

State of Maine



RULES RELATING TO THE LICENSURE OF WATER SYSTEM OPERATORS

Board of Licensure of Water System Operators

Department of Health and Human Services
11 State House Station
Augusta, Maine 04333-0011

Effective Date: June 1, 2007

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RULES RELATING TO THE LICENSURE OF
WATER SYSTEM OPERATORS

SUMMARY STATEMENT

These rules are designed to regulate the licensing of operators of water treatment systems and water distribution systems serving the public.

BASIS STATEMENT

These rules are established to protect the public health by insuring that operators of public water systems are qualified and have knowledge and ability to properly operate and maintain these systems.

AUTHORITY

22 MSRA § 2628

EFFECTIVE DATE: June 1, 2007

Non-Discrimination Notice

In accordance with Title VI of the Civil Rights Act of 1964, as amended by the Civil Rights Restoration Act of 1991 (42 U.S.C. 1981, 2000e et seq.) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), the Age Discrimination Act of 1975, as amended (42 U.S.C. 6101 et seq.), Title II of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.), and Title IX of the Education Amendments of 1972, the Maine Department of Human Services does not discriminate on the basis of sex, color, national origin, disability or age in admission or access to or treatment or employment in its programs and activities.

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SECTION 1

ADMINISTRATION

1. RULES

- A. The Board, in accordance with any other state laws, shall make such rules as are reasonably necessary to carry out the intent of the law.

2. CONSTITUTIONALITY CLAUSE

- A. If any section, subsection, sentence, clause, phrase or portion of these rules is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of these rules.

3. APPLICABILITY

- A. The Board shall license persons to serve as operators of public water systems. System types required to retain licensed operators are designated in Rules Relating To Drinking Water, 10-144, Chap 231. It shall be unlawful for any supplier of water so designated to operate a public water system unless the operator is duly licensed by the Board.
- B. Pursuant to 22 MRSA § 2623, it shall be unlawful for any person to perform the duties of an operator without being duly licensed as required under these rules.

SECTION 2

DEFINITIONS

AERATION - The process of adding air to water.

BOARD - State of Maine Board of Licensure of Water System Operators.

CONSECUTIVE SYSTEM - Any publicly or privately owned Public Water System that purchases or otherwise procures water from another Public Water System and stores and distributes that water for sale.

COMMISSIONER - The Commissioner of the State of Maine Department of Health and Human Services or the Commissioner's designee.

DEPARTMENT - State of Maine Department of Health and Human Services.

DIATOMACEOUS EARTH FILTERS – A process resulting in substantial particulate removal in which a precoat cake of diatomaceous earth filter media is deposited on a support membrane septum, and while the water is filtered by passing through the cake on the septum, additional filter media known as body feed is continuously added to the feed water to maintain the permeability of the filter cake.

DISTRIBUTION SYSTEM- A system of pipes and appurtenances by which a potable water supply is distributed to customers.

DIRECT FILTRATION – A series of processes including coagulation and filtration, but excluding sedimentation, resulting in substantial particulate removal.

DISSOLVED AIR FLOTATION - Process of solids removal wherein dissolved air is added to the clarifier from the bottom of the basin, causing suspended particles to rise to the surface and be removed by skimming

ELECTRODIALYSIS - Process where brackish water flows between alternating cation-permeable and anion-permeable membranes. A direct electric current provides the motive force to cause ions to migrate through the membranes and either react to create a gas or remain in a separate solution as brine wastewater.

GRANDFATHERING – The exemption for the existing operator(s) in responsible charge, as of September 30, 2000 from meeting the initial education and/or examination requirements for the classification of the system has been assigned.

HORIZONTAL FLOW - Flow of water in a horizontal direction through a rectangular or round sedimentation / clarification basin.

INJECTION MIXERS - Use of perforated tubes or nozzles to disperse a chemical into the water being treated.

IN-LINE BLENDER MIXER - Stationary blender used for coagulant mixing.

MECHANICAL DEWATERING - The use of mechanical devices such as belt filter presses, plate filter presses, centrifuges or other rotational mechanisms to force the separation of solids (sludge) from liquids (water).

MECHANICAL MIXERS - Paddles, turbines, and propellers used in coagulation facilities.

OPERATOR - An individual either employed or retained by a Public Water System, who, as part of their job duties, is assigned the responsibilities for operational activities that will directly impact the quality and/or quantity of water provided to consumers.

PUBLIC WATER SYSTEM- Is hereby incorporated by reference as defined in Title 22, Chapter 601, Section 2601 (8) of the Maine Revised Statutes.

pH ADJUSTMENT - The alteration of the pH of the raw water or pre-finished water by mechanical or chemical procedures to enhance the performance of the treatment process.

RECIPROCITY – Licensing of a person who has passed a written examination in another state and meets the experience and education requirements of these Rules.

REVERSE OSMOSIS - Passage of water from a concentrated solution through a semi-permeable membrane to fresh water by the application of pressure.

SCADA INSTRUMENTATION - Supervisory control and data acquisition system used to monitor and control remote water facility sites.

SOLID-CONTACT SEDIMENTATION - Unit which combines the coagulation, flocculation, and sedimentation processes in a single basin which is either rectangular or circular in shape. This process may be either gravity, upflow or pressurized. Flow is through a solids blanket of flocculated, suspended solids or buoyant medium.

SOLIDS COMPOSTING - Mixing of sludge with decaying organic material for eventual use as a soil amendment.

STABILITY OR CORROSION CONTROL - The removal of dissolved gases or addition of chemicals to render finished water non-corrosive or the addition of chemicals to form a protective coating inside pipes.

TUBE SEDIMENTATION - Tubes or inclined plates placed in rectangular or circular sedimentation basins to improve settling efficiency.

TRAINING CONTACT HOUR (TCH) – One clock hour of interaction as defined under contact. Contact is defined as interaction between a learner and instructor, or between a learner and materials, which have been prepared to facilitate learning. Contact implies two way communication in order for the learner to receive feedback to monitor and assess learning.

TREATMENT PROCESS AND/OR IN-LINE TREATMENT - Portion of the drinking water system containing various chemical additions and/or filtration processes, exclusive of transmission or distribution, which alters the physical, chemical, radiological or microbiological quality.

SECTION 3

WATER SYSTEM CLASSIFICATION

1. CLASSIFICATION

- A. Public water systems shall be classified according to two divisions – Treatment and Distribution.
- B. Public water systems shall be classified as set forth in these rules based on system capacity, source, complexity of treatment, and other physical conditions affecting public water systems.
- C. Systems shall retain an operator or operators duly licensed for Treatment System and Distribution System at the Class level designated for the system.
- D. The Board shall assign classification value points to treatment technologies not listed in the point rating schedule on a case by case basis.
- E. If a treatment system or distribution system will be upgraded in class as a result of changes being made to the system, and the operator of that system does not hold the appropriate license for the upgraded class, the operator must upgrade the license by passing the next scheduled operator examination. Failure to pass the appropriate examination prior to completion of the system upgrade will make the operator ineligible to continue to operate the system. The system must then employ a licensed operator or enter into a contractual agreement with a licensed operator of proper classification.

2. GRANDFATHERING

- A. Systems which must for the first time have a licensed operator(s) as a result of state rules or regulations to require compliance with Environmental Protection Agency Final Guidelines for the Certification and Recertification of the Operators of Community and Non-transient Non-community Public Water Systems may apply to the Board for grandparenting by September 30, 2002.
- B. The Board, with the advice of the Commissioner, may grant or deny grandfathering based on system compliance history. Grandfathering must be granted or denied within 90 days of receiving application.
- C. Grandfathering shall be site specific and non-transferable.

- D. Within 24 months of the date the system is grandfathered, the operator must demonstrate that he or she has the necessary skills, knowledge, ability and judgment for the classification by passing the appropriate classification of examination for the system they operate.
- E. If the classification of the treatment system or distribution system changes to a higher level, then the grandfathered certificate will no longer be valid.

3. PUBLIC WATER SYSTEM CLASSES

- A. Treatment classification is determined by a point system as outlined in Appendix A and Table 1. below.

Table 1. Treatment Classification

Classification	Total Points (From App. A.)
Very Small Water System (VSWS)	19 or less and serving <500 Pop.
Class I	19 or less
Class II	20 to 34
Class III	35 to 47
Class IV	48 or more

- B. Distribution classification is based on population served as outlined in Table 2 below.

Table 2. Distribution Classification

Classification	Population Served
Class I	1,500 and less
Class II	1,501 to 15,000
Class III	15,001 to 50,000
Class IV	50,001 and over

SECTION 4

OPERATOR CLASSIFICATION

1. GENERAL REQUIREMENTS

- A. License applicants must pass an examination for the Class for which licensure is sought in addition to examinations for all lower Classes, except that passing a VSWS examination is not a prerequisite to sit for Class I. The Board may choose to administer examinations in sequential or direct-entry format.
- B. Work experience in a Public Water System is defined as that gained in actual performance of operational activities within any Public Water System.
- C. Related experience may include, but is not limited to, wastewater treatment plant operations, pilot studies, design, planning, construction and other technical disciplines.
- D. All applicants must submit satisfactory evidence of graduation from high school or an equivalency certificate, except as otherwise provided in §5(4)(B)(1)(a)(i).

(1) Education requirement waiver for grandparented Very Small Water System (VSWS) operators: A grandparented operator of a VSWS who does not hold a high school diploma or GED and has been grandparented pursuant to §3(2) may apply to sit for the VSWS examination if the public water supply in which the grandparented operator is in responsible charge has a satisfactory compliance history. A satisfactory compliance history for these purposes is defined as 24 continuous months of operation with no more than two (2) violations.

- E. Each applicant shall satisfy the experience requirements for the Class of license requested. Education may be substituted for experience as set forth below. Transcripts or other proof of completion must be provided to the Board.
 - (1) Post high school education in approved areas of engineering, science, and/or related fields: 60 semester hours or equivalent equals 1 year of experience.
 - (2) Specialized training courses will be evaluated on an individual basis.
 - (3) All experience and/or education submitted in support of applications that are not specified in this section shall be evaluated on an individual basis.

2. CLASS REQUIREMENTS

- A. There shall be five classifications of operators to parallel the classifications of public water systems. Very Small Water System (VSWS) licensed operators shall be considered qualified to supervise and operate a Very Small Water System, Class I licensed operators shall be considered qualified to supervise and operate a Class I water system, Class II licensed operators shall be considered qualified to supervise and operate a Class II water system, etc. Licenses shall be divided into treatment and distribution categories (Class I- IV).
- B. The requirements for these classifications are:
- (1) VSWS Operator: Six months of experience in a VSWS or higher water system or one year of related experience and pass the VSWS examination.
 - (2) Class I Operator: One year experience in a Class I or higher water system or two years of related experience and pass the Class I examination.
 - (3) Class II Operator: Two years experience in a Class I or higher water system or four years of related experience and pass the Class II examination.
 - (4) Class III Operator: Three years experience at a Class I or higher water system or six years of related experience and pass the Class III examination.
 - (5) Class IV Operator: Four years experience in a Class I or higher water system or eight years of related experience and pass the Class IV examination.

3. OPERATOR-IN-TRAINING

- A. Operator –in–Training means an operator who has passed an examination, but does not meet the experience requirements for the license. An operator with an Operator-in-Training license is not authorized to supervise and operate a classified water system.
- B. The requirements for the Operator-in-Training license are:
- (1) VSWS Operator-in-Training: Pass the VSWS examination. No experience necessary.
 - (2) Class I Operator-in -Training: Pass Class I examination (treatment and/or distribution). No experience necessary.
 - (3) Class II Operator-in-Training: Pass Class II examination (treatment and/or distribution). No experience necessary.
 - (4) Class III Operator-in-Training: Pass Class III examination (treatment and/or distribution). No experience necessary.

(5) Class IV Operator-in-Training: Pass Class IV examination (treatment and/or distribution). No experience necessary.

- C. Upon completion of the required experience, an Operator-in-Training may apply to the Board for the full level of license.
- D. The Operator-in-Training will have four years from the date of successful examination to complete required experience.

SECTION 5

LICENSING PROCEDURES

1. GENERAL PROVISIONS

- A. The Board shall license persons to operate a public water system or part of a system. Such licensure shall be granted based upon successful completion of an examination administered by the Board, except as noted. All applicants must meet the minimum education and experience requirements for the specific class to sit for examination for that class.
- B. Acceptance to sit for the examination will be granted upon receipt of a completed application form as prescribed by the Board, and payment by the applicant of the appropriate fee, provided the applicant meets the qualifications for the appropriate level of licensure. Such fees shall be determined by these rules. The fees from those failing to pass the examination will not be returned. Application for licensure shall be made on forms provided by the Board through the Department of Health and Human Services, 11 State House Station, Augusta, ME 04333-0011. Incomplete or illegible applications and those not notarized, or not accompanied by the required fee, will be returned to the applicant.
- C. A license will not be issued if the applicant fails to achieve a passing grade on the examination.
- D. An operator whose license has been revoked will not be allowed to sit for an examination for three years from the effective date of revocation.

2. FEES

A. Fees for licensure or recertification may not exceed the following:

- | | |
|---|----------|
| (1) Initial licensure with or without examination | \$ 70.00 |
| (2) Re-examination | \$ 70.00 |
| (3) Reinstatement of license | \$ 50.00 |

(4) Biennial renewal fee	\$ 60.00
(5) Issuance of duplicate license or certificate	\$ 25.00
(6) Issuance of license and certificate after successfully completing experience requirement with an Operator-in-Training license.	\$25.00

B. Checks shall be made payable to the "Treasurer, State of Maine."

3. EXAMINATIONS

- A. At least one series of examinations shall be held each year. The Board may conduct examinations as it deems necessary.
- B. Examinations shall be held at such date, place and time as the Board shall determine.
- C. Notice of such an examination shall be published in newspapers of general circulation at least 90 days prior to the examination and shall be sent to all interested parties.
- D. The scope of the examination and the examination procedure will be determined by the Board. In general, the examination shall cover the fundamentals of operation of a water system relating to the source, pumping, distribution, disinfection, water treatment, public health, administration and appropriate rules applicable to water systems.
- E. A summary of the results of the examination shall be forwarded to the applicant.

4. LICENSES

A. The Board shall issue biennial licenses to individuals to perform the duties of operators. The license shall indicate the classification level of the systems or parts of systems for the operation of which the individual is qualified to act as an operator.

B. Classes of License

(1) Licenses shall be issued in the following classes:

- (a) Very Small Water System (VSWS)
 - (i) Restricted: A restricted license shall be issued to persons applying for an examination who qualify for the education waiver applicable for grandparented operators identified in §4(1) (D)(1)

and pass the VSWS examination. Restricted licenses shall be site specific and non-transferable.

- (b) Class I:
 - (i) Water Treatment System
 - (ii) Water Distribution System
- (c) Class II:
 - (i) Water Treatment System
 - (ii) Water Distribution System
- (d) Class III:
 - (i) Water Treatment System
 - (ii) Water Distribution System
- (e) Class IV:
 - (i) Water Treatment System
 - (ii) Water Distribution System
- (f) Operator-in-Training
 - (i) VSWS
 - (ii) Class I Water Treatment
 - (iii) Class I Water Distribution

5. RECIPROCITY

The Board may issue a license upon application without examination in a comparable classification to any person who holds a license or certificate issued by any state, territory or possession of the United States or another country if in the judgment of the Board the requirements for licensure of operators of Public Water Systems are equivalent to those outlined in these rules.

6. REVOCATION AND SUSPENSION

The Board may suspend or revoke a license of a certified operator when it is determined that the operator has practiced fraud or deception; that the operator has been negligent in that reasonable care, judgment or the application of knowledge or ability was not used in the performance of duties; or that the operator is incompetent or unable to perform the duties of an operator properly.

Pursuant to 5 Maine Revised Statutes, Chapter 375, Subchapter 5, the Board may establish a procedure policy by which formal complaints against water operator licensees are accepted and processed.

SECTION 6

LICENSE RENEWAL

1. RENEWAL OF LICENSES – applies to standard, operator in training and restricted licenses.
 - A. The Board shall notify licensed water operators of the date of expiration of that person's license and the fee required for renewal for a two year period. The notice shall be mailed to the person's last-known address at least 60 days in advance of the expiration date of the license.
 - B. Licensees are responsible for updating license contact information with any changes within the renewal period.
 - C. Licensees must submit the renewal form together with the renewal fee no later than 60 days from license expiration date. Licenses that are not renewed by the deadline shall become inactive.
 - D. Beginning with all licenses renewed after December 31, 1998, as a prerequisite to license renewal, an applicant must show proof of completion of Training Contact Hours (TCH) acceptable to the Board as outlined below.
 - E. The licensee shall be responsible for providing proof of completion of the required Training Contact Hours (TCH) for their classification of license at the time of renewal. The Board will, at its discretion, verify submitted material for accuracy, applicability and acceptability.
 - F. License holders who allow their licenses to become inactive shall be reinstated upon payment of the reinstatement and renewal fees and upon proof the applicant has completed the required Training Contact Hours (TCH) provision pursuant to Subsection 6(2) of these Rules.
 - G. License holders who allow their licenses to remain inactive for two years or longer shall be removed from the master list of licensed operators maintained by the Department. A license holder whose name has been so deleted shall be required to submit an application for initial licensure.
2. TRAINING CONTACT HOURS
 - A. Training Contact Hours may be earned as follows:
 1. One Continuing Education Unit (CEU) equals ten Training Contact Hours (TCH).

2. One college level credit in chemistry, mathematics, biology, engineering or environmental sciences shall be equal to ten Training Contact Hours (TCH).
 3. Technical meetings, workshops, seminars, courses and classes as approved by the Board, shall be equal to the amount of hours attended with the maximum credit being six Training Contact Hours (TCH) per technical meeting per day. A description of the course, material covered, institution offering the course and instructor credentials must be submitted to the Board for approval.
 4. Successful completion of self-study educational courses offered by a Technical School, University, or Correspondence School.
 5. Other waterworks seminars and education courses. A description of the course, material covered, institution offering the course and instructor credentials must be submitted to the Board.
- B. Training shall be relevant. One hour of relevant training equals one Training Contact Hour (TCH). In order for training to be approved by the Board and count as Training Contact Hours (TCH), it must comply with the following criteria:
- The training shows a direct link to water quality, water supply, or protection of public health; and
 - The training is relevant to managing the operation or maintenance of public water systems; or
 - The training is relevant to the operation or maintenance of public water systems
- C. Training Contact Hours (TCH) must be earned for the highest license held. Operators holding both a Treatment System and Distribution System license shall be required to complete Training Contact Hours (TCH) for only one category.
- D. Prior to licensure renewal, the applicant, including holders of restricted VSWS and Operator- in-Training licenses, shall provide proof of completion of the following requirements during the last renewal cycle:

VSWS	6 Training Contact Hours
Class I	12 Training Contact Hours
Class II	18 Training Contact Hours
Class III	24 Training Contact Hours
Class IV	24 Training Contact Hours

Excess Training Contact Hours cannot be carried from one renewal period to the next period.

SECTION 7

ADMINISTRATIVE PROCEDURES

1. The Board shall provide written notice to operators or applicants for licensure of licensing decisions made pursuant to these rules. The notice shall be sent by regular mail and shall include notice of opportunity for appeal in accordance with this section.
2. An operator or applicant for licensure who is aggrieved by a decision of the Board may appeal by filing a written request. The request shall be filed with the Chair of the Board within thirty days of the postmarked date of the written notice of decision from the Board. The request shall specify all issues being raised on appeal. Failure to raise any issue shall be deemed a waiver.
3. The Board shall notify the appellant of the time, place and date of the appeal hearing within thirty days of receipt of the written request for appeal.
4. All hearings and appeals shall be conducted in accordance with the Maine Administrative Procedures Act, Title 5, Chapter 375, Subchapter IV, Sections 9051-9064.

Appendix A

Treatment System Classification Point Values

Item	Points
Size (2 point minimum to 10 point maximum)	
Maximum population (1 point minimum to 5 points maximum)	1 pt per 10,000
Design flow average (1 point minimum to 5 points maximum)	1 pt per MGD
Water Supply Sources	
Groundwater	3
Groundwater under the influence of surface water	5
Surface Water	5
Chemical Treatment / Addition Processes	
Fluoridation	5
<i>Disinfection:</i>	
Chlorination	5
Chloramination	10
Chlorine dioxide	5
Ultraviolet light	5
Ozonation	10
pH adjustment (calcium carbonate, carbon dioxide, hydrochloric acid, calcium oxide, calcium hydroxide, sodium hydroxide, sulfuric acid, other)	5
Stability or corrosion control (calcium oxide, calcium hydroxide, sodium carbonate, sodium hexametaphosphate, other)	5
Coagulation & Flocculation Process	
Chemical addition (aluminum sulfate, bauxite, ferrous sulfate, ferric sulfate, calcium oxide, bentonite, calcium carbonate, carbon dioxide, sodium silicate, other)	1 pt per chemical coagulant added (5 points max.)
<i>Rapid mix units:</i>	
Mechanical mixers	3
Injection mixers	2
In-line blender mixers	2
<i>Flocculation tanks:</i>	
Hydraulic flocculators	2
Mechanical flocculators	3
Clarification / Sedimentation Process	
Horizontal Flow (rectangular basins)	5
Horizontal Flow (round basins)	7
Solid-contact	15
Inclined-plate, tube	10
Dissolved air flotation	30
Filtration Process	

Single media filtration	3
Dual or mixed media filtration	5
Microscreens	5
Diatomaceous earth filters	5
Cartridge filters	
As pre-filter to another process	2
As microbiological removal	5
Slow sand filters	5
Direct filtration	5
Pressure or greensand filtration	5
Other Treatment Processes	
Aeration	3
Packed tower aeration	5
Ion exchange / softening (Cation, Anion, Adsorptive)	
To control Primary MCL contaminant	5
To control secondary MCL contaminant	2
Lime - soda ash softening	5
Membrane filtration- reverse osmosis, micro,ultra,nano	10
Powdered activated carbon	5
Other Processes	0 to 15
Residuals Disposal	
Discharge to lagoons	5
Discharge to lagoons and then raw water source	8
Discharge to raw water	10
Disposal to sanitary sewer	3
Mechanical dewatering	5
On-site disposal	5
Land application	5
Solids composting	5
Facility Characteristics	
<i>Instrumentation:</i>	
The use of SCADA or similar instrumentation to provide data with no process operation	0
The use of SCADA or similar instrumentation to provide data with limited process operation	2
The use of SCADA or similar instrumentation to provide data with moderate process operation	4
The use of SCADA or similar instrumentation to provide data with extensive or total process operation	6
Gravity Fed Systems	
Total atmospheric storage less than average day design flow	5