

# Regulatory Framework for Greenville Water Authority's Cross Connection Control Program

## NOTES:

- In 1995, Governor Tom Ridge separated the old DER into two agencies: Department of Conservation and Natural Resources (DCNR), and the Department of Environmental Protection (DEP). DER, as a distinct agency, no longer exists.
  - The Department of Environmental Protection (DEP) is responsible for the monitoring of water and air quality, energy sources, and waste management. Their requirements for public water supplies are embedded in Chapter 109 of *The Pennsylvania Code*
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The information below was taken from The Pennsylvania Code website, which reflects The Pennsylvania Code changes effective through 34 Pa.B. 5116 (September 11, 2004).

*The Pennsylvania Code*, TITLE 52 PUBLIC UTILITIES

CHAPTER 65. WATER SERVICE

Pa. Code § 65.17. Standards of Design.

1. *General.* The design of the water plant of the utility shall conform to standard acceptable engineering practices. It shall be designed so as to provide reasonably adequate and safe service to its customers and shall conform to the requirements of the Department of Environmental Resources (DER) which concern sanitation and potability of water.

*The Pennsylvania Code*, TITLE 25 ENVIRONMENTAL PROTECTION

CHAPTER 109. SAFE DRINKING WATER

Subchapter A. GENERAL PROVISIONS

Pa. Code § 109.1. Definitions.

Cross-connection-An arrangement allowing either a direct or indirect connection through which backflow, including backsiphonage, can occur between the drinking water in a public water system and a system containing a source or **potential source of contamination**, or allowing treated water to be removed from any public water system, used for any purpose or routed through any device or pipes outside the public water system, and returned to the public water system. The term does not include connections to devices totally within the control of one or more public water systems and connections between water mains.

*The Pennsylvania Code*, TITLE 25 ENVIRONMENTAL PROTECTION

CHAPTER 109. SAFE DRINKING WATER

Subchapter F. DESIGN AND CONSTRUCTION STANDARDS

Pa. Code § 109.608. Cross-connections.

A public water system may not be designed or constructed in a manner which creates a cross-connection.

*The Pennsylvania Code*, TITLE 25 ENVIRONMENTAL PROTECTION

CHAPTER 109. SAFE DRINKING WATER

Subchapter G. SYSTEM MANAGEMENT RESPONSIBILITIES

Pa. Code § 109.709. Cross-connection control program.

- (a) No person may introduce contaminants into a public water supply through a service connection of a public water system.
  - (1) It shall be the responsibility of the customer to eliminate cross-connections and provide backflow devices to prevent contamination of the distribution system from both backsiphonage and backpressure. Individual backflow preventors shall be acceptable to the public water supplier.
  - (2) If the customer fails to comply with paragraph (1) within a reasonable period of time, the water supplier shall discontinue service after reasonable notice has been made to the customer.

# Greenville Water Authority's Cross-Connection Control Program

(December 2014) Condensed

- *The Pennsylvania Code* is the Commonwealth of Pennsylvania's official publication of rules and regulations.
- Greenville Water Authority's Cross-Connection Control Program is a containment program that requires the installation of backflow device(s) on all connections from our water distribution system.

<b><u>Customer Class</u></b>	<b><u>Required Device(s) – Must Meet ASSA/ANSI Standards</u></b>
Residential	Residential Dual Check Valve (Non-testable device). Irrigation (no chemicals added) - Double Check Valve Assembly
Commercial	Double Check Valve Assembly or Reduced Pressure Zone Assembly (Water Authority to determine type of device by usage survey)
Public	Double Check Valve Assembly or Reduced Pressure Zone Assembly (Water Authority to determine type of device by usage survey)
Industrial	Double Check Valve Assembly or Reduced Pressure Zone Assembly (Water Authority to determine type of device by usage survey)
Fire Service	Dry or Water Only - Double Check Detector Assembly w/ chemical additives – Reduced Pressure Zone Detector Assembly
All Classes	Well or alternate source of water on property (either connected or not connected to public water supply) - Reduced Pressure Zone Assembly

## **Information on Thermal Expansion**

The addition of backflow prevention devices to residential or residential-type water systems may result in a “closed-loop” system creating abnormally high and potentially dangerous internal pressures. Installation of pressure relief valves or bladder type accumulators may be necessary to eliminate the hazard.

Thermal expansion takes place in water heaters when water is heated. As the water is heated, it expands and increases in volume. Traditionally, the increased volume of water flows back into the supply line and into the public water supply main. With the addition of backflow preventers, check valves and pressure reducing valves on the supply line, a closed loop is formed and the water cannot flow back into the supply line. The volume of water then increases and the resultant pressure increases beyond what the hot water system is designed to handle. The increase in pressure causes the emergency relief valve on the water tank to open and discharge water creating a nuisance and resulting in inefficient operation. Excessive pressure may also rupture pipe fittings and lead to water heater explosion. To eliminate this potential hazard, the owner must install pressure relief valves or accumulators in the plumbing system to relieve pressure.