

Texas Commission on Environmental Quality

Cross-Connection Control Subcommittee

December 1, 2016

Meeting Summary

Announcements

Mr. Richard Bosch

The meeting commenced at 9:00 am. Comment was requested on the summary of the previous meeting (September 7, 2016). The following comments were provided and a motion was made to adopt the meeting summary:

- The date of the previous meeting under the Draft Meeting Summary section needs to be updated from March to June.
- The TCEQ could not take a position going against the rule. 290.38(58) says to adopt one of two codes. The codes do not include a double check valve for use on irrigation systems. The TCEQ Cross-Connection Control Program (CCCP) stated there is no conflict regarding the rule. The 290 rules require the adoption of an ordinance and a plumbing code is a different category.
- It was noted that the Subcommittee meeting summary are not minutes. A summary is a brief account of main points. The TCEQ CCCP agreed.

After the motion was seconded, the vote was unanimous for adoption. The finalized meeting summary will be posted to the TCEQ web page in the near future.

Mr. Shannon Frazier was announced as the new member of the TCEQ Cross-Connection Control Program.

Licensing Update

Ms. Linda Saladino

Ms. Linda Saladino, TCEQ Occupational Licensing Program, provided an update on the FY 2016 numbers of new and renewed license applications for the following:

- Backflow Prevention Assembly Testers
- Customer Service Inspectors
- Backflow Test Administrators
- Customer Service Inspection Test Administrators

Ms. Saladino provided handouts for BPAT & CSI Program Results and Program Activity Reports for Irrigation, BPAT and CSI for licensing testing.

Ms. Saladino provided a summary of a reorganization of TCEQ Occupational Licensing Program section. She stated that the section is organized by program instead of by function. Phone inquiries will be routed initially by program, then by license type (such as renewal). One goal is to have more boots on the ground. The section will go from having two team leaders to having one. The team leader position is vacant and the section will be hiring one team leader.

Ms. Saladino also provided an update on the online licensing application. To apply online for a new license, an applicant needs to be prepared with supporting documentation. For example, get the criminal history form filled out, as the form will need to be uploaded. She noted that some applicants have not been attaching the supporting documents. All professional licenses will need pre-approval before the potential licensee can register to take the exam. Potential licensees will receive an approval letter prior to their testing date.

Ms. Saladino stated that the Licensing Program hand tabulated the BPAT exam analysis for the written portion of the BPAT exam. Here are the results:

- The overall pass rate was 44%,
- The first time pass rate was 36%, and
- For 12 retests, the pass rate was 75%.

Ms. Saladino introduced Mr. Larry Diamond as a new employee on the licensing team. Mr. Diamond has wastewater permitting experience at TCEQ.

Public Water System Biennial Training

Ms. Melissa Keller

Ms. Melissa Keller, TCEQ Landscape Irrigation Program, provided an update on PWS biennial investigator training. Training details:

- Approximate date: 1st or 2nd week of June 2017
- Location: Austin area

Ms. Keller stated that the upcoming training was the 2nd training in which she has assisted with coordination and requested input regarding the type of training investigators should receive. Ms. Keller also pointed out that Mr. Tom Heitman is the program support liaison at the TCEQ Office of Compliance and Enforcement.

Ms. Keller also stated that attending the CCCP Subcommittee meeting would be beneficial for TCEQ employees for local offices and that 10-15 additional people may attend the following Subcommittee meeting(s).

Possible training topics:

- Emergency response to a backflow incident: The TCEQ CCCP has drafted a flow chart as guidance for managing a backflow / cross-connection incident as the incident is occurring.
- New RTCT rule: Input was received regarding the level of detail for new training versus the level of detail provided in the training provided the day after the PDW Conference. Mr. Al Fuentes, TCEQ CCCP, stated that more detail would be added to future training.

Electronic Resources

Mr. Chirag Patel

Mr. Chirag Patel, TCEQ CCCP, gave a presentation on the types of electronic resources available to assist in managing a cross-connection control program. He also led the discussion on the limited resources available to public water systems (PWS) and gathering ideas to aid struggling water PWSs.

Mr. Patel noted that scarce resources are a PWS issue across the state and that the TCEQ CCCP has to work with what is available. The TCEQ CCCP is aware that in some cases, documentation may be scattered across a PWS in various offices and with hard copy documentation there is often no backup data.

One attendee noted that with Excel, the learning curve is well worth the effort.

Mr. Patel noted he has received feedback from the regulated community regarding the use of a single system. Having one tracking system everyone can use has the following advantages:

- All involved only have to learn one system, and
- Information is easily passed on in certain cases, such as retirement of a program administrator.

Mr. Richard Bosch, TCEQ CCCP, asked the Subcommittee for input regarding what the TCEQ CCCP can provide to systems that are in the situation where one person is performing multiple jobs while experiencing a lack of resources.

The City of Temple stated that they invested in XE2 software, which is an internal management system, to track

all backflow devices. Test reports are scanned and uploaded. The system even generates a notification letter when BPA testing is overdue. The City estimates the software system has increased efficiency by at least 50%.

Mr. Bosch discussed the problem of information access using the following example: A one person on one side of a municipality (PWS) performs a task associated with administering a cross-connection control program, the municipality has the information, but water system personnel do not have access to the information.

One attendee noted that cross-connection control program information can be made available on the internet and that a PWS can determine who should have access. The attendee noted that CSI inspectors can query information on-line and make notations.

Another attendee noted that most cross connection program are “a piece of paper in a box in a closet”. It was generally agreed by the group that some can manage a 3-400 backflow assembly program using paper records. It was also noted that some PWSs are tracking a few hundred assemblies, but in reality may have thousands of BPAs.

It was noted that in New Braunfels, the PWS was tracking 1,100 assemblies and the tracking system quickly grew to 7,000 assemblies when the PWS went from a “box in a closet” to an online system. It was also noted that TCEQ can view everything remotely in the online system in use at the New Braunfels PWS. Since the quick initial improvement in tracking, it is estimated that in a city of 60,000 people, there are now 8-10,000 backflow assemblies being tracked. The time in the office has been estimated to have been cut from 4-6 hours (using a paper system) to 2 hours (using software).

Mr. Patel stated that the TCEQ CCCP would like to lay down a base of tracking information in those 3-4,000 population areas where the population may quickly grow and paper records become inefficient.

The topic of smart meter information was discussed. With smart meters, negative consumption indicates a backflow event is occurring. Mr. Bosch discussed City of Arlington input (courtesy of Mr. Joe Gildersleeve) where smart meter negative consumption reports are reviewed for significant backflow events.

One attendee noted that smart meters tracked 120 backflow incidents after changing over to smart meters. Many were 3-5 gallon events due to water heaters, but smart meters also identified significant events in the 100 gallon range.

Mr. Patel demonstrated the use of the TCEQ Source Water Assessment Viewer (SWAV) which is available on the TCEQ web site. He demonstrated how to identify Potential Sources of Contamination (PSOCs) which may justify the use of a backflow preventer.

One attendee asked whether wastewater outfalls, which are part of NPDES permits, can be identified through the SWAV. It was clarified by TCEQ that there are 3 ways to identify these types of discharge points:

- Mr. Larry Diamond, TCEQ Occupational Licensing Program, stated that from the TCEQ home page, select Wastewater Division, click on the Individual Permits link, and perform an advanced search.
- Mr. Shannon Frazier, TCEQ CCCP, noted Drinking Water Watch can be used.
- The SWAV also has wastewater outfalls.

Mr. Richard Bosch gave a presentation on coordination, cooperation and communication, based on RG-478, Establishing and Managing an Effective Cross-Connection Control Program and TCEQ CCCP field observations. Mr. Bosch noted that the TCEQ CCCP has observed circumstances where multiple people and work groups are involved in administering a cross-connection control program.

Mr. Fuentes inquired about circumstances where different work groups administering a program have a “turf war” related to segregation of duties. The following examples were given by attendees:

- The City of Dallas attendee stated that for Dallas, employees are scattered throughout different facilities and hard copy program documentation is stored in a central location. The building inspector provides water system officials CSI and backflow documentation.
- Benbrook Water Authority attendees noted that the PWS is a separate entity from the City. If a City utility crew observes an issue with the water system, the City crew contacts the water system. The main issue for the water system is gaining access to sets of plans for new construction. The water system requests two sets of plans for every new construction project and reviews the plans. The City does not perform the CSIs, so the water system has all cross-connection control program documentation.
- The New Braunfels plumbing office hired a third party to perform CSIs. Information was not exchanged between the plumbing office and the water system officials. There was a disconnect between the two work groups. **The City finally adopted a landscaping irrigation ordinance.**

Fireline Systems Documentation

Mr. Richard Bosch gave a presentation and led the discussion on required documentation for fireline systems. The presentation included cross-connection control and State Fire Marshal requirements. The following input was provided by Subcommittee Members:

- Several attendees informed the group that the validation process for a fireline employee should include asking to see a copy of the W-2 for that individual in addition to checking the State Fire Marshal’s Office web site. It was noted by attendees that ultimately the PWS is responsible for verifying that an individual is employed by the fireline company. It was further noted that the requirements state the employee must be a “permanent employee” and that is where the W-2 recommendation originated.
- One attendee inquired about a situation where there is one fireline that enters into a building and a second that is installed underground outside of the same building. The attendee asked if the installation of the second fireline does not require a licensed fireline company, is the individual performing the BPA test required to work for a fireline company? Richard stated that the answer is yes.
- One attendee noted that lately we are seeing more double-checks (DCVA) in residential fire systems. As an FYI DCVAs installed on firelines need to be tested by a fireline company per RG-345, which defines what constitutes a fireline system.
- **One attendee noted a situation where a private hydrant unknown to NBU (New Braunfels Utilities) was on main containment. The backflow tester testing the DCVA found rushing water and the owner of the leaking DCVA was charged for the water loss because the fire hydrant was on the main containment.**
- One attendee mentioned retrofitting fireline systems in cases where a DCVA is used for backflow prevention. In potable water systems where a BPA is identified as the cause of a backflow incident, if the failing BPA is a DCVA, that provides reasonable grounds for the water authority to require an upgrade to an RPZ. For firelines interconnected to an auxiliary water system (which can be a large category and include a number of sources, such as reclaim or ocean water) there needs to be appropriate backflow for those types of systems and these types of fireline systems need to be considered in a plan

review process. DCVAs need to be replaced with an RPZ in these cases due to the auxiliary water source. For example, oil facilities commonly use backup ocean water and have additional storage to augment on-site auxiliary storage. It was noted that the additional tanks can get nasty.

Emergency Response Plans

Mr. Chirag Patel

Mr. Chirag Patel gave a presentation on emergency response plans based on RG-476, A Public Water System Guide to a Backflow Incident, and RG-477, A Public Water System Guide to Preparing a Backflow-Incident Emergency-Response Plan.

Mr. Patel stated that there will be an update to RG-476.

The first thing to consider with any type of backflow emergency event: What is the contaminant?

It was noted that flushing could cause more problems. Flushing can spread contaminants if water system officials have not determined beforehand distribution system valve locations or how water moves through the system when a particular fire hydrant is opened (unidirectional flushing).

One attendee posed the following questions and also provided responses:

- Where does identifying the contaminant fit into responding to a backflow event?
- When do you identify the contaminant?

Identification depends on the potential source – reservoir, groundwater supply, etc. Attempts should be made to identify the contaminant source. Determining the source can be challenging and a water system may not know the source. A suggestion was made that the PWS isolate any suspected facility and the premises. Determine if a contaminant may have back-siphoned into the system. Make an attempt to identify the contaminant and where the contaminant is in the system. If a point source is located, work from the suspected source location and test for the contaminant at varying distances from the suspected source point. When a contaminant is not known, the old school of thought is to do 4-5 basic tests, such as chlorine residual, pH, conductivity, or color, because most contaminants may impact one or more of these base tests. Review test results. Odd result values may assist in isolating the impacted area. Look at the dilution factor and at what point the contaminant will cause harm. Outside intervention may be needed.

Mr. Bosch noted that any basic tests performed would need to have historical data so that a “normal” baseline value is available to compare incident values with. Mr. Patel noted that the TCEQ CCCP is drafting a standard list of questions for responding to a backflow event. Ms. Melissa Keller, TCEQ Landscape Irrigation Program, stated that regional offices do not have a standard procedure for responding to backflow event. Mr. Byron Hardin, Hardin & Associates, noted there are the Nitrification Action (NAP) Plan requirements and Level 1 & 2 Assessments. A backflow event could affect NAP sampling. A NAP could have provisions for backflow incident tracking.

USC Course

Mr. Richard Bosch

Mr. Richard Bosch gave a presentation on the USC Cross-Connection Control Program Specialist Training. The TCEQ CCCP has submitted a request to host the training at the TCEQ Central Offices (Austin). The training will consist of a week-long course that includes classroom learning as well as practical (hands-on) training. The course will be specific to State of Texas regulations.

The request includes TCEQ purchasing ~20 registrations for public water systems. The ~20 registrations will be offered at no cost to water systems based on selection criteria. Additional seats are available for those interested in attending the course but do not qualify for free admission. When registration is available, registration will be available through the USC website.

Once funding and course dates are set, TCEQ will send notification when registration is available.

Carbonate Beverage Systems

Mr. Byron Hardin

Mr. Byron Hardin, Hardin & Associates, gave a presentation and led the discussion on hazards associated with carbonated beverage systems and the type of backflow prevention assemblies required.

Mr. Hardin noted that carbonated beverage systems are an “old topic with new twists.”

Mr. Hardin noted that the latest designs for carbonated beverage systems, such as the Coca Cola Freestyle, are much more complicated than traditional soda-dispensing machines. There is an influx of dedicated water taps to these systems, because they all have a water-only option. Mr. Hardin posed the following question to the Subcommittee, “why is this an issue?”

There is a concern that carbonic acid (from the carbonated beverage machine) can alter the pH of the potable water. The lower pH could potentially cause lead/copper to leach out of water lines in the event of a backflow incident.

The State provides the definition of potable water. Mr. Hardin posed the following question to the Subcommittee, “does the potable water line in a soda-dispensing machine go through a process that meets the potable definition?”

As inspectors, we have to ask, “where is the water coming from?” From a backflow perspective, having a vented dual check valve is not sufficient protection alone. An RPBA is needed as well due to the health hazard created by the potential leaching of lead and copper.

Water taps on these beverage systems are typically installed downstream of the backflow preventer. This set-up is susceptible to a backflow event. As an investigator, how do you handle a water tap downstream of a BPA? You identify and isolate the point of use. Mr. Hardin posed the following question to the Subcommittee, “if a water tap is downstream of an RPBA, does the water available at the tap meet potable standards?”

Should the water selection tap on a carbonated beverage machine be isolated and tied in upstream of the approved backflow assembly? Mr. Hardin argues, yes.

Other regulatory agencies have concern for cross-connection programs, such as the Food & Drug Administration and the Centers for Disease Control. Biological contamination can pose a threat to carbonated beverage systems. For example, vinyl lines must be cleaned, maintained, and sanitized regularly. E.coli and other bacteria have been found on valve dispensers.

Input was received stating that an inspected beverage machine had an additional water jet to clean out the tray of the beverage machine. The water jet line was also traced back to the restaurant’s ice machine water line.

An attendee made a comment regarding carbon dioxide gas canisters - most restaurant owners buy CO2 gas for the carbonated beverage systems from industrial companies, not health/food grade companies due to higher costs.

An attendee made a comment that the type of CO2 for carbonated beverage systems should be standardized across the state.

There was a general consensus among the Subcommittee Members regarding the water lines on carbonated beverage systems: either don't have the water line connected with the carbonated system (have separate line that bypasses carbonation process), **or install the RP upstream of the water line.**

RTCR Assessments

Mr. Al Fuentes

Mr. Al Fuentes, TCEQ CCCP, discussed Revised Total Coliform Rule Assessments and how the assessments relate to cross-connection control.

When sampling in a distribution system, if a public water system (PWS) receives a positive sample for E.coli, the PWS must perform a survey to investigate how/why an E.coli result was obtained. If a Total Coliform positive result is obtained for a distribution sample, a Level 1 assessment is triggered. If an E Coli positive result is obtained for a distribution sample, a Level 2 assessment is triggered.

During Level 1 or 2 assessments, TCEQ staff visit a PWS and try to identify the susceptible areas within a system. TCEQ staff examine monitoring plans, etc. in an attempt to "find and fix" the problem. No violations are issued to the system. These assessments are intended to be targeted problem solving for the system's benefit.

Office of Legal Services: Enforcement

Mr. Jess Robinson

Mr. Jess Robinson, TCEQ Office of Legal Services, discussed the types of enforcement actions that can be taken by TCEQ against a public water system.

Enforcement cases against a public water system usually originate at the regional level (from investigations), but can also originate at the TCEQ main office.

Question asked by an attendee:

- If a CSI investigator is licensed by the TCEQ, and a backflow event occurred that brought a PWS to enforcement, would the responsibility be on the PWS or the CSI inspector?

In response, Mr. Robinson explained that it is typically very difficult for TCEQ to enforce against an inspector. For example, falsification (in general) is difficult to prove. TCEQ would have to prove that a CSI form was falsified, and it would have to be proven that the falsification was intentional, which is also difficult to prove.

Mr. Robinson noted that if there is proof that a CSI form was not legitimate, a water system could decide not to accept the form. It was noted that only TCEQ-approved CSI forms should be used or accepted. Some systems have custom/private forms. However, prior approval from TCEQ must be given to use alternate forms.

A comment was made to instruct water purveyors who have their own CSI and Test & Maintenance Report forms to make those forms available to inspectors and testers.

An additional comment was made by an attendee that performs CSIs to not remove the date/time portion from the approved TCEQ forms. As an investigator, the attendee noticed that some water purveyors have removed

this portion from their forms.

Additional Discussion / Comments

- At the Irrigation Advisory Council (IAC) meeting held on November 9, 2016, a motion was made for the TCEQ to classify irrigation systems as a health hazard (7 to 1 in favor of motion). This motion was also made at previous TCEQ CCCP Subcommittee meetings. However, TCEQ staff cannot petition existing rules or take a position statement. Individuals can make a petition to change/amend rules, but not the CCCP Subcommittee. The purpose of the CCCP Subcommittee is to listen to Subcommittee Members and to gain a better understanding of what occurs in the field of cross-connection control – not to change rules.

It was mentioned that at the next Subcommittee meeting, the roles and responsibilities of the Subcommittee should be addressed.

- Mr. Bill Hamrick, **ATB Services Inc.**, presented a cross-connection demonstration that was well received by the Subcommittee:

