

# Texas Commission on Environmental Quality

## Cross-Connection Control Subcommittee

June 1, 2016

### Draft Meeting Summary

#### Announcements

**Mr. Al Fuentes**

The meeting commenced at 9:00 am. After introductions by everyone present, comment was requested on the summary of the previous meeting (March 3, 2016). No comments were provided and a motion was made to adopt the meeting summary. 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.

Several members of the subcommittee asked about efforts to change the classification of irrigation systems to health hazards. No communication had been provided to the TCEQ Cross-Connection Control Program on this and so no action(s) has been taken. Members of the subcommittee will draft a position statement and/or a rule petition to provide to TCEQ upper management for consideration.

#### Update on Regulatory Guidance Document No.206 and Regulatory Guidance Document No. 478 - Mr. Al Fuentes

Mr. Al Fuentes, TCEQ Cross-Connection Control Program, provided an update on the revisions to regulatory guidance document No. 206 (RG-206), A Public Water System Guide to Customer Service Inspections. At issue is the removal of the exemption of irrigation systems from the need for a Customer Service Inspection (CSI). This was necessary as this exemption was in direct conflict with the CSI regulation.

After listening to the strong concerns from the irrigation industry and the Irrigator's Advisory Council (IAC), TCEQ management met internally and decided to put the publication of RG-206 on hold until a stakeholders group can be formed to allow for industry professionals to voice their concerns and present possible solutions.

The subcommittee expressed some concern that until the publication of RG-206, there will be no written guidance available on CSIs. Members of the regulated community can call TCEQ to receive site-specific guidance on questions about CSIs.

RG-478 is being finalized and is very close to publication. The sample ordinance included in this RG is being reviewed by staff in the TCEQ Environmental Law Division. Once this is complete, it will be submitted for publication.

#### Hose Station on Salon Chair Tubs

**Mr. Chirag Patel**

Mr. Chirag Patel, TCEQ Cross-Connection Control Program, provided a presentation on pedicure Salon Chair Tubs. These tubs can be free-standing or can be built-in to each individual salon chair. They are filled with water so the clients can soak their feet. At issue is the way these tubs are filled. Many use a hose which can create a cross-connection to a health hazard. The layout of the chairs can vary, but they are usually all supplied by a single hot and a single cold water line. Salon tub chairs can also include explicit instructions to follow local codes and include recommendations to install backflow device on hot and cold water supply lines down to a specific make and model number.

The subcommittee recommended backflow prevention on each of the lines supplying the chairs in addition to consulting with the adopted Plumbing Code. This would eliminate the need to provide backflow preventers for each individual chair. Due to the hazard, the correct backflow preventers would need to be used and they would have to be tested annually.

Mr. Patel also solicited information from the subcommittee on the backflow concerns for Reverse Osmosis filtration systems. The concern was primarily with larger systems such as whole-house systems or those used for businesses. After some discussion, the subcommittee was unclear if a backsiphonage condition could pull contaminants off a membrane, but considered highly unlikely due to the high pressures needed to flow water through the membrane. The main hazard is the drain line which removes the concentrated discharge from the membrane. This drain line must go to the sanitary sewer so it must be attached through an air gap.

**Soda dispensing units and connections downstream of a BPA**

Mr. Troy Baird, Bac-Flo Unlimited, lead the discussion on the backflow concerns on soda dispensing units (carbonated beverage dispensers) and downstream connections. The carbon dioxide (CO2) container is highly pressurized and, when mixed with the water it could backflow into the potable water supply. The hazard is that this mixture of CO2 and water will corrode copper plumbing. Then, when the carbonated water flows to mix with the syrup to make the soda, the soda is contaminated with copper. This has been documented in the following excerpt from an EPA White Paper:

*Excerpt from EPA Paper: Potential Contamination Due to Cross-Connections and Backflow and the Associated Health Risks, September 2001*

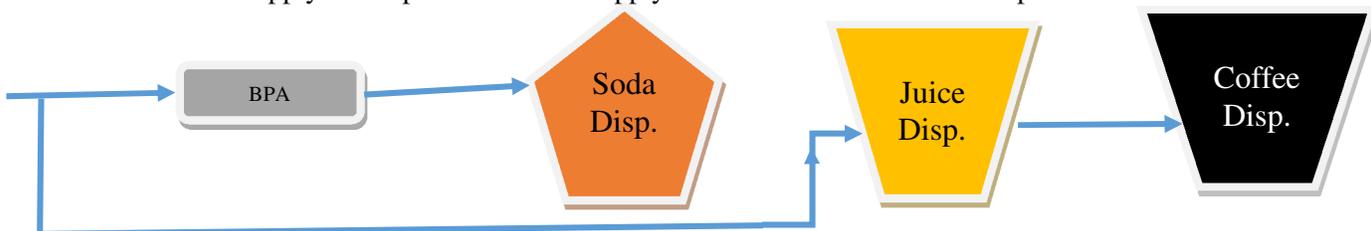
*Metals*

*There are 73 reported backflow incidents with metal contaminants—55 with copper and 18 with hexavalent chromium. Copper contamination is most commonly associated with backflow incidents at restaurants, where carbonated water can dissolve portions of water or soft drink dispenser piping made of copper. In 1987, a child in Minnesota suffered acute copper toxicity when the backflow from a carbon dioxide machine contaminated a restaurant’s potable system (AWWA PNWS, 1995). A similar incident at a fair in Springfield, MO, caused vomiting and abdominal pain in three people who drank soft drinks from a soft drink machine that had a faulty check valve (AWWA PNWS, 1995). Potential health effects due to copper poisoning include vomiting, nausea, and liver and kidney damage; refer to the Chemical Health Effects Table for other potential health effects (US EPA, 2002a). CDC reports that the observed acute health effects due to copper poisoning outbreaks are gastrointestinal illness (CDC, 1996).*

Typically, the backflow preventer is installed at a location where it will protect the potable water supply from this hazard. However, other dispensing machines such as juice and coffee are connected on the same supply line as that connected to the soda dispenser. The copper contaminated water could then flow downstream and people could be drinking contaminated juice and coffee.



In order to prevent this, the subcommittee recommended that the Soda Dispenser (carbonated beverage dispenser) have its own dedicated supply line separate from the supply line for other downstream dispensers.



Mr. Troy Baird also led the discussion on multiple-licensed individuals and the conflict of interest that creates. An example would be a licensed plumber who also has a water supply protection specialist endorsement on his license which qualifies him to conduct a Customer Service Inspection (CSI). He could install a plumbing system and conduct a CSI on his own work. Another would be a licensed irrigator who also hold a Backflow Prevention Assembly Tester’s license. He can install a backflow prevention assembly on his irrigation system and also test it. Each professional would be inclined to pass the CSI and the test of the backflow prevention assembly or, they would have to spend more time and money making any repairs or corrections.

After an extensive discussion, the following points were made:

- A backflow prevention assembly is there to protect the public health so it is critical that it function correctly.
- Each incidence of fraud is handled on a case-by-case basis and is very dependent on the evidence.
- A water system who suspects an individual fraudulently filling out paperwork may submit a complaint to the appropriate TCEQ regional office. An investigator would then follow up with an investigation and documentation of evidence. An example given was of a water system who received a Backflow Prevention Assembly Test & Maintenance Report (T&M form) for a backflow prevention assembly on their system. It was later discovered that the tester had been on vacation at the time of the test and so had fraudulently filled out the T&M form ahead of time.
- The enforcement tool available to the TCEQ is the license issued by TCEQ.
- Because holding multiple licenses is not prohibited, much of the responsibility for correctly fulfilling the responsibilities of the license is left to the individual holding the license.

**Updates to the Backflow Prevention Assembly Test and Maintenance Report (BPAT form) and the Customer Service Inspection Certificate (CSI form)**

Mr. Chirag Patel presented the latest version of the BPAT Form and the CSI form for the subcommittee’s review. The forms have been substantially improved and the subcommittee just had a few recommendations for both forms:

<b>T&amp;M Form</b>	<b>CSI Form</b>
<ul style="list-style-type: none"><li>• In order to be clear, only acronyms used in the University of Southern California’s Manual of Cross-Connection Control (USC manual) should be used unless there is a conflict with a state regulation.</li><li>• Remove “Is this assembly lead free.”</li><li>• Make it clear what the assembly is being used for.</li><li>• Change “Lic. Tester No.” to “BPAT License No.”</li></ul>	<ul style="list-style-type: none"><li>• Include the words “or indirect” in (1).</li></ul>

**Air gaps: Tracking and verification**

Mr. John DeCell, VEPO, requested information from the subcommittee on whether air-gaps should be inspected annually. The concern is that air-gaps are used on health hazards. After some careful consideration by the subcommittee in which discussion was had on whether the regulations support inspecting air gaps, who would inspect them, does this need a new form, and at what cost does this entail, the subcommittee did not come to a consensus on this issue. Mr. Al Fuentes recommended postponing this discussion until additional internal discussions within TCEQ could be held.

Mr. Chirag Patel provided information on the Cross-Connection Control Questionnaire. The TCEQ sends out an annual questionnaire to Public Water Systems (PWS) to increase awareness of the backflow prevention and cross-connection control regulations as well as to get a snapshot of their Cross-Connection Control Program. Their programs are ranked according to the answers in the questionnaire. Some of the issues that water systems are dealing with based on the responses to the questionnaire are keeping the correct records for the correct amount of time, have an authority for the Cross-Connection Control Program, and annual testing on backflow prevention assemblies installed on health hazards.

**Guide for Request of Approval of Alternate Form(s) and Electronic Record Keeping****Mr. Chirag Patel**

Mr. Patel also presented information on alternate form approvals. TCEQ regulations allow water systems to use alternate BPAT Forms as well as CSI forms with approval. Some of the information needed for approval is:

- A signed hardcopy request for approval.
- A copy of the alternate form.
- What are the deviations from the official form?
- A description of how the form will be used;
  - Will testers in the service area only be allowed to use that form?
  - Will copies of the form be provided (triplicate)?

If the system wishes to keep these records electronically, some of the additional information needed will be:

- Will the forms be filled out electronically?
- Precautions for data loss?
- Will the information be available for the required amount of record retention time?
- Is training available to system staff so they are proficient with the electronic system?

**Interconnections: How to Evaluate the Need for a Backflow Prevention Assembly****Mr. Chirag Patel**

Mr. Patel also covered the possible need for backflow prevention at an interconnection between two water systems. For this subject, the system providing the water is referred to as the “provider” and the system receiving the water is referred to as the “receiver.”

A backflow preventer at an interconnection could be costly as these water lines are usually large. When deciding whether backflow prevention is needed at an interconnection, there are several questions which should be answered:

1. Does the receiver have a good Cross-Connection Control Program?  
If the receiver can show they have a good program and are actively eliminating or protecting cross-connections, then the provider can use this to support **not** requiring a backflow prevention assembly at the interconnection.
2. Does the receiver have a good sampling history?  
A good sampling history could indicate a well-run water system with good preventive measures for contamination.
3. Does the receiver have many hazards in their system?  
The quantity of hazards within the receiving system could also be a contributing factor in deciding whether to require backflow prevention.
4. Where are the locations of these hazards?  
If there is a large industrial park just downstream of the interconnection, then the provider might want to consider this before making the connection without backflow prevention.
5. Are there any backpressure concerns?  
Backpressure could be created by the elevation of the receiving system or the existence of an elevated storage tank in the proximity of the interconnection. Should there be a drop in pressure from the provider, then backflow could occur.

6. What is the regulatory compliance status of the receiver?  
The absence of violations or enforcement by regulatory agencies of the receiver could also be an indicator of a good water system and lessen the need for backflow prevention and the interconnection.

**Changes to the BPAT test**

**Ms. Linda Saladino**

Ms. Linda Saladino, TCEQ Occupational Licensing Section, provided an update on the changes to the Backflow Prevention Assembly Tester (BPAT) exam for obtaining the BPAT license. She is working on the reporting process for exam results, modifying guidance documents, and making the written exam computer based. Another key issue is training individuals to Proctor the exam. How much training do Proctors need, what qualifications must they have, and what are the initial logistics and costs to train Proctors are a few questions she is working to answer.

**Financial, Managerial, and Technical (FMT) Assistance**

**Mr. Jason Smith**

Mr. Jason Smith, TCEQ Response and Capacity Development Team, provided a brief update on the FMT Assistance Program. This program provides assistance to Public Water Systems at no cost and with unrestricted frequency. Mr. Smith pointed out that when the FMT Program visits water systems there is no risk of violations being cited. Among the many issues a water system deals with, they can receive assistance with disinfectant residual problems, nitrification action plans, cross-connection control programs, resolving violations, and enforcement. However, the FMT Assistance Program cannot advise on professional engineering or legal matters.