



NEWEA

**New England
Water Environment
Association**

**COLLECTION SYSTEMS
CERTIFICATION PROGRAM**

CERTIFICATION PROGRAM
FOR WASTEWATER COLLECTIONS SYSTEMS PERSONNEL

As part of an assessment of regional water pollution abatement and control needs in the mid-1950s NEWEA (then the New England Sewerage and Industrial Waste Association) established an ad hoc committee to investigate and develop a certification program to rate skilled, qualified operators. The committee submitted its report and program in the Fall of 1957 when it was adopted and the program initiated.

In June 1979, the issues of collection systems operators were raised. An Ad Hoc Committee on Collection System Operator Certification presented its report to the NEWEA (then the New England Water Pollution Control Association) Executive Committee on August 30, 1979, where it was adopted and the program implemented.

After the adoption of NEWEA's Certification Program for treatment plant operators, all six New England states adopted mandatory certification requirements. As a result, NEWEA's Plant Operator Certification Program has been phased out. During its active years, nearly 1,000 operators were certified. NEWEA's Certification Program for Collection System Operators continues to administer examinations and issued certificates. (Through December 2020, over 8,400 collections systems certifications have been issued.)

Founded in 1929 with 40 members, NEWEA now has over 2,000 members representing scientists, state, federal and municipal officials, educators, consulting engineers and wastewater collection system operators, equipment manufacturers and distributors, wastewater treatment plant personnel, and others who are actively concerned with the preservation and enhancement of our water environment including the protection of water resources and restoration of water quality.

CERTIFICATION PROGRAM
FOR WASTEWATER COLLECTIONS SYSTEMS PERSONNEL,
NEW ENGLAND WATER ENVIRONMENT ASSOCIATION, INC.

GENERAL INFORMATION
SECTIONS 1-10

1.0 OBJECTIVE

This Certification Program, for the examination and certification of wastewater collection systems personnel in the New England States, is hereby established in order to promote the employment of trained, experienced, reliable and efficient personnel for the operation of public and industrial wastewater works; and to establish standards and facilities whereby wastewater collection systems personnel can demonstrate proficiency. By means of this program, the New England Water Environment Association, Inc. (NEWEA) will strive to:

- a) Improve the quality of wastewater collection systems operations;
- b) Improve the status of wastewater collection systems personnel;
- c) Promote safety conditions for wastewater collection systems personnel;
- d) Provide a roster of qualified personnel; and
- e) Provide a means whereby those responsible for employment of wastewater collection systems personnel can readily determine the qualifications, which are considered desirable in such personnel.

2.0 GENERAL POLICIES

- 2.1 This is a voluntary program. It will be unnecessary for any person to hold membership in the NEWEA or in any other organization of association to receive certification, provided that said person meets the requirements set forth herein.
- 2.2 All wastewater collection systems personnel, including those in subordinate positions, are encouraged to: a) apply for certification in the highest grade consistent with their present qualifications, regardless of whether or not the qualifications established for their present position could be satisfied by a person holding a lower grade of certification; and b) strive for increased knowledge, training and experience to permit future advancement in their grade of certification.
- 2.3 This program provides for certification of personnel whose duties are confined to work, or supervision of work on: a) sewer maintenance or construction; or b) pumping stations.
- 2.4 The NEWEA will endeavor to cooperate with, and requests the cooperation of those State, Municipal, Civil Service, Industrial and Institutional agencies in New England which own, operate or exercise control over wastewater collection systems, to the end that the maximum benefits of the program may be realized throughout the New England States.

3.0 DEFINITIONS

- 3.1 "Wastewater Collection Systems" means an arrangement of piping, devices and structures constructed and installed for the purpose of transporting and treating wastewater from domestic, commercial or industrial sources, or combinations thereof, and including gravity sewers, force mains, manholes, pumping equipment and other facilities that collect and convey wastewater.

- 3.2 “Collection Systems Personnel” means both (a) the individual who is the superintendent or administrative head and has responsibility for the operation of a wastewater collection system, and (b) the individual who works under the supervision of the superintendent, and who normally has charge of or performs important operating functions.
- 3.3 “Operator-In-Training” (OIT) status means an applicant who has met the written examination and education requirements for a particular grade but who has not had sufficient operating experience to meet the full requirements of that grade. This status will apply to all four grades (1 through 4) of certification.
- 3.4 “Reciprocity” certification describes the certification of an applicant who passed a written exam in another state and meets the experience and education requirements of this program.
- 3.5 “Sub Committee” shall mean the NEWEA Collection System Certification Sub Committee.
- 3.6 “Qualifying Experience” shall mean the duties in a level of responsibility relevant to the field operation, maintenance, and management of a collection system.

NOTE: In the title of this Program and in all places where it appears, the word “Operator” covers both superintendent and operator as defined here.

4.0 CERTIFICATION COMMITTEE

4.1 The Sub Committee may consist of twelve members in the following categories:

Six to twelve currently employed or retired wastewater industry professionals possessing NEWEA Collection System Grade 4 Certification, including but not limited to wastewater collection system managers, supervisors, operators, maintainers, educators, trainers, State Regulatory Agency members, and sanitary engineers.

Efforts shall be made to achieve representation from each from the States of Massachusetts, Connecticut, Rhode Island, New Hampshire, Maine and Vermont.

All Sub Committee members shall be members of NEWEA.

4.2 All Sub Committee members shall be appointed by the President of NEWEA in accordance with Section 4.1.

4.3 A Chair of the Sub Committee shall be appointed by the President from its membership. The secretary-treasurer shall be the Executive Director of the Association and shall serve the Sub Committee concurrently.

4.4 The Sub Committee shall have responsibility for implementing and administering the Certification Program, subject to the approval of the Executive Committee. The Sub Committee may adopt such rules and regulations, consistent with the provisions contained herein, as necessary for the conduct of this program.

4.5 It shall be the duty of the Sub Committee to receive all applications for certification from NEWEA; to investigate, verify and evaluate the accompanying record of each applicant; to prepare examinations for the various grades of certification as herein provided; and to perform such other duties as may be necessary to ensure compliance with the provisions herein contained.

5.0 GENERAL PROCEDURE

- 5.1 Application for certification shall be made to the NEWEA office using online forms to be prescribed by NEWEA. Applications shall be submitted 30 days in advance of the date of examination established by NEWEA. Applicants are required to evaluate their education and work credit and apply for the appropriate grade level of examination for which they qualify. Applicants shall refer to Sections 9.0 CLASSIFICATION OF WASTEWATER COLLECTION SYSTEMS and 10.0 QUALIFICATIONS OF COLLECTION SYSTEMS PERSONNEL to evaluate their education and work credit. Applications will be given preliminary screening, by any Sub Committee member, to ascertain whether the applicant meets the education and experience requirements. Applications will be returned to NEWEA. NEWEA will notify applicants who receive Sub Committee approval to take the examination for certification. Applicants will then select from the scheduled dates and time of online examinations. Applicants may also choose to take exams in-person when offered at prescribed locations. NEWEA will correct all examinations and notify Test takers of their score. Test Takers who do not pass the exam will be urged to reapply.
- 5.2 Applicants requesting reciprocal certification must complete the online application and submit proof of satisfactory completion of a Sub Committee approved examination.
- 5.3 Certificates for all grades provided herein will be issued by NEWEA only after applicants have fully qualified themselves in accordance with the provision of this program.
- 5.4 Certification status: In addition to assignment of grade to operators, the Sub Committee chair, or designee, shall assign operators a status as follows:
- (1) Operator-in-Training Status. Upon receiving an applicant's application for certification examination, the Sub Committee chair, or designee, shall review the applicant's experience, education and training. If the applicant's work history at a collection system DOES NOT meet the experience qualifications established in Section 10.0 QUALIFICATIONS OF COLLECTION SYSTEMS PERSONNEL, the applicant shall be approved for an Operator-in-Training (OIT) Certification exam. The Sub Committee chair, or designee, shall provide written results of the evaluation that quantifies additional education and or relevant field experience credit required to meet the Full Operator Status. After passing the grade 1 OIT; grade 2 OIT; grade 3 OIT; or grade 4 OIT examination and gaining sufficient experience at a collection system to meet the full grade qualifications, the OIT must complete an online Application to request an upgrade to Full status. The Application must include written verification duly signed by the OIT's supervisor to document completion of the operating experience requirement. Proof of eligibility must be forwarded to NEWEA within 6 months of the date of eligibility. NEWEA shall review the operator's status and (if merited) issue the upgrade certificate at Full Operator Status.
 - (2) Full Operator Status. Full operator status refers to an operator who has passed a certification examination and meets all experience requirements set forth in 10.0 QUALIFICATIONS OF COLLECTION SYSTEMS PERSONNEL for a specified collection system.

6.0 EXAMINATION

- 6.1 The Sub Committee shall prepare such written and oral examinations as will properly reflect the knowledge and ability required of the various grades of operators as herein provided.
- 6.2 The examinations will be offered as online format or in-person for applicants deemed qualified by the Sub Committee.
- 6.3 The Sub Committee may hold examination periods at the time and place of the annual meeting of NEWEA and at such other times and places throughout the year as may be required and convenient. Arrangements for duly qualified examination Proctors will be made by NEWEA. The time and place of examinations may be announced on the NEWEA website, in the NEWEA Journal and Newsletter, or by such other methods as the Sub Committee may deem necessary and proper.

- 6.4. The passing grade on all examinations shall be a minimum of 70%.
- 6.5. In the event an applicant fails to pass an examination, s/he may apply for re-examination at their discretion, using the online application.
- 6.6. The re-examination fee must be paid upon submitting the online application. Refer to SECTION 8.0 FEES FOR CERTIFICATION.
- 6.7. The Sub Committee may, at its discretion, waive examination for applicants holding certificates or licenses issued by other states or associations having equal or greater standards than those outlined in this program as determined by the Sub Committee chair, or designee.
- 6.8. In accordance with the Americans with Disabilities Act, if you have a disability and need testing accommodations, please contact the NEWEA office so that appropriate arrangements can be made.

7.0 ISSUANCE OF CERTIFICATES

- 7.1. Upon satisfactory fulfillment of the requirements provided herein, NEWEA shall issue a suitable certificate. Said certificate shall state the grade and status for which the applicant is certified and the date of issue.
- 7.2. Certificates will be permanent on successful completion of the requirements unless revoked for proper cause.
- 7.3. The Sub Committee is authorized to revoke the certificate of any person who, after a hearing before the Sub Committee, is found guilty of fraud or deceit in obtaining a certificate, or of gross negligence, incompetence or misconduct in the performance of his/her duties as an operator.

8.0 FEES FOR CERTIFICATION

- 8.1. Fees for original certification or retest in each grade shall be \$75.00 and payable to New England Water Environment Association.
- 8.2. Fees for reciprocal certificates issued in accordance with Sections 5.2 and 6.7, shall be \$75.00 and payable to New England Water Environment Association.
- 8.3. Fees will accompany online applications for examinations.
- 8.4. Fees collected from applicants who fail to pass the examination will not be returned.
- 8.5. Each applicant for a provisional certificate shall be subject to the same original fees as required of applicants for full certification under this section.
- 8.6. Fees shall be paid for all initial applications for certificates or advancement to a higher grade.
- 8.7. The fee schedule as listed herein may be revised, if it is found necessary, to make the Certification Program self-sustaining, as approved by the NEWEA Executive Committee.

9.0 CLASSIFICATION OF WASTEWATER COLLECTION SYSTEMS

- 9.1. The Certification Committee shall, from time to time, classify all Collection Systems into four grades based on the size and complexity of a point system as indicated below.

The point system is based on the 13 areas described in Section 9.2

Grade I	1 - 20
Grade II	21 - 39
Grade III	40 - 55
Grade IV	56 - >

9.2

		Points	Max. No. of Points
1	Largest Pipe Size		6
	a. Up to 42"	3	
	b. Greater than 42"	6	
2	Average Total Flow MGD		
	a. 0 - 0.10	1	*Extra 2 pts. for industrial flow in excess of 20% of total flow.
	b. 0.10 - 0.40	2	
	c. 0.40 - 0.70	3	
	d. 0.70 - 1.00	4	
	e. 1.0 - 5.0	5	
	f. 5.0 - 10.0	6	
	g. 10.0 - 20.0	7	
	h. 20.0 - 50.0	8	
	i. 50.0 - 100.0	9	
	j. 100.0>	10	
3	Total Miles of Sewer Sanitary & Combined. Do not include storm sewers.		
	a. 0 - 10	2	
	b. 10 - 20	4	
	c. 20 - 50	6	
	d. 50 - 100	8	
	e. 100>	10	10
4	Pump Stations Under Control of Collection Systems Operators		
	a. Standby power	2	
	b. Dry well station	2	
	c. Wet well station	2	
	d. Grit removal	1	
	e. Comminution	1	
	f. Bar rack	1	
	g. Aeration	1	
	h. Variable speed pumps	2	
	i. Number of stations		
	1) 2-4	2	
	2) 5-10	4	
	3) 10>	5	
	j. Alarm systems:		
	Flow	1	
	Personal safety	1	
	Telecommunications	1	18
5	Flow Measurement in Collection System	2	2

6	Siphons	2	2
7	Combined Sewers	3	3
8	Force Main	2	2
9	Chemical Additions		
	a. Hypochlorite	2	
	b. Gas	5	
	c. Other (explain)	2	9
10	Odor Control System	1	
11	SCADA System	1	
12	Oldest Part of System		
	a. Prior 1940	3	
	b. Prior 1960	2	
	c. Prior 1980	1	
	d. New	0	3
13	Mechanical Equipment		
	a. High pressure jet truck	3	
	b. Mechanical rodder	3	
	c. Bucket machine	3	
	d. Combination vacuum/jet truck	3	
	e. Closed circuit TV equipment	3	
	f. High pressure grouter	3	
	g. Other (be specific)		
			Maximum 15 points allowed for this section
14	Population Served by System		
	a. 1,500 or less	1	
	b. 1,501 – 15,000	3	
	c. 15,001 – 50,000	5	
	d. 50,001 and greater	7	

9.3 Grade I Collection System
All systems for a total point value of 1 - 20

9.4 Grade II Collection System
All systems for a total point value of 21 - 39

9.5 Grade III Collection System
All systems for a total point value of 40 - 55

9.6 Grade IV Collection System
All systems for a point value of 56 or greater

10.0 QUALIFICATIONS OF COLLECTION SYSTEMS PERSONNEL

10.1 Four grades of Collection Systems personnel are hereby established to parallel the previously described classification of Collection Systems.

Grade I certified personnel shall be considered as qualified to maintain operation of Grade I Collections Systems.

Grade II certified personnel shall be considered as qualified to maintain operation of Grade II Collection Systems.

Grade III certified personnel shall be considered as qualified to maintain operation of Grade III Collection Systems.

Grade IV certified personnel shall be considered as qualified to maintain operation of Grade IV Collection Systems.

10.2 Applicants in all classifications shall meet the following general requirements:

- a. Possession of a High School Diploma, High School Equivalency (HSE certificate), GED, or equivalent while not a requirement, is highly recommended.
- b. Submission of satisfactory evidence of qualifying experience to be defined as, duties in a level of responsibility relevant to the field operation, maintenance, and management of a collection system.
- c. All applicants with less than 1 years' qualifying work experience will be approved for a Grade I-OIT examination only.
- d. All applicants for Grades I and II must submit satisfactory evidence of qualifying experience at a Grade I or higher system for a minimum of 1 years' experience. There will be no education substitution permitted for this 1-year period of qualifying experience.
- e. Education may be substituted for a maximum of 50% of the balance of qualifying experience as required in 10.3 through 10.6 to the degree indicated:

Grade I - No substitution

Educational experience for other grades as follows:

Extent of Education	Experience Equivalent
Bachelor of Science Degree	4 years * Or 3 years**
Associates Degree	2 years * Or 1 year **

—————* **Relevant post-high school education shall include programs in sanitary engineering, environmental technology or science, water treatment, or wastewater treatment and technical and scientific disciplines.**

** Various other educational and experience equivalents will be considered as experience to the degree adjudged by the Sub Committee.

10.3 Grade I

All applicants for this grade must pass a Grade I examination and must submit satisfactory evidence of at least one years' qualifying experience describing duties in a level of responsibility relevant to the field operation, maintenance, and management of a collection system in this or higher grade. There shall be an OIT status for grade I collection system operators.

10.4 Grade II

All applicants for this grade must pass a Grade II examination and must submit satisfactory evidence of mechanical aptitude.

Applicants with experience at a Grade I collection system must submit satisfactory evidence of two years' qualifying experience performing duties in a level of responsibility relevant to the field operation, maintenance, and management of such systems. Relevant education may be substituted for no more than 50% of required experience.

Applicants with experience at a Grade II or higher collection system, must submit satisfactory evidence of one years' qualifying experience performing duties in a level of responsibility relevant to the field operation, maintenance, and management of such systems, for which no education credit substitution is permitted, Section 10.2 notwithstanding. There shall be an OIT status for grade II collection system operators.

10.5 Grade III

All applicants for this grade must pass a Grade III examination; must submit satisfactory evidence of at least six years of qualifying experience performing duties in a level of responsibility relevant to the field operation, maintenance, and management of a collection system in Grade II, or of four years' qualifying experience in the operation of a collection system in Grade III or higher; and must submit satisfactory evidence of mechanical aptitude. Higher education may be substituted for no more than 50% of required experience, Section 10.2 notwithstanding. There shall be an OIT status for grade III collection system operators.

10.6 Grade IV

All applicants for this grade must pass a Grade IV examination; must submit satisfactory evidence of seven years of qualifying experience performing duties in a level of responsibility relevant to the field operation, maintenance, and management of a collection system in Grade III, or at least six years of qualifying experience in the operation of a collection system in Grade IV; and must submit satisfactory evidence of mechanical aptitude. Higher education may be substituted for no more than 50% of required experience, Section 10.2 notwithstanding. There shall be an OIT status for grade IV collection system operators.

Training Credit Calculation and Equivalents

10 Training Contact Hours (TCH) = 1.0 Continuing Education Unit (CEU)

1.5 CEUs = 1.0 College Level Credit

Collection System Certification Examinations

Examinations: Each test is a one-hundred question, multiple choice examination. The use of a non-programmable basic calculator, blank scratch paper, and the NEWEA Formula sheet is allowed.

NEED TO KNOW CRITERIA represents the breadth of subject matter covered by the Collection System Certification exam series. The information below provides the operator with a study tool in preparing for the examinations in all four grades. Each exam consists of 100 multiple choice questions.

Category Name	Grade 1 (%)	Grade 2(%)	Grade 3(%)	Grade 4 (%)
Equipment Operation, Evaluation & Maintenance	28	21	23	19
Coll Sys Operation, Maintenance & Restoration	20	22	18	21
Lift Station Operation & Maintenance	14	15	15	18
Coll Sys Monitoring, Evaluation & Adjustment	19	26	23	16
Applied Math, Safety and Administrative Procedures	19	16	20	26

Suggested References

NEWEA Collection Systems Formula Sheet

Grades 1 and 2: CSUS manual: Operation & Maintenance of Wastewater Collection Systems Vol. 1

Grades 3 & 4: CSUS manual: Operation & Maintenance of Wastewater Collection Systems Vol. 2

EDUCATIONAL MATERIALS

The following resources may be used to obtain study materials:

Office of Water Programs
California State University, Sacramento
6000 J Street
Sacramento, CA 95819-6025
Telephone: (916) 278-6142
Fax: (916) 278-5959
<http://www.owp.csus.edu>

Water Environment Federation
601 Wythe Street
Alexandria, VA 22314-1994
Telephone: (800) 666-0206
Fax: (703) 684-2492
<http://www.wef.org>