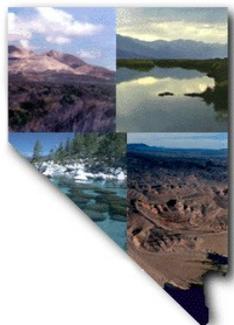


Water Lines



Featured Article:

Backflow

What's the Difference Between the Ninth and Tenth Editions?

By: Jim Youngblood, Lyon County Utilities

In the summer of 1996, the Manual Review Committee met for the first time to begin work on the *Manual of Cross Connection Control, Tenth Edition*. There were many technical issues that had to be resolved and new portions that needed to be written. The Tenth Edition is about 200 pages larger than the *Ninth Edition*. New chapters were added to help Testers and Cross-Connection Control Specialists understand all details of cross-connection control.

Chapter Two, entitled History, discusses history from ancient civilizations to the current state-of-the-industry.

Chapter Three, on hydraulics, explains the basics of general hydraulics and hydraulics specific to backflow and backflow prevention assemblies. Types of backflow, types of cross-connections, degrees of hazard are all discussed to help the reader understand what

types of cross-connections exist and what type of backflow protection is required to prevent backflow in each situation. Including an explanation of how a backflow preventer operates, in addition to a detailed explanation of their operation that goes far beyond the basics.

Chapter Four discusses the various elements of a cross-connection control program, to help in developing a cross-connection control program. Including policies and procedures to help lay out the details of how a cross-connection control program should be run.

Chapter Five explains the intricacies of conducting a cross-connection control site survey. This includes information on preparing for the survey, notifying the customer and actually conducting the survey. This, combined with the following two chapters, will be essential to the specialist in their site surveys, which are a big part of their cross-connection control program.

Chapter Six gives some general information about facilities. A section on each type of facility explains the types of facilities and what types of cross-connections may be encountered at a facility.

Chapter Seven shows several common pieces of equipment and systems that may be discovered on a site survey. There are illustrations of the equipment and systems showing how they work and where a cross-connection hazard may be present. Each piece of equipment includes a description of the

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Cont' - Backflow Article

equipment, of how it works and where it is used.

Chapter Eight Provides a model ordinance including updated sample forms, and letters. The *Tenth Edition* also includes a CD-ROM that contains MS Word and PDF versions of documents that can be edited to meet the specific needs of your agency.

Chapters Nine, Ten and Eleven cover the Field Test Procedures, and Standards. In the *Tenth Edition* a Standard for Field Test Kits is included. Once field test kits are submitted to the FCCCHD, they will be evaluated, approved and placed on the *List of Approved Backflow Prevention Assemblies and Field Test Kits*.

Field Test Procedures: Although the basics of the field test procedures remain the same, there are some differences that are described below.

Reduced Pressure Principal Assembly:

In the *Ninth Edition* of the manual listed under "acceptable results" for the first check of the RP of "a recommended value of at least 3.0 psid buffer greater than the relief valve opening point." This "recommended requirement" has been removed in the *Tenth Edition*. The *Tenth Edition of the Manual of Cross-Connection Control* has the following requirements for the RP field test results: The relief valve must open at 2.0 psid or greater, the first check valve must hold a minimum value of 5.0 psid and more than the relief valve opening point; and the second check must hold tight against backpressure. The procedure for flushing the assembly has also changed.

Double Check Valve Assembly:

Details have been added for the double check valve assembly, including when the field test kit is to be raised to the same level as the water in the tube attached to the downstream test cock.

Pressure Vacuum Breaker Assembly:

The field test procedure has been modified to show that the bleed-off valve arrangement must be attached at the beginning of the test. Also information has been added to clarify when it is

critical to locate the test kit at the proper elevation.

Spill Resistant Vacuum Breaker Assembly:

The field test procedure has been changed to test the check valve before testing the air inlet valve. The procedure has also been modified to attach the bleed-off valve arrangement at the beginning of the test. Also information has been added to clarify when it is critical to locate the test kit at the proper elevation.

Other Changes:

Language has been added to verify detection of flow through the bypasses on the double check detector assembly and the reduced pressure principle detector assembly. There are also new sections demonstrating the field test procedures for the reduced pressure principle detector assembly-Type II and the double check valve detector assembly-Type II.

Certification and the Tenth Edition:

Many testers may be concerned about using the *Tenth Edition* field test procedures, when the certification program they use may not be using the *Tenth Edition* yet. Some agencies may move to accepting the *Tenth Edition* Field Test Procedures immediately, some may allow testers to test according to the *Ninth* or *Tenth Edition*, with a time frame for moving to the *Tenth Edition* and yet others may continue to use the *Ninth Edition* for a period of time. Beginning January 2012 AWWA will only be administering the *Tenth Edition* for new testers.

"CURRENTLY" it appears that effective January 1, 2012 AWWA will only be administering the *Tenth Edition*.

NDEP ~ BSDW will need to adopt the *Tenth Edition* during the next regulatory effort to amend the Nevada Administrative Code (NAC 445A.6663, 5) before it is formally recognized as part of their regulatory program.

The Spigot Q & A:

Focus on Alternative Treatment



- Which water treatment chemical must be manufactured on-site for immediate use because it is highly reactive and quickly decomposes?
A. Chlorine B. Activated carbon C. Potassium permanganate D. Ozone
- The time it takes for half of the ozone in water to decompose (half-life) is:
A. 4 to 12 hours B. 3 to 20 minutes C. 30 to 60 seconds
- Ozone treatment of water can provide:
A. Disinfection B. Clearer water C. Better particle aggregation D. All of the above
- Ozone can corrode or damage:
A. Metals B. Plastics C. Rubber D. All of the above
- Suitable materials for continuous exposure to ozone/air mixtures include:
A. Teflon B. Stainless Steel C. PVC D. All of the above
- Ozone can be generated via:
A. Corona discharge B. Ultraviolet light C. A high voltage electrical supply
D. All of the above



Answers to the Spigot questions

- D – Ozone (O_3) is an unstable form of oxygen and quickly decomposes to normal oxygen (O_2).
- B – The half life of ozone ranges between three and twenty minutes depending on the temperature and water quality.
- D – All of the above. Ozone provides disinfection and enhances the removal of suspended matter by altering organic coatings on the surface of water particles.
- D – All of the above. Because ozone is a very reactive gas it can damage many materials.
- B- Stainless steel. Stainless steel is used for ozone/air mixtures. However, moist air will form corrosive acids that can corrode stainless steel. Regular inspections are necessary.
- D – All of the above. Ozone can be generated by all these methods. The effectiveness of the method used will depend upon factors such as feed air quality.

Questions in this edition of “The Spigot” were originally published in *Water Technology* a water industry publication, in May of 2002 and are used by permission of J. Harrison.

***The Spigot is prepared by Crystel Montecinos, Environmental Consultant for Tigren, Inc.
You can contact her at 775-240-1396.**

Videoconferencing Classes for Drinking Water Operators in Nevada – What We Have Accomplished in a Decade and Where We are Headed

By: Mark Walker, UNR and Crystel Montecinos, Tigren Inc.

Changes are coming to the videoconferencing program offered by the University of Nevada for water treatment plant operators. The program will have new management by the Nevada Rural Water Association, but will retain the approach that has made it a successful way of assisting rural water supply operators for over a decade.

More than a decade ago, we realized how much territory there is inside Nevada's borders. The state has a maximum East-West width of 320 miles and a maximum North-South length of 490 miles. No matter how fast you drive, a trip from one end of Nevada to the other takes a lot of time, unless you happen to be traveling at the speed of data transmission. In 1999, the University of Nevada took the first steps toward using state-of-the-art videoconferencing technology to reach rural water supply operators with classes to help them maintain certification and advance their skills.

Throughout the program's history, the University of Nevada has provided training by taking advantage of a well-developed videoconferencing network managed by the Nevada System of Higher Education. The project, supported by the funds provided by the U.S. Environmental Protection Agency and administered by the Nevada Division of Environmental Protection's Bureau of Environmental Protection has delivered more than 120 classes to operators from Jackpot to the Yucca Mountain Project and from Reno to West Wendover. Operators from 355 systems in Nevada have received more than 21,000 contact hours to maintain their certification and enhance their careers. The current videoconferencing network brings classes within no more than an hour's drive for any operator in the state.

Evaluation has been a big part of the program and helps to ensure that the courses continually improve. This is illustrated in summaries of responses to questionnaires administered throughout the program (see the figure below). Overall, operators are very satisfied with the classes and keep coming back because they are useful, convenient and very

informative. During a special evaluation in 2010, operators reported that the classes had improved their confidence, competence, job skills, and chances of succeeding on certification examinations (see the table below).

The classes have been a strong partnership between the University and many volunteer instructors from state and federal agencies, general improvement districts, representatives of industries, and technical service providers. Without these volunteers, the classes would be expensive and likely inaccessible to rural operators.

Technology has improved tremendously from the first class, which was attended by 20 operators in three locations and was delivered by hardware and software that was sometimes unreliable. Today's classes use much improved technology that is reliable, clear and very interactive, though not always trouble-free.

Over the past ten years, many operators across the state have become comfortable with the distance education format. Individual operators and managers often work as part of our team to ensure that classes reach their communities. We appreciate and applaud the efforts of everyone who has been involved.

As with all things, especially technology, these classes have evolved, with even more changes coming. The biggest will be the transfer of management from the University of Nevada, Reno to the Nevada Rural Water Association. UNR will schedule three workshops between January and June of 2012 to ensure a smooth transition. Nevada Cooperative Extension offices across the state will continue to be active partners in this program. Due in part to the many phone calls, emails, and letters of support UNR has received The Nevada Division of Environmental Protection recognizes the need to continue its sponsorship of this important program. Other changes will include shifting to a paperless

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Updates and Announcements

2012 Drinking & Wastewater Priority List Renewal

We are in the process of preparing the 2013 Priority Lists for projects to be funded from the State of Nevada Division of Environmental Protection, Drinking Water State Revolving Fund (DWSRF) & Clean Water Revolving State Revolving Fund (CWSRF). You will soon receive a solicitation letter from the NDEP Office of Financial Assistance with instructions for having your water or wastewater project added to the priority list or having your project remain on the list. Your submittal must be received no later than **February 15, 2012**. For additional information on the Clean Water State Revolving Loan Fund or to download copies of the loan pre-application, visit our website:

<http://ndep.nv.gov/bffwp/srlf01.htm>

or the Drinking Water State Revolving Loan Fund website:

<http://ndep.nv.gov/bffwp/dwsrf1.htm>.

If you have further questions please contact Michelle Stamates at (775) 687-9331 or Daralyn Dobson at (775) 687-9489.

Water Operators: Contact Hours & CEUs

Obtaining Contact Hours and Continuing Education Units (CEUs) is a crucial requirement for every Water Operator that works in the State.

Education programs provide Water Operators the opportunity to improve their understanding of the Drinking Water Industry. For example, Water Operators can choose to enter the areas of Water Distribution, Water Treatment, Water Quality, Backflow, Management, etc. It also allows Water Operators to further develop their skill levels. By improving their skills, they will be better prepared to provide and protect safe drinking water for everyone. In addition, they will become more familiar with new developments in their field as technology and regulations change.

When Water Operators are looking for continuing education options, they should check the NDEP Bureau of Safe Drinking Water's Calendar of Events for approved contact hour classes for certification renewal. The NDEP requires Grade 3 and Grade 4 operators to take courses from International Association of Education Training (IACET) authorized providers or accredited colleges.

Cont' Videoconferencing Classes for Drinking Water Operators in Nevada – What We Have Accomplished in a Decade and Where We are Headed

system of notification. Workshops and training events will be announced via the internet. Please ensure that NDEP and the NV Water Operator Video Conference Program administrators (NVRWA nvrwa@pyramid.net and C.Montecinos xtelle@aol.com) have your current email address. As the University of Nevada, Reno, Colleges of Agriculture, Biotechnology and Natural Resources and Cooperative Extension pass the baton to the Nevada Water Resources Association, we would like to thank everyone for their support and enthusiasm in conceiving and building this successful program.

Impact Assessment Among Rural Water Supply Operators Attending Videoconferencing Classes, 10—12/2010 (n=172)

	Y	N
Increased Confidence in Treatment Plant Operation	170	2
Career Improvement/Competence to Accept New Responsibilities	152	20
Improved Job Skills	170	2
Success with Certification Examinations	145	27

Wastewater Operators Certified



The following wastewater professionals passed their Wastewater Treatment, Laboratory, Collection, Industrial Waste Inspector, and Nevada Plant Maintenance exams in September 2011.

WASTEWATER TREATMENT GRADES

Grade 1: Kyle Anders, Rosario Bernal, Chris Glassburn, Anthony LaRocca

Grade 2: Terry Capron

Grade 3: Brian Buffo

NEVADA WASTEWATER LABORATORY ANALYST:

Grade 1: Vincent Salomone

NEVADA COLLECTION

Grade 1: Ken Benson, Larry Judd, Jon MacIntire, Donimic Marvelli, Ryan Miller, Lloyd Schafer, Michael Shepherd

Grade 2: Auston Kinser

NEVADA PLANT MAINTENANCE

Grade 3: Christopher Lieurance

Wastewater Exam dates for 2012:

Exam date: 3/15/12

Exam date: 3/23/12 - NvRWA Annual Conference
Deadline - 2/15/12

Exam date (NWEA Annual Conf): 4/26/12
Deadline - 3/26/12

Exam date: 6/21/12
Deadline - 5/21/12

Exam date: 9/20/12
Deadline - 8/20/12

Exam date: 12/20/12
Deadline - 11/20/12

Water Operators Certified



The following water professionals passed their Water Treatment and Water Distribution exams in September 2011.

Water Distribution Grades:

Grade 1: Richard Beeghly, Dwight Bodine, Shawn Burt, Robert Capehart, Paul Carballosa, Chelsea Carson, Marty Christensen, Jason Crosby, Anthony Daniels, Deal Dankers, Kris Eaton, Kenji Guro, Richard Herrmann, Jim Karr, Roy Mares, Alice Nicholes, Victor Nowak, David Oliver, Drusuna Oliver, Jared Secondine, Nick Shakespear, Michael Sturgeon, George Tinkorang, Rebecca Sawyer Williams, John Williams, Kevin Williams

Grade 2: Elizabeth Andrew, Michael Boney, George Dean III, Donald Gonzales, John Gordon, Chad Henroid, Jose Nunez, Jonathan Patriarca, George Tinkorang

Grade 3: Darel Barlow, Marc Rohus

Grade 4: Kevin Argella, Michael Crow, John Philip De Jesus

Water Treatment Grades:

Grade 1: Daniel Bevan, Michael Conely, Leroy Daines, Lon Albert Dalley, Scotty Donaldson, Jason Fennema, Ryan Kolda, Corbin McFarlane, Shane Mortensen, Jim Phillips, Jeffrey Renwick, Clay Self, Jung Min Shin

Grade 2: Kelly Joe Reyna, Amanda Steensen

Grade 3: Phillip Abbott, Thomas Borley

Grade 4: Jared Dooley, James Souba

TRAINING CALENDAR FOR 2011

Jan. 9 - 13, 2012 - Backflow Test Certification

City of Wells, Public Works Building Wells, NV

Contact: Bob Foerster at 775-841-4222

frontdesk@nvrwa.org or visit

<http://www.nvrwa.org/> and click on training**Jan. 18, 2012 - Water Treatment Techniques**

Water quality parameters, Water sources, Water treatment techniques, Water treatment regulations, Water treatment math

N. Tahoe Events Center, Kings Beach, CA

Contact: Stevan Palmer 775/750-1884 or

spalmer@rcac.org

Feb. 15, 2012 - Operations, Disinfections, and Calculations

Best Western Timber Cove Lodge

South Lake Tahoe, CA

Contact: Stevan Palmer 775/750-1884 or

spalmer@rcac.org

March 20 - 23, 2012 - NvRWA Annual Training and Technical Conference

Contact: Bob Foerster at 775-841-4222

frontdesk@nvrwa.org or visit

<http://www.nvrwa.org/> and click on training**April 11, 2012 - LT2ESWTR and UV Disinfection**

South Tahoe Public Utilities District

1275 Meadow Crest Dr.

South Lake Tahoe, CA

contact: Stevan Palmer 775/750-1884 or

spalmer@rcac.org

*Attendees can register for RCAC's Training online at:

<http://www.rcac.org/doc.aspx?730>**Ongoing On Site - Various Management, Board, Wastewater and Water Topics, at your request - NvRWA**

Contact: Bob Foerster at 775-841-4222

Upon Request: Instructor-Lead CSUSac Courses: Distribution or Treatment, 6 - 8 weekly trngs. Contact NvRWA for details and to schedule. Gain the approved post-secondary training while preparing for your exams. Also offering water and wastewater classes powered by SunCoast Learning Systems. Water Courses have been approved for recertification hours. Visit the NvRWA web page and select the SunCoast Learning target: <http://www.nvrwa.org/> Contact: Bob Foerster at 775-841-4222

*send us your email address to get on the announcement list.

NDEP Bureau of Safe Drinking Water - training calendar for approved classes:

<http://ndep.nv.gov/dwo/main/calendar.html>**The following are tentative dates for the UNR Video Conference Workshops:**

March 9, 2012

April 20, 2012

May 18, 2012

For more information please call:

Contact: Crystel Montecinos 775-240-1396

Nevada Section of the American Water Works Association. They have one event scheduled for Nevada in February they will host a **Spring Symposium in Las Vegas**. For those operators who find it difficult to travel visit the Section's web site www.ca-nv-awwa.org for many more education opportunities

Change of Mailing Address Requested

Operator Certification Administrators have noted that a number of certificates are being returned to the State, because Operators have not updated their mailing addresses after moving. Operators are asked to promptly notify the State when they have changed addresses. Please contact Nan Paulson at 775-687-9447 or npaulson@ndep.nv.gov

3189

STATE OF NEVADA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF FINANCIAL ASSISTANCE
901 SOUTH STEWART STREET SUITE 4001
CARSON CITY NV 89701
RETURN SERVICE REQUESTED

Water Lines
Winter 2011

NV Water and Wastewater Operator's Forum Members:	Training Contacts
<p>Bob Foerster, Chair 775-841-4222 NvRWA - nvrwa@pyramid.net</p> <p>Harvey Johnson, Chair 775-832-1289 Incline Village GID - Harvey_johnson@ivgid.org</p> <p>John Hulett 775-954-4612 Washoe Co Water Resources - Hulett@washoecounty.us</p> <p>Cameron McKay, 775-588-3548 Kingsbury GID - cam@kgid.org</p> <p>Dale Johnson 775-738-6816 Elko Co Public Works - djohnson@elkocountynv.net</p> <p>Dave Johnson 702-567-2051 Southern NV Water Authority - dave.johnson@snwa.com</p> <p>Lynn Forsberg 775-738-6816 Elko County Public Works - lforsberg@elkocountynv.net</p> <p>Tom Georgi 702-822-8026 Las Vegas Valley Water Dist - Thomas.Georgi@lvvwd.com</p> <p>Mike Ariztia 775-673-2220 Sun Valley GID - mariztia@svgid.com</p>	<p>University of NV, Reno - CABNR & Cooperative Extension UNR videoconference classes for water system operators and managers are available in most communities. Call Crystel Montecinos at: 775-240-1396 or email at: xtelle@aol.com</p> <p>Community College of Southern Nevada Wastewater Water Technology Program www.cleanwaterteam.com LeAnna Risso at 702-668-8487 or LRiso@cleanwaterteam.com</p> <p>WWET Training in Clark County - www.wwet.org Training for water treatment and distribution system operators, wastewater treatment and collection system operators, and other professionals in these fields. Contact Jeff Butler 702-258-3296</p> <p>State of Nevada Water Certification Exams Exam applications and fees are due to the State Bureau of Safe Drinking Water 45 days before exam dates. A proctor will contact examinees to schedule testing. Contact: Ron Penrose at 775-834-8017 for information about the exam dates. Additional information call: 775-687-9527 or http://ndep.nv.gov/bsdw/cert_home.htm</p> <p>Nevada Water Environment Association - www.nvwea.org Jennifer McMartin (775)465-2045 or jenniferm@nvwea.org</p> <p>Nevada Rural Water Association Please send requests for training to www.nvrwa.org or contact staff directly at 775-841-4222</p>