



State of Ore
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Certification Programs For Water And Wastewater System Operators



**A Joint Report of the Department of Environmental Quality
and the Oregon Health Division, Department of Human Services**

January 2001



This report has been prepared by the Oregon Health Division (OHD) of the Department of Human Services and the Department of Environmental Quality (DEQ) in accordance with the requirements of ORS 448.409. The report describes the activities of OHD and DEQ under their respective water and wastewater operator certification programs from January 1, 1999 to December 31, 2000.

Contents

Executive Summary	3
Certification Program for Water System Operators	
Program Activities.....	5
Water System Classification and Compliance.....	6
Certification of Individual Operators.....	6
Professional Growth.....	6
Technical Assistance and Training.....	6
Efficiency and Service Improvements.....	7
Certification Program for Wastewater System Operators	
Program Coordination and Development.....	8
Wastewater System Classification	8
Certification and Examination.....	9
Certification Program Activities	10
Professional Growth.....	11
Technical Assistance and Training.....	11
Compliance, Variance and Enforcement.....	11
Efficiency and Service Improvements.....	12
Legislative Issues	12
Conclusion	13

Executive Summary

Oregon law requires owners of drinking water and wastewater systems (public and private) to have their systems under responsible control and direction of certified operators. Trained and certified operators are necessary to ensure that the systems are not managed in a manner that could adversely affect public health or water quality. Certified operators also improve facility operation and compliance, protect the public's investment in the facilities, and instill public confidence in the safety and certainty of services. The Oregon Health Division of the Department of Human Services (OHD) administers the certification program for drinking water system operators and the Department of Environmental Quality (DEQ) administers the program for domestic wastewater system operators. OHD and DEQ coordinate activities when it is beneficial to their respective certification programs.

Elements of the two certification programs are summarized in the following table and program activities and accomplishments are described within this report. Several initiatives have been undertaken to improve program efficiency, including the use of standardized tests and increased use of electronic communication and data base systems.

In the 2001 legislative session, DEQ will be proposing an increase in wastewater operator certification fees. By statute, the revenue generated by certification fees is supposed to be sufficient to cover DEQ's costs to implement the program. Currently, fee revenue covers only about 49 percent of program costs. General Funds that have been used to help fund the certification program have been shifted to DEQ's Wastewater Management Program to address a revenue shortfall in that program. DEQ is working with the Operator Certification Program Advisory Committee to decide how a fee increase would be applied.

*Table 1: OHD and DEQ Operator Certification Programs
1999 – 2000*

CATEGORY	OHD WATER		DEQ WASTEWATER	
Total Persons Certified	1,618		1,549	
Persons with Combined Certificates	458 (28%) (Distribution & Treatment)		639 (41%) (Collection & Treatment)	
Persons Certified by Both OHD and DEQ	554 (34 %)			
Certificate Applications Reviewed	847		565	
Applications Denied	33		3	
Certificates Issued by Reciprocity	16		18	
Examinations (scheduled)	798		562	
Continuing Education Required	2.0 CEUs every 2 years		2.0 CEUs every 2 years	
Certification Renewal Period	Annual		Biennial	
Certifications	Distribution	Treatment	Collection	Treatment
Operator-in-Training (OIT)	46	64	67 ¹	
Provisional Grade I Certificate	N/A	N/A	9	15
Grade 1 Certificate	578	279	393	409
Grade 2 Certificate	564	214	376	295
Grade 3 Certificate	130	79	145	182
Grade 4 Certificate	64	58	132	231
Total Certificates	2076		2,187	
Systems — Certified Operator Required	Distribution	Treatment	Collection	Treatment
Class 1 (I)	178	53	139	190
Class 2 (II)	118	81	135	75
Class 3 (III)	22	25	39	38
Class 4 (IV)	6	4	26	33
Total Entities	320		383²	
Certificate Fee (application, exam & license)	\$75.00 for 1 yr. Cert.		\$60.00 – \$120.00 for 2 yr. Cert.	
Renewal Fee — One Certificate	All Grade Levels — \$40.00 for 1 Yr.		Grade I or II — \$60.00 for 2 Yr.	
Renewal Fee — Second Certificate			Grade III or IV — \$80.00 for 2 Yr.	
Renewal Fee — Second Certificate	All Grade Levels — \$20.00 for 1 Yr.		Grade I or II only — \$30.00 for 2 Yr.	
Staffing	1.0 Program Representative 1		1.0 Natural Resource Specialist 3	
	0.75 Office Specialist 1		1.0 Office Specialist 2	
	DWS Technical Staff Support		—	

¹ OIT is a “non-certified” recognition under the DEQ’s program and not included in number of persons certified.

² Of this number, fifty-five are “satellite” wastewater collection systems that are connected to other regulated wastewater systems providing conveyance and/or treatment.

Certification Program For Water System Operators

Under ORS 448, the Oregon Health Division of the Department of Human Services (OHD) classifies all drinking water treatment plants and water distribution systems and certifies individuals qualified to supervise system operation. All community water systems using surface water sources, and those using groundwater sources with more than 150 service connections, must be under the supervision of an operator with a certificate equal to or higher in grade than the water system classification. As of December 2000, there were 320 water systems that required a certified operator and 1,618 certified operators.

Program Activities

Coordination and Development:

1. Certification Subcommittee of the Drinking Water Advisory Committee.
2. Write and amend Rules.
3. Certification.
4. Create and distribute training notices, forms and documents.
5. Coordinate with other certifying authorities and organizations.
6. Manage data and report.
7. Manage services agreement contract for examinations and grading by the Association of Boards of Certification.

Water System Classification:

1. Classify systems in the areas of distribution and treatment to determine operator certification grade requirements.

Compliance and Variances:

1. Track water system compliance with certification requirements.
2. Issue variances and establish compliance schedules.
3. Respond to complaints and inquiries.
4. Revoke Certificates.

Operator Grading, Examination and Application Review:

1. Review and evaluate applications for certification including new, upgrade, reciprocity, filtration endorsement, renewal and reinstatement for 4 grade levels in each area (Distribution and Treatment) and Operator-in-Training.
2. Schedule and proctor examinations.
3. Provide information on examination study materials; notify examinees of results.

Technical Assistance and Training:

1. Respond to inquiries on certification requirements and procedures.
2. Provide lists of qualified operators to systems recruiting for vacancies.
3. Participate in the activities of the Oregon Environmental Services Advisory Council. (OESAC). OESAC evaluates and assigns Continuing Education Units (CEU) to courses offered for professional growth and assists in coordinating statewide training throughout the year.

Water System Classification and Compliance

Water systems are classified in two areas – treatment and distribution – with four levels of complexity in each. Classification is based upon the complexity of the treatment processes and distribution systems. These classifications are used to determine the qualifications required of personnel in direct responsible charge of the water system.

There are currently 320 water systems that require certified operators. At the end of this reporting period, 319 of the 320 systems have at least one operator certified at the required level. Five operators hold a variance license. These operators continue to perform adequately and were issued limited certificates permitting them to continue to work at that system only.

Systems using groundwater with less than 150 service connections are not required to have a certified operator. A few of the exempt systems have voluntarily chosen to use a certified operator to oversee their operation or to be on call to provide technical assistance.

Certification of Individual Operators

Certifications are granted when an operator's experience, education and examination results meet established criteria. The criteria closely follow the Model Certification Standards developed by the Association of Boards of Certification (ABC) and used by over 30 states. These standards and a uniform exam allow operators certified in Oregon to become certified in any of these other states by reciprocity and operators certified in other states to become certified in Oregon.

Exams are scheduled and administered by program staff and are held in May and October of each year at five locations around the state. In addition, the program received 38 requests for special exams during this reporting period. Applicants must demonstrate that they meet the education and work experience requirements before qualifying for an exam. A total of 831 applications for exams were reviewed and 798 exams were given in the 2-year period. Successful applicants are issued certificates. Unsuccessful candidates are provided with individualized exam results noting the areas of deficiency.

The Operator Certification Program has continued to show wide acceptance by the water industry. Although only 320 systems are required to have a certified operator, the number of certified operators has increased from 1,394 in 1990 to 1,618 in 2000. The additional certified operators represent the growing professionalism in the industry and the support for certification by water systems. There are 458 certified operators holding certificates in both water treatment and distribution.

Professional Growth

Certified Operators are required to obtain two Continuing Education Units (CEUs) every 2 years in order to renew their certificates. CEUs are given for courses in water treatment or distribution and related fields. Every 2 years, operators must document the courses taken to satisfy this requirement. During this reporting period, all operators who were required to report were able to document the courses claimed. Training opportunities are generally plentiful in the state and well attended.

Technical Assistance and Training

Staff members routinely answer questions on interpretation of certification requirements and procedures from individuals and owners of water systems. A list of qualified operators is provided to communities upon request to assist them in recruiting new operators.

Staff members also participate in the activities of Oregon Environmental Services Advisory Council (OESAC), which reviews proposed training for qualifications of instructors, determines relevancy of course material, assigns continuing education units, and coordinates the training opportunities around the state. OESAC is composed of representatives from community colleges, professional organizations in the water and wastewater industry, the office of Professional Technical Education of the Department of Education, the Department of Environmental Quality, and OHD.

Technical staff in the Drinking Water Program participate in training events sponsored by professional organizations, which provide certified operators with the CEUs necessary to renew their certificates.

Efficiency and Service Improvements

OHD has developed a Licensing and Certification database that integrates a variety of programs into a uniform fiscal and information management system. The Water System Operator Certification program uses this database to automate some of the steps involved in scheduling exams.

Certification Program For Wastewater System Operators

ORS 448 requires the Department of Environmental Quality (DEQ) to certify persons operating or supervising the operation of sewage treatment works (wastewater systems). Wastewater systems include collection systems, treatment systems and combined collection and treatment systems, whether publicly or privately owned. The operator certification program, as adopted in rule by the Environmental Quality Commission (EQC), requires DEQ to:

- 1) Classify systems and define requirements of system owners,
- 2) Certify persons qualified to operate and supervise systems,
- 3) Set forth a system of penalties for rule violations,
- 4) Provide for variances to the rules, and
- 5) Establish certification fees based on the principle of cost recovery.

Program Coordination and Development

Program staff routinely work with regional staff to provide technical assistance to system owners, respond to requests for time extensions for operator hiring and examination, administer scheduled and special examinations, and initiate enforcement activity as warranted to compel compliance.

Staff participated on Association of Boards of Certification (ABC) technical committees and the Oregon Environmental Services Advisory Council (OESAC) to assist in the evaluation of certification program standards and continuing education. DEQ supports and participates with OESAC to identify, develop and evaluate workforce training and assign Continuing Education Units (CEUs) to qualifying courses.

DEQ maintains a standing 10-member Operator Certification Advisory Committee to provide advice and recommendations to the program. Committee members are appointed by DEQ's Director and represent operators, system owners, and the educational community. Issues considered by the advisory committee over the past 2 years included operator accountability, compliance assurance, exam scheduling and early qualification, outsourcing of examinations, process improvement, and fee-based budgeting.

Wastewater System Classification

Wastewater systems are classified in two areas, collection or treatment, and at one of four levels based upon relative size, complexity and degree of difficulty to operate and maintain. Some entities include both collection and treatment systems, while others include only one type of system. As of December 31, 2000, there were a total of 383 entities operating 675 classified systems that required a certified operator. Additionally, there were about 136 systems where voluntary certification is encouraged by DEQ (Table 2).

When a wastewater system's operation is evaluated by DEQ as triggered by a permit action (new permit, permit renewal or modification), or technical evaluation (plan review), a classification review is conducted. Over the past two years, DEQ staff reviewed system classifications for over 60 facilities, including 15 new ones. Fourteen systems were re-classified higher or lower, or dropped from operator certification requirements.

Table 2: Oregon Classified Wastewater Systems - 12/00

Classified Wastewater Systems	CERTIFICATION	
	MANDATORY	VOLUNTARY
Collection & Treatment	276*	49
Collection Only	55	8
Treatment Only	52*	79
TOTAL	383	136

* These 328 entities operate under a DEQ permit with conditions that include operator certification and reporting.

Certification and Examination

To obtain a certificate, a person must meet minimum standards for education and operator work experience and pass an examination at one of four grade levels. Scheduled examinations are held twice each year (March and September) at up to seven sites around the state. DEQ administers and scores all of the examinations. During this reporting period, DEQ scheduled exams for 562 applicants, including 21 that were scheduled on special dates to accommodate disability, permit compliance or hardship.

As of December 31, 2000, 1,549 persons held active operator’s certificates, including 17 holding provisional certificates enabling them to receive on-the-job training. Of the total number of persons certified, 41 percent hold certificates in both collection and treatment system operation. The total number of active certificates on this date was 2,187.

Program Activities

Coordination & Development:

1. Develop forms and guidance material.
2. Manage data and reports.
3. Review and amend rules, including fees.
4. Coordinate and provide staff support for the Wastewater System Operator Certification Advisory Committee.
5. Communicate with trainers to assess training needs and career development ladders, and participate in activities of Oregon's Environmental Services Advisory Council (OESAC) for work force training and continuing education.
6. Act as liaison with the Association of Boards of Certification, North American certifying authorities, and organizations that represent wastewater system operators, owners, vocational-technical educators, and the water quality control industry.

Wastewater System Classification:

1. Compile, evaluate and interpret design, operation, maintenance and operational compliance information for wastewater systems statewide.
2. Classify systems to determine operator or supervisor certification grade.
3. Coordinate permit notification to system owners.

Operator Certification & Examination:

1. Evaluate education, training and experience qualifications for certification including provisional and standard certificate, certificate by reciprocity, continuing education, renewal and reinstatement.
2. Evaluate and provide examination accommodations for the disabled.
3. Develop, validate, maintain, and secure examinations.
4. Prepare and distribute exam study guidance.
5. Schedule exams and proctors.
6. Score exams and provide notice of results.
7. Issue certificates and periodic certificate validation.

Technical Assistance & Training:

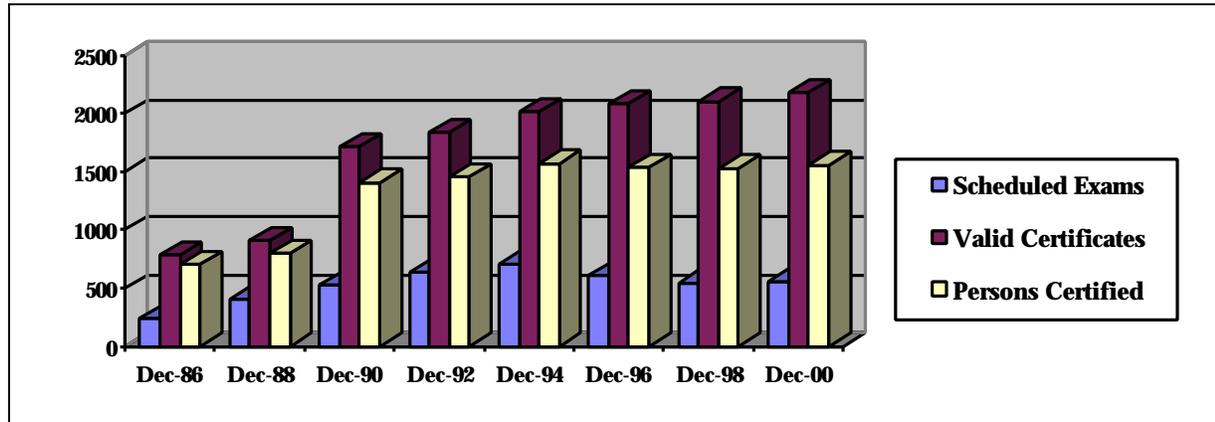
1. Respond to inquiries and provide guidance and interpretation of certification requirements regarding system owner, supervisor, operator, and contractor operability issues.
2. Provide technical assistance, clerical and record support for OESAC committee for the Continuing Education Unit.
3. Provide technical assistance and data management support to DEQ staff regarding system owner and operator certification compliance.

Compliance, Variance & Enforcement:

1. Provide compliance tracking of system owners and operators,
2. Respond to complaints and inquiries, including evaluation of compliance investigations and actions, and certificate sanction or revocation.
3. Evaluate and prepare responses to variance applications.

The following graph (Figure 1) shows how the number of scheduled examinations, number of valid certificates, and number of persons certified has grown.

Figure 1: 1999 – 2000 Wastewater Operator Certification Program



Professional Growth

To be eligible to renew a certificate, an operator must demonstrate professional growth in the field by completing a minimum of two Continuing Education Units (CEUs). One CEU is equivalent to 10 contact hours of lecture or formalized training in wastewater collection or treatment or related fields. Continuing education ensures that operators maintain and enhance their skills and keep pace with changing regulations and technology. During this reporting period, all the operators who were required to report were able to document the CEUs claimed.

Technical Assistance and Training

During the past two years, program staff responded to thousands of requests for assistance from system owners, operator personnel, training providers and DEQ regional staff, regarding operator certificate qualifications, application forms, continuing education, system classification and rule interpretation. DEQ also provides certified operator and classified system information to system owners (employers), operators, vocational counselors, organizations, etc., to help with operator training, recruiting, and job placement.

Operator training in Oregon is not a primary function of DEQ. Training is accomplished by a host of non-profit organizations, community colleges, public and private sector consultants and professional trainers. DEQ staff may help coordinate and develop training, and often deliver training modules on certification requirements, system operation issues and compliance at regional “short schools” around the state. In 1999 and 2000, DEQ staff assisted with 15 training events.

Compliance, Variance and Enforcement

DEQ determines permit compliance by reviewing self-monitoring reports and file records, and through field inspections, surveys, and other investigative techniques. DEQ has significant enforcement authority to compel compliance should it be needed. During the biennium, DEQ issued several Notices of Noncompliance or Notices of Permit Violation to system owners for failure to comply with certification requirements.

Report to the Legislature

DEQ provided technical assistance resources and coordinated outreach to system owners and operators who were out of compliance, as well as those in marginal compliance. All have either come into full compliance or are in the process of doing so. DEQ encourages and often recommends a course of action to assure training deficiencies are corrected.

Program rules call for the Director of DEQ to sanction, revoke or refuse renewal or reinstatement of an operator's certificate for grievous acts. No certificates were revoked or suspended during the reporting period. DEQ will investigate complaints alleging operator violations of permit conditions for various acts such as failure to perform proper sampling and testing, improper facility operation, false or fraudulent records or reports, or failure to obtain proper certification.

Compliance with certification requirements is also monitored by DEQ. Upon request, extensions may be granted to allow for recruiting or contracting with a certified operator, or examination of operator personnel. The number of systems being supervised by properly certified operators is currently estimated at 90%. Just over one in four systems meet operator certification compliance through some type of contract for operation services.

Efficiency and Service Improvements

A coordinator and a clerical support person currently staff DEQ's Operator Certification program. Continued efficiency efforts have helped offset any need for increased staffing despite some increase in the number of persons certified and applying for certification. For example, the program has increased use of the Internet for communications and document distribution and has cut costs by switching to the use of national standardized wastewater examinations. Additional opportunities to increase efficiency are also being considered, such as on-line Internet applications and payment via debit or credit card.

Legislative Issues

By statute, the revenue generated from wastewater operator certification fees is supposed to be sufficient to cover DEQ's costs to implement the program. Currently, fee revenue covers only about 49 percent of program costs. Additional program costs have been covered by General Funds.

For the 2001-2003 biennium, DEQ is shifting general funds to the wastewater management program to address a revenue shortfall in that program. To make up for the loss of General Funds, DEQ is proposing to increase wastewater operator certification fees. The following chart provides an example of the proposed changes if the fee increase was implemented at the same rate for all activities. However, a decision has not yet been made as to whether this approach will be taken. DEQ is working with the Operator Certification Program Advisory Committee on this issue. Other implementation strategies are also being considered which would reduce the impact on small system operators and owners.

Example of Proposed Changes

Certification Level	Current Application Fee	Proposed Fees (with an across the board increase)
Provisional	\$60	\$150
Grade I	\$60	\$150
Grade II	\$80	\$200
Grade III	\$100	\$250
Grade IV	\$120	\$300

Conclusion

The objectives of the Wastewater System Operator Certification Program are to help protect public health, Oregon's environment and water resources, and capital investment in infrastructure through proper operation and maintenance of Oregon's domestic wastewater collection and treatment systems. Ensuring a reservoir of qualified persons who have met established minimum levels of education, experience and acquired knowledge base helps ensure these objectives are met.

Oregon's wastewater utilities continue to raise minimum employment qualifications for both supervisory and non-supervisory personnel. Certification has enforced a much needed minimum standard for education, training and experience that helps ensure an effective and efficient workforce which properly operates and maintains facilities to minimize their adverse effect on water quality.

The continued acceptance and support of the program is evidenced by increased employer preference for certification, recruiting practices, promotional and pay incentives, and increased employer support for professional skill training. Another indicator of support for this program is the increasing number of employer-paid certification fees estimated to be at about 73 percent.

The Wastewater System Operator Certification Program is working well in Oregon. The issues at hand today are continued process efficiency improvement and stable funding for this program.