



CROSS CONNECTION CONTROL PROGRAM

I. PURPOSE

Cross- connections between public water supplies and non-potable sources of contamination represent one of the most significant threats to health in the water supply industry. This program is therefore designed to maintain the safety of the water in the supplier's system by preventing the introduction of any foreign liquids, gases, or other substances to the public water system other than water from the intended source.

II. AUTHORITY

This program derives its enforceability from Title 22, MRSA, SS 42(1), 42(3), 2612(2) & 2612(5)

Maine Department of Health and Human Services, Division of Environmental Health, Cross Connection

Rules 10-144 In addition, authority rises from the Rules and Regulations as published

by the Bath Water District and as approved by the Public Utilities Commission of the State of Maine and from provisions of the Occupational Safety and Health Act, and from provisions of the State Plumbing Code, part I, 10-144A CMR 238

III. DEFINITIONS

A. Auxiliary Water Supply

Any water supply on or available to the premises other than the Supplier's approved public water supply. These auxiliary waters may include but are not limited to water from another purveyor's public water supply or any natural source such as a well, spring, river, or stream; used waters; or industrial fluids. These waters may be contaminated or polluted, or they may be objectionable and constitute an unacceptable water source over which the Supplier does not have sanitary control.

B. Backflow

The flow of water or other foreign liquids, gases or other substances into the distribution system of a public water supply from any source other than the intended.

C. Backflow Preventer

An assembly or means designed to prevent backflow.

1. Double Check Valve Assembly

The approved double check valve assembly consists of two internally loaded check valves, either spring loaded or internally weighted, installed as a unit between two tightly closing resilient-seated shutoff valves with properly located resilient-seated test cocks. This assembly shall only be used to protect against a non-health hazard (that is, a pollutant).

2. Reduced Pressure Principle Backflow Preventer

The approved reduced-pressure principle backflow preventer consists of two independently acting approved check valves together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves and below the first check valve. These units are located between two tightly closing resilient-seated shutoff valves as an assembly and equipped with properly located resilient-seated test cocks.

D. Backpressure

A condition in which the Owner's system pressure is greater than the Supplier's system pressure

E. Backsiphonage

Backflow caused by negative or reduced pressure in the supply piping.

F. Contamination

An impairment of a potable water supply by the introduction or admission of any foreign substance that degrades water quality and creates a health hazard.

G. Cross-Connection

A connection or potential connection between any part of a potable water system and any other environment containing other substances in a manner that, under any circumstances, would allow such substances to enter the potable water system. Other substances may include, but are not limited to, gases, liquids, or solids, such as chemicals, waste products, steam, water from other sources (potable and non-potable), or any matter that may change the color or add odor to the water.

H. Cross Connections- Controlled

A connection between the potable water system and a non-potable water system with an approved backflow preventer properly installed and maintained so that it will continuously afford the protection commensurate with the degree of hazard.

I. Cross-Connection Control by Containment

The installation of an approved backflow preventer at the water service connection to an owner's premises where there are actual or potential cross connections that cannot be effectively eliminated or controlled within the Owner's water system.

J. Department

State of Maine Department of Human Services

K. Hazard, Degree of

This term is derived from an evaluation of the potential risk to public health and the adverse effect of the hazard upon the potable water system.

1. Class I – Low Degree of Hazard

If backflow were to occur, the resulting health significance would be limited to minor changes in the aesthetic quality such as taste, odor, or color. The foreign substance must be non-toxic and non-bacterial in nature and have no significant health threat.

2. Class II – Moderate Degree of Hazard

If backflow were to occur, the resulting effect on the water supply would be significant changes in aesthetic qualities. The foreign substance must be non-toxic to humans and non-bacterial in nature.

3. Class III – High Degree in Hazard

If backflow were to occur, the resulting effect on the water supply could cause illness or death if consumed by humans. The foreign substance may be toxic to humans chemically, bacterially, or radiologically. Toxicity may result from either short or long term exposure.

L. Owner

Any person who has legal title to or license to operate or dwell in, a property which has a service connection to the Supplier's water system.

M. Permit

A document issued by the Department with the approval of the Supplier that allows the use of a backflow preventer.

N. Person

Any individual, partnership, company, public or private corporation, political subdivision or agency of the State, department, agency, instrumentality of the United States or any other legal entity.

O. Pollution

The presence of any foreign substance in water that tends to degrade its quality so as to constitute a non-health hazard or impair the usefulness of the water.

P. Supplier

The Bath Water District

Q. Service Connection

The terminal end of a service connection from the potable public water supply system where the Supplier loses jurisdiction and sanitary control over the water at its point of delivery to the Owner's water system. If a meter is installed at the end of the service connection, then the service connection shall mean the downstream end of the meter. There shall be no unprotected takeoffs from the service line upstream of any meter or backflow preventer located at the point of delivery to the Owner's water system. Service connection shall also include water service connection from a fire hydrant and all other temporary or emergency water service connections from the public water system.

R. Water – Potable

Water that is safe for human consumption as described by the Department.

S. Water – Non-Potable

Water that is not safe for human consumption or that is of questionable quality.

T. Water – Used

Any water supplied from a public potable water system to an Owner's water system after it has passed through the water service connection and is no longer under the sanitary control of the Supplier.

U. Water System

1. The water system shall be considered as made up of two parts: the Supplier's system and the Owner's system.
2. The Supplier's system consists of the source facilities and the distribution system, and includes all those facilities of the water system under the complete control of the Supplier, up to the service connection. The source includes all components of the facilities used in the production, treatment, and delivery of water to the distribution system. The distribution system includes the network of conduits used for the delivery of water from the source to the service connection.
3. The Owner's system includes those parts of the facilities beyond the service connection that are used to convey supplier-delivered water to points of use.

IV. ADMINISTRATION

A. An employee of the District, having properly identified himself, shall have free access during the District's normal business hours, to all premises supplied with water to permit inspection of the plumbing system for possible cross connections. The Owner shall follow the provisions of these rules and the Department's Cross Connection Rules; if a cross connection is found to exist.

B. Both the District and the Owner shall attempt to eliminate all cross connections.

V. RESPONSIBILITIES

A. Supplier's Responsibilities

1. The Supplier shall insure that all new service connections are installed in compliance with the Supplier's Cross-Connection Control Program. All new services shall be protected from backflow by cross connection control by containment with an approved backflow preventer installed at the service connection immediately downstream of the water meter.
2. The Supplier shall conduct inspections of all existing non-residential service connections.
 - a. The Supplier shall not allow any cross-connection to remain unless it is protected by an approved backflow preventer that is regularly tested and operates satisfactorily.
 - b. The Supplier's inspections shall be made during normal working hours unless otherwise arranged with the Owner.
 - c. The Supplier shall, after initial inspection of plans or premises, inform the Owner by letter of any cross-connection control measures deemed necessary, and the time allowed before implementation is required. (Note: Normally, a maximum time of 30 days will be allowed.)
 - d. The Supplier shall re-inspect the premises upon notification that a backflow preventer has been installed or upon installation of the water meter before water service is activated.. The Supplier shall inform the Owner by letter of any failure to comply following the first re-inspection. The Supplier will allow sufficient additional time for the correction. (Note: Normally, a maximum time of 10 days will be allowed.)
 - e. If there is a failure to comply by the time of any subsequent re-inspection, the Supplier shall inform the Owner by letter that water service to the Owner's premises will be terminated or not activated in the case of new services.. The termination procedure shall be as specified in the Supplier's rules and regulations and in accordance with Maine Public Utilities Commission rules.
3. If the Supplier determines at any time that a threat to the public health exists, service shall be terminated immediately.
4. Re-establishment of service before the installation of a backflow preventer may be allowed by the Supplier after an agreement has been made between the Supplier, the Department, and the Owner indicating the intention of the Owner to comply with the provisions of the agreement.
6. The Supplier should advise owners of their responsibility to insure that cross-connections in the Owner's water system are eliminated or properly protected. The Supplier should also advise the Owner of possible problems that may be encountered as a result of the installation of a backflow preventer in existing plumbing systems due to thermal expansion.
7. The Supplier will notify the Owner in writing when the annual testing of their backflow preventer is due.
8. The Supplier will keep testing records in a database in digital form and paper copies for at least two years.

B. Owner's Responsibilities

1. The Owner, after being informed by a letter from the Supplier, shall at his expense, install, maintain, and test or have tested any backflow preventer on his service connection. Testable devices must be tested by certified backflow tester.
2. The Owner or his agent shall submit copies of all test reports to the Supplier upon completion of said tests. The Owner or his agent shall immediately notify the Supplier of any backflow preventer test that fails.
3. The Owner shall correct any malfunction of the backflow preventer that is revealed by periodic testing. This shall include the replacement of parts or the replacement of the backflow preventer if deemed necessary by the Supplier. The Owner shall re-test the repaired device and submit copies of repair and test records to the Supplier within ten calendar days.
4. The Owner shall inform the Supplier of any new, proposed, or modified cross-connection and also any existing cross-connection that the Owner is aware of but has not been found by the Supplier.
5. The Owner shall not install a bypass around any backflow preventer unless there is a backflow preventer on the bypass. Owners who cannot shut down operation for testing must supply the additional devices necessary to allow testing to take place.
6. The Owner shall only install backflow preventers listed or approved by the Supplier and the Department.
7. The Owner shall maintain the backflow preventer in a manner approved by the Supplier.
8. Pit installations are strongly discouraged and must have Department approval before a water service will be issued.
9. it is the responsibility of the Owner to inform the District of any changes to the degree of hazard in the Owner's facility

VI. DEGREE OF HAZARD

The District recognizes the difference in the threat to its distribution system arising from different types of cross connection. These hazards can be classified as follows:

A. Class I - Low Degree of Hazard

If backflow were to occur, the resulting health significance would be limited to minor changes in the esthetic quality such as taste, odor or color. The foreign substance must be non-toxic and non-bacterial in nature and have no significant health effect.

B. Class II - Moderate Degree of Hazard

If backflow were to occur, the resulting effect on the water supply would be significant changes in esthetic quality such as taste, odor or color. The foreign substance must be non-toxic to humans and non-bacterial in nature and have no significant health effect.

C. Class III - High Degree of Hazard

If backflow were to occur, the resulting effect on the water supply could cause illness or death if consumed by humans. The foreign substance may be toxic to humans either chemically, bacteriological or radiologically. Toxicity may result from either short or longterm exposure.

D. The following are considered Class III hazards and must be protected by containment with an RPZ device:

- a. Waste water installations.
- b. Industries where a health hazard exists.
- c. Hospitals, nursing homes, clinics.
- d. Vessel watering points or fixtures.
- e. Tank trucks, street sweepers, and other similar units which receive water at the District's shop or any of its hydrants.
- f. Mortuaries or funeral homes where embalming is performed.
- g. Lawn irrigation systems where chemicals are added.
- h. Swimming Pools.
- i. Car wash facilities.
- j. Farms where water is used for other than domestic purposes.
- k. Commercial photo developing establishments.
- l. Automotive repair garage.
- m. Laboratories.
- n. Commercial florists.

- o. Health spas.
- p. Any commercial structure in which the specific business activity cannot be ascertained or which contains rental units.

E. Class III hazards which must be protected by fixture isolation include:

- a. Cooling towers
- b. Chemically treated boilers.
- c. X-ray developers/processors.

F. Fire Sprinkler system using antifreeze or fire suppressing chemicals will be considered high hazard and require an RPZ.

VII. EXEMPTIONS

- A. Any cross-connection protected against backflow, at the time this program goes into effect, may continue with that same protection unless:
 - 1. The existing protection is grossly inadequate.
 - 2. The Department notifies the Supplier in writing that a change must be made.
- B. The exemption will expire when the backflow preventer must be replaced and the replacement backflow preventer must be the one required by the degree of hazard present.
- C. Any backflow preventer that fails a test will be immediately repaired. The Supplier shall require that repair parts be ordered within 24 hours and that shipment is the fastest means possible. Any delay of more than seven days shall require discontinuance of service or other means to insure protection of the public water system.
- D. Certain Class III degree of hazard situations, as determined by the Supplier, will not be allowed to continue unprotected if the backflow preventer fails the test and cannot be immediately repaired. The Owner is responsible for the provision of spare parts.

VIII. RESIDENTIAL BACKFLOW PREVENTERS

The Bath Water District requires all new residential services to be protected by at least an approved non testable backflow prevention device, supplied by the home owner. Also anytime a residential service is disconnected and the meter removed, service will not be reactivated at any residential service until it is protected by an approved backflow prevention device. The District also reserves the right to require a testable device be installed on a residential service if a higher degree of hazard is discovered.