

What Is In This Chapter?

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The Alaska Department of Environmental Conservation (ADEC) administers the Operator Certification Program. The purpose of operator certification is to ensure that water system operators are qualified and competent. The program requires that operators meet eligibility requirements and pass certification exams. There are 10 different exams that vary in subject matter and difficulty, depending on the type and complexity of the water system operated.

There are two elements of operator certification:

- System classification is the process by which ADEC determines the complexity of a water system. The classification of a water system determines the required level of operator certification.
- Operator certification is the process by which operators demonstrate competency at a level comparable to system classification. For example, if a water treatment system is classified as class 2, the supervising operator of the system must pass the level 2 water treatment certification exam.

System Classification

The following water systems are required to have certified supervising operators:

- **Community or non-transient non-community water systems** serve 25 residents or 15 service connections year-round. Non-transient non-community water systems serve the same 25 people for at least six months of the year. Typical examples include community water systems, subdivisions, condo associations, schools, office buildings, and day-care centers.
- **Transient non-community** water systems that use a surface water source or a groundwater under the direct influence of surface water source. These systems serve 25 people per day for at least 60 day per year. Typical examples include lodges and restaurants.
- **Water distribution systems** that serve more than 500 people or more than 100 service connections. These systems are typically associated with a community system.

All of these water systems are classified into one of the following system types:

- **Small water systems** typically service fewer than 500 people and fewer than 100 service connections. In order for a system to be classified as small, there must be minimal or no treatment occurring at the system. When no chemicals are added at a small water system, the system is classified as small, untreated. When one chemical is added at a small water system, the system is classified as small, treated. Often, there will be some sort of “passive” treatment at a small water system, such as softeners or cartridge filters. Water systems with more complex treatment, such as multiple chemicals, chemically aided filtration, or membrane filtration are classified as water treatment systems.

Example: Consider a water system serving a small office building. Groundwater is pumped from a well and run through a softener. No chemicals are added to the water. This system is classified as small, untreated because no chemicals are added to the water. The classification is not affected by the use of a softener.

- **Water treatment systems** are classified according to complexity. Complexity is determined using a point rating system. Points are assigned for the design

capacity of the system, the water source, and each treatment component of the water system. Points are totaled once all components are considered. The total determines classification from class 1 to class 4, with class 4 systems being the most complex.

Points are associated with every imaginable component of a water treatment system. The point values for various components are established in the regulations that govern the program. The ranges of points used to determine the final classification are also found in the regulations.

Example: Consider a typical direct filtration surface water treatment system. The classification might be as follows:

Peak day design capacity (130,000 gallons per day)	9 points
Surface water as a source	6 points
pH adjustment	3 points
Coagulation (primary coagulant)	5 points
In-line static mixer used for mixing	1 point
Granular media filtration	8 points
Disinfection with powdered hypochlorites	3 points
Total	35 points

Systems totaling between 31 and 55 points are classified as class 2. Thus this system is a class 2 system.

- **Water distribution systems** are classified according to the number of service connections. The classification of a water distribution system increases from 1 through 4 as the number of service connections increases. Regulations specify the number of service connections for each classification of distribution system.

There are two caveats that will increase the classification of a water distribution system from that determined by the number of service connections. Water distribution systems with five or more pressure zones are classified one class higher. Additionally, water distribution systems where water is circulated or heated to prevent freezing in the distribution system are classified one class higher. The classification of a distribution system will increase only once, even if both conditions are present.

Example: Consider a North Slope water distribution system with 150 service connections. Water is heated and circulated in the distribution system to prevent freezing. Water distribution systems serving 15 to 500 service connections are initially classified as class 1. However, because water is heated and circulated to prevent freezing, the classification increases by one class. Thus this is a class 2 distribution system.

Operator Certification

There is a comparable level of certification for every class of system. Operators can become certified at the following levels:

- Small, Untreated
- Small, Treated
- Water Treatment levels Provisional, 1, 2, 3, and 4
- Water Distribution levels Provisional, 1, 2, 3, and 4

An operator must take and pass a certification exam to become certified. There is an education and experience prerequisite associated with each exam. The prerequisites increase with each higher level exam. For example, an operator needs three months of experience and a high school diploma to take the small, untreated exam, whereas an operator needs four years of experience and four years of postsecondary education to take the water treatment level 4 exam. The education and experience prerequisites for each exam are described in regulations.

Small, Untreated and Small, Treated Certification

Small, untreated and small, treated exams are offered twice per year in a paper and pencil format. Alternatively, the two exams are available online, year-round at seven prearranged locations. Water treatment and water distribution exams are available twice per year in a paper and pencil format. Additionally, the provisional level exams are available in conjunction with introductory courses, which are held at different times of the year at various locations around the State.

Provisional Level Certification

The Provisional level of certification replaces what was once called operator-in-training (OIT) certification. Operators must pass the level 1 exam to receive Provisional certification. In order to test for the provisional certification, an operator must have completed high school and have three months of experience. Provisional certificates can be upgraded to level 1 once the operator meets the level 1 experience requirements. The operator is responsible for applying for a certificate upgrade. OIT certificates cannot be upgraded without taking an exam; instead, operators with OIT certificates need to pass the level 1 exam to obtain provisional or level 1 certification.

There is an education renewal requirement associated with each certification. The continuing education unit (CEU) is the recognized unit of education. One CEU is equivalent to 10 hours of continuing education. An operator must earn 0.5 CEUs (five hours) of training during the three years prior to certificate expiration in order to renew a small, untreated certificate. An operator must earn 1.0 CEU (10 hours) of training during the three years prior to certificate expiration in order to renew a small, treated certificate. An operator must earn 3.0 CEUs (30 hours) of training during the three years prior to certificate expiration in order to renew any water treatment or water distribution certificate. Information regarding continuing education can be obtained from the Operator Certification program staff.

Regulatory Requirements

The supervising operator of a regulated system must be certified at a level equal to the classification of the system under that operator's control. The regulations that govern the Operator Certification Program discuss the requirements in more detail. Utilities that serve more than 500 people or 100 service connections typically have both a water treatment system and a water distribution system. If that is the case, the

supervising operator of the water treatment system must have the appropriate water treatment certificate, while the supervising operator of the water distribution system must have the appropriate level of water distribution certification. Water systems that serve fewer than 500 people and fewer than 100 service connections have only one classification. The supervising operator of these systems must be appropriately certified.

Regulations

The Operator Certification Program is governed by the Water and Wastewater Operator Certification and Training regulations (18 AAC 74). The information found above provides a quick overview of the classification and certification process. For specific information regarding the requirements, consult the actual regulations. The following list provides the specific regulatory citation for the items discussed above.

Classification of small water systems	18 AAC 74.450
Classification of water treatment systems	18 AAC 74.120 (b) and (e)
Classification of water distribution systems	18 AAC 74.120 (a)
Prerequisites for exams	18 AAC 74.050
Certificate renewal requirements	18 AAC 74.810
Regulatory requirements for water treatment and water distribution systems	18 AAC 74.010
Regulatory requirements for small water systems	18 AAC 74.410

More Information

All questions regarding system classification and operator certification should be addressed to the Operator Certification Program. Contact information for the program is as follows:

Operator Certification Program
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<http://www.dec.state.ak.us/water/opcert/index.htm>