

**2021
NORTH CAROLINA
CERTIFICATION PROGRAM
ANNUAL REPORT**

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North Carolina Division of Water Resources

Public Water Supply Section

Operator Certification Program

North Carolina Water Treatment Facility Operator Certification Program

This report outlines the Environmental Protection Agency's (EPA) nine baseline standards for state operator certification programs under the Safe Drinking Water Act and describes in detail the status of the North Carolina Operator Certification Program as related to the standards.

Public Health Objective

N.C. General Statute 90A-20 established the authority for the state to implement the operator certification program and ensures that public health objectives are emphasized.

Article 2. Certification of Water Treatment Facility Operators

§ 90A-20. Purpose

It is the purpose of this Article to protect the public health and to conserve and protect the water resources of the State; to protect the public investment in water treatment facilities; to provide for the classifying of public water treatment facilities; to require the examination of water treatment facility operators and the certification of their competency to supervise the operation of water treatment facilities; and to establish the procedures for such classification and certification. Further, it is the purpose of this Article to provide for the certification of personnel operating the distribution portion of a water treatment facility.

In addition to the public health statement above, it should be noted that the state's Operator Certification Program operates under the oversight of the N.C. Public Water Supply Section, which is the primary agency that administers the Safe Drinking Water Act. The Section has a stated mission and vision that include public health objectives:

Mission: To promote public health by ensuring that safe, potable water is available in adequate quantities to the residents and visitors of North Carolina served by public water systems by assuring that such systems are properly located, constructed, operated, and maintained.

Vision: North Carolinians are consistently served a safe, reliable supply of drinking water by compliant water systems.

Anti-backsliding

The State's Operator Certification Program has remained the same during this review period and there has been no backsliding with regard to implementation or policy. In fact, the program continues to pursue a variety of projects designed to better support the state's community of licensed operators (e.g., improved data management, increased exam choices, more continuing education opportunities, etc.).

BASELINE STANDARDS

1. Authorization

North Carolina General Statutes 90A-20 through 90A-34 and N.C. Administrative Code Title 15A Subchapter 18D (15A NCAC 18D), *Rules Governing Water Treatment Facility Operators*, govern the training, certification and performance of water treatment facility operators, as well as the classification of facilities that treat and provide water for public consumption. The North Carolina Water Treatment Facility Operators Certification Board (NCWTFOCB, or the “Board”) has rule-making authority in North Carolina.

2. Classification of Systems, Facilities and Operators

All public water systems in North Carolina shall have a certified operator in responsible charge (ORC) for each water treatment facility that: (i) alters the physical, chemical or microbiological characteristics of the water; (ii) has approved plans for such alterations; or (iii) has equipment installed for such alterations (as per 15A NCAC 18D .0206(a)). When surface water systems are treating water, there must be a certified operator holding at least a Grade C Surface certification or above assigned to be on the premises (as per 15A NCAC 18D .0206(b)). There must also be an operator in responsible charge for the distribution portion of the community (CWS) and non-transient non-community (NTNC) public water systems. This operator must possess a valid certificate issued by the Board equivalent to or exceeding the distribution classification of the facility for which he or she is designated (as per 15A NCAC 18D .0206(c)).

The state has delegated authority to the N.C. Water Treatment Facilities Operator Certification Board to make decisions regarding classification of facilities and the associated grades of operator required to operate each facility. The determination considers a variety of factors that include size, complexity of treatment, population, source type, etc. TNC systems in North Carolina are classified if the facility provides disinfection other than ultraviolet treatment.

Table 1. Breakdown of water systems within each category of classification is per SDWIS data (*as of April 11, 2022*). The “# of Certified Operators” is the number of operators holding an active license within each category of classification during the 2021 reporting period.

CLASSIFICATION	# of CWS	# of NTNCWS	# of TNCWS	# of CERTIFIED OPERATORS
WELL	1491	315	314	2062
SURFACE WATER	128	5		1855
DISTRIBUTION SYSTEM	2001	330		3348
CROSS-CONNECTION	351	6		916

The state’s ORC information is received and maintained by the Operator Certification Program. Operators are required to inform the Board whenever ORC designations are changed (15A NCAC 18D .0701 (e)). In addition, during the annual certification renewal period, certified operators must submit a form that lists facilities for which they serve as ORC. The Operator Certification Program updates its database for ORC designations based upon information received during the renewal period.

For additional verification, the Public Water Supply (PWS) Section’s regional office staff inspects treatment facilities and their distribution systems to determine the classification of each system and that systems have a properly certified ORC. Each ORC must hold a certification that is equal to or greater than the classification of the facility under its supervision (15A NCAC 18D .0206). After a sanitary survey, the regional office staff submits ORC changes or potential violations of 15A NCAC 18D .0206 to Operator Certification Program staff.

There were 5,670 certified operators holding 8,181 active certifications in NC during the reporting period. The number of licensed operators appears sufficient to meet demand in the state.

The Board has authority to issue temporary certifications in cases where: (i) operators are in the process of upgrading their certification, and (ii) operators with the proper certification are not readily available within the local vicinity. In all such cases, the operator requesting a temporary certification must demonstrate to the Board that they are competent and able to fulfill duties in accordance with 15A NCAC 18C. Requests for temporary certifications are rare. During this reporting period, the Board did not issue any temporary certifications.

3. Operator Qualifications

The *Rules Governing Water Treatment Facility Operators* require individuals applying for state certification to meet specific education and experience requirements. All applicants for certification are required to possess either a high school diploma or general education development equivalent (GED). Operators must successfully complete a required training school approved by the board (15A NCAC 18D .0201). Attendance rosters from the schools are forwarded to the Operator Certification Program, and the database is continually updated to include this information. The state does not have a “grandparenting” option that allows exceptions to the requirements for certification.

Potential operators must pass a comprehensive examination that demonstrates they have the necessary knowledge and ability deemed appropriate for their desired level of certification. Traditional examinations are offered in paper format on a quarterly basis, with exam locations geographically distributed across the state (e.g., Hickory, Snow Hill and Raleigh). Note that the Snow Hill location has not been available since COVID-19 restrictions began in mid-2020. Examinees preferring the Snow Hill location have utilized the Raleigh venue as an alternative. In addition to the traditional examinations, computer-based exams are scheduled three times annually, offering convenience and immediate results to the operators. Should any examinees fail the same type and level of examination three times, they are required to re-take the appropriate school before repeating the examination (15A NCAC 18D .0202).

Number of examinations administered by certification type, with pass rates:

- Surface – 334 examinees, 63% pass rate
- Well – 278 examinees, 50% pass rate
- Distribution – 811 examinees, 53% pass rate
- Cross-Connection – 82 examinees, 59% pass rate
- Total examinees – 1505, 55% pass rate

Applicants must demonstrate “acceptable experience” as defined by 15A NCAC 18D .0105. The required amount of acceptable experience varies in accordance with the requested classification level, and acceptable experience amounts are specified in 15A NCAC 18D .0201. North Carolina has an option to allow applicants to become certified apprentices in Level B, C, D, or Cross Connection Control without experience, if they complete the required school and successfully pass an appropriate examination. The certified apprentice may be upgraded to full certification once the required acceptable experience has been obtained and verified by applicant’s supervisor.

To maintain certification, operators are required to complete six acceptable professional growth hours annually. The Board has developed a preapproval policy, and the Operator Certification Program uses an IBEAM database to track professional growth hours and pre-approved courses. The program’s website is continually updated to display pre-approved courses. This information enables operators to select courses that are acceptable and appropriate for their specific professional growth needs. To date, approximately 3,900 courses have been pre-approved. Also, more than 400 training providers and six training sponsors have been approved.

4. Enforcement

During this reporting period, the Operator Certification Program expired the certifications of 430 operators due to nonpayment of annual renewal fees. No operator certifications were expired for failure to obtain the required six contact hours of professional growth. Due to restrictions resulting from the COVID-19 pandemic, the Board provided an extension to allow operators until the end of calendar year 2021 to complete the required six PGH for 2020, along with the six hours required for 2021. Therefore, the number of operators expired during this reporting period is likely “artificially low” as the subset of operators that had no intention of completing the PGH requirement were automatically given the extension (following successful payment of the renewal fee).

The Operator Certification Program’s database allows confirmation that drinking water systems remain in compliance with state regulations regarding required operators, and that operators continue to maintain their certification requirements. If there is evidence that a facility does not have a properly certified ORC, program staff send a notice to the system requesting that it verify ORC designation. The system owner is required to respond within 15 days. If the system owner does not respond or designate a properly certified ORC within 15 days, a notice of violation/administrative order (NOV/AO) is sent to the system owner, who then has 90 days to respond. If the problem is not resolved within 90 days, the violation information is sent to the PWS Section’s enforcement unit for penalty preparation. The Chief of the PWS Section has delegated authority to assess administrative penalties. In 2020, there were 8 NOV’s issued. There were no administrative penalties assessed during the reporting period.

A data link exists between the PWS Section’s Safe Drinking Water Information System (SDWIS) and the Operator Certification Program’s database application. This link ensures that the most current ORC information is readily available to state inspectors during sanitary surveys or other site visits.

The Board has authority to take disciplinary action and revoke certifications in cases where negligence, operator incompetence, or criminal activity has occurred. The Board did not consider

any disciplinary actions during this reporting period. Revocation of licensing is extremely rare in N.C.

5. Certification Renewal

During the 2021 annual renewal cycle, the following number of operators renewed their certifications for calendar year 2022:

Distribution - 3076 (plus 12 Apprentice licenses)

Surface – 1667 (plus 32 Apprentice licenses)

Well – 1880 (plus 17 Apprentice licenses)

Cross Connection - 904

For license renewal, operators are required to obtain six professional growth hours each year and pay an annual renewal fee of \$30 per certification. To meet the demand for approved courses and training, the Operator Certification Program works closely with training organizations such as the N.C. Section of the American Water Works Association, N.C. Section of the Waterworks Operators Association, N.C. Rural Water Association, and private training providers. “Grand-parenting” is not allowed, and therefore there are no additional trainings assigned to any subset of operators.

Professional growth courses accepted for certification renewal must have the approval of the Board. A course preapproval and tracking policy was adopted by the Board in 2006. This policy allows preapproval of various courses types, including in the classroom, online and delivery via a webinar. The policy also provides a mechanism for training organizations to become an “approved sponsor.” Any organization wishing to receive preapproval for courses or to obtain sponsorship status must submit a formal application and sign an agreement to comply with Board education requirements.

The Board has established a review committee, which evaluates and approves potential professional growth courses. The committee has the authority to approve webinars for professional growth hours, and on-line training, as well as in-class sessions. In response to recommendations from the state’s training providers, the review committee now considers new course requests “on demand.” The previous process included a bulk, monthly processing routine of applications, which resulted in delays in promoting and refining new educational opportunities.

During the reporting period, a total of 101 new courses were approved for professional growth credit. The new courses include a combination of in-class modules as well as virtual formats.

6. Resources Needed to Implement the Program

The Operator Certification Program staff consists of a Supervisor, an Extension Education & Training Specialist, and two and a half FTE Administrative Specialists. Staffing levels increased one half of an FTE since the last report period. Staff perform a variety of functions that include: administering statewide examinations, approving and auditing professional growth opportunities, managing database and state records, providing training and outreach, processing fee receipts, participating in the enforcement of *Rules Governing Water Treatment Facility Operators* (Title 15A Subchapter 18D), and coordinating the annual license renewal process. Additional resources

are provided by the Public Water Supply Section or Division of Information Technology to support programming needs and database development.

The Operator Certification Program is self-supported through a fee-based structure that is codified within N.C. General Statute 90A-27 and N.C. Administrative Code 18D .0304. Annual operator renewal fees and exam application fees are the primary revenue sources. The program does not receive money from the state's general fund, nor does it regularly receive federally appropriated funds. Fee receipts are used for a variety of purposes, including salary support, information technology services/software development, capital equipment, and expenditures associated with trainings and examinations administered throughout the state.

The following summary is offered with regard to program resources: In North Carolina FY 2020-2021, program receipts deposited were \$315,569. Historically, the percentage breakdown of expenditures for program operations are approximately as follows: Salaries and Fringes: 87%, Purchased Services/Travel: 13%, Supplies: 1.7%, Equipment: 0.5%, and Other Expenses: 0.04%. Unspent funds remaining at the end of the fiscal year are considered as non-recurring and may be transferred to the General Assembly.

7. Recertification

Operators with certifications expired for more than two years are required to petition the Board for approval to be recertified (15A NCAC 18D .0309(c)). The Board considers each petition individually and renders instructions for recertification, which typically include paying two years of renewal fees and late fees and successfully retaking the exam for each certificate held. If an individual has been expired for more than five years, in addition to the fees, late fees and exam, they are required to attend the appropriate training school prior to sitting for the exam.

8. Stakeholder Involvement

The Board meets quarterly in March, June, September and December. The meetings are open to the public and public participation is encouraged. Minutes taken at each Board meeting are public record. They are available upon request and posted on the program's website. Stakeholders traditionally have provided guidance, recommendations, input into rule revisions and served as proctors for certification exams, when needed. Stakeholders have also endorsed anticipated programmatic improvements, including an electronic payment option, a combined program database and examinations "on demand" to supplement the quarterly schedule. Staff and stakeholders continued to communicate regularly to discuss training options and other industry issues.

9. Program Review

The Operator Certification Program is subject to an annual internal review. The second Vice Chair of the Board conducts the internal review with results presented to the full Board. Board member Sarah Long conducted the internal review in April of 2022. Each activity of the program was reviewed, and the results will be presented to the Board at the June 2022 meeting. A copy of the internal review is attached.

An external review is completed every five years by an entity outside the program's primary agency. The most current external review (March 2018) was conducted by Alan Oldham,

Training Division Manager, North Carolina Rural Water Association. The next scheduled external review is in 2023.

The N.C. American Water Works Association (NCAWWA) and program staff regularly review and revise the distribution school curriculum, commonly referred to as *Needs to Know*. The *Needs to Know* is an outline of topics required for each level of certification and includes references cited within the textbooks used by the schools. The NCAWWA Board of Education and Examiners and program staff meet after each examination to review the results of distribution and cross-connection examinations and make any necessary changes. Similarly, The N.C. Waterworks Operators Association Board of Education and program staff periodically review and revise the well and surface school curriculum. In addition, if examination results indicate a high percentage of students answered a specific question incorrectly, the wording of the question is checked for ambiguity. Ambiguous questions may be removed or clarified for future examinations. References on the answer key are also checked to ensure they are understandable and clear.