

Texas Commission on Environmental Quality

Cross-Connection Control Subcommittee

December 3, 2014

Meeting Summary

Announcements and Introductions

Al Fuentes

The subcommittee will meet on the following dates in 2015: March 4th, June 3rd, September 2nd, and December 2nd.

A request was made for any comments on the previous meeting's summary. The subcommittee had no comments. A motion and second were made to adopt the summary. The vote was unanimous and the final summary was posted to the TCEQ webpage.

Serial Number Recognition on Backflow Prevention Assemblies

Jerry Lewis/Doug Goodwin

Mr. Jerry Lewis, Sundance Training, and Mr. Doug Goodwin, Vepo, provided information on the challenges faced by backflow prevention assembly testers (BPATs) when trying to identify a specific assembly by the serial number. The TCEQ's Test & Maintenance Report form requires the BPAT to record key information about the assembly he is testing including the serial number. These details are important and provide a history of the assembly to the Public Water System (PWS) and show that the correct assembly is in the correct location and has not been moved. For example, an assembly could be moved from a line that is conveying something unsafe, to a potable water line. Sometimes, a PWS will move an assembly as needed instead of incurring the cost of purchasing and installing another assembly. This implies that there is an unprotected cross-connection making the potable water supply vulnerable.

Unprotected assemblies installed below ground or above ground, become submerged and/or exposed to the elements which causes corrosion of the outside of the assembly. This results in not only increased difficulty testing the assembly (rusted in place shut off valves, clogged test cocks, buried assembly, etc.) but the serial number is not readable and cannot be recorded on the Test and Maintenance Report form (T& M Form). Some possible solutions tried in the past by members of the subcommittee were to tie a tag to the assembly with new identification numbers on it or mark the assembly in some way so that it can be identified. The problem encountered with this was the need to keep track of the new identification by the PWS and for a BPAT testing the same assembly a year later would know what mark or tag to look for to identify the assembly and record that on the T&M Form.

It was determined by the subcommittee that the public water system should confirm the following details:

- The assembly passed the test;
- It is the same type of assembly as was previously tested;
- The assembly was in the same geographic location as the previous test;
- The assembly was installed per manufacturer's recommendations;
- There was no obvious evidence of the assembly or plumbing having been moved;
- And the tester provided an explanation why the serial number was not recorded.

These confirmed details will then become the means to identify the backflow prevention assembly in the future and it will become necessary for the public water system to record and track the confirmed details. Also, it is

not likely that a TCEQ regional investigator would cite a violation during a compliance inspection for not properly recording the serial number of the assembly if this information is available.

Testing Insulated Backflow Prevention Assemblies

Jerry Lewis/Doug Goodwin

Mr. Lewis and Mr. Goodwin also provided information on testing a backflow prevention assembly when it is insulated against freezing. It is important to note that when an assembly is insulated, the insulation must not impair the proper functioning of the assembly such as covering the relief port on a Reduced Pressure Zone Backflow Prevention Assembly (RP), the air intake on an Atmospheric Vacuum Breaker (AVB) or a Pressure Vacuum Breaker (PVB).

Insulation often prohibits the backflow prevention assembly tester (BPAT) from testing the assembly because the test cocks are blocked or the entire assembly is enclosed and the BPAT does not have access to it. After some discussion, the subcommittee concluded that communication between the owner of the assembly and the tester was critical in these cases. If the BPAT needs to remove all or part of the insulation to expose the assembly and allow for testing, then the owner and the tester need to determine who will reinstall the insulation. Ultimately, the BPAT is licensed to test the assembly and he is responsible for the test, for correctly documenting the test results in the Test & Maintenance Report form, and for submitting the signed hardcopy to the public water system. Unless otherwise agreed, the owner of the assembly is responsible for the insulation should make accommodations, such as partially removing the insulation, to allow for testing and for reinstallation of the insulation after the test.

Backflow Programs & TCEQ Electronic Record Keeping

Doug Eisenhauer, BSI

Mr. Doug Eisenhauer, BSI Online, provided a presentation on electronic record keeping of Cross-Connection Control Program (program) records and some of the features of the BSI program. It is important to note that the purpose of the presentation was to provide general information on how an electronic record keeping program could be used to meet the record keeping and record retention requirements in TCEQ regulations. This does not in any way constitute endorsement by the TCEQ of any electronic record keeping system.

Mr. Eisenhauer described 2 types of methods which are typically employed to keep the records of a program:

The In-House Program – this type of program uses water utility staff and a computer program such as an Excel spreadsheet or an Access database. It requires some very large computer files, staffing to run the program and excellent knowledge of the water system which makes it expensive to run.

Traditional Outsourcing – this type of program uses 3rd party organizations to organize and administer the program. This can be a moderate to expensive solution depending on the size of the water system and can be a viable solution for water systems.

An online management system for electronic record keeping of program records is a key element in outsourcing the record keeping aspect of the Cross-Connection Control program and benefits the water system by efficiently tracking the testers, assemblies, due dates, licenses, etc. It also provides for real-time entry of test results which can be verified by the computer program to make sure they are within the appropriate range. The test reports can then be printed when needed and the information is clear and legible. Several Texas water systems have received approval to use the BSI Online system.

Keeping program records electronically is considered a different format from the forms in the TCEQ regulations and requires approval by TCEQ before use. This is specified in:

290.44(h)(4) (C) A test report must be completed by the recognized backflow prevention assembly tester for each assembly tested. The signed and dated original must be submitted to the public water supplier for recordkeeping purposes. Any form which varies from the format specified in Appendix F located in §290.47(f) of this title must be approved by the executive director prior to being placed in use.

Topics of Interest

Al Fuentes

Mr. Al Fuentes, TCEQ Cross-Connection Control Program, provided some brief information on the following topics:

- **Cyber Security and Water Utilities** – As with all computer systems, those computer systems used to operate public water systems are vulnerable to attack by computer viruses, malware, etc. This topic was recently discussed at the TCEQ Drinking Water Advisory Work Group (DWA WG) and the need to take precautions to protect these computer systems was stressed as this is a viable threat. One possible scenario would be if a Supervisory Control and Data Acquisition (SCADA) system for a large metropolitan surface water treatment plant were incapacitated, the distribution system could lose pressure, among many other negative impacts, which would create a severe backsiphonage condition. If the event lasted long enough so that people did not have water for an extended period of time, they would understandably find alternate water sources which would increase the likelihood of cross-connections. Eventually, when the water supply was re-established, all of the newly formed cross-connections would pose a contamination threat to the potable water supply.
- **Ebola Precautions** – The precautions taught in the safety classes for water utility workers are an important tool against possible exposure to the Ebola Virus when working with non-potable water or at a wastewater treatment plant. Information is also available on the CDC website. The CDC is currently working on an “Interim Guidance for Workers Handling Untreated Sewage from Ebola Cases in the United States,” document.
- **Sewer Maintenance Trucks** – These trucks contain a large tank which holds potable water used in the maintenance of the sewer system. Typically, the tank is filled through a connection to a fire hydrant which, if the appropriate backflow prevention is not taken, will form a direct cross-connection. As a result, these trucks are equipped with a backflow prevention assembly or a built-in air gap to protect the potable water supply.
- **Backflow Event** – A backflow event occurred at a large manufacturing facility in South Texas. This site uses treated river water for certain processes. During a repair to the line carrying the treated river water, it was accidentally cross-connected to a potable water line. The treated river water then flowed into the potable water distribution system. As soon as the staff on site became aware of the cross-connection and contamination of the potable water supply, they alerted the employees to not drink the water, eliminated the cross-connection, and flushed the entire system with highly chlorinated water. After the high-chlorine water was flushed and the distribution system was pressurized with potable water, bacteriological samples were taken and analyzed. None of the samples came back positive and no illnesses were reported due to this event.

CSI's and the New EPA Lead Free Rule

Byron Hardin

Mr. Byron Hardin, Hardin & Associates, provided a presentation on the Environmental Protection Agency's (EPA) new lead free requirements. Following is a summary of some of the key points of his presentation:

- New federal lead requirements became effective January 4, 2014;
- Reduce allowable lead content in potable plumbing components to 0.25% (installed or sold);
- No requirement for retrofit;
- No single type of compliant identification – varies widely;
- States may have additional, more stringent requirements.

TCEQ regulations currently do not reflect the new lead requirements but, a process is underway to change TCEQ regulations to be consistent with the federal requirements. This also means changes to the CSI Certificate and other documents with requirements for lead-free. An issue that needs to be addressed is how CSI Inspectors are going to verify lead-free plumbing when the lead free requirement applies to the “wetted surface” of the pipe or fixture. It was the general consensus of the subcommittee that labeling was going to be key to identifying a lead free product.

Challenges of Fire Hydrant Flushing

Adam Smith

Mr. Adam Smith, City of Austin, provided a brief presentation on fire hydrant flushing and some of the challenges that poses. In light of the current drought, the public perception is important because it could be construed that water is being wasted when flushing fire hydrants. Typically, the water is spilled on the ground.

Some of the items considered or checked when flushing a hydrant are Pre and Post flushing chlorine residuals, flow rate, line capacity, options for firefighting when the hydrant is being flushed and repairs to the hydrant if it doesn't function properly.

Some of the challenges posed are:

- Identifying and scheduling fire hydrants for flushing when there are overlapping municipal and fire jurisdictions;
- Noncompliance when water is provided to another jurisdiction and they do not regularly flush the hydrants creating a stagnant water condition;
- Documenting and reporting that the fire hydrants have been flushed;
- Fraud – Did the water system employee actually flush the hydrant and did he do it correctly?
- Communication between the water utility, fire department, and the customers;
- Properly dechlorinating the water so that the plant and animal life are not affected;
- Possible property damage and soil erosion from the high water flow and pressure;
- Creating a backsiphonage condition when the water pressure in the main drops.

Mr. Smith and the City of Austin work diligently to face these challenges by making sure that all affected parties are notified of the fire hydrant flushing, conducting a data check of the documentation, using diffusers or stream straighteners to minimize the hazard from the high water flow, education of both the employee and customer, and knowledge of the surrounding hazards and the effect the lower water main pressure might have.

Using Recycled Water in Fire Trucks

Steven Wheele

Mr. Wheele provided information on using recycled water in fire trucks. When fighting a fire, any available source of water can be used to put the fire out and save lives and property. This includes a recycled water source which means that when a fire truck is connected to the fire hydrant, the potable water supply is directly exposed to any contaminants, biological or chemical, that might be in the fire truck. Should a backpressure condition occur, from the pump in the fire truck, or a backsiphonage condition, from a drop in pressure in the water main, those contaminants will end up in the drinking water.

Some recommendations from Mr. Wheelie were:

- Periodic cleaning and disinfection of the tanks in the fire truck;
- Backflow prevention in the plumbing of the truck;
- Education of the fire fighters;
- Appropriate identification of those trucks which are routinely supplied with recycled water.

BPAT Practical Exam Proctoring

Linda Saladino

After the meeting, Ms. Linda Saladino, TCEQ Occupational Licensing Section, met with the those members of the subcommittee involved in developing the TCEQ examination to obtain the Backflow Prevention Assembly Tester (BPAT) license.