

inside: **field test kit standard / detector assembly spare parts... and more**

Cross Talk

Winter 2006

Field Test Kit Standard

The gage equipment used by the backflow prevention assembly tester (Tester) is an essential part of their "tool box." Over the years the equipment used has evolved from simple go/no-go tests with garden hoses (i.e., backpressure check valve with full line pressure) to the use of mercury manometers to record pressure differences. However, mercury manometers with their long glass tubes, and mercury contents, were not the easiest of things to use. One wrong action by the Tester could cause a spill



of mercury on the ground, or worse yet, flush the mercury into the test cock of the assembly. To the relief of the Tester of today, the mercury manometer is a thing of the past.

Over the years, Testers have configured their own gages by buying the gage head (i.e., pressure measuring component), then plumbing the gage with tubing, pipes, and fittings to meet

their needs. Gages may have been configured with 2, 3, 5, or more needle valves.

The Foundation's current 9th Edition Manual contains construction and operation guidelines for gages at the beginning of each field test procedure in Section 9. The Foundation has utilized these guidelines as the basis for reviewing gages and

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Foundation Membership

The Foundation's Membership Program provides many benefits to the Members of the Foundation. These include: twenty-five percent discount on manuals, twenty percent discount on Foundation Training Courses for any employee of the Member company/organization, the *List of Approved Backflow Prevention Assemblies*, printed quarterly, and access to the up-to-the-minute version of the *List* for those Members with Internet access.

Members are encouraged to call the Foundation with technical questions. The Foundation's Engineering Staff is available to assist members with the various aspects of field testing backflow preventers, installing backflow preventers and administering their cross-connection control program.

Below is a list of those who have become Members of the Foundation this past quarter:

A.C.E.S.

Aaron Zeff's \$34.95 Testing Co.

American Water

American Water Services, Inc.

Arizona American Water

James A. Ashe

Brower's Backflow Test

California Dept. of Health Services

Civil Engineering Consultants

Curtis Plumbing

El Dorado Irrigation District

Falcon Mechanical

Fort Scott Community College

Fort Worth, City of

Green Iguana Services

Kenneth Hyde

Irri-Care Plumbing & Backflow

Lundstrom & Associates

Mena's Environmental Services

Montezuma Rimrock Water Co.

Nampa, City of

Omaha J.A.C.

Patoka Lake Reg. Water District

R.J. Mechanical, Inc.

Gerald Redus

Reed Meter Repair

SAIC - NV

Santa Maria-Bonita School District

Texas Water Utilities Association

Thomas Cross Connections

University of Texas - Austin

Wicketts Int'l Plumbing Co.

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Detector Assembly

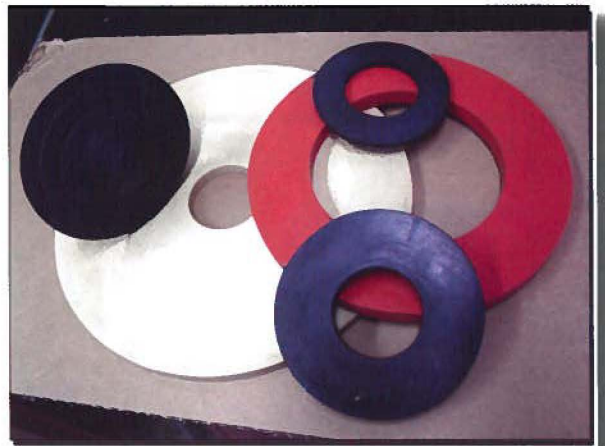
Spare Parts

The Manual of Cross-Connection Control requires the manufacturer of backflow prevention assemblies to maintain originally manufactured spare parts in order for a backflow prevention assembly to maintain its approval. Once the assembly itself is no longer manufactured, but spare parts are still available from the original manufacturer, the assembly is maintained on the List of Approved Assemblies; however, it is noted as only having spare parts available. This means the assembly itself is no longer being manufactured, but the original spare parts are still available from the manufacturer. In this case, the administrative authority has no reason to remove the assemblies from the field, since repairs can still be made and the approval maintained.

Once spare parts are no longer available from the original manufacturer, then the assembly is removed from the List of Approved Assemblies. Administrative authorities may vary on their policies once an assembly has been removed from the List of Approved Assemblies. However, most will allow the unapproved assembly to remain in service until a repair is needed, which requires spare parts. At that point it is not possible to replace the spare parts with those of the original manufacturer, and therefore, it is not possible to maintain the assembly in the originally approved configuration. Therefore the assembly should be removed from service.

A question has arisen recently regarding double check detector assemblies and reduced pressure principle detector assemblies. There have been some cases where the bypass backflow preventer of the detector assembly does not work. The maintenance person has attempted to replace the bypass assembly only to find out that it is listed as only having spare parts available. Since it is listed as "spare parts only," the bypass assembly itself is no longer manufactured, and therefore not available as a replacement. Some administrative authorities have suggested replacing

the bypass assembly with a different model assembly. However, the List of Approved Backflow Prevention Assemblies lists the acceptable bypass assemblies for each model of detector assembly. Replacing the bypass assembly with another model, which is not listed for that particular detector assembly, invalidates the approval.



*Spare Parts:
Several disc sizes for backflow prevention assemblies*

The Foundation's response to this dilemma is to point out that the bypass backflow preventer need not be replaced, but it may be repaired. The Manual of Cross-Connection Control in Section 10.2.1.9 defines replacement parts as "...all piping, internal components, and access covers for internal components of the assembly, excluding the primary assembly body(s), {i.e., main pressure containing vessel(s)}."

Therefore, it is not required that the body of the bypass assembly be in production as a spare part for the mainline assembly to stay on the list, as long as spare parts are still available for the bypass backflow preventer from the original manufacturer. Since originally manufactured spare parts are still available for the bypass assembly, it is possible to repair the bypass without having to replace the bypass backflow preventer. ■

University Milestones

125 University/ **100** Viterbi School of Engineering/ **62** Foundation

With the 2005-2006 school year underway, the University of Southern California, the Viterbi School of Engineering along with the Foundation of Cross-Connection Control and Hydraulic Research are all celebrating major milestones in their history. All three entities continue to strive for excellence after all these years, continuing to build on the exceptional reputation the University is known for.

University of Southern California, 125th Anniversary



In 1880, members of the Los Angeles region Methodist Episcopal Conference founded the University of Southern California. The school was host to 53 students and 10 teachers. Today, celebrating its 125th anniversary, the school boasts a student body of over 32,000 and 3,000 full-time faculty. Incidentally, tuition to attend the University back in 1880



*USC's first identifiable faculty.
The picture was take in 1880.*



*USC's first building, finished October 4, 1880.
The building still stands on campus and is known
as the Widney Alumni House.*

was \$15.00 per term, and students were not allowed to leave the city without the knowledge and consent of the university president.

The University was first nicknamed the "Trojans" in 1912, after a Los Angeles Times' sportswriter, Owen Bird, linked the fighting spirit of USC athletes to that of the historic Trojans. And since 1912, USC is the only university in the world to have a gold-winning athlete in every summer Olympiad. In 1943, one-third of all USC students had some sort of role in the war effort. In 1947, after the end of World War II, enrollment at the University increased from 8,500 in 1945 to over 24,000 in 1947. Between 1946-1980 the University matured into an institution with the highest level of academic excellence and distinction in the world. In 1984 the USC campus became the site of the largest Olympic Village when the City of Los Angeles played host to the XXIII Olympiad. Notable USC alumni include Neil Armstrong, John Wayne and George Lucas.

Today, the University is the largest private employer in the City of Los Angeles. There are

more than 180,000 living alumni in the Trojan family with almost three-quarters of them living in California.

Viterbi School of Engineering, 100th Anniversary

USC Viterbi **School of Engineering** **Celebrating 10² Years**

Twenty-five years after the University of Southern California opened its doors, the university offered its first engineering courses. By 1907 the university had 100 students enrolled in physics and engineering. And, in 1908 the University awarded its first engineering degree, a B.S. in civil engineering. In 1927, the University had awarded 254 engineering degrees. And, after 20 years of offering its first engineering courses the University established the "College of Engineering" that was comprised of five departments including chemical, civil, electrical, mechanical and petroleum engineering.

By 1937 the College of Engineering had 10 full-time faculty and 230 students. With the increased enrollment after World War II, the College of Engineering saw its number of students jump to 400. In 1949, the University awarded 605 engineering degrees. The College of Engineering was then renamed the "School of Engineering." For the next 50 years the School of Engineering led the way with numerous advances in several engineering fields including communications, fluid dynamics and biomedical.

In 2004, Andrew J. and Erna Viterbi gave \$52 million to the University of Southern California, lending a name that has become a legend in information theory, telecommunica-

tions and entrepreneurship to the university's School of Engineering. That same year, the school ranked #6 in graduate engineering programs (#3 among private universities) by the U.S. News & World Report.



USC President Steven Sample with Andrew and Erna Viterbi along with Engineering Dean Nikias.

The Viterbi School of Engineering now enrolls 1,858 undergraduate and 3,325 graduate students, including 915 Ph.D. students and 2,410 masters' degree candidates. About 800 of the latter are pursuing their studies through the school's innovative Distance Education Network.

Foundation for Cross-Connection Control and Hydraulic Research, 62d Anniversary

With the continued support of its members, the Foundation, part of the University of Southern California, is celebrating its 62d Anniversary. In 1944, the Foundation began operations and since then has become one of the world's foremost authorities in the backflow field.

For the next 20 years the Foundation made great strides in the field of cross-connection control. The Foundation began work in a laboratory located on the university campus. It was during these early days that the first Beeco, Crane, Hersey and Grinnell units were evaluated. In 1948, Paper No. 5, the Foundation's first publication, including testing procedures and specifications for double check valve assemblies and reduced pressure principle assemblies was published. In 1960,

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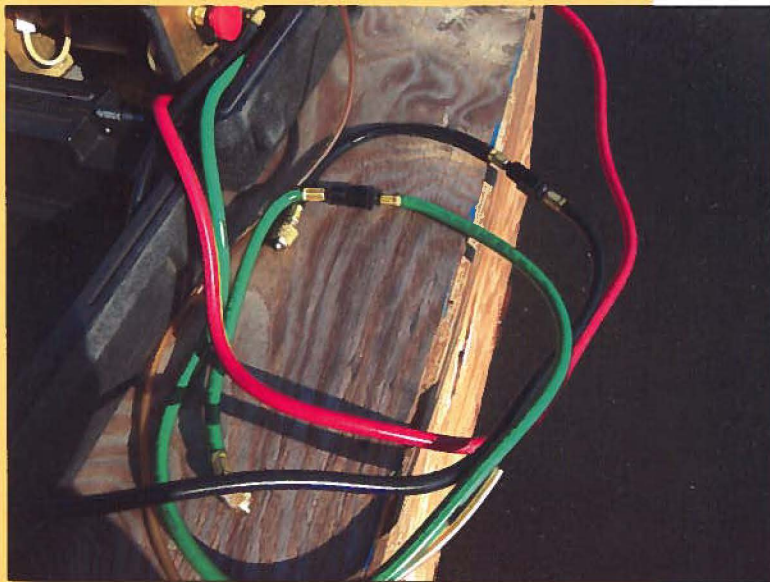
Field Test Kit Standard

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publishes a list of those gages complying with the guidelines. Over the years, this list of acceptable gages has been adopted by some administrative authorities and Tester certification programs.

To provide a more comprehensive means of evaluating a gage's performance, the Foundation's Manual Review Committee (MRC) is developing a new gage, or Field Test Kit Standard, to be included in the 10th Edition Manual. When the new standard is published, Field Test Kits in compliance with the Standard will be approved, similar to the way that the Foundation approves backflow prevention assemblies.

During the MRC review process, numerous comments have been received about the proposed Field Test Kit Standard. Some of the comments have been voiced from Testers concerned that their current gage may not be one of those on the future Approved List, and this would create a hardship to replace their gage. The Foundation has made an effort to inform Testers all around the country that the Foundation's



Standards are voluntary. They are not mandated in any area, unless the local administrative authority adopts them. Should an administrative authority adopt the Field Test

Kit Standard, there would be some type of implementation schedule established. Changes would not be required over night. This is similar to the changes experienced when administrative authorities adopted the



9th Edition Field Test Procedures to replace the 8th Edition. Testers were given a reasonable period of time to migrate over to the new procedures.

Other comments received by the MRC concern the annual accuracy verification requirements in some jurisdictions. It has been misinterpreted by some that the Field Test Kit would have to be tested to the Field Test Kit Standard every year. This is not the intent of the Standard. The Field Test Kit is only tested to the Standard when a manufacturer submits their product to the Foundation for the initial Approval. The annual accuracy verifications required in some areas should be based upon a separate protocol. To provide guidance for this protocol, the 10th Edition Manual will maintain recommendations in the Appendix. This protocol will identify accuracy verifications in a descending mode with either water or air, and pressure leakage tests.

Should you require any additional information please contact our office. ■

the Manual of Cross-Connection Control, Recommended Practice was published.

In 1964, Professor E. Kent Springer was named Director of the Foundation and would continue to be for the next 20 years. During the year 1967-1968, the Manual, in particular Section 10 covering the Specifications, was thoroughly reviewed by a committee representing water utilities, health departments and manufacturers, as well as the Foundation.

With an ever-growing number of state, local and other agencies becoming involved in the Foundation, the Southern California Water Utilities Association helped the Foundation establish the membership program in 1967, ensuring a financial base for continued operations.



First Membership Check to the Foundation from SCWUA.

In 1968, after the on-campus laboratory was torn down to make room for new engineering buildings at the University, the Foundation moved into an old pumping station previously run by the Los Angeles Department of Water and Power and makes its home there today.

The laboratory facility is where much of the Foundation's work takes place. This is where all the controlled evaluations of the backflow prevention assemblies are conducted. Not only can it be used to evaluate backflow pre-

vention assemblies, but also to conduct specialized research projects, which may require the laboratory's specialized systems and large water flow capacity.

For the next 15 years the Foundation published three more editions of the manual and



Prof. Springer and Prof. Lee at the Foundation's 50th Anniversary Party.

began offering the Course for the Training of Backflow Prevention Assembly Testers, focusing on helping students become proficient with testing the several different types of backflow preventers. The Foundation also began offering the Course for the Training of Cross-Connection Control Program Specialists, specializing in the administrative process of running a successful cross-connection control program.

The Foundation has grown to over 800 members and continues to be a leading source of information and education in the cross-connection control field. Currently, the Foundation is working on the 10th edition of the Manual expected to be ready for Spring 2006. ■

Training Courses

Tester Course

Los Angeles, CA
1-5 May 2006

Los Angeles, CA
10-14 July 2006

Specialist Course

Los Angeles, CA
23-27 January 2006

Monterey, CA
5-9 June 2006

Los Angeles, CA
24-28 July 2006

Upcoming Events

TREEO Cross-Connection
Control Conference
•Gainesville, FL
9-10 February 2006

Spokane Regional Cross Connection
Control Chapter Seminar
•Spokane, WA
23 February 2006

American Backflow Prevention Assoc.
Annual Conference
•San Antonio, TX
9-12 April 2006

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School of Engineering
Celebrating 10² Years