at a Class II plant or higher.
14. What are the education and experience requirements for Class IV operators?
- (1) Completion of four years of college majoring in environmental engineering, environmental sciences, or related fields and
  - (2) Four years of experience including at least two years of direct responsible charge experience in a Class III or higher facility.
- OR
- (1) Graduation from high school and
  - (2) Twelve years experience including at least eight years of direct responsible charge in a Class III or higher facility.
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 education.
- (4) Two years of direct responsible charge experience at the level below may be substituted for a year of the formal education requirements at any level.
- (5) 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.

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, or any foreign country 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 a fee in accordance with Question #8 and a completed Certification Thru Reciprocity Application. Reciprocity is judged on an individual basis by comparing the education, experience, and DRC 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 gets out of 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 (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 facility an operator may take the Class I Stabilization Pond exam. This is an in-depth exam covering all facets of the operation of a stabilization pond.

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

Yes! To satisfy the requirements of a Class I Water Treatment facility (using groundwater with a population 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 responsible charge 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 which meets twice per year (September at the SDWWA Conference and February/March at an SDWWA seminar). 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 now maintains a site on the World Wide Web. The URL address is <http://www.state.sd.us/opercert>. The Operator Certification Program is within the DENR Permitting and Regulation Guide. The web site contains exam and reciprocity application forms, schedules of exams, the Operator Certification Law, and links to training and the Secretary to the Board.

24. Are there going to be any changes to the Operator Certification Program in the near future?

**Yes. The 1996 Amendments to the Federal Safe Drinking Water Act will require certified operators for ALL community and non-transient non-community water systems regardless of size.**

In an effort to meet these EPA requirements, the Department of Environment and Natural Resources (DENR) introduced Senate Bill 40 to the 2000 Legislature. This bill was overwhelmingly passed by both the Senate and House and was signed by Governor William Janklow on January 27, 2000. The effect of this legislation is that all community and NTNC water systems will need a certified operator beginning July 1, 2000.

To ease the compliance burden for small water systems, the legislation allows for "grandfathering" of the current operator for all water systems requiring a certified operator for the first time. These community and NTNC systems include-

Any groundwater system serving less than 500 people that does not use disinfection treatment, and

Any distribution system serving less than 500 people

Grandfathering will allow an operator to receive certification without having to pass an exam. There will be an application period from July 1 to December 31, 2000 for operators to apply for the restricted grandfathered certificate. All certificates are renewed on an annual basis. In order for these grandfathered certificates to be renewed for the first time, an operator must attend an approved water training class by February 1, 2002.

If your system is now being required to obtain this new certification, you will be provided with information and applications to apply for the grandfathered certificates this summer. Please note that if your water system uses disinfection equipment, you are not eligible for a grandfathered certificate as your water system is currently required to have a certified operator.

These changes in the Operator Certification Program do NOT affect your wastewater system in any way.

Changes for larger water systems include-

1. A certified operator must be available for each operating shift.
2. That any operator making process control-system integrity decisions about water quality or quantity that affect public health must be certified.

## Guidelines for Certification Time Frames

Operator that splits time between two areas needs a minimum of 30% time in lesser area to test.

Operator that splits time between three areas needs a minimum of 25% time in lesser areas to test.

Operator that splits time between four areas needs a minimum of 15% time in lesser areas to test.

## 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.

## Water/Wastewater Study Materials

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

Manual of Instruction for Wastewater Treatment Plant Operator (New York Wastewater Manual)  
Manual of Instruction for Water Treatment Plant Operator (New York Water Manual)

Health Research Inc.  
Health Education Services Division  
PO Box 7126  
Albany NY 12224  
Phone: 518-439-7286

Water Distribution Operator Training Handbook  
Water Chlorination Principles and Practices  
Water Fluoridation Principles and Practices  
Water Utility Management Practices  
Introduction to Water Distribution

American Water Works Association (AWWA)  
6666 W Quincy  
Denver CO 80235  
Phone: 303-794-7711  
Web site: [www.awwa.org](http://www.awwa.org)

Small Water System Operation and Maintenance  
Water Treatment Plant Operation  
Water Distribution System Operation and Maintenance  
Operation of Wastewater Plants-Vol I and II  
Operation and Maintenance of Wastewater Collection Systems-Vol I and II

Ken Kerri  
Office of Water Programs  
CSU-Sacramento  
6000 J Street  
Sacramento CA 95819-6025  
Phone: 916-278-6142 or 6366

Operation of Municipal Wastewater Treatment Plants-MOP 11  
Wastewater Collection Systems Management-MOP 7

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

Free Study Materials in all Areas of Water and Wastewater

South Dakota Association of Rural Water Systems  
5009 W 12th Street-#5  
Sioux Falls SD 57106  
Phone: 605-336-7219