Tennessee Backflow Prevention Association

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TBPA

We're working for safe, clean drinking water in Tennessee

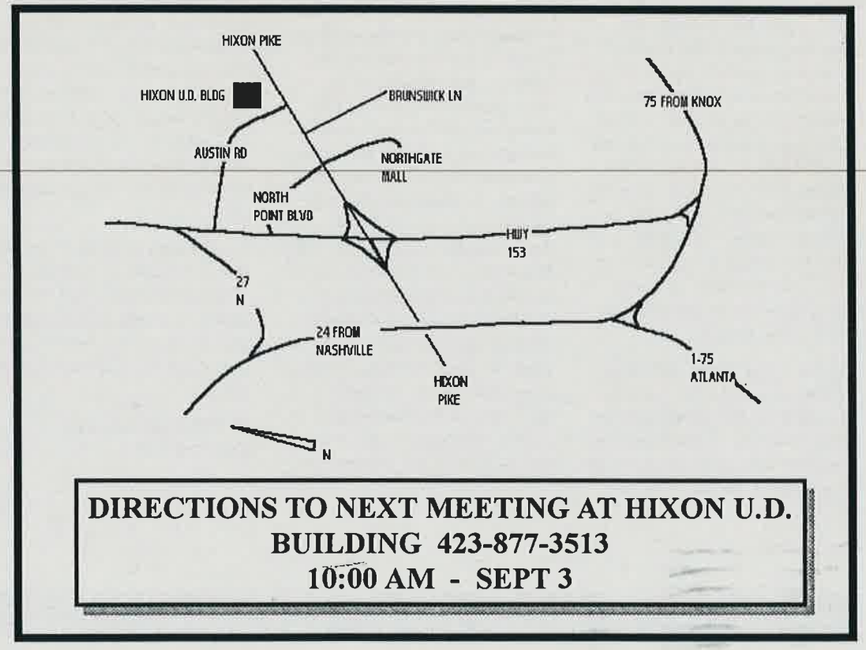
IN THE NEXT ISSUE:

Assembly Installations

Test & Repair Tips

More of What's New

Coming Fall 1998



DIRECTIONS TO NEXT MEETING AT HIXON U.D. BUILDING 423-877-3513
10:00 AM - SEPT 3

Tennessee Backflow Prevention Association

Tennessee Backflow News

Summer 1998

READ THIS FIRST

NEXT MEETING

10:00 am Thursday, September 3, 1998

Hixon Utility District Meeting Room

Directions on back
Contact: Bob Deal
423-877-3513

Discussion Topic:
State/Utility/Public Relations & Cooperation

INSIDE

Water Utility's CCC Program Hits Local Resistance

The Soddy Daisy-Falling Water Utility District ran into some resistance recently while implementing its state-approved cross connection control regulations. Mr. Rodney Hinds, a water customer upset with the requirement from the utility that his business install a reduced pressure type backflow prevention assembly, contacted the State Division of Water Supply for clarification of the policy. Mr. Hinds, owner of *Sports Shack* in Soddy-Daisy, then wrote a letter to the customers of the Utility District that was published in the local newspaper. In this letter Mr. Hinds writes "According to the state, Soddy-Daisy's requirements would only be necessary for water users who are involved with hazardous materials or chemicals. And that normal water users would need only a check valve costing about $20 to be in compliance with the state policy."

Mr. Gary Burriss, Assistant Manager of the Tennessee Division of Water Supply Chattanooga Environmental Assistance Center in a letter to Mr. Wayne Tate, General Manager of the Soddy Daisy-Falling Water Utility District, writes "This office has received several inquiries from commercial customers concerning the Utilities' recent efforts to increase its cross connection control program activity. These customers expressed concern that the Utility is requiring the maximum protection regardless of the type of business and its associated water usage. Although it is commendable that the Utility is taking an initiative to protect its water supply, efforts should be made to prioritize protection based on the degree of hazard. The program should be conducted in accordance

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Tennessee Recognized With PACE Award

The Tennessee Backflow Prevention Association (Tennessee Chapter of the ABPA) was one of only six of thirty-eight ABPA Chapters that were presented the prestigious PACE Award at the 1998 International ABPA Conference. The PACE Award was first given in 1997 to recognize ABPA Chapters for their positive impact on their membership, their profession and their community. The award is based on the activities and projects that were accomplished in the year preceding the annual conference. Each chapter in the ABPA is eligible to submit an application for consideration. Receiving the 1998 PACE Award were: the Arizona Chapter, the Carolinas Chapter, the Colorado Chapter, the Tennessee Chapter, the Georgia Chapter and the Silver State Chapter from Nevada. Three Chapters in ABPA Region 3 received the Award. Tennessee President David Kellogg was present at the 1998 ABPA International Conference to accept the award. Congratulations to all Tennessee ABPA leaders and members!

Tennessee Backflow Prevention Association

The **Tennessee Backflow News** is published quarterly by the Tennessee Backflow Prevention Association, whose members have a common interest in protecting the drinking water from contamination through cross connections. Your ideas, experience and expertise are invited and needed by the TBPA to insure a balanced approach to backflow prevention in the State of Tennessee. Your participation and support will continue to help shape the future of this industry in Tennessee.

Opinions expressed in articles, letters or advertisements in this publication are not necessarily those supported by the TBPA. This newsletter is not to be considered as legal or professional advice. **Dues are $42 annually**, and are payable to the TBPA Treasurer. Annual dues include $15 for Tennessee and $27 for National ABPA dues. National membership is required for Tennessee membership.

The TBPA Treasurer address is:

Becky Thompson, TBPA Treasurer
c/o MSUD, PO Box 175
Madison, TN 37116-0175

All other info requests and inquiries, including newsletter items and advertisements can be directed to:

Tennessee Backflow Prevention Association
Attn: Dale Phelps
c/o Gatlinburg Utilities
PO Box 5, Gatlinburg, TN 37738

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Let Us Hear From You!

TBPA/ABPA MEMBERSHIP FORM

Tennessee Backflow Prevention Association
American Backflow Prevention Association

NAME: _____

COMPANY: _____

ADDRESS: _____

CITY/ST/ZIP: _____

PHONE: _____

FAX: _____

CHECK ONE: RENEWAL: _____ MEMBER # _____

NEW : _____

ABPA DUES: $27.00
TBPA DUES: 15.00
ANNUAL DUES TOTAL: $42.00

Please remit total to:

Becky Thompson, TBPA Treasurer
c/o Madison Suburban Utility District
PO Box 175
Madison, TN 37116-0175

Includes bi-monthly ABPA News Magazine
And quarterly Tennessee Backflow News
Pre-payment of dues required to process application. Membership is non-transferable.
TBN Jul-98

Insurance for the Special Needs of Backflow Testers

The American Insurance Agency, Inc. has developed an insurance product that will meet the special needs of individuals who test and repair backflow assemblies. The Agency worked closely with key members of the ABPA to tailor the coverage to the specific needs of backflow testers.

Companies and individuals who test backflow assemblies face additional liability exposures that are unique to the service.

The tester and the company need to have a comprehensive insurance policy. The American Insurance Agency Backflow Prevention Insurance Program will not only cover the plumbing contractor coverage's, but is also broad enough to cover the exposures of backflow prevention.

The many features of the coverage in this policy are comprehensive in nature and offer a complete portfolio of coverage.

This program would allow all policies to be written by one company and one agent, reducing the risk of coverage gaps.

The Program is currently approved in approximately 7 states, but is not yet approved in Tennessee. The American Insurance Agency, Inc. is seeking approval for this program in Tennessee.

Stay tuned to the Tennessee Backflow News for further developments in this Program.

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Does your insurance coverage meet your exposure to liability for testing and repairing backflow assemblies?

Educating the Customer ...continued...

(Continued from page 10)

plain that while this particular case is dealing with dirty water and a garden hose, it could just as easily be a water line that is feeding make-up water to an acid vat, or maybe even something worse. I then create a scenario where, just a few blocks away, a water line has just broken, or a fire hydrant has just been opened quickly, causing negative water pressure to occur. I follow this up with a question to the customer, "what do you think would happen to the liquid in the bucket?" Ninety nine percent of the time you can see the answer on the customers face as he comes to the realization of the potential of this situation.

This is a very primitive and simple method for sure, but it has proven to be very effective in educating the water customers of my city because it is quick and easy for the customer to understand, and can be demonstrated on-site.

We, as water professionals, have to realize that the people who we need to educate the most about backflow protection, in most cases, are regular working class people who work hard to earn their money and deserve a complete understanding of why we are requiring them to spend their money on backflow protection. I'm talking about the fellow who is tired of working for someone else and takes the financial leap of faith to open his own business. Maybe it's a dentist who has just graduated from dental school and is nervous enough already about starting his own practice, the mom and pop who have saved up their retirement to open a small restaurant in the city square; or the newlyweds who are building their dream house that includes plans for an in-ground irrigation system. The examples are endless.

I feel that it is one of our major responsibilities, not only as inspectors and testers, but also as representatives of our water companies to make sure each and every customer understands the dangers of cross connections, especially in situations where the customer must install backflow protection. It's imperative, not only for the safety of our public drinking water, but for a good long-term working relationship between the water purveyor and it's customers.

You can have a city that is protected from the dangers of backflow, and customers who are happy to help protect the public water supply at the same time. All it takes is a little extra effort and understanding on our part.

"I feel that it is one of our major responsibilities...to make sure each and every customer understands the dangers of cross connections..."

Educating the Customer – The Responsibility is Ours

Inspectors Column

Articles by Cross Connection Inspectors and Plumbing Inspectors

Dave Richardson,
Cross Connection Inspector
Hendersonville Utility District

"Cross Connection". To the average water customer this term doesn't mean much, but to a water industry professional, it strikes a deep seeded chord of fear.

What is a cross connection anyway? The most common definition is: "Any connection, actual or potential, between a potable (drinking) water source, and a non-potable water source, which could cause contamination of the public water supply by backflow or backsiphonage. The problem is, if you use this definition on a customer you are likely to little more than confuse them.

So then, how do we as inspectors and water purveyors make our customers understand cross connections and the hazards that are associated with them? It has been my experience that complete understanding of this definition is vital if you expect to have your customers cooperation in protecting the public drinking water supply.

Since you have done your best to explain this definition in understandable terms, you are likely to have a customer who thinks that you are talking about a connection between the sanitary sewer system and the domestic water lines. While that is certainly a cross-connection, the term, as we all know, is much broader than that,

On more than one occasion I have had a customer who has been required to install backflow protection argue vehemently that there was no way that his sewer lines could backflow into the city's drinking water. Of course, they were shocked when I agreed with them. Situations like this have made me realize that it is my obligation as an inspector and a customer service representative to educate the customer on the hazards of their particular cross-connection, and on cross connections in general. Usually, once the hazard is detailed, the customer is more than happy to eliminate the cross connection, or put in backflow protection.

Certainly it would be easier to just demand that backflow protection be installed without any explanation as to why, and of course the customer would have to comply. But, experience has taught me that once the customer understands that a hazard exists, and exactly what the hazard is, they are usually more than happy to take the necessary steps to comply, and it is usually done much sooner than if they had been forced to comply without any understanding as to why. This way your customer is happy and the city is protected sooner. Everyone wins!

One more advantage to educating your customers is when you have to make a return visit for your annual inspection, or testing of the backflow device, they are usually more cooperative, which makes for a much nicer visit.

So, just what are the dangers associated with cross connections anyway? This can be answered with two words. Backflow and Backsiphonage. The hydraulics of this phenomenon would be better left to and engineer to explain. However your customers must have at least some sort of understanding of what takes place in these situations, or they may not believe that protection is necessary. I have found that the easiest way to communicate these dangers to an unknowing customer is with a demonstration that includes an instrument with which everyone is familiar, the ordinary garden hose.

I usually start with a bucket full of dirty water, a hazard to which everyone can relate. Next, I immerse the end of the hose pipe into the bucket of water, explaining of course that the hose pipe must still be connected to the spigot for it to be an actual cross connection. Then I ex-

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"Usually, once the hazard is detailed, the customer is more than happy to eliminate the cross connection, or put in the backflow protection".

USC Foundation Special Notice 98-0002

Contact Zurn/ Wilkins at 770-448-8990 or contact your local Wilkins Manufacturer's Representative

The USC Foundation has released a Special Notice concerning a change in the design of check valve poppets contained in the following Wilkins backflow assemblies:

950, 950XL, 950XLT, 950XLU, 975, 975XL, 975XLU, 075XLMS, 975XLBMS. All assemblies affected are 3/4" and 1", production units will have serial numbers between #566393 to #644281. The thickness of the poppet was found to be greater than the originally submitted and approved configuration. The thicker poppet will not affect the assembly's ability to prevent backflow but it will cause a higher overall pressure loss, and for some models and sizes the maximum allowable pressure loss may be exceeded. Should you have any assembly affected by this modification, contact Wilkins Regulator company for replacement components.

Lead Story continued...

(Continued from page 1)

with the System's approved Cross Connection Policy and Plan. Please refer to the Division's Cross Connection Control Manual and EPA's Cross Connection Control Manual that were provided to your System. Information in these manuals should be helpful in determining the degree of hazard at various facilities and the type of cross connection protection needed."

The newspaper then ran an article by Staff Writer Jon LeBoeuf. In his article, LeBoeuf writes "Some Soddy Daisy business owners are incensed about being considered hazardous to the community by the Soddy-Daisy Falling Water Utility District...Rodney Hinds, owner of the sport Shack in Soddy-Daisy...says the device is necessary only if water users deal with hazardous materials or waste... Soddy-Daisy City Manager Hardie Stulce said the city also has received numerous complaints from business owners about the measures taken by the utility district, but he wants is made clear that the measure has nothing to do with the city's government...it has nothing to do with the city". Mr. Hinds is further quoted "I urge all water users to contact the local water commission and our politicians to be sure we're provided with a safe water supply at a reasonable price... otherwise, we may need to start digging our own wells again".

The Soddy Daisy-Falling Water Utility District has a Cross Connection Control Plan approved by the State Division of Water Supply, which states that all commercial customers shall have a reduced pressure backflow preventer installed.

The Division of Water Supply Cross Connection Control Manual states on page 40 that under no circumstances are residential single or dual checks to be used in the place of a required RP, DCVA, or PVB.

The TBPA invites your comments or opinion on the recent happenings in Soddy Daisy. Please attend the upcoming TBPA meeting in Hixon, or send your comments to the TBPA President or Newsletter Editor.

Wet-Pipe Fire Systems Investigated

In the previous issue of the Tennessee Backflow News we briefly previewed the AWWARF Report titled "Impact of Wet-Pipe Fire Sprinkler Systems On Drinking Water Quality". In this article we will briefly look closer at the report and its conclusions.

Resulting from actual sampling of wet-pipe systems, it was concluded that the water quality within the existing systems exceeds the primary standard for lead and cadmium, and exceeds the secondary standards for iron, manganese, total dissolved solids, sulfate, color and odor.

Also determined was that the predominate cause of backflow of water from within a dedicated wet-pipe system is related to the failure of check valves that have failed in the open or partially open position. The majority of such backflow inci-

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"Results of the study indicated that standard swing check valves on wet-pipe fire sprinkler systems are susceptible to failure in the open position"
AWWARF Impact of Wet-Pipe Fire Sprinkler Systems on Drinking Water Quality. Pg. 148

Backflow Assembly Approvals – Valid or Invalid?

WHAT IS AN INVALID APPROVAL?

Reprinted with permission from Cross Talk, Spring 1997, University of Southern California Foundation for Cross Connection Control and Hydraulic Research

The Foundation staff frequently receive inquiries as to the status of a backflow preventers Approval after a modification or variance in installation orientation has occurred. In many cases, the Foundation staff member's response will be something like, "that modification would invalidate the Foundation's Approval of the assembly." There are a number of reasons the Foundation's Approval of a particular backflow prevention assembly would be invalidated. For example, if the assembly is installed in an orientation other the orientation under which the assembly was evaluated, the Approval would be invalidated. The shutoff valves could be moved or ells could be placed in between the shutoff valves and the assembly. Rotating the assembly on it's axis or rotating the shut-

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WHAT'S NEW

New Equipment and Trends in the Backflow Industry

Watts 909 Approved in the Vertical Orientation

Watts Regulator is pleased to introduce the backflow industry's first USC Approved "Vertical Flow Up" small diameter Reduced Pressure Backflow Preventer. The 3/4" and 1" 909QT has successfully passed the USC 9th Edition lab and one year field test in the horizontal and vertical flow up position. There have been two small changes made to the check valves to obtain this approval , the check valve washer has been modified, and the throat of the second check valve has been opened up.

These parts are interchangeable and do not require a model designation change. These parts are being phased into production the week of July 20th, beginning with serial #461650. Therefore, all valves manufactured after this date would be USC Approved in both the horizontal and vertical flow up orientations.

Also recently approved by USC is the 1" SS009QT Stainless Steel RPZ.

Information taken from Watts Regulator Bulletin #213

Hydrocowl Enclosures Receive ASSE 1060 Certification

Hydrocowl enclosures for 3/4" through Dual 10" water systems are certified by ASSE to Class I, Class II, and Class III of ASSE Standard #1060, Performance Requirements for Outdoor Enclosures for Backflow Prevention Assemblies. If you are still specifying below ground installation of water systems that require inspection or maintenance, Hydrocowl encourages you to make ASSE 1060 approved enclosures and above ground installation part of your standard specification. For more information contact Hydrocowl at 800-245-6333, e-mail to sales@hydrocowl.com. Visit the website at www.hydrocowl.com. Hydrocowl is located at 213 Crutchfield Avenue, Nashville, Tennessee 37210. *Information by Hydrocowl, Inc. flyer.*

Wilkins Introduces Model 375 RP Assembly

Wilkins introduces the Model 375 RP assembly in sizes 4" and 6". The assembly is FM approved, UL Classified, and ASSE Listed but is still awaiting USC Foundation approval. The new assembly features a single access cover to reduce maintenance and down time, check components made from lead free engineered plastics and stainless steel, and a thin wall lightweight epoxy coated ductile iron body. The body and cap feature no threads or taps, eliminating exposure to corrosion.

Reduced Pressure Backflow Preventer with Patented Battery Monitor Switch

Wilkins rolls out a full line of USC Foundation approved RP assemblies with the patented Battery Monitor Switch (BMS) designed to sense and react to relief valve movement. Battery operated and ready to install, the BMS supervises the relief valve in the closed position. When the relief valve opens to a predetermined level, the built-in alarm sounds a high pitched signal, announcing that a relief valve discharge is occurring. A built in time delay prevents false alarms due to fluctuating line pressures. The BMS is equipped with a phone jack for output to an on-site alarm, a security auto dialer, or central station alarm system. Connected to an optional security dialer, up to three remote locations can be alerted . The 3/4" thru 2" 975XLBMS, and the 2.5" thru 10" 975BMS is equipped with a UL recognized switch, a 9 volt battery and is factory installed, tested and ready for installation. The BMS is also available as a kit to retrofit any existing 975 and 975XL.

Information provided by Ben O'Neal Company, Inc.

Fire System Report continued...

(Continued from page 3)

dents were attributed to standard swing check valves and alarm check valves that were not UL 193 listed. Controlled simulations of a backflow incident indicated approximately 100 gallons of water backflowed from a wet-pipe system when the check valve failed in the open position during an average 3 minute hydrant flow test.

Among the report recommendations are the following: approved backflow assemblies should be installed with all new Class 1 and Class 2 wet-pipe systems; lead containing valves should not be used in the construction of new systems; Class 1 and Class 2 systems should be maintained in accordance with NFPA 25; a leak confidence test be developed to document that the main clapper holds pressure; a full flow test be conducted during the annual maintenance of the backflow assembly to verify the assembly will open properly and allow adequate flow to pass through the assembly; and continued cooperation and communication between the various parties involved.

Regarding retrofit of existing Class 1 and Class 2 systems, and acknowledging that an alarm check valve does not provide the same protection as a double check assembly, the report recommends the following: if the system has a properly maintained UL Listed alarm check valve, no modifications are recommended; if the system has no check valve, a lead-containing check valve, or a swing check valve, it should be replaced with a UL Listed alarm check with the standard alarm pressure switch trim package. Should a water purveyor choose to require the installation of a backflow prevention assembly on an existing wet-pipe fire system, then a comprehensive hydraulic analysis and evaluation should be performed by a qualified professional engineer on a case-by-case basis prior to the addition of a backflow preventer in order to determine the level of hazard, the cost to retrofit the system, and the impact on system hydraulics and performance in order to meet the requirements of NFPA 13.

Water Purveyors that require retrofit of fire systems may wish to study this report.

The publication can be purchased for $150 non-members, and $125 for AWWA members Phone the AWWA at 303-794-7711.

TBPA Meets in Madison

The TBPA met June 4th in Madison, TN. Ten members were present. Mr. Pat Meyer of the Tennessee Fire Sprinkler Contractors Association was an invited guest. Mr. Meyer shared with the group the views and concerns regarding backflow assemblies and fire systems from the fire contractors point of view. The group also viewed a video by the NFSA about backflow preventers and fire systems, and an interesting video by the TFSCA illustrating the reduction in fire deaths with the increase in the number of sprinklers installed. The 1998 Conference report was given, and favorable comments from key speakers at the Conference were reported. The members present reviewed a proposed two-page test and repair form . Positive comments were made regarding the changes to the TBPA Newsletter.

Be sure to attend the next TBPA meeting in lower East Tennessee in September !

Tips continued...

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A: (1) The sensing line may be plugged with debris. The sensing line may be internal or external, locate it and clean it out, including the ends or any fittings that may be in the line. (2) Also check the relief valve diaphragm for cuts, tears or holes. (3) Some relief valve designs with a vertical stem accumulate debris in the bottom housing that may not allow the stem to move to the point to close the relief valve. (4) Verify that the check springs are installed in the proper order. The heavier spring goes in the #1 check valve. (5) The #2 shutoff valve and the #2 check may be leaking with backpressure. You may verify this be using regular pressure gages in the testcocks of the assembly and observing the pressure readings.

Q: I repaired a backflow assembly by cutting a check disc from a sheet of gasket material. It worked, the check now tests. Is this ok?

A: No. The USC Foundation 9th Edition Manual states in Section 9.1.5(d), Maintenance and Repairs, "Use only manufacturer's replacement parts."

Note: The USC Foundation Manual is generally considered as the authority regarding backflow prevention assemblies. The manual is, among other things, a guidance document to assist in implementing and carrying out a cross connection control program. The manual is not considered an absolute requirement or law unless an entity, such as a state, municipality, district or company adopts it, or parts of it, as such.

Training is Key at LU 572

"The only way we can truly grow is through training" Mike Trigg, Plumbers & Pipefitters Local Union 572

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phase, setting up a way to accumulate all the material needed to assemble a hands-on workstation for the class. Six weeks, countless letters to manufacturers, visits to supply houses and factory representatives yielded enough material. The test station assembly is completed in apprentice school, and now to get state approval for the course. Thanks to Ms. Becky (Thompson), Mr. John Hall and Mr. Don Stephens, the strategy was laid out and it was on to the State Division of Water Supply.

After meeting with Mr. Robert Lashlee and Mr. David Draughn, a course outline was finally approved. It took three re-writes and every hour of the thirty-two hour course accounted for, but it was well worth it. We finally had a State approved course!

So here it is a few short years later, backflow prevention and cross connection is now one of the primary courses we offer at the Plumbers and Pipefitters Local 572 in Nashville. The road here was not easy, but if it weren't for the great people I was fortunate to meet along the way, I would not have made it. That's the one great thing about this industry, the people. They never stop trying to help you. Wouldn't it be great if all the companies had the same ethics that most of this industry has! I have not met one person that didn't offer to help in any way they could, no ego problems. What a breath of fresh air.

We, Local 572, have over eighty apprentices currently enrolled in a five-year training program, with a total of over one thousand members in the mid-state area. More journeyman than apprentices are involved in the classes. We offer classes in just about every facet of the industry, and now have more work than ever! We have accomplished this through training – product and skill knowledge is a powerful tool. Our members, realizing this, have more than doubled the amount of money out of their pockets for training. We need to make the same commitment in the backflow industry.

The only way we can truly grow is through training, more courses, and more programs for the different jobs this industry provides. We not only train our Union people, but also management and maintenance staff from hospitals, mechanical engineers and contractors. The door is open for other classes like inspectors and water purveyors. We cannot be content with the training classes as they are now. We must give more people the opportunity to be educated. The push to train should never stop.

The water industry is facing more challenges every day. Liability and consumer concerns keep this progressive industry on the cutting edge of technology. The only way to keep up is through the spreading of education. We should encourage those that want to be involved, as you in the industry, encouraged me.

We have not stopped in our efforts to expand. And I don't think anyone should be content as to where we are now. Proof is the recent passage of a Medical Gas Bill we proposed, presented to State Legislators, and has now become law. The other Locals in the state have met with us, Local 572, and want to have classes in their cities. So it's back to the State Division of Water Supply for approval. Now, let's talk about an Isolation Policy!

More tips next Issue!

Tips continued...

hose capacity is enough to satisfy the leak on the #2 shutoff valve. If the volume of the leak of the #2 shutoff valve requires more than 1/4 turn of the needle valve to open the relief valve, then a temporary bypass hose may be installed from the #1 to #4 testcocks to divert the water around the check valve and satisfy the #2 shutoff valve leak. Hoses larger than standard gage hoses may be needed for larger assemblies. For further information see the USC Ninth Edition Manual, Section 9.2.3.3.

Q: The relief valve on a large RP assembly has a continuous discharge. I have replaced and cleaned both checks and the relief valve. The assembly still discharges. What can I do?

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Advertisements

Please Support Our Advertisers – They Support ABPA!

Spread the Word – Training is the Key!

Plumbing Contractors are on the front lines of protecting the quality of our drinking water!

Mike Trigg, Training Coordinator, Plumbers & Pipefitters Local Union #572

How It Started

When I had to work in the Madison area and I found out that I would be under the scrutiny of the notorious Becky Thompson, Madison Utilities Inspector, panic set in. Here I am a Master Plumber, apprentice instructor and running work for ages, but when it came to RPZ's and DCVA's I was as lost as last years Easter egg!

What could I do to make up for this mental void? The only thing I knew to do was swallow my pride and admit to Ms. Thompson my total lack of knowledge and hope for the best. Thankfully, instead of being the brunt of ridicule, I was educated and encouraged to be involved in the backflow industry. What a challenge!

So it's off to classes I go! The TAUD class, two straight years of the UA Instructors Training Program in Ann Arbor (40 hours each), and countless phone calls to the people in the know. Finally, I knew a little about backflow, very little.

Next Step: Involvement

First it was a meeting with the Apprenticeship Committee (JATC). Unfortunately, when you want to start a new program it costs, and that means more money that has to be appropriated. With this out of the way it was on to the second

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Double Check Assembly Test Procedures In Tennessee

Mr. Robert Lashlee, P.E., Tennessee Division of Water Supply

The 9th Edition of the USC FCCC&HR Cross Connection Control Manual recommends that Double Check Assemblies be tested for leakage in the direction of flow utilizing a differential pressure gauge type test kit. If you do not have the 9th Edition Manual to follow, it is recommended that you use the procedure in the EPA Cross Connection Control Manual. Outlined on page 28 of the EPA Manual, this procedure is known as the "High and Low Pressure Hose Method Using the Differential Pressure Gauge". The procedure is also detailed and illustrated in the American Society of Sanitary Engineering (ASSE) "Professional Qualification Standards" publication as ASSE Standard 5010-1015-2.

Once again, it is necessary that you check to verify that there is no leakage (or seepage) through the second shutoff valve when using the "High and Low Pressure Hose Method". Since there is no method available to compensate for minor leakage, the test cannot be completed using this procedure unless you can stop the leakage. The FCCC&HR procedure has the advantage of allowing you to compensate for minor leakage, which may allow you to obtain an accurate test, providing the leakage is not too great.

"Following "Approved Procedures" as closely as possible, while carefully analyzing the performance of the device and test equipment, along with accurate and complete reporting of results, will promote uniformity throughout the State and add credibility to our backflow prevention efforts"

Mr. Robert Lashlee, P.E.

Test & Repair Tips

Q: What is the requirement for tightness of the #2 shutoff valve during a test of an RP assembly?

A: The differential pressure reading across the #1 check is also called the static pressure drop. This requires a no-flow, or static, steady state inside the assembly. A leaking #2 shutoff valve would be apparent during a proper test and may affect the gage readings when testing the assembly. Indication of a possible leaky #2 shutoff would be apparent during the part of the test procedure that activates the relief valve. If you have to open the low side gage needle valve more than 1/4 turn to open the relief valve, or if the relief valve does not open at all, it is likely that the #2 shutoff may be leaking. You may confirm this possibility by turning off the high side testcock with the vent hose connected to testcock #4 and the high and vent gage needle valves open. If the gage needle drops, it is most likely the #2 shutoff valve is leaking. The 9th Edition USC Field Test Procedures state that a small leak in the #2 shutoff valve can be tolerated as long as the

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Approvals – Valid or Invalid, continued...

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USC Foundation

off valves on their axes may invalidate the Approval. Even though the foundation's Approval may be invalidated, it is important for the administrative authority and those in the field to understand a few things about the Foundation's Approval and the invalidation of an approval. Backflow prevention assemblies are submitted to the Foundation for evaluation under certain parameters. For example, the assembly may be evaluated in either the horizontal orientation or both the horizontal and vertical orientation. When an assembly is submitted for horizontal orientation, this is the only orientation under which it is evaluated. There is no way for the Foundation to ascertain the specific operational characteristics of an assembly in a specific orientation unless the assembly is tested in that orientation. Therefore, an assembly tested in the horizontal orientation is Approved for horizontal orientation only. It could be that the assembly would work if tested in the vertical orientation, but the Foundation can not make statements about the operation of the assembly when there is no data to back up the statement. Certain double check assemblies have passed the evaluation in both the horizontal and vertical orientations. Thus, they are approved for vertical and horizontal installation. However, there are others which have been tested in the horizontal orientation only. Even though they may or may not work in the vertical orientation, the Foundation would have to invalidate such an assembly installed in the vertical orientation, because there is no data to confirm acceptable operation in the vertical orientation.

A less critical case occurs when a shutoff valve on an Approved assembly is rotated. Since the assembly was not evaluated and Approved in that particular configuration, the Approval would be invalidated. In this type of situation, it is important to know what shutoff valves are used for testing and maintenance purposes. They do not contribute to the assembly's ability to prevent backflow. Therefore, if a shutoff valve is rotated on it's axis, the assemblies ability to prevent backflow should not be affected. However, since this is not the configuration under which the assembly was evaluated, the Foundation's Approval would be invalidated. The administrative authority may, in such a case, chose to allow a variance to the requirements for Foundation Approval based on the fact that nothing has been done to alter the ability of the assembly to prevent backflow. The Foundation's position, however, is that the Approval is invalidated when there is any change in configuration, orientation, materials, etc. The Foundation's Approval, in essence, states that a particular assembly in a particular configuration and orientation met specific criteria. It is not good engineering practice for the Foundation to grant Approval in other configurations without first evaluating it under those specific configurations.

In summary, any change made in the assembly, (including configuration and orientation) since the time it was evaluated and Approved by the Foundation, would invalidate the Foundation's Approval. These changes may or may not affect the assembly's ability to prevent backflow. The local administrative authority may grant a variance for assemblies modified in such a way that would not affect the assemblies' ability to prevent backflow.

"The Foundation can not make statements about the operation of the assembly when there is no data to back up the statement"

Please see the USC Foundation Special Notice on page 10.

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