

inside: **member recognitions** | **al jorgensen** | **double check** | **70 years...** and more

Cross Talk

Autumn 2014

As the Foundation celebrates its 70th anniversary it would like to take this moment to thank the USC Foundation Members for their constant support. And recently, the Foundation held two events to honor those long-standing Foundation members.

Thank You Members

In November, at the Southern California Water Utilities Association (SCWUA) luncheon meeting, the Foundation honored its charter members who have continued to support the Foundation membership program since its inception in 1967.

And, in December, the Foundation recognized those members who have continued to support the Foundation membership program for more than 25 years by hosting a luncheon reception in its offices at USC.

With its continued support from members the Foundation will continue to be a leader in backflow prevention and cross-connection control. ■



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Foundation

Membership

What's included with a USC Foundation Membership

Membership Discounts

- 25% off Manual Orders
- 20% off Training Courses
- Training Tools are also discounted

Other Benefits

- Free copy of the Manual of Cross-Connection Control, each time a new edition is published
 - E-mail notification every time the electronic copy of the *List of Approved Backflow Prevention Assemblies* is updated
 - Updates to the *List of Approved Backflow Prevention Assemblies* mailed quarterly
 - Special Notice mailed when needed
 - New *Cross Talk* mailed quarterly
-

Members are encouraged to call the USC Foundation with technical questions. The USC 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 USC Foundation since the last *Cross Talk*.

24 HR Express Services, Inc.

Ace Pelizon Plumbing

Backflow Engineering Group, Inc.

California Backflow

David Hahn Registered Plumber

Jean E. Wright

Monarch Plumbing and Mechanical

Roto Rooter Services, Inc.

University of Washington Plant Operations

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in memoriam: Al Jorgensen

Al Jorgensen, who devoted his entire career to the water industry in some fashion and sat on the USC Foundation's Board of Advisors, has died. He was 86.

Al Jorgensen was born December 1, 1927 in downtown Los Angeles at the Lutheran Hospital, which is still there. He was raised and worked in southern California most of his working years. He attended UCLA from 1945-47 and graduated from U. C. Berkeley in 1949 with a Bachelor of Science in Process Engineering. At this same graduation he received his commission as a Second Lieutenant in the U. S. Army Corps of Engineers. In 1967, Al earned a Master of Science degree in Public Administration from the USC Price School of Public Policy.

He was called to active duty in 1951 and spent nearly two years in Korea as the commander of the 91st Engineer Water Supply Company furnishing water from Taegu in the South through Seoul and the Panmunjom Peace Camp in the North. In 1961 his Reserve Unit, the 916th Engineer Construction Group, was called to duty during the Berlin Wall Crisis and he spent a year at Fort Meade, MD. Al retired from the Army Reserve in 1973 with the rank of Lieutenant Colonel.

Al Jorgensen was involved in operations and planning, design and construction as well as management in the water industry. He has always been a supporter and consumer of public water supplies (no bottled water). In 1950 he was the first full time employee of the newly formed Crescenta Valley Water District and after the Korean War he was the General Manag-



er of the Mountain Water Company, both of La Crescenta. From there he became the Director of Utilities for the City of Monrovia from 1956 to 1967. During this time he was President of the Upper San Gabriel Valley Water Association for four years (1963-1967). He became a Rotarian in 1956 and was President of the Monrovia Club in 1966-1967.

In 1967 Al became Director of Operations and Planning for the international consulting firm of Engineering-Science, which involved many consulting trips to Rio de Janeiro. In 1971 he became

a partner in Lowry and Associates, Consulting Engineers in Orange County, California, with offices in the San Francisco Bay Area and Arizona. In 1986 two firms merged to form NBS/Lowry that grew to some 300 people. Al became the Executive Vice President and Chief Operating Officer. He retired in 1990 and moved to Prescott, Arizona.

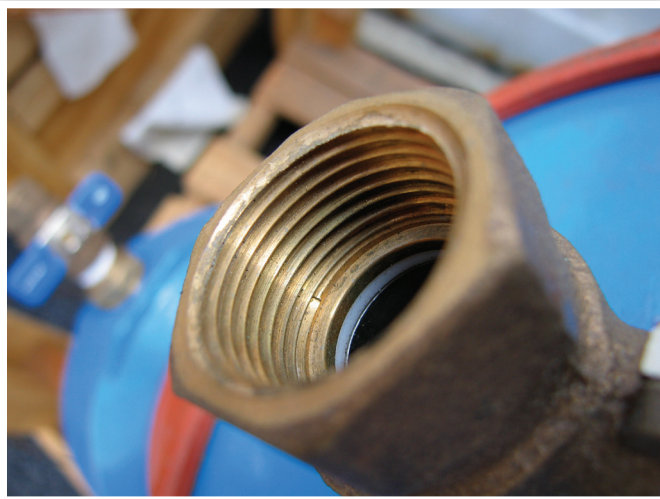
During his working years he was very active in the American Water Works Association (AWWA) and served as Chairman of the California-Nevada Section in 1980. He was the National Director representing the CA/NV Section from 1984 through 1987.

Al Jorgensen became a member of the Southern California Water Utilities Association (the Walter Weight Group) in the early 1950's. He was instrumental in forming the financial backing and support of the water industry for the Foundation for Cross-Connection Control and Hydraulic Research at USC. He was present when the first check for \$10,000 was presented to Dr. Norman Topping, President of the University of Southern California, in 1967.

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The Usefulness of the No. 1 Test Cock

The double check valve backflow prevention assembly (DC) has four test cocks. But, during the normal field test procedure the tester never uses the No. 1 test cock. So that leads to many questioning the importance of having the No. 1 test cock on the assembly. Its origins can be traced to earlier editions of the *Manual of Cross-Connection Control*. However, today the No. 1 test cock may be a useful tool when maintaining the assembly.



Before the publication of the *Manual of Cross-Connection Control, Ninth Edition* the field test for the DC was quite different than it is now. A duplex pressure gauge was used instead of the differential pressure gauge used under the Tenth Edition.

A duplex gauge had two pressure gauges sharing the same gauge face. Each gauge was shown on the gauge face by a different colored needle. During the test of the No. 1 check valve, one gauge read the pressure at the No. 2 test cock, while the other gauge the pressure at the No. 3 test cock. The pressure at the No. 2 test cock was then dropped about two psi. If the needle representing the pressure at the No. 3 tests cock remained the same, then the check valve was determined to be holding tight against a small backpressure. If the differential could not be maintained, it was necessary to proceed to the confirmation test.

For the confirmation test, a bypass hose that bypassed water from the No. 1 test cock, through the gauge to the No. 3 test cock was attached. After the assembly was repressurized and isolated, pressure in the entire assembly was dropped about ten psi by loosening the hose at the No. 3 test cock. The pressure was simultaneously dropped upstream of check valve No. 1, via the hose at the No. 2 test cock and increased downstream of the check valve via the hose attached to the No. 3 test cock. This hose was connected to the No. 1 test cock, thus allowing high pressure from the No. 1 test cock to be introduced behind the check valve. Once the needles split, the gauge would show a small differential of no more than five psi. If this held, then the check valve was recorded as holding tight.

When the field test procedure was changed for the publication of the Ninth Edition, consideration was given to removing the requirement for the No. 1 test cock. However, some reasons were given to convince the Manual Review Committee to keep the requirement for the No. 1 test cock.

Water may be used from the No. 1 test cock, when maintaining and cleaning the DC as well as other diagnostics steps. If the assembly is disassembled during maintenance, it may be helpful to be able to rinse off component parts of the assembly during this process.



Duplex Gauge

In some cases it may be difficult to repressurize an assembly after testing and maintenance. This can occur in situations where the line pressure is fairly high. It makes it difficult to open the No. 1 shutoff valve if high pressure is pushing against the upstream side of the shutoff valve and there is still no pressure on the downstream side.

It is the same principle of a sliding door. If the door is closed and a large amount of force is on one side of the door (for example, if someone is leaning against a sliding door), the door itself would become lodged against the sliding surfaces and would not be able to open—or at least be difficult to open. If the force was removed from the one side, or an equal force was exerted on the other side, the door would not be forced against any of the sliding surfaces and would slide open easily.

This is the same situation with a shutoff valve. With the shutoff valve having high pressure on the upstream side, it may be necessary to add an equal pressure to the downstream side of the shutoff valve in order to equalize pressure on both sides of the shutoff valve and allow it to “slide open” freely. This can be accomplished by slowly introducing pressure through a bypass hose from the No. 1 test cock, to the No. 2 test cock. Once pressure is equalized and the air bled out, the shutoff valve may be opened more easily, with reduced possibility of flushing debris into the assembly too.

So, even though the inclusion of the No. 1 Test Cock may have been required for field testing in previous editions of the Manual and today the test cock is no longer used during the field test procedure; it continues to be an important part of the double check valve backflow prevention assembly. ■

Celebrating 70 Years

continued from **Summer 2014, Cross Talk**

During the 1960's the Manual, in particular Section 10 covering the Specifications, was thoroughly reviewed by a committee representing water utilities, health departments and backflow prevention assembly testers, as well as the USC Foundation. This resulted in some major changes that were incorporated into the 4th Edition of the Manual published in 1969.

At the same time, almost concurrently with the retirement of Dr. K.C. Reynolds in 1965, the University was enjoying a major building program on the University Park Campus. The site of the Foundation's laboratory was located in the middle of the Viterbi School of Engineering's new building complex, and the laboratory had to be demolished. During this period of time, the evaluation work of the Foundation was carried out almost entirely by leasing time in industrial laboratories.

Later an abandoned pumping station of the Los Angeles Department of Water and Power (LADWP) was found to be available and negotiations were initiated for the use of the space as the Laboratory of the Foundation.



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In April 1965, LADWP provided the laboratory new equipment that the Foundation could use for its continued operation and testing of devices. Not only can it be used to evaluate backflow prevention assemblies, but also to conduct specialized research, which may require the laboratory's systems and large water flow capacity. The location continues to be home of the Foundation Laboratory.



USC Foundation Laboratory

In 1965, USC Professor E. Kent Springer, P.E. was named the third Director of the Foundation and would continue in this position for the next 20 years.

A variety of new hydraulic research projects lead to a change in the Foundation's name to the Foundation for Cross-Connection Control and Hydraulic Research.

With an ever-growing number of state, local and other agencies becoming involved in the Foundation, the Southern California Water Utilities Association (SCWUA) helped the Foundation establish the membership program in 1967, ensuring a financial base for continued operations. The membership program helps fund the day-to-day operations of the USC Foundation. Now for over 45 years the Foundation membership program has helped the Foundation to maintain its strong leadership in backflow prevention and cross connection control.



SCWUA presents \$10,000 check to USC

Due to the Foundation's extensive background in the operation of the backflow prevention assemblies, the Foundation was called upon to train field personnel in the intricacies of field testing backflow prevention assemblies.

Training seminars were conducted in the late 1960's throughout the United States, and in 1971 the Foundation conducted its first five-day *Course for the Training of Backflow Prevention Assembly Testers*.

In 1985, USC Professor J.J. Lee Ph.D., P.E. became the fourth Director of the Foundation and continues in this position today.

In 1989, after the success of the Tester Course and the need for training of administrators to run cross-connection control programs arose, the Foundation developed the *Course for the Training of Cross-Connection Control Program Specialists*.

In 1989 the Foundation released the video *Working Together for Safe Water*, an introduction to the fundamentals of backflow and cross-connection control.

Eight years later the Foundation released the *Field Testing Backflow Preventers, Instructional Video* and it has become one of the more popular training tools offered by the Founda-

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in memoriam | Al Jorgensen : continued

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Al continued from that date as a member of the Advisory Board. He helped to guide the work of the Foundation for the last five decades. With gratitude, the Tenth Edition of the Manual, which has had a distribution of over 21,000 copies, was dedicated to Al, honoring his commitment to USC and the cross-connection control and water industries in general.

We mourn the loss of this great man who, ultimately, helped develop and guide the industry in protecting potable water supplies. Al's insight, wisdom and anecdotes will be greatly missed.

His survivors include his wife Dorothy and was preceded in death by his wife Merry, the mother of his children. He is also survived by his son Eric (Audrey) of Chatsworth, California, and grandson Kyle; and son Kurt (Linda) of Goodyear, Arizona, and Kurt's children Charles and Rosemary. ■

celebrating 70 Years: continued

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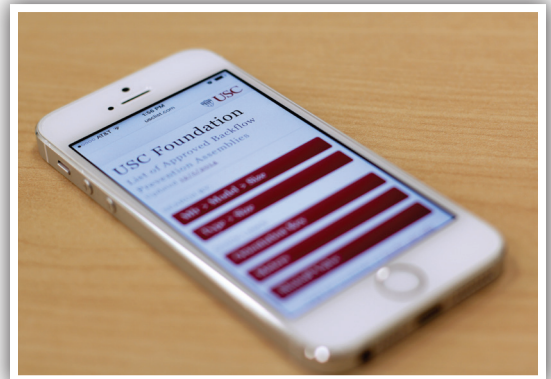
tion. Since then the instructional video has been updated to correspond with the most current edition of the Manual and its field test procedures.

In 2009, the Manual went through its most comprehensive revision. The Tenth Edition introduced several new chapters to explain different aspects of backflow prevention and cross-connection control in a detailed manner. New chapters included topics such as history, hydraulics, elements of a cross-connection control program, conducting site surveys, equipment and facilities.

The *List of Approved Backflow Prevention Assemblies* continues to be a valuable source of information for anyone involved in cross-connection control. Today, the List includes over 3000 listings and it continues to grow.

In 2013, in order to provide that information in the best and fastest way possible the Foundation unveiled the *USC List Web App*. The web app allows users to search for USC approved backflow prevention assemblies by using information such as manufacture name, type of assembly or size. It is an ideal tool for the backflow prevention assembly tester or cross-connection control specialist who is on the go.

Later that year the Foundation developed several *One Day Update Seminars* to offer backflow prevention assembly testers and cross-connection control program specialists opportunities to be refreshed on current field test procedures and cross-connection control topics. For example, seminar topics include field test procedures, recycled water shutdown tests and Los Angeles & California codes and regulations.



USC List available on mobile device

With the support of its membership, the Foundation will continue to be a leader in backflow prevention and cross-connection control for years to come. ■

Training

Courses 2015

all courses in Los Angeles, CA unless noted

Tester Course **Specialist Course**

12-16 January

26-30 January

4-8 May

23-27 March

13-17 July

27-31 July

5-9 October

One Day Update Seminar

12 February

Advanced Field Test Procedures

16 April

L.A. & CA Codes and Regulations

25 June

Recycled Water Shutdown Test

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youtube.com/usfccchr



Upcoming

Events

Arizona Environmental

Health Conference

Laughlin, NV

4-5 February 2015

ABPA - Oregon Chapter

Annual Seminar

Wilsonville, OR

5 February 2015

ABPA - Utah Chapter

Annual Conference

Draper, UT

6 February 2015

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