

Each issue, we ask members of the *On Tap* Editorial Advisory Board to answer a drinking water-related question. We then print as many responses as space permits. The opinions expressed are not necessarily those of NESCA.



In January 2007, the EPA hosted a stakeholders meeting to discuss cross connections and backflow prevention. In July 2007, the agency established a Total Coliform Rule Distribution System Advisory Committee.

Q: *Do you believe that cross connections pose a serious threat to public health?*

If so, should cross connections be addressed in a revised Total Coliform Rule?

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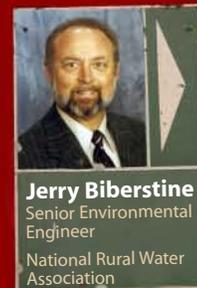
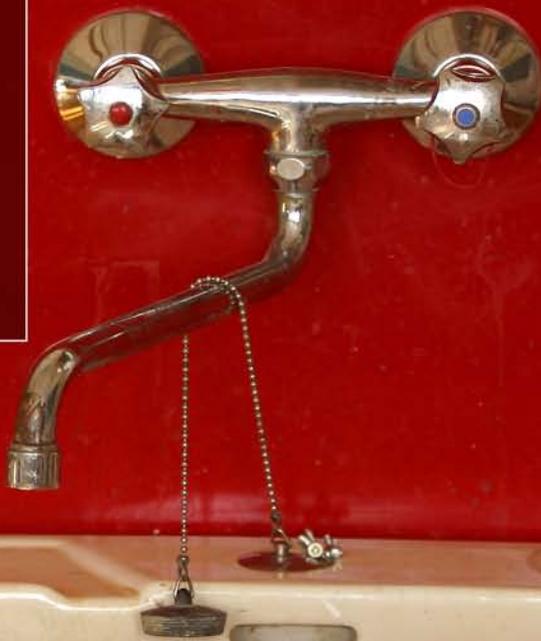
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Leave Regulations to States



All public water systems have cross connections and they can pose health hazards. There are documented cases of cross connection/backflow incidents that have contaminated potable water supplies, and, in some cases, caused illnesses and deaths.

Some states require mandatory backflow protection on certain facilities where high health hazard-type cross connections are normally found, such as:

- car washes;
- food and beverage processing centers;
- hospitals, mortuaries, clinics;
- laboratories;
- metal plating and chemical plants;
- petroleum processing and storage plants;
- piers and docks; and
- sewage treatment plants.

Although all water systems should have a cross-connection control program, I do not believe cross-connection regulations should be specifically addressed in the Total Coliform Rule. Cross-connection control is not just for protecting against bacteriological contamination.

Plumbing codes and Washington State drinking water regulations require cross connections to be controlled by approved methods (physical air gap) or approved mechanical backflow prevention devices or assemblies. In Washington, cross-connection program requirements fall under the drinking water regulations for Group A public water systems (i.e., systems that fall under the Federal Safe Drinking Water Act Requirements). All Group A public water systems are required to have a state-certified cross-connection specialist to implement the cross-connection control program. A state-certified backflow assembly tester must inspect and test all backflow prevention assemblies at the time they are installed and annually thereafter.

The EPA has a cross-connection control manual designed as a tool to be used for educational, administrative, and technical reference in conducting cross-connection control programs. The American Water Works Association is another good resource for implementing a cross-connection control programs.

Is the cost worth the benefit?

As a former drinking water program manager, I am aware that unprotected cross connections can present a serious public health threat. The concern used to be that an unintentional cross connection would contaminate the water supply, resulting in sickness and even death. Today, the concern is that terrorists (international and domestic) could use cross connections to intentionally contaminate water supplies, also resulting in illness, death, and instilling a total lack of confidence in the purity of the water supply that we work so hard to provide.

On the other hand, this is an area in which over-regulation can be just as detrimental to public health. At one time, the EPA considered the possibility of requiring cross-connection control on every tap and every water system, across the country. A preliminary analysis done by the National Rural Water Association came up with costs in the range of \$5 billion (yes, billion with a "b") to install the necessary devices, and another \$3 billion per year to test each device. Bankrupting water systems over this issue would be a far greater threat than leaving things as they are.

Currently, every state has statutes that cover cross connections. Mostly, they cover the higher threats such as commercial and industrial users where chemical usage, boilers, etc. can threaten a potable water supply. However, such statutes are not all under the drinking water program purview. The requirements may be under plumbing codes, building codes, or other state statutes. Most cross connection horror stories come from many years ago when water systems did not realize the threat.

With residential services, it is not just the issue of putting a device on a service line. The device must be accessible to a tester, so an existing meter pit is not big enough. A new meter pit may be required. Then there is the issue of thermal expansion. When the water in the plumbing in a residence heats up on a summer day, it expands. If it cannot relieve the pressure back down the service line, it usually blows the pressure relief valve on the water heater. This results in not just the addition of a cross-connection control device, but the addition of thermal expansion controls on every service line in the country. No wonder the costs become astronomical.

Like operator certification, federal regulation of existing state programs can be a plus, or a minus, from the standpoint of what to do with limited available resources. If state statutes already make cross connections illegal, why do we need another federal mandate on water systems? A federal mandate on cross-connection control would result in new state programs (at a time when state programs cannot keep up with all the other new federal rules and mandates), and create a new federally mandated cross-connection control device testing and certified tester program.

These requirements are already in place in many states, but another federally mandated program is just another straw on the camel's back. With billions of dollars of infrastructure involved, the argument is a very high pressure one. Is there a threat? Definitely. Do we need more federal regulations to deal with it? That has yet to be proven.