

COLORADO DEPARTMENT OF REGULATORY AGENCIES
OFFICE OF POLICY AND RESEARCH

COLORADO PLANT OPERATOR CERTIFICATION PROGRAM

1995 SUNSET REVIEW



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1995-1996 Members***

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June 30, 1995

The Honorable Richard Mutzebaugh, Chair
Joint Legislative Sunrise/Sunset Review Committee
State Capitol Building
Denver, Colorado 80203

Dear Senator Mutzebaugh:

The Colorado Department of Regulatory Agencies has completed the evaluation of the **Plant Operator Certification Program**. We are pleased to submit this written report, which will be the basis for my office's oral testimony before the Joint Legislative Sunrise/Sunset Review Committee. The report is submitted pursuant to §24-34-104 (8)(a), of the Colorado Revised Statutes, which states in part:

"The Department of Regulatory Agencies shall conduct an analysis of the performance of each division, board or agency or each function scheduled for termination under this section..."

"The Department of Regulatory Agencies shall submit a report and such supporting materials as may be requested, to the Sunrise and Sunset Review Committee created by joint rule of the Senate and House of Representatives, no later than July 1 of the year preceding the date established for termination..."

The report discusses the question of whether there is a need for the regulation provided under article 9 of title 25, C.R.S. The report also discusses the effectiveness of the division and staff in carrying out the intention of the statutes and makes recommendations for statutory and administrative changes in the event this regulatory program is continued by the General Assembly.

Sincerely,

Joseph A. Garcia
Executive Director

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EXECUTIVE SUMMARY

Agencies has concluded its Sunset Review of the Plant Operators Certification Program, operated under the authority of the Plant Operators Certification Board (Board), and recommends continuing the program.

The program was established to ensure all water and wastewater treatment facilities in Colorado are operated by persons qualified to protect the public health, safety, and welfare. Safe water is a vital resource to the citizens of Colorado and the certification of plant operators is a significant contributor to maintaining the high water quality standards currently enjoyed by residents and visitors.

Members of the Board were found to be hardworking, dedicated, hands on professionals. Board members frequently volunteer additional time to the profession by conducting educational workshops for operators in rural areas of the state.

The Board minimizes its disciplinary activities, choosing instead to work with the owners of facilities to bring them into compliance voluntarily. However, the recordkeeping system used by the Board makes an evaluation of compliance difficult.

The Board has no technical support staff, but uses the technical staff of the Water Quality Control Division. This arrangement is an efficient use of resources and could be expanded to improve compliance. Fees for certification are inadequate to cover the expenses associated with the program. The report recommends cash funding the program, similar to the occupational licensing programs in DORA.

A major focus of the Board is on educational programs for operators. While the value of continuing education for any profession is not disputed, Mandatory Continuing Education is seldom recommended in sunset reviews. This report recommends modifications to the continuing education requirement in the statute.

The membership of the Board is required by statute to represent water quality and health officials, as well as large facilities. A majority of the facilities in the state are classified as small facilities, however, no small facility operators are required on the Board. The report recommends mandatory representation of small facilities by a Class D operator on the Board.

BACKGROUND

The Plant Operators Certification Program, operated under the authority of the Plant Operators Certification Board (Board) and administered by the Water Quality Control Division in the Colorado Department of Public Health and Environment (CDPHE) shall be terminated July 1, 1996 unless continued by the general assembly. During the year prior to this date it is the responsibility of the Department of Regulatory Agencies (DORA) to conduct an analysis of the program in compliance with §24-34-104, C.R.S.

The purpose of this review is to determine whether the Plant Operators Certification Program should be continued for the protection of the public health, safety and welfare. The report also evaluates the performance of the Water Quality Control Division in CDPHE, related to this program. During this review, CDPHE must demonstrate that there is still a need for the certification program and that the regulation is the least restrictive regulation consistent with the public interest. DORA's findings and recommendations are submitted to the Joint Legislative Sunrise/Sunset Review Committee of the Colorado General Assembly. Statutory criteria used in the sunset review is found in the appendix of this report.

The Sunset Review process included an analysis of the statute, interviews with state authorities, CDPHE staff, local government representatives and regulated individuals. DORA made every effort to elicit information and comments from all interested parties.

The legislative declaration of the enabling legislation for the plant operator program clearly states the program objectives: “To assure adequate operation of water and wastewater treatment facilities, and to preserve the public peace, health, and safety, the provisions of this article and regulations authorized pursuant thereto are enacted to provide for the examination, classification, and certification of water and wastewater treatment plant operators and to establish minimum standards therefore, based upon their knowledge and experience, to provide procedures for certification, to encourage vocational education for such operators, to provide a penalty for the wrongful use of the title "certified operator", to require each water and wastewater treatment plant to be under the supervision of a certified operator, to provide for the classification of all water and wastewater treatment plants in the state, and to provide a penalty for the operation of a water or wastewater treatment plant without supervision of a certified operator.”

History of Plant Operator Regulation in Colorado

Plant Operator Certification was mandated by Senate Bill 73-253. Prior to this act, Plant Operator Certification was a voluntary program. The act created the Plant Operator Certification Board and required the Board to evaluate water and wastewater treatment facilities in order to establish the qualifications, experience, and the number of certified operators necessary for operation of such facilities. The Board is required to establish a testing and certification program for not less than four classifications each, of water and wastewater treatment plant operators.

The act was amended in 1977 to allow approved education to be substituted for 50 percent of the experience requirements. In 1985 the act was amended again to clarify the definitions of “Wastewater Treatment Plant” and “Water Supply System”. The 1985 amendments also provided for a sunset review of the program in 1993. In 1988 the act was amended to allow experience obtained in one type of plant to be applied to the experience requirements for either type of certification. Senate Bill 88-144 also established mandatory continuing education requirements for Certified Plant Operators. In 1991, the sunset date for the program was moved to 1996 in a bill which adjusted sunset dates for several programs.

SUMMARY OF STATUTE

The Plant Operator Certification Program is contained in article 9 of title 25, Colorado Revised Statutes. Section 102 contains the definitions of certificate, certified operator, wastewater treatment plant, water treatment plant and water supply system. Section 103 establishes the nine member Board, to be appointed by the governor with terms staggered. Five members of the Board specifically represent regulators and operators, four are at large members.

Section 104 allows the Board to elect officers and promulgate regulations to implement the program, including developing an examination and defining experience criteria. The Board must promote and assist in training programs designed to develop qualified operators. The Board is also required to evaluate water and wastewater treatment plants to establish the minimum class of certified operator required for direct supervision.

Sections 105 and 106 outline the minimum requirements for certification as a Class A, B, C or D water and wastewater treatment plant operator. All classifications require passing a written examination approved by the Board. Higher levels require completion of increasing years of relevant, Board approved experience. The classifications are intended to build on preceding levels, in that, to be certified as a C an individual must meet the requirements for a D then demonstrate additional experience and pass the Class C examination. Section 106.5 allows for education and cross experience to be substituted for up to 50 percent of the actual experience.

Section 107 contains certification provisions including certification by endorsement, certification renewal periods, mandatory continuing education to maintain certification and provisions for grandfathering individuals operating facilities prior to the certification requirements took effect. This section also provides for the classification and certification of industrial wastewater treatment operators. The continuing education requirement is graduated, from a low of two units for a Class D to a high of five units for a Class A certification.

Section 108 establishes fees for certification and renewal. Section 109 provides title protection for certified operators. Section 110 contains penalty provisions for owners of facilities not operating under the supervision of a certified operator and for individuals misrepresenting themselves as certified operators.

The act grants title protection to certified plant operators. An individual found guilty of misrepresenting themselves as a certified plant operator is subject to a \$300 fine. The owner of a water treatment or wastewater treatment plant allowing the facility to be operated without the supervision of an appropriately classified operator can be found guilty of a misdemeanor and subject to a fine of up to \$300 for each day of violation.

Regulations

The regulations implementing the program are contained in Volume 5 of the Colorado Code of Regulations (C.C.R.) section 1003-2. The regulations were originally promulgated in 1975 and were last revised effective September, 1989.

The regulations contain the application procedures and require the Board to revise the examination on a regular basis. The regulations establish the standards to classify water and wastewater treatment plants based on water volume and treatment techniques used.

Board regulations allow certified operators to supervise multiple facilities under certain circumstances. This usually involves low volume facilities requiring lower classification for supervision. Regulations allow operators certified at a high level to supervise lower level plants. High volume plants using complex treatment methods may require several certified operators on staff to comply with the regulations.

PROGRAM DESCRIPTION AND ADMINISTRATION

Colorado Plant Operator's Certification Board

The policy making body for the program is a nine member Board appointed by the governor. Five members of the Board are required to specifically represent the Water Quality Control Commission (WQCC), the Colorado Board of Health, the Colorado Municipal League, one Class A water treatment operator and one Class A wastewater treatment operator. Four are at large members.

Operational staffing for the program is located in the Water Quality Control Division (Division). The staff consists of one full time certification officer and a part-time clerical support person. The total budget for the program was a little over \$70,000 in fiscal year 1994-95, a figure that has been fairly consistent for the past several years, adjusted for inflation. Fees for examinations, certifications and renewals are set by statute and totaled \$22,000 last year.

The Board has no technical support staff assigned to it for inspection or compliance programs. The Board has access to inspection reports prepared by Division field personnel. The Division employs seven district engineers, two technicians and four water samplers to conduct site inspection, sample water quality at facilities and evaluate the results.

Water Treatment Certification

A water treatment plant is defined in §25-9-102, C.R.S. as “the facility or facilities within the water supply system which can alter the physical, chemical, or bacteriological quality of the water.” Water supply system “means the system of pipes, structures, and facilities through which a water supply is obtained, treated, and sold or distributed for human consumption or household use, if such system has at least fifteen service connections or regularly serves at least twenty-five individuals.” This broad definition means that the Board must require certification for facilities ranging in size and complexity from the City of Denver wastewater management system to a small restaurant in rural Colorado obtaining its drinking water from a well.

Drinking water regulations are divided into two main categories: primary drinking water standards are those based on public health concerns, mainly disease prevention. Secondary drinking water standards are based on public welfare concerns. These include economic issues, such as water odor and discoloration (water high in certain minerals is safe to drink; however, it may discolor clothing washed in it). Water regulations are also divided into two categories by water supply source. Surface water is water obtained from a stream, river or reservoir. Ground water is water obtained from a well not directly influenced by a surface water source.

Under the authority of the “Safe Drinking Water Act”, the EPA promulgates both primary and secondary water quality standards. In Colorado, the State Board of Health is responsible for adopting federal drinking water standards. The Division is responsible for administering and enforcing drinking water regulations. Colorado standards can be no more restrictive than those promulgated by the EPA. However, the Board of Health may adopt standards for those pollutants not regulated by the EPA. All water treatment facilities are inspected on a regular basis by the Division. Facility operators are required to regularly analyze water samples to insure compliance with drinking water standards. Records must be maintained on all sample results and regularly reported to the Division.

The CDPHE has identified over 2800 water treatment facilities state-wide. As explained above, because of the broad definition of water treatment facilities, these facilities serve from as few as 15 to over a half million people per day. To serve this variable population, the Plant Operator Certification Board has adopted regulations for four levels of certification.

The lowest level of certification is a Class D. The most common Class D Water Treatment Plant is a private well, serving at least 15 households or a small business, with disinfecting (chlorinating) the only treatment. To obtain a Class D Certification, an individual must submit an application with the required fee and receive a passing score on a Board administered test. Certification is valid for 5 years and the operator must obtain two continuing education units during that time period to maintain certification.

Class A is the highest level of certification in Colorado. A typical facility requiring a Class A operator is a high volume facility serving a large population and requiring complex treatment to maintain primary drinking water standards. Class A Certification is obtained by submitting proof of four years Board approved experience, an application with the required fee and passing a separate Board administered examination. The operator must obtain five Board approved continuing education units over the five year period to maintain certification.

There are currently 729 Class A, 271, Class B, 912 Class C, and 2012 Class D Board Certified Water Treatment Plant Operators in Colorado. Many municipal water treatment facilities link pay increases to obtaining higher levels of certification as a method to increase the professional knowledge of their staff.

Wastewater Treatment Certification

The Federal Water Pollution Control Act, also known as the Clean Water Act (CWA), covers a variety of topics related to water quality. Topics include a grant program for the construction of water treatment facilities, authority to issue discharge permits and control storm water runoff, establish effluent limits, and water quality standards. The EPA is required to establish water quality standards for a variety of pollutants. EPA delegates enforcement of the standards to approved state agencies. In Colorado, the WQCC has the authority to implement standards stricter than those required by EPA. The Division, in the CDPHE is charged with administering the state wastewater permit program and monitoring water quality in state waters.

Wastewater treatment plant “means the facility or group of units used for the treatment of industrial or domestic wastewater from sewer systems and for the reduction of handling of solids and gases removed from such wastes, whether or not such facility or group of units is discharging into state waters.” The definition specifically excludes industrial wastewater and pretreatment facilities that do not discharge into state waters.

The WQCC establishes water quality standards and use classifications for state waters. The Division uses these standards in establishing effluent limitations for discharge permits. All individuals, businesses and government entities discharging waste into state waters are required to obtain a discharge permit from the Division. Discharge permits are issued for both domestic and industrial wastewater treatment.

Discharge permits contain effluent limits which must be maintained by the facility. These permits do not prescribe treatment methodology. Of the over 1,000 wastewater treatment plants, 100 are considered major facilities and are inspected by the Division at least annually. The balance of the facilities are inspected on a five year schedule. All discharge permits contain requirements for periodic testing and reporting of wastewater discharges.

Treatment plants that exceed permit levels have negative impacts on the receiving waters. Downstream users of the water may receive water contaminated to a point that their treatment procedure does not bring water into compliance with safe drinking water standards. In extreme cases, excessive discharges cause severe damage to aquatic life. In 1993, a local brewery accidentally discharged beer into a stream, killing most of the aquatic life for several miles downstream. Incidents such as this have long term impacts on the recreational uses of state waters.

As with water treatment facilities, the facility classification is dependent upon volume and complexity of treatment. Less than 30 percent of the wastewater treatment facilities are publicly owned and operated by municipalities or special districts. The balance are privately owned and operated by individuals, businesses and non-profit organizations. Privately owned wastewater treatment facilities are classified as either domestic or industrial facilities. Privately owned domestic wastewater treatment facilities and operators are classified and certified under the same criteria as publicly owned facilities. The Board has adopted a separate certification for industrial wastewater treatment operators.

The certification levels for domestic wastewater plant operators parallel those for water treatment plants. Class D operators are required to pay the statutory fee, pass an examination and maintain continuing education. Higher level certifications require a more rigorous examination, meeting gradually increasing experience and continuing education requirements.

There are currently 710 Class A, 246 Class B, 791 Class C and 2072 Class D Board Certified Wastewater Treatment Plant Operators in Colorado. As with the water treatment operators, many municipalities link increased certification levels to pay grades.

The Board has also developed three classifications for industrial wastewater treatment plants. As with the water and wastewater classifications, the higher level classifications require more experience and more complex testing. Class A wastewater operators may operate any level of industrial wastewater plant.

Disciplinary Actions

Board regulation 100.7.2.1 allows the Board to revoke the certification of an operator for “The failure of the operators to display in practice the experience and qualification, perform his duties and exercise reasonable care and judgment consistent the requirements and minimum qualification for certification as determined after investigations by the Board.” The Board has no staff for independent enforcement inspections. The Board establishes classifications for facilities, then relies on Division inspection reports to reveal violations. The Board has on at least two occasions revoked a certification under the provisions of regulation 100.7.2.1, in conjunction with other enforcement actions by the Division.

Section 25-9-110 (2) of the statute also provide penalty provisions for facility owners operating plants without the supervision of certified operators. The Board typically does not encourage enforcement actions under this statutory provision. However, the provision is used as leverage to compel responsible parties to either obtain certification or contract with a certified operator. One metro area sanitation district plead guilty to operating a facility without a certified operator and violating its discharge permit. The facility was fined in excess of \$35,000.

The district engineers for the Division conduct inspections on all classifications of water treatment and water treatment facilities. A portion of the inspection is verifying that the facility has a properly certified operator on staff. In practice, inspections focus on compliance with permit conditions, approved treatment methods and record keeping requirements. The Division does not normally initiate enforcement actions for non compliance with certification requirements. The Board receives copies of all inspection reports.

On at least one occasion, the owner of a treatment facility has been charged with falsifying certification information during an inspection by Division engineers. Charges in this case are part of an pending disciplinary action still under investigation by Division enforcement personnel.

SUNSET ANALYSIS

Plant operator certification requirements for facilities using surface water is encouraged, but not mandated, by the EPA. Geographically, approximately 75 percent of the state is dependent upon groundwater for drinking water needs. Almost two thirds of the state population uses water obtained from surface water facilities. There are no federal funds dependent upon maintaining the program. Currently, 49 states require some type of certification or mandatory training for plant operators.

Colorado was one of the first states to classify water and wastewater treatment facilities and require certification for plant operators. In fact, the certification program predates the 1974 federal Safe Drinking Water Act. The Colorado program is used as a model for other states. Colorado currently grants licensure by endorsement to operators certified in 30 other states.

The quality of drinking water in the United States is considered very good, especially when compared to developing countries. High water quality standards have virtually eliminated deaths caused by waterborne diseases in the United States. However, constant vigilance must be maintained. The Center for Disease Control estimates just under one million people are infected with waterborne illnesses annually in the United States. Most illnesses, such as giardia, are relatively minor and result in nausea and diarrhea for a few days. In 1993, an outbreak of cryptosporidium in Milwaukee was traced to the municipal water treatment plant. The outbreak infected 400,000 people and resulted in six deaths.

Water treatment facilities in Colorado vary in size and complexity. The broad definitions of a water treatment plant and water supply system sometimes cause systems that have been in operation for years to be classified as a “new” water treatment system. This occurs frequently in areas where housing or business development results in an increase in the number of people or residences an individual well serves. Water Division staff work with local health departments and county planning offices to identify new and existing water systems that serve enough people to meet the definition.

Most small privately owned water treatment systems are certified as Class D and require only a small amount of chlorinating to meet drinking water standards. A typical Class D system would serve a small mobile home park or a campground. Many Class D operators are the owners of the mobile home park or campground served by the system. Class D systems do not require the attention of a full time operator.

A concern voiced by members of the Board and Division personnel, is the simplicity of the Class D systems allow owners to be lax on required maintenance. The operation of the water treatment facility is not the primary responsibility of the business owner. Fortunately, groundwater in Colorado is relatively pure. Because of the purity of the intake waters, outbreaks of waterborne diseases are rare. However the potential exists.

Wastewater treatment facilities are more complex in nature. They range from treatment lagoons (basically a large, open septic tank) to multi-million dollar plants with separate mechanical, chemical and bacteriological processes. A concern of most people contacted for this report is the lack of priority attached to wastewater treatment facilities. Surprisingly, an improperly maintained wastewater treatment facility is potentially more dangerous to the public than an improperly maintained water treatment facility, due to downstream impacts on wildlife, agriculture, livestock and humans.

District engineers for the Division inspect all classified plants. Inspections are more frequent at large facilities because of the greater impact on the public. All facilities, regardless of size, are required to regularly test water for compliance with applicable water quality standards. County or state health officials can issue orders for using bottled water or boiling water before drinking when violations of drinking water standards occur. This is more common in surface water sources than ground water facilities.

Board and Division representatives maintain mandatory Plant Operator Certification is necessary to maintain quality operation of facilities. High turnover, particularly at the lower levels, results in facilities being operated without a certified operator in place, with the knowledge of the Board. The Board emphasizes voluntary compliance over disciplinary enforcement. The normal response in this situation would be to implement a training program to certify an operator. Most of these facilities manage to maintain drinking water standards or the requirements of their discharge permit.

Most of the enforcement decisions are based on a lack of resources. The Board has the authority to initiate enforcement procedures, however, it does not have the financial resources to do so. The volunteer members of the Board make every effort to convince facility owners to either obtain certification or contract with a certified operator for plant supervision. In sparsely populated rural areas this sometimes results in a single operator maintaining several systems over a large area. This potentially causes operational practices as problematic as if the facility were operated by a non certified operator.

Certification is a form of title protection. It is usually distinguished from licensure in that it does not restrict the practice of an occupation or trade, only the use of a title in the practice of the occupation. Voluntary certification programs are usually established by members of a profession as a form of self regulation. Certification by a professional organization provides the public with knowledge that an individual has been recognized by his or her peers as having obtained a minimum level of competency.

Voluntary certification programs have no legal public protection or enforcement powers, unless they are required by law for the practice of a profession. When government agencies operate professional certification programs, they take on the effect of licensure by restricting the practice of an occupation to government certified individuals.

The Plant Operators Certification Program is a licensing program in every aspect except the name. Practitioners must demonstrate proficiency on a government approved examination and the practice is limited to government certified individuals. Most occupational licensing programs are cash funded by members of the occupation. Fees are established at a level necessary to cover the direct and indirect expenses of the program, including investigations and enforcement. Fees generated by the Plant Operator Certification Program cover approximately 30% of the expenses of the program.

The current membership of the Board has a satisfactory geographical mix, with representation from publicly owned facilities in both rural and urban areas of the state. The Board lacks representation from small privately owned facilities and the general public. The at large members are all certified operators or employees of regulated facilities.

The Board has established sufficient certification levels for facilities and operators to satisfy the diversity of the regulated community. The classification of individual facilities could be delegated to the Division staff, using criteria established by the Board. The Board regularly conducts examinations for various levels of certification, and revises the examinations periodically. The Board promotes regular training programs to assist applicants and certified operators to obtaining the education necessary to achieve higher level certification or mandatory continuing education units.

The continuing education requirement in the Plant Operator Certification Act was originally enacted to address the concern about grandfathered operators not being required to pass an examination. Since the requirement was established in 1988, all grandfathered operators should have obtained some level of continuing education by this time. Changing regulations and technology at high level plants may justify a need for continuing education to maintain competency. However, operators at this level are full-time employees and would likely obtain continuing education without a statutory requirement. Operators of lower level wastewater plants also have a need to maintain professional competency. Regulatory and technological changes may have an impact on these facilities. However, operators in these facilities are less likely to obtain the education without a statutory requirement.

With the exception of programs specifically for Class D operators, the Board approved and conducted seminars are focused on providing a level of knowledge to move operators to the next certification level. This is particularly desirable for municipal employees who frequently have salaries or performance appraisals based on achieving higher certification levels. It is less important for a business owner who only maintains certification to operate the chlorinator at a restaurant or campground.

The Board is charged with determining the minimum classification for an operator at every water and wastewater treatment plant in the state. The Board has established criteria, by regulation, for 11 facility classifications. The Board relies primarily on Division inspections to obtain information about individual facilities for classification and compliance with operator requirements.

The emphasis of the Board is on the education and certification of operators. In this area, the program has been successful. There are currently 1.4 certified water treatment operators and 3.6 certified wastewater treatment operators for every facility in Colorado. The Board has been less successful in insuring that every facility has a properly classified operator supervising its operation. Board records are maintained to monitor continuing education and renewal status of individual operators. Certification records are not cross reference to facility records. Information about facilities operating without a certified operator is not readily assessable.

**Should the
Certification
of Plant
Operators
Continue?**

Clean water for drinking and recreational purposes is a necessity for the citizens of Colorado. The proper operation of water treatment and wastewater treatment plants is an integral component in the maintenance of the high quality of water enjoyed in this state. While waterborne illnesses in Colorado are rarely fatal to humans, they can have severe impacts on infants, the elderly, and people with weakened immune systems. They also have a significant economic and social impact through loss of work and increased medical expenses.

Recommendation 1 - Continue the certification of plant operators.

RECOMMENDATIONS

Establish Fees by Rule

Fees generated by the testing and renewal of plant operator certification recover only a fraction of the cost associated with the program. While the program under review is called a certification program, it functions more like a licensing program since certification is mandatory for the practice of the occupation. Most occupational licensing programs are cash funded by the practitioners. In order to effectively operate on a cash funding basis, the renewal period should be shortened and the Board must have the ability to adjust fees periodically. Fees should be deposited in a dedicated fund, similar to other occupational licensing programs. Fees could be graduated to provide relief to operators at the lower levels, since these individuals frequently are paid less than operators at larger facilities.

Recommendation 2 - Require the Board to establish fees by rule to cover direct and indirect costs associated with the operation of the program.

Move Duties

The Plant Operators Certification Board is charged with evaluating and classifying water and wastewater treatment facilities. To accomplish this, the Board, by regulation, has adopted criteria for each level of facility classification. The actual classification of the individual facility is an administrative function. Since the Division is the initial point of contact for both types of facilities, it could easily apply the classification criteria to all new facilities.

Recommendation 3 - Move the responsibility for the classification of facilities to the Water Quality Control Division.

**Move
Enforcement
Provisions**

The Board does not currently have the resources to enforce its statutory and regulatory requirements. Division staff regularly inspect facilities and provide information to the Board. If the Board finds a non-compliant situation, they send a written request to comply, if that fails they request assistance from the Division for enforcement. While it is rarely necessary to request Division assistance, it is more efficient to have all enforcement authority in one place.

Recommendation 4 - Move the enforcement provisions of the Board to the Water Quality Control Division.

**Continuing
Education**

The current continuing education requirements were implemented in response to a concern that grandfathered operators had received no formal training on water quality issues. Changing technology and regulations may support a continuing education requirement for complex operations. However, operators of simple water treatment plants do not require continuing education to operate their facilities in accordance with regulations. The mandatory continuing education provision is scheduled to repeal in 1999. Unless significant justification is presented to continue it, the repeal should be allowed to take place. The statute requires graduated continuing education requirements based on certification levels. These requirements may be excessive for the purpose of maintaining competency at lower levels of certification.

Recommendation 5 - Allow Board to adjust continuing education requirements within statutory maximums.

Board Composition

The majority of the facilities in the state are small operations. However, small operators are not required to be represented on the Board. Requiring a Class D water treatment or wastewater treatment operator on the Board would add balance to reflect the regulated community.

Recommendation 6 - Change makeup of Board, small operators not represented.

Continuing Education

Continuing education opportunities are not as plentiful in rural areas of the state as in urban area. Attending seminars and workshops are beneficial to operators from both an educational and a networking standpoint. However, it is not always practical or cost effective, particularly for small operations to send an operator to a seminar. Video tapes of lectures or other related topics could be used in place of actual class time for some or all of the contact hours.

Recommendation 7 - The Board should consider alternate formats for obtaining continuing education.

**Administrative
Recommendation
s**

While it is currently required that all facilities be supervised by a certified operator, it is not required by statute or regulation to notify the Division who that operator is. High turnover, particularly at the lower levels, can impact compliance. Requiring a responsible party to document when operators change would encourage compliance.

Recommendation 8 - Require all plants to report to the Division anytime there is a change in the certified operator of record.

Currently all records maintained by the Board are based on operators, not facilities. The Board depends on the Division inspection reports to reveal compliance issues. The purpose of the certification program is to insure every facility in the state has a certified operator, not to increase the number of operators in the state. Maintaining records on a facility basis will allow the Board and Division to monitor compliance.

Recommendation 9 - Change recordkeeping methods to focus on facilities.

APPENDICES

Sunset Statutory Evaluation Criteria

- (I) Whether regulation by the agency is necessary to protect the public health, safety and welfare; whether the conditions which led to the initial regulation have changed; and whether other conditions have arisen which would warrant more, less or the same degree of regulation;
- (II) If regulation is necessary, whether the existing statutes and regulations establish the least restrictive form of regulation consistent with the public interest, considering other available regulatory mechanisms and whether agency rules enhance the public interest and are within the scope of legislative intent;
- (III) Whether the agency operates in the public interest and whether its operation is impeded or enhanced by existing statutes, rules, procedures and practices of the Department of Regulatory Agencies and any other circumstances, including budgetary, resource and personnel matters;
- (IV) Whether an analysis of agency operations indicates that the agency performs its statutory duties efficiently and effectively;
- (V) Whether the composition of the agency's board or commission adequately represents the public interest and whether the agency encourages public participation in its decisions rather than participation only by the people it regulates;
- (VI) The economic impact of regulation and, if national economic information is available, whether the agency stimulates or restricts competition;
- (VII) Whether complaint, investigation and disciplinary procedures adequately protect the public and whether final dispositions of complaints are in the public interest or self-serving to the profession;
- (VIII) Whether the scope of practice of the regulated occupation contributes to the optimum utilization of personnel and whether entry requirements encourage affirmative action;
- (IX) Whether administrative and statutory changes are necessary to improve agency operations to enhance public interest.

Plant Operators Certification Board Statute

25-9-101. Legislative declaration. To assure adequate operation of water and wastewater treatment facilities, and to preserve the public peace, health, and safety, the provisions of this article and regulations authorized pursuant thereto are enacted to provide for the examination, classification, and certification of water and wastewater treatment plant operators and to establish minimum standards therefor based upon their knowledge and experience, to provide procedures for certification, to encourage vocational education for such operators, to provide a penalty for the wrongful use of the title "certified operator", to require each water and wastewater treatment plant to be under the supervision of a certified operator, to provide for the classification of all water and wastewater treatment plants in the state, and to provide a penalty for the operation of a water or wastewater treatment plant without supervision of a certified operator.

25-9-102. Definitions. As used in this article, unless the context otherwise requires:

- (1) "Board" means the plant operators certification board.
- (2) "Certificate" means the certificate of competency issued by the board stating that the operator named thereon has met the requirements for the specified operator classification of the certification program.
- (3) "Certified operator" means the person who has direct responsibility for the operation of any treatment facility covered under this article and is certified in accordance with the provisions of this article.
- (4) "Department" means the Colorado department of public health and environment.
- (5) "Wastewater treatment plant" means the facility or group of units used for the treatment of industrial or domestic wastewater from sewer systems and for the reduction and handling of solids and gases removed from such wastes, whether or not such facility or group of units is discharging into state waters. "Wastewater treatment plant" specifically excludes any facility or group of units used for pretreatment, treatment, or handling of industrial water, wastewaters, reuse waters, and wastes which are not discharged into state waters.
- (6) "Water supply system" means the system of pipes, structures, and facilities through which a water supply is obtained, treated, and sold or distributed for human consumption or household use, if such system has at least fifteen service connections or regularly serves at least twenty-five individuals.
- (7) "Water treatment plant" means the facility or facilities within the water supply system which can alter the physical, chemical, or bacteriological quality of the water.

25-9-103. Plant operators certification board - composition - repeal of article. (1) There is hereby created the plant operators certification board which shall constitute a section of the division of administration of the department and shall consist of nine members, five of whom shall be as follows:

- (a) A certified Class A water treatment plant operator;
 - (b) A certified Class A wastewater treatment plant operator;
 - (c) A representative from the Colorado municipal league;
 - (d) A representative recommended by the state board of health;
 - (e) A representative recommended by the state water quality control commission.
- (2) All members of the board shall be appointed by the governor.

(3) Appointments to the initial board shall be as follows: Three of the members shall be appointed for a three-year term, three for a two-year term, and three for a one-year term. Thereafter all board members shall serve for a term of three years. No member shall serve continuously on the board for more than nine years.

(4) This article is repealed, effective July 1, 1996. Prior to such repeal, the plant operators certification board shall be reviewed as provided for in section 24-34-104, C.R.S.

25-9-104. Duties of the board. (1) The board shall elect a chairman and secretary each year, establish rules and regulations setting forth the requirements governing application, admission to the examinations, and recording and issuing of certificates for the class of operator for which the applicant is found to be qualified. The board shall furnish the examination material and collect fees as set forth in section 25-9-108. The board shall set the times, dates, and places for holding examinations, one of which shall be given at least annually, grade examination papers, and evaluate work experience of applicants. The board shall maintain an office provided by the department for contact with operators and employers to receive applications and fees, conduct such examinations as may be directed by the board, record the results thereof, notify applicants of results, issue certificates, and prepare and distribute an annual report.

(2) The board shall promote and assist in regular training schools and programs designed to aid applicants and other interested persons to acquire the necessary knowledge to meet the certification requirements of this article.

(3) The board shall establish not less than four classes of certified water treatment plant operators and not less than four classes of wastewater treatment plant operators, which classes shall differentiate the various levels of complexity to be encountered in water and wastewater treatment plant operation.

(4) The board shall, after due consideration, establish for each water and wastewater treatment plant a minimum class of certified operators required for its direct supervision. Compliance for all such treatment plants shall be mandatory by January 1, 1976.

(5) The board shall establish a procedure whereby any decision of the board can be subject to appeal.

(6) The board shall exercise such other powers and duties as are deemed necessary within the scope of this article.

(7) Members of the board shall serve without compensation, but shall be reimbursed for their necessary expenses.

(8) The board shall exercise its powers and perform its duties and functions as if it were transferred to the department by a type 1 transfer under the "Administrative Organization Act of 1968", being article 1 of title 24, C.R.S.

25-9-105. Water treatment plant operator. (1) Persons who by examination and experience are found to be qualified for certification as water treatment plant operators shall be certified as having the minimum qualifications required for each of the respective classes, as follows:

(a) Class D. An applicant must indicate by written examination his knowledge of basic water treatment principles, chlorination procedures, bacteriological testing techniques and standards, department water quality standards, pumping and storage principles, and good housekeeping and safety practices.

(b) Class C. In addition to the knowledge required for a Class D applicant, the Class C applicant must indicate by written examination his knowledge of control procedures, including but not limited to the purpose, use, and procedures

used for the basic chemical, physical, and biological tests. The applicant must also have two years' experience working in a water treatment facility.

(c) Class B. In addition to the knowledge required for a Class C applicant, the Class B applicant must indicate by written examination his knowledge of the operation and maintenance of filter units, the principles of coagulation and sedimentation, the maintenance and safety of auxiliary equipment, and the principles of taste and odor control. The applicant must also have three years' experience working in a water treatment facility.

(d) Class A. In addition to the knowledge required for a Class B applicant, the Class A applicant must indicate by written examination his knowledge of the interpretation of results of chemical, physical, and biological control analyses; maintenance and operational procedures; housekeeping; customer relations; corrosion control; cross-connection control; and supervisory control techniques. The applicant must also have four years' experience working in a water treatment facility.

25-9-106. Wastewater treatment plant operator. (1) Persons who by examination and experience are found to be qualified for certification as wastewater treatment plant operators shall be certified as having the minimum qualifications required for each of the respective classes, as follows:

(a) Class D. A Class D applicant must indicate by written examination his knowledge of basic principles concerning pumping, grit, grease, sludge, sedimentation, hydraulics, chlorination, pumps, motors, state water quality control commission stream standards, and good housekeeping and safety practices.

(b) Class C. In addition to the knowledge required for a Class D applicant, the Class C applicant must indicate by written examination his knowledge of wastewater treatment principles, settling characteristics of solids and grit, separate sludge digestion, sludge processing, sampling, and basic chemical, physical, and biological tests. The applicant must also have two years' experience working in a wastewater treatment facility.

(c) Class B. In addition to the knowledge required for a Class C applicant, the Class B applicant must indicate by written examination his knowledge of the maintenance and operation of biological units, sedimentation units, and auxiliary equipment, and his experience in performing basic chemical, physical, and biological tests. The applicant must also have three years' experience working in a wastewater treatment facility.

(d) Class A. In addition to the knowledge required for a Class B applicant, the Class A applicant must indicate by written examination his knowledge in the interpretation of the results of chemical, physical, and biological control analyses; maintenance and operational procedures; and record-keeping, customer relations, corrosion control, cross-connection control, and supervisory control techniques. The applicant must also have four years' experience working in a wastewater treatment facility.

25-9-106.5. Education and experience - substitution allowed. Education and cross-experience may be substituted for experience requirements for certification as a Class C, Class B, or Class A water treatment plant operator or as a Class C, Class B, or Class A wastewater treatment plant operator; except that at least fifty percent of any experience requirement shall be met by actual on-site operating experience in a water treatment facility or a wastewater treatment facility, as the case may be. For purposes of this section "cross-experience" means that experience as a wastewater plant operator may be substituted for experience requirements for certification as water treatment plant operator and vice versa.

25-9-107. Certification procedure - repeal. (1) Any individual possessing the required experience may apply to the board on such forms as required and furnished by the board. The application shall be accompanied by such fee as required by section 25-9-108. The board shall admit for examination those applicants who meet the minimum qualifications as established by regulations of the board for certification.

(2) When an individual desires certification in a field other than that in which he has experience, his experience shall be evaluated by the board. The certificate issued is to be based upon the knowledge demonstrated by the applicant through examination and his verified record of work experience in water and wastewater treatment plant operation.

(3) Certificates shall be awarded by the board for a period of five years only to those applicants successfully meeting all of the requirements.

(4) Certificates shall be renewed upon payment of the required renewal fee by the applicant.

(4.5) (a) In addition to payment of the required renewal fee, an applicant for recertification shall submit proof of compliance with the following minimum continuing education requirements:

(I) Class A water and wastewater treatment plant operators, five continuing education units;

(II) Class B water and wastewater treatment plant operators, four continuing education units;

(III) Class C water and wastewater treatment plant operators, three continuing education units;

(IV) Class D water and wastewater treatment plant operators, two continuing education units.

(b) For purposes of this subsection (4.5), one continuing education unit is equal to ten hours of instruction.

(c) This subsection (4.5) is repealed, effective July 1, 1999.

(5) The board, upon application therefor, may issue a certificate, without examination, in a comparable classification to any person who holds a certificate in any state, territory, or possession of the United States or any country, providing the requirements for certification of operators under which the person's certificate was issued do not conflict with the provisions of this article and are of a standard not lower than that specified by regulations adopted under this article.

(6) Certificates of proper classification shall be issued without examination, upon appropriate application filed with the board on or before July 1, 1985, to applicants who have been the operators of any facilities covered under this article on or before July 1, 1973. A certificate so issued shall be valid only for that particular treatment plant or system and for the classification determined by the board on the basis of experience and education of the operator and shall remain in effect unless revoked by the board pursuant to the provisions of article 4 of title 24, C.R.S.

(7) Certification in an appropriate classification shall be issued to operators who on or before July 1, 1973, hold certificates of competency attained by examination under the voluntary certification program within the state of Colorado during the time immediately preceding July 1, 1973.

(8) Certificates of proper classification as industrial wastewater treatment plant operators in industrial wastewater treatment plant facilities using chemical or physical treatment methods may be issued to applicants who successfully complete the appropriate examination and who meet the requirements to be set by the board pursuant to rules and regulations. Until the board establishes rules and regulations under this subsection (8), any operator may be certified for a particular industrial treatment plant if he has a current Class A license.

25-9-108. Fees. Each application for certification shall be accompanied by a fee in the amount of fifteen dollars which is not refundable and which will include the expenses for the first examination taken by the applicant. Examination fees in the amount of ten dollars shall be paid for each additional examination taken in any class. Reexamination fees in the amount of ten dollars will be paid for second and succeeding examinations in any class. Renewal fees in the amount of five dollars shall be paid prior to the issuance of a renewal certificate by the board. All moneys received by the board shall be deposited with the department of the treasury pursuant to the provisions of section 24-36-103, C.R.S.

25-9-109. Use of title. Only a person who has been qualified by the board as a certified water treatment plant operator or certified wastewater treatment plant operator and who possesses a valid certificate attesting to this certification in this state shall have the right and privilege of using the title "certified water treatment plant operator, Class" or "certified wastewater treatment plant operator, Class".

25-9-110. Violations - penalty. (1) It is unlawful for any person to represent himself as a certified water treatment plant operator of any class or a certified wastewater treatment plant operator of any class without first being so certified by the board and without being the holder of a current valid certificate issued by the board. Any person violating the provisions of this subsection (1) is guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of not more than three hundred dollars.

(2) It is unlawful for any owner of a water treatment plant or a wastewater treatment plant in the state of Colorado to allow the plant to be operated without the supervision of a certified operator of the classification required by the board for the specific plant. Any owner violating the provisions of this subsection (2) is guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of not more than three hundred dollars for each violation. Each day of violation constitutes a separate offense.