

# Cross Talk



UNIVERSITY OF SOUTHERN CALIFORNIA

Volume 8 / Number 1 / October 1990

FOUNDATION FOR CROSS-CONNECTION CONTROL  
AND HYDRAULIC RESEARCH

## Laboratory Changes

The Laboratory of the Foundation has seen many changes over the past few months. Several systems have been added and/or modified to improve the efficiency of the Laboratory.

### *The Thermal Loop*

The Foundation's thermal loop is a high temperature, open, recirculating system which is used to test the operation of backflow prevention assemblies under high temperature conditions. This testing is required in Section 10.2.3.2.f of the **Manual of Cross-Connection Control**, Eighth Edition. In addition, other listing agencies also require high temperature tests, which the Foundation often performs for the manufacturers of the backflow prevention assemblies.

The original thermal loop was installed in the Foundation Laboratory in 1982. In order to meet higher pressure and flow requirements, a new system replaced the older system earlier this year. The new system has the capacity to test backflow preventers at 210°F, while at rated pressure up to 200 psi. The previous system did not have the capacity to reach such pressures. The improved system will allow for assemblies to be tested at rated temperatures and at rated pressures.

The thermal loop is fully automated, keeping accurate records of temperature and pressure for up to seven days on any particular assembly.

### *The Cycle System*

Although the Eighth Edition of the **Manual of Cross-Connection Control** does not have a required cycle test for backflow prevention assemblies, other listing agencies around the world do require cycle testing. This is the case in Canada, Australia, and France. The addition of a cycle test will be consid-

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## Director's Note

After months of preparation, the Foundation office has finally settled into its new facilities in Kaprielian Hall on the USC Campus. The new office space offers the Foundation staff more room and a better environment to conduct its business. However, because of the move, there have been many adjustments. Therefore, *Cross Talk* has been somewhat delayed in getting back into publication.

At the time of the move in early January, the Foundation's Secretary took another position outside of the University. The position was just filled in September. The vacancy in this position placed a number of responsibilities on the rest of the Foundation staff and there have, therefore, been some delays in publishing both *Cross Talk* and the 1989 Annual Report. The Foundation's new Administrative Assistant is Ms. Linda Raftree Ramirez. Her background, skills, and education assure that she will add a high level of professionalism and efficiency to the Foundation office.

The Annual Report for 1989 was sent to all Members in May. Additional copies may be obtained by contacting the Foundation office.

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## Highlights

 **Parallel Installations**

 **Laboratory Update**

 **New Members**

 **Manual Update**

# Welcome!

## ...New Members

Many Foundation Members may not be aware of all the benefits of Membership in the Foundation. As a reminder, Foundation Members receive 25% discounts on the purchase of either the *Manual of Cross-Connection Control*, or the Foundation's Film/Video *Working Together for Safe Water*. Members also receive a 20% discount on the Foundation's Training Courses. This includes both the *Short Course for the Training of Backflow Prevention Assembly Testers* and the *Short Course for the Training of Cross-Connection Control Program Specialists*. The Foundation's Bulletin, *Cross Talk* is sent to each Member as is each updated version of the *List of Approved Backflow Prevention Assemblies*, which may be updated several times each year. Also the Foundation Members are welcome to contact the Foundation's Engineering Staff with any questions they may have. Members are encouraged to contact the Foundation Office whenever problems are encountered with a specific model of backflow prevention assembly, or with any noteworthy information. The Foundation would like to welcome the new Members listed below to the Membership of the Foundation!

AAA Backflow Testing & Service  
 American Backflow Specialties  
 U.S. Army Department  
 City of Arcata  
 City of Artesia  
 Backflow Systems Maintenance  
 Backflow Tech  
 Banner Enterprises, Inc.  
 City of Calexico  
 City of Calgary  
 California Institute of Technology  
 Canadian Standards Association  
 Christion Brothers Plumbing  
 Cold Springs Water Company  
 Commercial Backflow Services Co.  
 Corona Plumbing  
 D & D Backflow & Cross Connection  
 Prevention  
 Denver Water Department  
 Dihydro Services, Inc.  
 Dodrill's Valparaiso Plumbing Co.  
 City of Durham  
 Educational Trust Fund  
 Fire Safety First  
 Frank's Plumbing Company  
 Glenshire Mutual Water Company  
 City of Goodyear  
 Heber Public Water Utility District  
 City of Hesston  
 Hillsborough County Public Utilities  
 Indiana Department of Environmental  
 Management  
 Intervolve Corporation  
 City of Jacksonville

Jim Woody Plumbing  
 Water District #1 of Johnson County  
 Kern County Environmental Health  
 Services  
 Kern Cross-Connection Control  
 City of Kings Mountain  
 Kingsbury General Improvement  
 Distict  
 Krieger & Stewart, Inc.  
 Lancaster Ohio Water Department  
 City of Manhattan Beach  
 McPherson Board of Public Utilities  
 Motorola, Inc.  
 Town of Nags Head  
 North Albany County Service District  
 North Tahoe Public Utility District  
 City of Okeechobee  
 Park Manor Waterworks, Inc.  
 Parks Plumbing  
 Peterson Fire Protection  
 Pinedale County Water District  
 City of Porterville  
 Town of Pulaski  
 City of Punta Gorda  
 Quincy Community Services District  
 Rio Verde Utilities Inc.  
 Rubio Canon Land & Water  
 Association  
 County of San Joaquin  
 City of San Jose  
 Santa Margarita Water District  
 City of South Pasadena  
 Sprinkler Fitters Local 268  
 TREEO Center

City of Tulsa  
 Turlock Irrigation District  
 University of California, Berkeley  
 City of Vacaville  
 Victor Cox Construction  
 WEBB F. A. S. T. Fire Protection  
 Warnock Hersey Professional  
 Services, Ltd.  
 Water Connection  
 City of Wauseon  
 Winton Water and Sanitary District  
 Jack Wormley

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The Foundation, along with the rest of USC, will have a new telephone number as of 15 October 1990. The Foundation's new number will be (213) 740-2032. The Foundation's FAX number will be changed to (213) 740-8399. The change is due to the installation of a new telephone system throughout the University. Remember...

**After Oct. 15th**

Phone: (213) 740-2032  
FAX: (213) 740-8399

## Director's Note

*Continued from page 1*

The *List of Approved Backflow Prevention Assemblies*, which remains the highest priority publication issued by the Foundation, was published last on 23 March. This is published for Members of the Foundation only. If, as a Member, you did not receive a copy, please contact the Foundation office and a copy will be forwarded to you. The next List will be published in late October.

We appreciate your patience over the last several months as we have been without adequate office staff. We hope to improve our service to the Members, as we now have the staff and ability to produce newsletters, bulletins and special services on a more timely basis. If you have any questions, or suggestions, please contact the Foundation Office.

## Laboratory Changes

*Continued from page 1*

ered for the Ninth Edition of the Manual as part of the Laboratory Evaluation. Cycle test results may indicate to a manufacturer possible problem areas before entering the Field Evaluation phase of the Foundation's Approval Program.

The Cycle System is designed to run a backflow preventer through any of a series of cycles. A typical cycle may subject the backflow preventer to the following: no flow to full flow, then to no flow, depressurize the assembly, backpressure the assembly, etc. The system is designed so that virtually any combination of conditions may be

programmed into the system. Once programmed, the backflow preventer is subjected to the number of cycles desired and then inspected for damage or deterioration of parts.

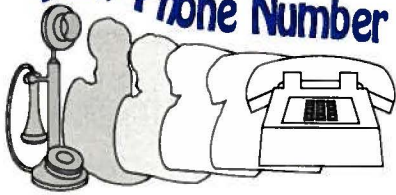
### *The Slurry System*

The Slurry Pipeline System is used to study the potential effectiveness of a closed conduit transportation system for coal slurry. This system was constructed to conduct research for the Taiwan Power Company. Construction and testing costs are covered by a grant from the Taiwan Power Company. The slurry system has been operational since early summer and now valuable data is being collected.



*Kaprielian Hall houses the Foundation's new office.*

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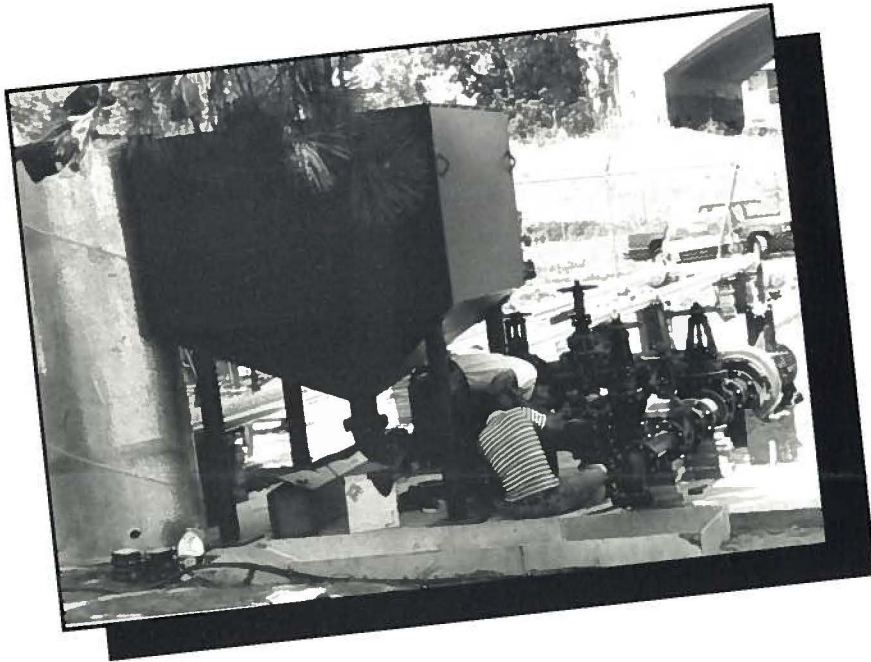
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*The Slurry Pipeline System under construction. The system is now fully operational.*

## Manual Update

The the Manual Review Committee of the Ninth Edition of the **Manual of Cross-Connection Control** will be meeting soon to begin the revisions required for the new edition of the Manual. Although it is expected that the Ninth Edition will be published in late 1991 or early 1992, there are several changes and improvements over the Eighth Edition which must be discussed in the coming months.

In order to have comments and suggestions for improvement considered by the Manual Review Committee, please send comments (referring to the Section involved) to the Foundation Office and clearly mark them for the Manual Review Committee.

## Manual

The Eighth Edition of the Manual of Cross-Connection Control is available for order. One complimentary copy was sent to each Member of the Foundation. Should additional copies of the Manual be required, Members are extended a 25% discount from the non-Member rate. Non-Members are extended a 20% discount on orders of 10 or more Manuals. The prices are as follows for each copy of the Manual.

Non-Member - \$37.00 each  
 Non-Member (in quantities of 10 or more) - \$29.60 each  
 Member - \$27.75 each

California residents must add appropriate sales tax. To order additional copies of the Manual please send a check or a hard copy of a purchase order to:

Foundation for Cross-Connection Control  
 and Hydraulic Research  
 University of Southern California  
 KAP-200 University Park MC-2531  
 Los Angeles, California 90089-2531

All Manual orders are processed within 3 days of receipt. There is an extra charge should UPS Blue Label, or Next Day Air shipment be required.

## New Administrative Assistant

The Foundation has been searching for a qualified Administrative Assistant since the resignation of the Foundation's Secretary in January.

After several months of searching and interviews the Foundation has hired Ms. Linda Raftree Ramirez. Ms. Raftree Ramirez holds a B.A. degree from USC. She has the experience, abilities, and expertise required for this position. She will be handling much of the work which has been carried out by the rest of the Foundation staff in the absence of a secretary and will be valuable in assisting Members with any questions they may have. The addition of Ms. Raftree Ramirez to the staff will improve the service to Foundation Members greatly.

7 - 11 January 1991  
 and  
 14 - 18 January 1991  
 at

The Foundation Laboratory

**Non-Members \$750.00**  
**Members \$600.00**

3 - 7 December 1990  
 and  
 13 - 17 May 1990  
 at  
 USC Campus

**Non-Members \$800.00**  
**Members \$640.00**

Contact the Foundation office for an application for the next USC Training Course or send a hard copy of a purchase order or a check to the Foundation office to reserve a space.

Foundation for Cross-Connection Control  
 and Hydraulic Research  
 University of Southern California  
 KAP-200 University Park MC-2531  
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## Parallel Installations

Often, backflow prevention assemblies are installed in parallel installations. This may be done for several reasons. The user may need more water than can be supplied through one water line, but more common is the need for continuous water service (or critical service). In the latter case, water can not be turned off, even for a short period of time. In order to perform the annual test on a backflow preventer in this application it is necessary to have one or more backflow preventers installed in parallel, thus allowing continuous water service.

Of course, a bypass pipe which only contains a shut-off valve should never be used where backflow protection is required, since a shut-off valve is not considered adequate protection against backflow. In addition, there is no assurance that the shut-off valve will be closed and holding tight when backflow protection is needed. The backflow prevention assemblies used in parallel should be of the same type (i.e., double check valve assembly, reduced pressure principle backflow prevention assembly, or pressure vacuum breaker assembly). In most cases, the assemblies will be of the same size.

Even though the assemblies may be the same size and model, the assemblies will not operate in unison. In other words, one of the assemblies will open allowing water to flow through it before the other assembly begins to open. This is simply due to the slight variations in the individual assemblies. Although both may operate well within the margins of design, there is always some variation in manufacturing tolerances, which allows one assembly to open first. This implies that one of the assemblies is likely to have much more flow through it during the course of its life. The assembly flowing more water may require maintenance or repairs more often, while the other seems to operate without any problems. When one assembly needs repair, this does not imply the other unit automatically needs repair. The unit getting the greater use will, more than likely, be the unit needing more maintenance.

Backflow prevention assemblies which are installed in parallel should be tested and maintained as separate assemblies. Although the incoming water system and pressure are the same, hydraulics through the assemblies may vary.

## Training Courses

Most Members are aware of the fact that the Foundation offers training courses for testers and specialists in Los Angeles several times each year. However, many are not aware of what it takes to have a short course at a satellite location. It is much easier than most imagine. There are two ways to hold a short course at a location away from Los Angeles.

A Member may desire to host a course in their area. If this is done the Member makes arrangements for the facilities and fills the class with their own personnel and those in the area which may be interested. The Foundation charges the Members a flat rate plus expenses for foundation personnel to come in and teach the course. For an outline of the requirements, please contact the Foundation office.

In other cases the Member may not feel comfortable with the responsibility of filling the class and making all of the arrangements. In this case the Foundation will make all of the arrangements. If enough interest is shown in the area for a particular course, the Foundation will sponsor the course. The Foundation, then, will handle registration of the students directly and the Member requesting the course is simply asked to help secure a suitable facility and recommend potential students to the Foundation office. For more information on arranging a short course by this method, please contact the Foundation office to discuss the details.

### *Working Together for Safe Water on Film/Video*

#### **VHS Video:**

Non-Members \$80.00  
Members \$60.00

Contact the Foundation office for an order form or send a hard copy of a purchase order or a check to the Foundation office to receive a copy of the Film/Video. California residents must add appropriate sales tax.

#### **16mm Film:**

Non-Members \$200.00  
Members \$150.00

Foundation for Cross-Connection  
Control and Hydraulic Research  
University of Southern California  
KAP-200 University Park MC-2531  
Los Angeles, California 90089-2531

## Calendar of Events

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This calendar lists several activities which the Foundation plans on participating in over the next few months. For more information contact the Foundation office.

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**10 October 1990** - Western States Symposium Association Seminar, Tucson, AZ

**30 October 1990** - CA/NV Section American Water Works Association Section Meeting, Las Vegas, NV

**31 October 1990** - Irrigation Association, Phoenix, AZ

**28 November 1990** - Western States Symposium Association Seminar, San Diego, CA

**3-7 December 1990** - Program Specialist Short Course, USC Campus, Los Angeles, CA

**7 - 11 January 1991** - Tester Short Course, Foundation Laboratory, Los Angeles, CA

**14 - 18 January 1991** - Tester Short Course, Foundation Laboratory, Los Angeles, CA

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