Texas Commission on Environmental Quality

Cross-Connection Control Subcommittee

June 7, 2011

Meeting Summary

Welcome/Introductions/Announcements:

- The next subcommittee meeting will take place September 6, 2011.

Vote to adopt minutes from last meeting:

The meeting summary from the December 1, 2010 meeting was adopted without discussion.

Updates from last meeting:

Texas Legislature – 82nd Regular Session

The 82nd Regular Session has concluded. There are four bills which will impact the cross-connection control program of the Water Supply Division. These bills are:

1. HB 2694 – TCEQ Sunset Bill: This bill has been enrolled and sent to the Governor. The bill authorizes the TCEQ to continue operations for another 12 years.
2. HB 3372: This bill has been enrolled and sent to the Governor. The bill amends the Health and Safety Code to allow structures connected to public water supply systems to use rainwater harvesting systems for indoor potable purposes. The bill also requires the TCEQ to work with the Texas State Department of Health to develop rules regarding the installation and maintenance of rainwater harvesting systems that are used for indoor potable purposes and connected to a public water system. The bill requires individuals who install and maintain rainwater harvesting systems connected to a public water supply system and used for potable purposes to be licensed by the Texas State Board of Plumbing Examiners as a master plumber or journeyman plumber with a water supply protection specialist endorsement. A person who intends to connect a rainwater harvesting system to a public water system for use for potable purposes must give written notice of that intention to the water purveyor. The water purveyor may not be held liable for any adverse health effects allegedly caused by the consumption of water collected by a rainwater harvesting system that is connected to a public water supply system and is used for potable purposes if the water purveyor is in compliance with the sanitary standards for drinking water.

Announcement of the bill was followed by a general discussion of the bill and its impact on water purveyors and the rainwater harvesting industry. This topic will be explored in greater detail at the next subcommittee meeting on September 6.

3. SB 1073: This bill has been enrolled and sent to the Governor. This bill is identical to HB 3372.
4. HB 3391: This bill has been enrolled and sent to the Governor. This bill also amends the Health and Safety Code to allow structures connected to public water supply systems to use rainwater harvesting systems for indoor potable purposes. This bill also amends several other codes to encourage rainwater harvesting in the state, including the Finance Code, the Local Government Code, the Property Code, and the Water Code.

Federal Legislation on Control of Lead in Drinking Water – S. 3874

S. 3874 is titled the "Reduction of Lead in Drinking Water Act" and was signed by President Obama on January 4, 2011. This act amends section 1417 of the Safe Drinking Water Act to define lead free as:

- Not containing more than 0.2 percent lead when used with respect to solder and flux; and
- Not more than a weighted average of 0.25 percent lead when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and fixtures.

Discussions with EPA staff after the subcommittee meeting indicate that the EPA will revise the Code of Federal Regulations to reflect this new definition as part of the promulgation of the final Long Term Lead/Copper regulations in 2013.

TCEQ Regulatory Guidance Documents

Two new regulatory guidance documents have been published:

- RG-478: ESTABLISHING AND MANAGING AN EFFECTIVE CROSS-CONNECTION CONTROL PROGRAM. This document is available at:

  http://www.tceq.texas.gov/publications/rg/rg-478.html

- RG-493: ACCURACY TESTING OF GAUGES USED FOR TESTING BACKFLOW PREVENTION ASSEMBLIES. Available at:

  http://www.tceq.texas.gov/publications/rg/rg-493.html

Drip Irrigation Systems and Chemical Additives

Jerry Lewis, Sundance Irrigation, gave a presentation on drip irrigation. Drip irrigation is the sub-surface application of water directly to the root zone of plants (normally lawns and flower beds). It allows for better water absorption and less water loss to evaporation. However, there is an inherent risk of root intrusion. The methods to prevent root intrusion include:

- Chemical additives applied to components of the system (drip emitters, disk filters) to dose root inhibitors;
- Mechanical valves in the emitters; and
- Copper shield tubing.

Of concern is the direct connection of drip irrigation systems with chemical additives to a potable water supply forming a cross-connection and creating the potential for these chemicals to backflow into the distribution system. A Cross-Connection Control Program Administrator can ask the irrigation system contractor for additional information about method(s) used to prevent root intrusion in order to determine the appropriate type of backflow protection.

IAPMO Backflow Reference Manual

Sean Cleary, Director of the Backflow Prevention Institute for the International Association of Plumbing and Mechanical Officials (IAPMO), gave a presentation on the 2nd edition of the IAPMO Backflow Prevention Reference Manual, released in March 2011. This manual contains full color graphics and four different field test procedures. Mr. Cleary briefly described the content of the manual and provided a copy of the manual to all present. IAPMO offers the following certifications:

- Backflow Prevention Assembly Tester;
- Assembly Repairer;
- Program Administrator;
- Cross-Connection Control Surveyor; and
- Fire Sprinkler System Cross-Connection Control Tester.

ABPA Backflow Prevention Video

Bruce Rathburn, San Antonio Water System, presented a video prepared by the American Backflow Prevention Association (ABPA) on cross-connection control and backflow prevention. This short video aired on the Discovery Channel in 123 countries, and features Mr. Rathburn as past president of the ABPA. The video is an excellent educational tool and is available through YouTube at:

http://www.youtube.com/watch?v=tVRtfTIqCl0

New Gauge Tester Demonstration

Bill Hamrick, ATB Services, Inc,, demonstrated his gauge tester. It uses air to test differential pressure gauges. The compressor and gauge are self-contained in an ice-cooler adapted for this purpose and attached to a hand-truck for mobility. It is very compact allowing for easy transport from location to location.

Summary of EPA's CONTROL AND MITIGATION OF DRINKING WATER LOSSES IN DISTRIBUTION SYSTEMS

This paper spoke of water loss and the Water Loss and Control Program. There are 880,000 miles of water supply infrastructure which is decades old. AWWA estimates 237,600 water line breaks per year resulting in a loss of 2.8 billion dollars in revenue. Water loss = money loss. Therefore, public water systems are encouraged to develop a **Water Loss and Control Program** (WLCP). A WLCP consists of:

Water audit- uses accounting principles to account for gallons of water as opposed to dollars;

Intervention- base decisions on the water audit; and

Evaluation- evaluate the results of the intervention and make any improvements for the future.

Discussion of ABPA Conference Topics

Residential Fire Systems and Cross-Connection Control by Jack Poole, P.E.

Jack Poole, Poole Fire Protection, Inc, made the point that fire sprinklers are not supposed to put out fires, but rather control a fire so that people can get out of the building and fire-fighters can get in. Mr. Poole also stated that when a fire truck hooks up downstream of a double-check valve backflow prevention assembly (DCVA) to pump water into the sprinkler system, the pressure from the fire truck will cause the DVCA to shut preventing backflow into the potable water supply. This is something to consider before requiring Reduced Pressure Principle Backflow Prevention Assemblies (RPs) on fire sprinkler systems. An RP has a relief valve that will open when backflow occurs. This relief valve could open when a fire truck hooks up and begins pumping water into the sprinkler system.

Residential Fire Suppression Systems & Cross-Connection Control by Matt Velardes

Matt Velardes, Irvine Ranch Water District, gave a presentation on residential fire suppression systems. Some newer residential fire sprinkler systems have end-use fixtures so that potable water flows through the fire sprinkler system and eliminates the stagnant water hazard and further eliminates the need for backflow prevention. There is currently a controversy in Orange County, California regarding whether plumbers who want to be

able to install these systems and the Fire Marshall who wants to retain control of the installation of these systems.

CCC Programs in a Weak Regulatory Environment by Ken Goergen & Aneta Ludwig

Ken Goergen, Pinellas County Utilities, talked about the status of cross-connection control regulations in Florida. Mr. Goergen mentioned the issue of people connecting their irrigation systems to a pump in the local lake to water their lawns. The state, in that case, requires backflow prevention in the form of a Reduced Pressure Principle Backflow Prevention Assembly (RP). Citizens in Florida are complaining that the regulations requiring an RP are too strict and would like to install a backflow preventer that is less expensive. Currently, state regulators are evaluating the regulations and trying to come to an equitable compromise.

Aneta Ludwig, Halton Region, spoke on the regulations for Cross-Connection Control used in Ontario, Canada. Ms. Ludwig stated that there is only one regulation which gives authority for Cross-Connection Control and backflow. The problem of limited regulations is compounded by the lack of communication or cooperation between the building official who is responsible for backflow prevention in new construction and the water purveyor who is responsible for the maintenance and testing. Furthermore, the water can **only** be shut off for **nonpayment** and not for any backflow prevention violations. As a result, regulators rely heavily on by-laws that each local jurisdiction adopts. However, there is much inconsistency from one local jurisdiction to another. What is not allowed in one locality might be allowed in another. They have recently enacted a new regulation that allows for individuals to be fined if they make a decision that negatively impacts water quality.

Backflow Prevention Assembly Freeze and Theft Protection

Cory Harmon, City of Austin, presented information on freeze and theft protection of backflow prevention assemblies. There are requirements in plumbing codes (IPC and UPC) for freeze protection but, they are lacking for theft protection. Many excellent pictures were shown showing a variety of ways available to protect a backflow preventer form freezing such as insulated enclosures, heat traces and jackets. A variety of pictures also showed ways to keep a backflow preventer from being stolen such as metal wire mesh cages, camouflage (boxes, fake rocks, landscaping), or chains.

Troy Baird, Bac-Flow Unlimited, provided information on a freeze protection valve. This valve is designed to allow water to flow through the assembly, thereby preventing freezing and cracking. The valve can be installed on the number 4 test cock of a DCVA or an RP, and is designed to open when the temperature drops to 33 degrees.

Customer Service Inspections vs. Water Use Surveys

Byron Hardin, Hardin and Associates Consulting, LLC, gave a presentation on the difference between Customer Service Inspections (CSIs) and Water Use Surveys. Mr. Hardin began his presentation by stating the TCEQ requirements for CSIs found in Title 30 of the Texas Administrative Code, Chapter 290, Section 290.46(j).

The following definition of a Water Use Survey was presented: A site survey conducted or caused to be conducted at least annually by the local authority that is designed to identify any possible sources of contamination as a result of cross- connections or potential cross-connections and validate the presence of approved backflow prevention devices to ensure protection of the potable water supply.

Mr. Hardin then explored the differences between CSIs and Water Use Surveys, and concluded by recommending that public water systems adopt a requirement for Water Use Surveys be conducted as a best management practice of a proactive cross-connection control program.

Licensed BPAT Employment Requirements

Mr. Buddy Heuberger, Heuberger Construction, posed a question regarding employment requirements for licensed backflow prevention assembly testers. Mr. Heuberger asked whether the test of a backflow prevention assembly qualifies as performing plumbing which, per the Plumbing License Law, requires the individual to be a licensed plumber. Per an agreement between the Texas State Board of Plumbing Examiners and TCEQ's predecessor agency, licensed Backflow Prevention Assembly Testers do not need to be licensed plumbers and are authorized to test backflow prevention assemblies and repair backflow prevention assemblies in-line.