

# CERTIFICATION GUIDE

## WATER DISTRIBUTION OPERATORS & ASSOCIATES

### CERTIFICATION OVERVIEW

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In this packet, you will find detailed information about the Water Distribution Operator and Associate Certification Program offered by the California – Nevada Section of the American Water Works Association.

The Certification Exam costs \$95 for members, \$100 for non members and is computer based. To apply for the exam, you must submit the completed form on page 3 and your payment to the Section Office. Once your application is approved, you will be notified of testing locations in your area. You will be allowed to schedule your exam at your convenience. You will receive immediate test results. If you pass, you can expect to receive your Certification Card within 30 business days.

### TABLE OF CONTENTS

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Exam Application	Page 3
Rules Governing Certification	Page 5
Range of Knowledge/ Need to Know Criteria	Page 16

### IMPORTANT PHONE NUMBERS

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CA-NV AWWA Section Office	909.481.7200
Certification Department	909.291.2100

EXAM APPLICATION  
WATER DISTRIBUTION OPERATORS & ASSOCIATES



# Application for Water Distribution Operators/Associates Certification

PLEASE READ INSTRUCTIONS BELOW FIRST

<p><b>INSTRUCTIONS TO APPLICANT</b></p> <p>1. <b>READ AND REVIEW THE CERTIFICATION RULES APPLICABLE TO YOUR DISCIPLINE.</b> When you sign the Application, you will have stated in writing that you have done so.</p> <p>2. <b>READ ALL INSTRUCTIONS BEFORE COMPLETING THE APPLICATION.</b> An incomplete or improperly prepared application will be returned. Questions not applicable mark N/A. All others should be answered as completely as possible in order to allow the Administrator to make an accurate evaluation of your credentials.</p> <p>3. Please type or print to ensure your answers are legible.</p> <p>4. Every application must be accompa-</p>	<p>nied by the <b>NON-REFUNDABLE</b> application fee. Please make check or money order payable to: <b>CA-NV Section, AWWA.</b></p> <p>5. Upon completion, mail the application to the Section office.</p> <p>6. Completed applications will be reviewed by the Administrator for Certification eligibility. A completed application includes all requested information, <u>and</u> proof of qualifications, per <b>Section 2</b> of the Rules.</p> <p>7. Refer to applicable program rules for appeals and protest procedures.</p> <p>8. The application must reach the Section office <b>20 days</b> prior to the exam date.</p> <p>9. <b>NOTIFICATION:</b> All applicants will be notified of eligibility <b>20 days</b> prior to the exam date.</p>	<p>10. <b>SPECIAL REQUEST FOR TAKING THE EXAM:</b> If you have a disability that restricts your ability to take a test under standard conditions, you may request special testing arrangements at the time of application. <b>SPECIAL TESTING REQUESTS MUST BE SUBMITTED IN WRITING BY A RECOGNIZED HEALTH CARE OR MENTAL HEALTH CARE PROVIDER</b> and <b>must</b> state the nature of the disability, the type of special testing requirements needed and contact information for both the provider and the applicant. <b>THIS REQUEST MUST ACCOMPANY YOUR APPLICATION AND FEE.</b></p> <p>Should you have any questions, contact the California-Nevada section, AWWA office at (909) 481-7200, fax (909) 481-4688.</p>
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Today's Date \_\_\_/\_\_\_/\_\_\_ Requested Exam Site \_\_\_\_\_ Requested Exam Date \_\_\_/\_\_\_/\_\_\_  Reciprocity Request  Reinstatement Request

Current Grade: \_\_\_\_\_ Current Certification:  Associate  Operator

Current Certification No.: \_\_\_\_\_

Grade Requested: \_\_\_\_\_ Certification Requested:  Associate  Operator

Is this a retest?  Yes  No

Full Name \_\_\_\_\_  
Print your name as you wish it to appear on the certificate

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone: Home (\_\_\_\_) \_\_\_/\_\_\_/\_\_\_ Work (\_\_\_\_) \_\_\_/\_\_\_/\_\_\_

Cell (\_\_\_\_) \_\_\_/\_\_\_/\_\_\_ Fax (\_\_\_\_) \_\_\_/\_\_\_/\_\_\_

Email \_\_\_\_\_

**Circle One: VISA MC AMEX**

Credit Card # \_\_\_\_\_

Name on Card: \_\_\_\_\_

Amount to Charge: \$ \_\_\_\_\_

Exp. Date: \_\_\_\_\_ V-Code \_\_\_\_\_

Signature: \_\_\_\_\_

Please Note: A **NON-REFUNDABLE** Application Fee of **\$95.00** for AWWA Members/**\$100.00** for non-members is due and must be included with each completed application. To receive member discount, list individual or company **AWWA Membership Number** \_\_\_\_\_. If not a member, include a paid membership application to get member discount or pay non-member

### PRESENT EMPLOYMENT

Employer \_\_\_\_\_ Length of Service \_\_\_\_\_

Address \_\_\_\_\_  
Number Street City State Zip

Job Title \_\_\_\_\_

### PRESENT EMPLOYER'S FACILITIES

Number of Customers \_\_\_\_\_ Daily Delivery (MGD): Average \_\_\_\_\_ Maximum \_\_\_\_\_

Type of Agency: Public \_\_\_\_\_ Private \_\_\_\_\_ Other (Explain) \_\_\_\_\_

We Sell: Wholesale \_\_\_\_\_ Retail \_\_\_\_\_ Domestic \_\_\_\_\_ Irrigation \_\_\_\_\_

Source of Water: Wells \_\_\_\_\_ Surface \_\_\_\_\_ Other (Explain) \_\_\_\_\_

Treatment Provided Water (if any): \_\_\_\_\_

**PREVIOUS EXPERIENCE**

List your job history below for the five years preceding present employment:

Date From	Date To	Total Years	Name	Address	Position

**EDUCATION**

*A COPY OF TRANSCRIPTS FOR CLASSES COMPLETED MUST BE ATTACHED*

List below the names of the schools, cities, and states in which you attended		Years Attended	Date Graduated	Subjects Studied Or Degree Earned
High School				
College				
Graduate				
Trade, Business, Correspondence				

- a. Are you presently enrolled in a waterworks course?     Yes     No    School \_\_\_\_\_  
 Instructor's name \_\_\_\_\_ Course title \_\_\_\_\_ No. of Units \_\_\_\_\_
- b. Summarize any additional experience you have which qualifies you for certification as a Water Distribution Operator/Associate.  
 Use additional page if required \_\_\_\_\_
- c. Do you currently hold a Professional Engineer Certificate?     Yes     No  
 If yes, please complete the following: State \_\_\_\_\_ Type \_\_\_\_\_ Number \_\_\_\_\_ Date Issued \_\_\_\_\_
- d. Please attach a current Job Description.**

**APPLICANTS FOR CERTIFICATION FOR GRADES II,III AND IV ONLY**

You **must** attach a complete **ORGANIZATIONAL CHART** for your agency, or company, and indicate on the chart your present job. A current **JOB DESCRIPTION** for this position as issued by your employer must also be provided. Give at least three references as to your operation ability. (Supervisors, foreman, etc.)

	Name	Address	Job Title
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____

I have carefully read the **Rules** governing Water Distribution Operator/Associate certification by California-Nevada Section, AWWA. I have carefully read the application instructions. I understand that my fee is **NON-REFUNDABLE**, and that it may be the judgment of the administrator(s) that my qualifications are insufficient for the grade of certification applied for.

I certify that the above information given by me is true. \_\_\_\_\_  
(Signature of applicant) (Date)

# RULES GOVERNING CERTIFICATION FOR WATER DISTRIBUTION OPERATORS & ASSOCIATES

Revised October 2009

- 1. Definitions** - The terms defined hereby apply explicitly to the California-Nevada Section of the American Water Works Association (CA-NV Section) Water Distribution Operators & Associates Certification Program.
  - 1.1. Administrator** - The CA-NV Section volunteer evaluating applications, administering examinations, issuing certificates, and performing associated duties.
  - 1.2. Applicant** - An individual applying for initial, upgraded, reciprocity or renewal by submission of a standard application to the administrator.
  - 1.3. Associate** - An individual that meets the minimum qualifications as defined in Section 2 and Section 4 of these rules.
  - 1.4. Certificate** - A certificate issued by the CA-NV Section AWWA attesting that an individual has met the standards of certification as they relate to water Distribution operation.
  - 1.5. Certification Director** - The person appointed by the Governing Board of the Section to represent the certification programs.
  - 1.6. Certification Grade (Associate)** - The level of certification as Grade I, II, III, or IV, as defined herein, corresponding to an individual's degree of knowledge as it relates to the operation/supervision of a public water Distribution system.
  - 1.7. Certification Grade (Operator)** - The level of certification as Grade I, II, III, or IV, as defined herein, corresponding to an individual's degree of knowledge, experience, and responsibility in the operation/supervision of a public water Distribution system.
  - 1.8. Committee** - The CA-NV Section AWWA Water Distribution/Treatment Certification Committee as appointed and administered by the Section via the Certification Board and charged with implementing the program(s) described herein.
  - 1.9. Contact Hour** - A minimum 50 minutes of actual time an attendee participates in continuing education offered by an approved provider on a public water supply related topic.
  - 1.10. Continuing Education (including contact hours)** - Presentations given by an accepted provider that transmits information related to the operation and/or maintenance of a drinking water treatment plant and/or distribution system.
  - 1.11. Course of Instruction** – A course of instruction acceptable to the Administrator provided by a formally accredited and/or standardized institution (e.g. institutions accredited/standardized by the Western Association of Schools and Colleges [WASC]) or the International Association for Continuing Education and Training [IACET]). The course may include, but is not limited to, instruction on the operation, maintenance, and/or management of public water supply systems including water treatment, water distribution, and/or water quality. Courses must be at least 3.6 CEUs (36 contact hours) over a minimum of 3 weeks.

- 1.12. Manager/Assistant Manager/Superintendent-** The employee of water agency with the ultimate administrative and operational responsibility for its water Distribution system, and the immediate subordinate in charge in his/her absence. Manager shall not ordinarily apply to an official exercising only general administrative supervision, such as a City Engineer or Public Works Director.
- 1.13. Operator** - An individual that meets the minimum qualifications as defined in Section 2 and Section 3 of these rules.
- 1.14. Section** - The California-Nevada Section of the American Water Works Association (AWWA).
- 1.15. Supervisor** - The employee of a public water purveyor who has the responsibility of supervising operators.
- 1.16. Waiver** - A release from certain requirements granted by the Certification Director as allowed for under specific sections of these Rules.
- 1.17. Water Distribution System** - Facilities for collecting, conveying, storing, pumping, controlling, disinfecting, and distributing drinking water.
- 1.18. Water Treatment System** - Structures, equipment, and processes that treat or condition a water supply, affecting the physical, chemical, or bacteriological quality of water distributed or otherwise offered to the public for domestic use by a public water system. Facilities consisting of only disinfection for which no Giardia or virus reduction is required and which are under the control of a certified distribution operator do not qualify as water treatment.

## 2. GENERAL QUALIFICATIONS

- 2.1.** Operators and Associates Certified under this program must:
- (a)** Be able to comprehend the English language to the extent that effective communications can be held with co-workers and supervisors
  - (b)** Have attained his/her 18th birthday

## 3. OPERATOR QUALIFICATIONS (Minimum)

- 3.1. Grade I Water Distribution Operator** - Job Description (typical) – An employee of a water purveyor who directly operates or is training to operate a drinking water treatment system
- (a)** Experience – Six (6) months operating a water Distribution system
  - (b)** Education – High school diploma or GED equivalent
  - (c)** Course of Instruction – Satisfactory completion of one (1) Course of Instruction as defined in Section 1.11 of these rules
  - (d)** Successful completion of the Grade I Water Distribution examination

- 3.2. Grade II Water Distribution Operator** - Job Description (typical) – An employee of a water purveyor who directly operates and/or supervises the operation of a drinking water treatment system. Typically operates as a journeyman operator or first-line supervisor (e.g. lead-man, foreman, etc.)
- (a) Experience – Two (2) years operating a water Distribution system, one (1) year of which as a Certified Grade I Operator for a Distribution I facility or higher
  - (b) Education – High school diploma or GED equivalent
  - (c) Course of Instruction – Satisfactory completion of two (2) Courses of Instruction as defined in Section 1.11 of these rules
  - (d) Successful completion of the Grade II Water Distribution examination
- 3.3. Grade III Water Distribution Operator** - Job Description (typical) – An employee of a water purveyor who directly operates and/or supervises the operation of a drinking water treatment system. Typically operates as the system supervisor (e.g. field supervisor, superintendent, chief operator, assistant manager)
- (a) Experience – Four years experience in operation/supervision of a water Distribution system, one (1) year of which as a Certified Grade II Operator for a Distribution II facility or higher
  - (b) Education – High school diploma or GED equivalent
  - (c) Course of Instruction – Satisfactory completion of three (3) Courses of Instruction as defined in Section 1.11 of these rules
  - (d) Successful completion of the Grade III Water Distribution examination
- 3.4. Grade IV Water Distribution Operator** - Job Description (typical) – An employee of a water purveyor who supervises and/or manages the operation of a drinking water Distribution system. Typically operates as the system manager (e.g. superintendent, chief operator, assistant manager, manager)
- (a) Experience- Five (5) years experience in supervision/operation of a water Distribution system, two (2) years of which as a Certified Grade III Operator for a Distribution III facility or higher
  - (b) Education – High school diploma or GED equivalent
  - (c) Course of Instruction – Satisfactory completion of four (4) Courses of Instruction as defined in Section 1.11 of these rules
  - (d) Successful completion of the Grade IV Water Distribution examination

#### **4. ASSOCIATE QUALIFICATIONS (Minimum)**



**4.1. Grade I Water Distribution Associate**

- (a)* Education – High school diploma or GED equivalent
- (b)* Course of Instruction – Satisfactory completion of one (1) Course of Instruction as defined in Section 1.11 of these rules
- (c)* Successful completion of the Grade I Water Distribution examination

**4.2. Grade II Water Distribution Associate**

- (a)* Education – High school diploma or GED equivalent
- (b)* Course of Instruction – Satisfactory completion of two (2) Courses of Instruction as defined in Section 1.11 of these rules
- (c)* Successful completion of the Grade II Water Distribution examination

**4.3. Grade III Water Distribution Associate**

- (a)* Education – High school diploma or GED equivalent
- (b)* Course of Instruction – Satisfactory completion of three (3) Courses of Instruction as defined in Section 1.11 of these rules
- (c)* Successful completion of the Grade III Water Distribution examination

**4.4. Grade IV Water Distribution Associate**

- (a)* Education – High school diploma or GED equivalent
- (b)* Course of Instruction – Satisfactory completion of four (4) Courses of Instruction as defined in Section 1.11 of these rules
- (c)* Successful completion of the Grade IV Water Distribution examination

**5. GENERAL CERTIFICATION PROCEDURE (Timelines in 5.1 and 5.2 are guidelines and, if missed, will not affect the validity of the action to which they refer)**

- 5.1.** Applicants for certification, upgrade, or reciprocity must submit a completed application, as available from the Section Office for evaluation at least thirty (20) days prior to the date set for the examination. Applicants shall be notified of the time and place of the examination at least twenty (20) days prior to the date of the examination.
- 5.2.** Applicants will be notified up to thirty (30) working days of passage or failure of the examination. Upon passage, applicant is considered to be certified by the CA-NV Section of the AWWA.

- 5.3.** Wallet cards for any grade are valid for two years from the date of issuance. Updated wallet cards will be issued upon renewal.

## **6. CERTIFICATION FEES**

- 6.1.** The application fee for certification examination in any grade shall be payable to the CA-NV Section. The current application fee shall be posted on the application forms provided by the Section.
- 6.2.** The application fee must accompany the completed application form.
- 6.3.** Checks returned for non-sufficient funds (NSF) will be subject to a returned check charge equal to the application fee.

## **7. CERTIFICATION UPGRADE**

- 7.1.** Individuals with current Grades I through III certifications may apply to test for the next higher grade with submittal of an application and required fee. (See Section 5 of these Rules).
- 7.2.** A Certified Associate may apply to upgrade to Certified Operator upon completion of the required experience as detailed in Section 3 of these rules. An individual with advanced Associate certification may maintain separate Associate and Operator certifications at different grade levels provided that the Associate grade level exceeds the Operator grade level. If a qualifying individual upgrades to an Operator certification at a grade level equal to or greater than his/her Associate grade level, the individual's Associate certification will be discontinued.
- 7.3.** Applications for examination will not be accepted from any individual requesting a grade more than one (1) grade higher than they currently hold.
- 7.4.** The Administrator's decision as to any individual's qualifications for upgrade may be appealed per Section 11 of these rules.

## **8. CERTIFICATION RENEWAL**

- 8.1.** An initial certificate for any grade shall be valid for a period of two years from the date of issuance. Any person wishing to maintain a valid certificate shall submit an application for renewal prior to the expiration date, but no more than six months prior to the expiration date indicated on the certificate. The request for renewal shall include the following:
- (a)** The applicant's name, current mailing address, grade, and certificate number
  - (b)** Payment of the renewal fee specified in the renewal notice
  - (c)** Proof of the required continuing education contact hours as defined in Section 8.2, Table A of these rules. For each successfully completed course, the proof of completion shall include the name of the course, the name of the instructor, the location, the date(s), and the number of contact hours provided

**8.2.** To be eligible for certificate renewal, certificate holders shall complete continuing education contact hours since the previous renewal or issuance of the certificate pursuant to Table A. No more than 25% of the contact hours shall be safety courses.

Table A - Required Continuing Education Contact Hours for Certificate Renewal

Distribution Operators/Associates	Contact Hours Required
Distribution 1	12
Distribution 2	16
Distribution 3	24
Distribution 4	24

- (a)** The certificate holder shall retain proof of continuing education as supplied by the acceptable provider for a minimum of four years
- (b)** Certificate holders possessing certificates in more than one CA-NV AWWA discipline may apply continuing education credits obtained within a renewal period to all current certificates
- (c)** Full semester courses taken at an accredited college, related to the operation and maintenance of public water supply systems shall be applicable for the hours listed in the course outline
- (d)** Any certificate holder selected for an audit of compliance with the continuing education requirement shall submit to the Section a copy of the applicant's proof of completion provided by the provider of the continuing education within 30 calendar days of notification of the audit (Timeline is a guideline and, if missed, will not affect the validity of the action to which they refer)
  - (i)** The certificate for any applicant for renewal who is found to have not successfully completed the continuing education requirement of this article will be revoked
  - (ii)** The applicant shall have the right to appeal the finding by written request filed with the Administrator. The Administrator shall transmit the request and recommendation to the Committee Chair, whose decision shall be final.
- (e)** When applying for renewal of a certificate, an applicant may request a waiver of all or part of the continuing education requirement. To be eligible for a waiver, an applicant shall verify the following in writing to the Section Office:

- (i) Residence in another country for at least half the period since the certificate was issued or last renewed, and that this prevented completion of the continuing education requirements
- (f) Absence from employment due to military service during the certificate period, since the certificate was issued or last renewed; an applicant will follow the pro-rated CEU requirement pursuant to Table B.

Table B - Pro-rated Required Continuing Education Contact Hours for Certificate Renewal

Military service	% of Contact Hours Required
3 – 6 Months	80%
6 – 9 Months	70%
9 – 12 Months	60%
12 – 15 Months	50%
15 – 18 Months	40%
18 – 21 Months	30%
21 – 24 Months	Full Waiver

- (g) When applying for renewal of a certificate, an applicant may request a voluntary temporary suspension of the certificate. A voluntary temporary suspension suspends all rights and responsibilities related to the certificate. To be eligible for a voluntary temporary suspension, an applicant shall verify the following in writing to the Section Office:
  - (i) Illness or other good cause, verified by a corroborating statement from a licensed physician that precluded completion of the continuing education requirements. Qualifying illnesses or causes include, but are not limited to:
    - a) Total physical and/or mental disability of the individual for at least half of the period since the certificate was issued or last renewed
    - b) Total physical and/or mental disability of an immediate family member for at least half of the period since the certificate was issued or last renewed, where the applicant has total responsibility for the care of that family member
  - (ii) A voluntary temporary suspension of a certificate can extend a maximum of two years. To end a temporary suspension, the applicant must supply verification from a licensed physician that corroborated the reason for the voluntary suspension that the condition

has been mitigated and meet the continuing education requirements and pay all fees and penalties due

- 8.3.** Each successfully renewed certificate shall be valid for a period of two years.
- 8.4.** Renewal notices are mailed sixty (60) days prior to an individual's expiration date. It is the responsibility of the individual to notify the Section of a change in address.
- 8.5.** Individuals failing to renew their certificate within three (3) months after their expiration date will pay an additional fee equal to the amount of the renewal fee. Individuals, who have not renewed their certificates within six (6) months of their expiration date, will be removed from the current certification program files.
- 8.6.** Individuals delinquent over six (6) months, yet less than one (1) year, may request reinstatement by submitting an application, the application fee, and show continued employment in the water industry and/or continued education.
- 8.7.** Individual's delinquent over one (1) year must submit an application, pay the appropriate fee, and pass the appropriate water treatment examination with a passing score.

## **9. EXAMINATION**

- 9.1.** The Section utilizes water distribution operator examinations prepared by the Committee under the "Need to Know" guidelines of the Association of Boards of Certification (ABC). The examinations are changed regularly to ensure their confidentiality, reflect current practice, and maintain compliance with national reciprocity guidelines.
- 9.2.** Examinations of Grades I through IV are written exams. All Examinations are "closed-book".
- 9.3.** Written examinations will be conducted at scheduled locations and dates within California or Nevada to meet the needs of the majority of applicants, with the Section providing the information upon request. Exams are administered by a local proctor approved by the Administrator. Written examinations may also be given at the semi-annual Section conferences.
- 9.4.** An applicant failing an exam (less than 70% score) may apply for re-examination after 6 months upon submission of a new application and payment of fee.
- 9.5.** If an applicant fails to appear for a scheduled examination without prior notification to the Section Office, he/she will be required to resubmit an application and fee for a future exam.
- 9.6.** Applicants seeking a higher certification grade must be current with the grade they currently possess.

## **10. CERTIFICATES**

- 10.1.** Upon passing the certification exam with a score of seventy percent (70%) or better, a Certificate, issued by the Section, will state the type and grade of certification, full name of the

individual, certificate number, date of issuance, the official seal of the Section, and be signed by the Certification Administrator and Certification Director.

- 10.2.** A currently certified individual may request a replacement or duplicate certificate from the Section Office for a nominal fee.

## **11. REVOCATION/APPEAL**

- 11.1.** The Section may suspend or revoke a practitioner's certificate for cause. Cause shall include a failure, in serious degree, to observe Section certification standards. A written complaint specifying the alleged reasons for revocation may be filed with the Certification Director, who, in consultation with the Committee Chair, shall determine whether the allegations in the complaint, if true, would constitute cause for revocation. The revocation of a certificate shall occur only after the practitioner has been given a fifteen-day prior written notice of the proposed revocation and the reasons therefore. The practitioner shall have an opportunity to be heard, orally or in writing, not less than five days before the effective date of the discipline by the Committee Chair, whose findings and conclusion shall be reviewed by the Committee and approved (or remanded to Committee Chair for further proceedings, as specified). Upon ultimate approval by the Committee, the revocation shall become final. The Committee Chair may suspend or revoke the credential for up to 12 months from the decision to revoke.

## **12. RECIPROCITY (APPLIES TO OPERATOR CERTIFICATION ONLY)**

- 12.1.** Certificates issued by equivalent water distribution operator certification programs may be eligible for reciprocity into the Section's Water Distribution Operator program by recommendation from the Program Administrator. In order to determine reciprocity eligibility, the following information must be submitted to the Administrator:

- (a)** A copy of one's current certificate and/or wallet card
- (b)** Proof of qualifying experience for the grade requested
- (c)** Completed application
- (d)** Application Fee

## **13. REINSTATEMENT**

- 13.1.** A certificate that has been revoked for failure to complete the continuing education contact hours required in Section 8.2, Table A may be reinstated within six months if all requirements specified in Section 8.2, Table A are met and all penalties as established in the Rules Governing Certification are paid and the renewal application is completed. Contact hours obtained for reinstatement shall not be used to satisfy the requirements of the next renewal period.

**13.2.** A certificate that has been expired for more than one year shall not be renewed.

**13.3.** The expiration date of a certificate that has been renewed pursuant to this section shall remain the same as if the previous certificate had been renewed prior to the expiration date.

#### **14. ACCEPTANCE OF CONTINUING EDUCATION PROGRAMS**

**14.1.** Only providers who offer continuing education programs that meet all of the following criteria shall be accepted. The Provider shall:

- (a)** Use instructors who are competent in the subject matter by education, training, or experience. ( A brief biography of the instructor must be maintained and available upon request)
- (b)** Offer courses that are a minimum of 50 minutes in duration (excluding participant evaluation of the continuing education program)
- (c)** Offer courses that are relevant to the scope of duties related to the certificate
- (d)** Have clearly stated and measurable education objectives
- (e)** Use teaching methods which are consistent with the objectives of the continuing education program
- (f)** Have a method for determining participants' attendance and/or participation in the class and exams
- (g)** Maintain accurate and complete records and copies of all reference materials, handouts and all additional materials provided to and used by the participants
- (h)** Maintain the capacity to provide documentation verifying the provider's compliance with items listed in 14.1(a) through (g) upon request

#### **15. REVISION OF RULES**

**15.1.** The Water Distribution/Treatment Certification Committee may recommend revisions to these Rules as necessary to institute new policies and to improve and/or maintain the integrity of the program. Recommended revisions shall be submitted to the Certification Board for consideration and approval. Approved revisions shall be submitted to the Section Governing Board for final consideration and approval. Upon approval from the Section Governing Board, such revisions will be published sixty (60) days prior to the effective date.

**15.2.** The Certification Director and the Section Chair may render decisions on matters not explicitly covered in these Rules.

## RANGE OF KNOWLEDGE/NEED TO KNOW CRITERIA WATER DISTRIBUTION OPERATORS & ASSOCIATES

### PARTNERSHIP

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The California – Nevada Section of the American Water Works Association (CA-NV AWWA) partners with the Association of Boards of Certification (ABC) to provide Water Distribution Examinations throughout California and Nevada.

Below is the detailed Need to Know Criteria developed by ABC. If you have any questions, please contact the Certification department at the California – Nevada Section of the American Water Works Association, (909) 481-7200



## Introduction

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As part of the development of its certification exams, the Association of Boards of Certification (ABC) conducted a job analysis of water distribution operators in 2008. As part of this process, ABC conducted a national survey of distribution operators. This *Need-to-Know Criteria* was developed from the results of ABC's 2008 distribution operator job analysis.

## How the *Need-to-Know Criteria* Was Developed

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### *Review of Task Survey*

The results of the 2008 task survey were provided to the ABC Distribution V&E Committee. In the task survey, operators rated job tasks and capabilities for frequency of performance and seriousness of inadequate or incorrect performance. These two rating scales were used because they provide useful information (i.e., how critical each task is and how frequently each task is performed) pertaining to certification. Of the 147 operators who completed the survey, 23% were class I operators, 37% were class II operators, 23% were class III operators, and 17% were class IV operators.

### *Committee Ratings*

The Distribution V&E Committee met in September 2008 to begin development of the new *Need-to-Know Criteria*. During their meeting, the committee rated the job tasks and capabilities found in the job analysis as essential, useful or not need-to-know and identified the level of knowledge (i.e., comprehension, application, analysis) required by operators for each task.

### *Analysis of Ratings*

The committee ratings were combined with the operator ratings from the task survey to form a composite criticality rating. The composite criticality ratings and percentage of operators reporting that they performed the tasks were used to determine what is covered on each level of certification exam.

## Core Competencies

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The essential tasks and capabilities that were identified through this process are called the core competencies. The following pages list the core competencies for distribution operators. The core competencies are clustered into the following job duties:

- System Design
- Monitor, Evaluate and Adjust Disinfection
- Comply with Drinking Water Regulations
- Water Quality Parameters and Sampling
- System Inspection
- Install Equipment
- Operate Equipment
- Evaluate and Maintain Equipment
- Perform Security, Safety and Administrative Duties

The level of knowledge (i.e., comprehension, application, analysis) required for each task is also identified in the following pages.

- **Comprehension** is the most basic level of understanding and remembering. Items written at the comprehension level require examinees to recognize, remember, or identify important ideas.
- Items written at the **application** level require examinees to interpret, calculate, predict, use or apply information and solve problems.
- Items written at the **analysis** level require examinees to compare, contrast, diagnose, examine, analyze, and relate important concepts.

The level of knowledge is a hierarchy from basic comprehension to analysis. The level of knowledge tested is cumulative. Therefore, tasks identified as application may include questions written at both the application and comprehension levels. Tasks identified as analysis may include questions written at the comprehension, application and analysis levels.

## Core Competencies for Distribution Operators

System Design	Class I	Class II	Class III	Class IV
Assess system demand	Comprehension	Comprehension	Comprehension	Comprehension
Select materials		Comprehension	Comprehension	Comprehension
System layout		Comprehension	Comprehension	Comprehension
Write plans		Comprehension	Comprehension	Comprehension
System map	Comprehension	Comprehension	Comprehension	Comprehension
Perform pressure readings	Comprehension	Comprehension	Comprehension	Comprehension
Select type of pipes	Comprehension	Comprehension	Comprehension	Comprehension
Wells	Comprehension	Comprehension	Comprehension	Comprehension
Read blueprints, readings, and maps	Comprehension	Comprehension	Comprehension	Comprehension
Install shoring	Comprehension	Application	Application	Analysis
Install joint restraints	Comprehension	Application	Application	Analysis
Install thrust blocks	Comprehension	Application	Application	Analysis

### **Required Capabilities:**

- Ability to adjust equipment
- Ability to diagnose/troubleshoot system units
- Ability to discriminate between normal and abnormal conditions
- Ability to inspect pumps
- Ability to monitor electrical and mechanical equipment
- Knowledge of cathodic protection
- Knowledge of types of joints, restraints and thrust blocks
- Knowledge of fireflow requirements
- Knowledge of general electrical, hydraulic and mechanical principles
- Knowledge of measuring instruments
- Knowledge of piping material, type and size
- Knowledge of pneumatics
- Knowledge of regulations
- Knowledge of standards
- Knowledge of start-up and shut down procedures
- Knowledge of testing instruments
- Knowledge of water reuse
- Knowledge of watershed management
- Knowledge of well drilling principles
- Knowledge of well-head protection

Monitor, Evaluate and Adjust Disinfection	Class I	Class II	Class III	Class IV
Monitor chlorine disinfection	Comprehension	Comprehension	Comprehension	Comprehension
Evaluate chlorine disinfection	Analysis	Analysis	Analysis	Analysis
Adjust chlorine disinfection	Application	Application	Application	Application

### **Required Capabilities:**

- Ability to adjust flow patterns
- Ability to diagnose, troubleshoot and adjust system units
- Ability to evaluate and maintain system units
- Ability to perform basic math
- Knowledge of general chemistry and physical science
- Knowledge of general electrical and hydraulic principles
- Knowledge of principles of measurement
- Knowledge of regulations

## Core Competencies (Continued)

Comply with Drinking Water Regulations	Class I	Class II	Class III	Class IV
<b>United States Exams – Code of Federal Regulations, Title 40, Part 141 – National Primary Drinking Water Regulations:</b>				
Subpart A - General definitions	Comprehension	Comprehension	Comprehension	Comprehension
Subpart B - Maximum contaminant levels	Comprehension	Comprehension	Comprehension	Comprehension
Subpart C - Monitoring and analytical requirements	Comprehension	Comprehension	Comprehension	Comprehension
Subpart D - Reporting and recordkeeping	Comprehension	Comprehension	Comprehension	Comprehension
Subpart I - Control of lead and copper	Comprehension	Comprehension	Comprehension	Comprehension
Subpart Q - Public notification of drinking water violations	Comprehension	Comprehension	Comprehension	Comprehension
<b>Canadian Exams</b>				
Provincial and territorial regulations	Comprehension	Comprehension	Comprehension	Comprehension

Water Quality Parameters and Sampling	Class I	Class II	Class III	Class IV
Chlorine demand	Application	Application	Application	Analysis
Chlorine residual	Application	Application	Application	Analysis
pH	Application	Application	Application	Analysis
Temperature	Application	Application	Application	Analysis
Turbidity	Application	Application	Application	Analysis

### **Required Capabilities:**

- Ability to calibrate instruments
- Ability to follow written procedures
- Ability to interpret Material Safety Data Sheets
- Ability to perform and interpret laboratory analyses
- Ability to perform basic math
- Ability to recognize normal and abnormal analytical results
- Knowledge of general chemistry and physical science
- Knowledge of laboratory equipment
- Knowledge of normal characteristics of water
- Knowledge of principles of measurement
- Knowledge of proper chemical handling and storage
- Knowledge of proper sampling procedures
- Knowledge of public notification requirements
- Knowledge of quality control/quality assurance practices
- Knowledge of regulations
- Knowledge of reporting requirements

## Core Competencies (Continued)

System Inspection	Class I	Class II	Class III	Class IV
Cross-connection surveys	Comprehension	Comprehension	Application	Application
Sample site plan	Comprehension	Comprehension	Application	Application

### **Required Capabilities:**

- Ability to communicate verbally and in writing
- Ability to discern between normal and abnormal conditions
- Knowledge of hydrology
- Knowledge of monitoring requirements
- Knowledge of proper sampling procedures and requirements
- Knowledge of sanitary survey process
- Knowledge of well-head protection
- Knowledge of safety procedures

Install Equipment	Class I	Class II	Class III	Class IV
Hydrants	Comprehension	Application	Application	Application
Meters	Comprehension	Application	Application	Application
Service piping	Comprehension	Application	Application	Application
Service connections	Comprehension	Application	Application	Application
Shoring	Comprehension	Application	Application	Application
Taps	Comprehension	Application	Application	Analysis
Valves	Comprehension	Application	Application	Analysis
Water mains	Comprehension	Application	Application	Analysis

### **Required Capabilities:**

- Ability to follow written procedures
- Knowledge of backflow prevention assemblies and methods
- Knowledge of facility operation and maintenance
- Knowledge of function of tools
- Knowledge of pipe fittings and joining methods
- Knowledge of piping material, type and size
- Knowledge of regulations
- Knowledge of start-up and shut-down procedures
- Knowledge of well drilling principles

## Core Competencies (Continued)

Operate Equipment	Class I	Class II	Class III	Class IV
Blowers and compressors	Comprehension	Comprehension	Comprehension	Comprehension
Centrifugal pumps	Comprehension	Comprehension	Comprehension	Analysis
Chlorinators	Comprehension	Comprehension	Application	Application
Computers	Comprehension	Comprehension	Comprehension	Comprehension
Electric motors	Comprehension	Comprehension	Comprehension	Comprehension
Electronic testing equipment	Comprehension	Comprehension	Comprehension	Comprehension
Generators	Comprehension	Comprehension	Comprehension	Comprehension
Hand tools	Comprehension	Comprehension	Comprehension	Comprehension
Heavy vehicles	Comprehension	Comprehension	Comprehension	Comprehension
Hydrants	Comprehension	Application	Application	Application
Instrumentation	Comprehension	Comprehension	Comprehension	Comprehension
Leak correlators/detectors	Comprehension	Application	Application	Application
Pipe locators	Comprehension	Application	Application	Application
Positive-displacement pumps	Comprehension	Application	Application	Analysis
Power tools	Comprehension	Comprehension	Comprehension	Comprehension
Remote terminal units (RTU)	Comprehension	Comprehension	Comprehension	Comprehension
Samplers	Comprehension	Comprehension	Comprehension	Comprehension
SCADA system	Comprehension	Comprehension	Comprehension	Comprehension
Tapping equipment	Comprehension	Application	Application	Analysis
Telemetry system	Comprehension	Comprehension	Comprehension	Comprehension
Valve locators	Comprehension	Comprehension	Comprehension	Comprehension
Valves	Comprehension	Comprehension	Comprehension	Comprehension

### **Required Capabilities:**

- Ability to evaluate and adjust equipment
- Ability to discriminate between normal and abnormal conditions
- Ability to monitor electrical and mechanical equipment
- Knowledge of data acquisition techniques
- Knowledge of function of tools
- Knowledge of general electrical, hydraulic and mechanical principles
- Knowledge of regulations
- Knowledge of safety procedures and emergency plans
- Knowledge of start-up and shut-down procedures

## Core Competencies (Continued)

Evaluate and Maintain Equipment	Class I	Class II	Class III	Class IV
<b>Evaluate Operation of Equipment</b>				
Check speed of equipment	Comprehension	Comprehension	Application	Analysis
Inspect equipment for abnormal conditions	Comprehension	Comprehension	Comprehension	Comprehension
Measure temperature of equipment	Comprehension	Comprehension	Comprehension	Comprehension
Read charts	Comprehension	Comprehension	Comprehension	Comprehension
Read gauges	Comprehension	Comprehension	Comprehension	Comprehension
Read meters	Comprehension	Comprehension	Comprehension	Comprehension
<b>Maintain Equipment</b>				
Backflow prevention methods and assemblies	Comprehension	Application	Application	Analysis
Blowers and compressors	Comprehension	Comprehension	Comprehension	Comprehension
Cathodic protection devices	Comprehension	Comprehension	Comprehension	Application
Chlorinators	Comprehension	Application	Application	Application
Corrosion control	Comprehension	Comprehension	Comprehension	Application
Electric motors	Comprehension	Comprehension	Comprehension	Comprehension
Fittings	Comprehension	Comprehension	Application	Application
Generators	Comprehension	Comprehension	Comprehension	Comprehension
Hydrants	Comprehension	Application	Application	Analysis
Hydraulic equipment	Comprehension	Comprehension	Comprehension	Application
Instrumentation	Comprehension	Comprehension	Comprehension	Comprehension
Pipe Joints	Comprehension	Application	Application	Application
Leak detection programs	Comprehension	Comprehension	Comprehension	Comprehension
Meters	Comprehension	Application	Application	Analysis
Service pipes	Comprehension	Comprehension	Application	Application
Pressure sensors instruments	Comprehension	Comprehension	Comprehension	Comprehension
Pumps	Comprehension	Comprehension	Application	Application
Service connections	Comprehension	Application	Application	Analysis
Valves	Comprehension	Application	Application	Analysis
Water mains	Comprehension	Application	Application	Analysis
Water storage facility	Comprehension	Application	Application	Analysis

### **Required Capabilities:**

- Ability to assign work to proper trade
- Ability to calibrate equipment
- Ability to diagnose/troubleshoot equipment
- Ability to differentiate between preventive & corrective maintenance
- Ability to discriminate between normal and abnormal conditions
- Ability to follow written procedures
- Ability to order necessary spare parts
- Ability to perform general maintenance
- Ability to record information
- Knowledge of backflow prevention, methods and assemblies
- Knowledge of corrosion control process
- Knowledge of dechlorination process
- Knowledge of different types of cross-connections
- Knowledge of disinfection process
- Knowledge of facility operation and maintenance
- Knowledge of general electrical, hydraulic and mechanical principles
- Knowledge of pipe fittings and joining methods
- Knowledge of piping material, type and size
- Knowledge of pneumatics
- Knowledge of protective coatings and paints
- Knowledge of regulations and standards
- Knowledge of start-up and shut-down procedures

## Core Competencies (Continued)

<b>Perform Security, Safety and Administrative Duties</b>				
	<b>Class I</b>	<b>Class II</b>	<b>Class III</b>	<b>Class IV</b>
<b>Perform security and safety procedures related to:</b>				
Chemical handling	Application	Application	Application	Application
Confined space entry	Application	Application	Application	Application
Electrical grounding	Application	Application	Application	Application
Excavation	Application	Application	Application	Application
Facility inspection	Application	Application	Application	Application
Fire safety	Application	Application	Application	Application
Lifting	Application	Application	Application	Application
Lock-out/tag-out	Application	Application	Application	Application
Personal protection equipment	Application	Application	Application	Application
Public protection	Application	Application	Application	Application
Shoring	Application	Application	Application	Application
Slips, trips, and falls	Application	Application	Application	Application
Tailgate safety session	Application	Application	Application	Application
Terrorism	Application	Application	Application	Application
Traffic/work zone	Application	Application	Application	Application
Trenching	Application	Application	Application	Application
Contamination	Comprehension	Comprehension	Application	Application
Facility upset	Comprehension	Comprehension	Application	Application
Natural disaster	Comprehension	Comprehension	Application	Application
Power outage	Comprehension	Application	Application	Application
Spill response	Comprehension	Comprehension	Application	Analysis
Vandalism	Comprehension	Comprehension	Comprehension	Comprehension
<b>Perform administrative procedures, such as:</b>				
Administer safety & compliance program	Comprehension	Comprehension	Comprehension	Comprehension
Develop budget	Comprehension	Application	Application	Application
Develop operation and maintenance plan	Comprehension	Application	Application	Application
Organize work activities	Comprehension	Comprehension	Comprehension	Comprehension
Plan work activities	Comprehension	Analysis	Analysis	Analysis
Train employees	Comprehension	Comprehension	Comprehension	Comprehension
Write internal reports	Comprehension	Comprehension	Comprehension	Comprehension
Write state/provincial reports	Analysis	Analysis	Analysis	Analysis
Make oral presentations	Comprehension	Comprehension	Comprehension	Comprehension
Respond to complaints	Comprehension	Comprehension	Comprehension	Comprehension
Restore private property	Comprehension	Comprehension	Comprehension	Comprehension
Restore traffic	Comprehension	Comprehension	Comprehension	Comprehension





## **ABC Distribution Certification Exams**

The ABC distribution certification exams evaluate an operator's knowledge of tasks related to the operation of distribution systems. The ABC Distribution V&E Committee determined the content of each exam based on the results of the national job analysis. To successfully take an ABC exam, an operator must demonstrate knowledge of the core competencies in this document.

Four levels of certification exams are offered by ABC, with class I being the lowest level and class IV the highest level. The specifications for the exams are based on a weighting of the job analysis results so that they reflect the criticality of tasks performed on the job. The specifications list the percentage of questions on the exam that fall under each job duty. For example, 7 to 10% of the questions on the ABC class I exam relate to "System Design." For a list of tasks and capabilities associated with each job duty, please refer to the list of core competencies on the previous pages.

### **ABC Distribution Exam Specifications**

	Exam Level			
	Class I	Class II	Class III	Class IV
System Design	7% - 10%	10% -13%	13% - 16%	15% - 18%
Monitor, Adjust & Evaluate Disinfection	5%	5%	5%	5%
Comply with Drinking Water Regulations	10% - 13%	10% - 13%	10% - 13%	10% - 13%
Water Quality Parameters & Sampling	12% - 15%	12% - 15%	12% - 15%	12% - 15%
System Inspection	5%	5%	5%	5%
Install Equipment	11% - 14%	9% - 12%	9% - 12%	6% - 9%
Operate Equipment	15% - 18%	16% - 19%	13% - 16%	13% - 16%
Evaluate & Maintain Equipment	14% - 17%	12% - 15%	7% - 10%	5%
Perform Security, Safety & Administrative Duties	12% - 15%	12% - 15%	17% - 20%	20% - 23%

### **Suggested Distribution Exam References**

The following are approved as reference sources for the ABC distribution examinations. Operators should use the latest edition of these reference sources to prepare for the exam.

#### **American Water Works Association (AWWA)**

- *Water Transmission and Distribution*
- *Water Distribution Operator Training Handbook*
- *Basic Science Concepts and Applications*
- *Water System Security, A Field Guide*
- *Water Quality*

To order, contact: American Water Works Association  
6666 West Quincy Ave.  
Denver, CO 80235  
Web site: [www.awwa.org](http://www.awwa.org)  
Phone: (800) 926-7337  
Fax: (303) 347-0804  
E-mail: [custsvc@awwa.org](mailto:custsvc@awwa.org)

Association of State Drinking Water Administrators (ASDWA) and National Rural Water Association (NRWA)

- *Security Vulnerability Self Assessment Guide for Small Drinking Water Systems*

To order, contact: ASDWA  
1025 Connecticut Ave NW Ste 903  
Washington DC 20036  
Available online in PDF format (select .Security.):  
Web site: [www.asdwa.org](http://www.asdwa.org)  
Phone: (202) 293-7655  
Fax: (202) 293-7656  
E-mail: [info@asdwa.org](mailto:info@asdwa.org)

California State University, Sacramento (CSUS) Foundation, Office of Water Programs

- *Water Distribution System Operation and Maintenance*
- *Small Water System Operation and Maintenance*
- *Manage for Success*

To order, contact: Office of Water Programs  
California State University, Sacramento  
6000 J Street  
Sacramento, CA 95819-6025  
Web site: [www.owp.csus.edu](http://www.owp.csus.edu)  
Phone: (916) 278-6142  
Fax: (916) 278-5959  
E-mail: [wateroffice@owp.csus.edu](mailto:wateroffice@owp.csus.edu)

**Regulations**

For United States exams:

- *Code of Federal Regulations*, Title 40, Part 141 ([www.gpo.gov](http://www.gpo.gov))
- State regulations (contact information for state certification programs is available on the Certification Contacts page of ABC.s web site, [www.abccert.org](http://www.abccert.org))

For Canadian exams:

- *Guidelines for Canadian Drinking Water Quality*. Federal-Provincial-Territorial Subcommittee on Drinking Water. Ottawa, ON: Health Canada ([www.hc-sc.gc.ca/waterquality](http://www.hc-sc.gc.ca/waterquality))
- Provincial and territorial regulations (contact information for provincial/territorial certification programs is available on the Certification Contacts page of ABC.s web site, [www.abccert.org](http://www.abccert.org))

**Study Guides**

American Water Works Association, *Operator Certification Study Guide: A Guide to Preparing for Water Treatment and Distribution Operator Certification Exams* ([www.awwa.org](http://www.awwa.org); complete contact information is on preceding page)