

High Hazard Cross Connections – Responsible Authorities

In response to the federal Safe Drinking Water Act (SDWA) Ground Water Rule and recent incidents in Minnesota, the Minnesota Department of Health (MDH) has adopted high-hazard cross connections that are not adequately protected as a Significant Deficiency for all Community Public Water Systems (CPWSs).

For the purposes of CPWS Unit program implementation, SDs will be defined as high-hazard cross connections that need a reduced pressure zone backflow preventer or air gap to meet the Minnesota Plumbing Code. However, CPWSs can adopt a more comprehensive approach, addressing all cross connections as part of a cross connection control program.

Any local unit of government which has a Building Code ordinance must use the Minnesota Plumbing Code as the criterion for proper installation and maintenance of plumbing systems. Because it is a statewide code, local ordinances cannot vary from it in any way which would be either more restrictive or less inclusive. MN Rules 4715.2161 requires that there be an ongoing testing program for any type of reduced-pressure-zone backflow preventers which are installed. This includes devices which are already installed as well as any which are newly installed. Any local unit of government enforcing the code must also enforce this very important part of the code.

In addition to state requirements, the SDWA, enforced through the United States Environmental Protection Agency (EPA), holds the water purveyor responsible for ensuring the quality of the water all the way to the free-flowing outlet of the consumer. This means the purveyor is responsible for assuring that the water quality is not compromised as a result of delivery through the distribution system. Pursuant to this requirement, the EPA stresses the importance of comprehensive local cross-connection control programs, including the need for periodic testing of backflow preventers.

The reason these devices must be tested annually is that they are the final and often only line of defense to protect the quality of water within plumbing water distribution systems contamination by other systems or equipment. After considerable money and effort is spent to assure safe water quality coming from the water system, it is important to assure that nothing is done to contaminate water within the distribution system. Provision of backflow preventers is a preventative measure, as the name implies, intended to help preserve water quality. Backflow preventers are, however, mechanical devices with internal moving parts, and like any mechanical device, they must be properly maintained to assure they will function when needed. Proper maintenance of the device is just as important as installation of the device itself.

It must be noted that local units of government that have a Building Code ordinance, but do not pursue a backflow preventer testing program may incur liability in the event of a contamination-related problem resulting from a cross-connection within a potable water system.

The Minnesota Plumbing Code resides in the Minnesota Department of Labor and Industry (DLI), and DLI can delegate authority for the plumbing code to a local authority. Below are references and resources CPWSs can use in addressing suspected or identified high-hazard cross connections.

Statute and Rule References

CFR 141.403 (a) (4) *Treatment Technique Requirements for Ground Water Systems*

For the purposes of this subpart, significant deficiencies include, but are not limited to, defects in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the State determines to be causing, or have the potential for causing, the introduction of contamination into the water delivered to customers.

Subpart H (*Surface Water Systems*) CFR 141.173 - Filtration; CFR 141.174 (a) and (b) - Filtration Sampling Requirements; and CFR 142.16(b)(3)(i) (A) thru (H) Sanitary Survey means an onsite review of the water source (identifying sources of contamination using results of source water assessments where available), facilities, equipment, operation, maintenance, and monitoring compliance of a public water system to evaluate the adequacy of the system, its sources and operations and the distribution of safe drinking water. Definition of a significant deficiency: any defect in a system's design, operation, maintenance, or administration,

as well as any failure or malfunction of any system component that the State determines to cause, or have the potential to cause, unacceptable risk to health that could affect the reliable delivery of safe drinking water.

MN Rules 4720.0025 *Unsafe Water Connections*

There shall be no physical connection between any public water system intended for potable or domestic use and any system, equipment, or device that may serve as a source of contamination, unless protected by a properly maintained backflow preventer approved by the commissioner.

MN Rules 4715.1900 *Design, Maintenance, and Installation*

A potable water supply system shall be designed, installed, and maintained in such manner as to prevent contamination from nonpotable liquids, solids, or gases, from being introduced into the potable water supply through cross-connection or any other piping connections to the system.

MN Rules 4715.1920 *Cross-Connection Control*

Cross-connections between potable water systems and other systems or equipment containing water or other substances of unknown or questionable safety are prohibited, except when and where, as approved by the authority having jurisdiction, suitable protective devices such as break tanks, reduced pressure zone backflow preventer, or equal, are installed, tested, and maintained to ensure proper operation on a continuing basis. Cross-connections between an individual water supply and a potable public supply shall not be made unless specifically approved by the authority having jurisdiction.

MN Rules 4715.2161 *Installation of Reduced Pressure Backflow Preventers*

Subp. 1. Notification of installation. The administrative authority must be notified before installation of a reduced pressure backflow preventer assembly.

Subp. 2. Testing and maintenance. The installation of reduced pressure backflow preventers shall be permitted only when a periodic testing and inspection program conducted by qualified personnel will be provided by an agency acceptable to the administrative authority. Inspection intervals shall not exceed one year, and overhaul intervals shall not exceed five years. The administrative authority may require more frequent testing if deemed necessary to assure protection of the potable water. Backflow preventers shall be inspected frequently after initial installation to assure that they have been properly installed and that debris resulting from the piping installation has not interfered with the functioning of the assembly.

Subp. 3. Inspection and records. A test and inspection tag must be affixed to the device. The tester shall date and sign the tag and include the tester's backflow preventer tester identification number. Written records of testing and maintenance must be maintained and submitted to the administrative authority.

MN Rules 4715.0100, Definitions, Subp. 2

Administrative Authority

“Administrative authority” means the commissioner of labor and industry. (When a governmental subdivision adopts and maintains a comprehensive plumbing enforcement program that is conducted by personnel who are knowledgeable about plumbing installation requirements, and includes enforcement of all code provisions including materials, methods, inspection, and testing, the administrative authority shall be the governing body of the adopting unit of

government, its agents, and employees; however, the commissioner of labor and industry retains the ultimate authority to enforce Minnesota Statutes, sections 326.37 and 326.45, and provisions of this chapter that are necessary to ensure compliance.)

Responsible Authorities (plan review, inspections, and code enforcement)

For each of the following establishments, if you suspect or identify an inadequately protected high-hazard cross connection, you can contact the appropriate agency for follow-up or enforcement action:

Food, Beverage, or Lodging Establishment

1) local plumbing code authority, or 2) local MDH or delegated program licensing authority at www.health.state.mn.us.

Pools

1) local plumbing code authority, or 2) local MDH or delegated program licensing authority at www.health.state.mn.us.

In-Store Delis, Grocery Stores, Butcher Stores, Bakeries, or Convenience Stores

1) local plumbing code authority, or 2) local MDA licensing authority at www.mda.state.mn.us.

Food Processing Facilities

1) local plumbing code authority, or 2) local USDA licensing authority at www.usda.gov.

Health Care Facilities and Providers

1) local plumbing code authority, or 2) MDH licensing authority at www.health.state.mn.us.

Building Plumbing Systems (in general)

You can request the local plumbing code authority take enforcement action.

Lawn Irrigation Systems

In some situations, an RPZ backflow preventer may not be a necessary device for a lawn irrigation system, and other devices may be more appropriate. If you suspect or identify an inadequately protected high-hazard cross connection, you can request the local plumbing code authority take enforcement action.

You can find the local plumbing code (and building code) authority for your CPWS at www.dli.state.mn.us. If the local plumbing code authority or specific licensing authority does not take enforcement action, you can contact DLI at www.dli.state.mn.us, as they retain the ultimate authority to enforce the Minnesota Plumbing Code. In addition, any CPWS that is a local government unit can take steps to adopt and enforce the Minnesota Plumbing Code by ordinance.

You can find additional resources at www.lmc.org for ordinances, www.mrwa.com for templates and helpful hints for implementing cross-connection control programs, www.mnawwa.org, www.abpa.org, www.dli.state.mn.us, and www.health.state.mn.us for grant opportunities and factsheets on High-Hazard Cross Connections - Significant Deficiency and High-Hazard Cross Connections in Minnesota.

For more information, contact:
Environmental Health Division
Drinking Water Protection Section
<http://health.state.mn.us/water>
651-201-4655

