

**CROSS-CONNECTION CONTROL REGULATIONS
COGSWELL SPRING WATER WORKS
HENNIKER, NEW HAMPSHIRE 03242**

Approved
Date: 1-23-90

1.	PURPOSE	3
2.	AUTHORITY	3
3.	RESPONSIBILITY	3
4.	DEFINITIONS	3
5.	ADMINISTRATION	5
6.	REQUIREMENTS	6
A.	Department:	6
B.	Owner	6
7.	DEGREE OF HAZARD	8
8.	PERMITS	8
9.	EXISTING IN-USE BACKFLOW PREVENTION DEVICES	8
10.	PERIODIC TESTING	8
11.	RECORDS AND REPORTS	8
12.	FEES AND CHARGES	9
	ADDENDUM	9
1.	Residential Dual Check	9
2.	Strainers	9
3.	Certified Testers Responsibilities	9

Cross Connection Control Program

1. Purpose

- a. To protect the public potable water supply served by the Cogswell Springs Water Works, Henniker, New Hampshire, from the possibility of contamination or pollutants which could backflow or backsiphon into the public water system.
- b. To promote the elimination or control of existing cross-connection, actual or potential, between its customers in-plant potable water system, and non-potable water systems by cross-connection.
- c. To provide for the maintenance of the continuing program of cross-connection control which will effectively prevent the contamination or pollution of all potable water systems by cross-connection.

2. Authority

- a. Under the provisions of the Federal Safe Drinking Water Act of 1974, and the State of New Hampshire, Water Supply and Pollution Control Commission Cross-connection Regulations, the water purveyor has the primary responsibility for preventing water from unapproved sources or any other substances, from entering the public potable water system.
- b. Cogswell Spring Water Works, Henniker, NH Rules and Regulations.

3. Responsibility

The Water Superintendent, of Cogswell Spring Water Works, Henniker, NH shall be responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow or backsiphonage of contamination or pollutants through the water service connection. If in the judgment of the Water Superintendent, an approved backflow device is required at the town's water service connection to any customer's premises, the Superintendent, or his delegated agent, shall give notice in writing to said customer to install an approved backflow prevention device at each service connection to his premises.

The customer shall, within 90 days install such approved device, or devices, at his own expense. Failure or refusal, or inability on the part of the customer to install said devices within ninety (90) days, shall constitute a ground for discontinuing water service to the premises until such a device or devices have been properly installed.

4. Definitions

- a. Approved: Accepted by the Superintendent as meeting an applicable specification stated or cited in this regulation, or as suitable for the proposed use.
- b. Auxiliary Water Supply: Any water supply, on or available, to the premises other than the purveyor's approved public potable water supply.
- c. Backflow: The flow of water or other liquids, mixtures or substances, into the distribution pipes of a potable water supply system from any source other than its intended source.

- d. **Backflow Preventer:** A device or means designed to prevent backflow or back siphonage. Most commonly categorized as an air gap, reduced pressure principle device, double check valve assembly, pressure vacuum breaker, hose bibb vacuum breaker, residential dual check, double check with intermediate atmospheric vent, and barometric loop.
- i. **Air Gap:** A physical separation sufficient to prevent backflow between the free-flowing discharge end of the potable water system and any other system. Physically defined as a distance equal to twice the diameter of the supply side pipe diameter but never less than one (1) inch.
 - ii. **Atmospheric Vacuum Breaker:** A device which prevents backsiphonage by creating an atmospheric vent, when there is either a negative pressure or sub atmospheric pressure in a water system.
 - iii. **Barometric Loop:** a fabricated piping arrangement rising at least thirty-five (35) feet in the air, having a “U” bend at the top and returning to the initial elevation. It is utilized in water supply systems to protect only against back siphonage.
 - iv. **Double Check Valve Assembly:** An assembly of two (2) independently operating spring loaded check valves with tightly closing shut off valves on each side of the check valves, plus properly located test cocks for the testing of each check valve.
 - v. **Double Check Valve with Intermediate Atmospheric Vent:** A device having two (2) spring loaded check valves separated by an atmospheric vent chamber.
 - vi. **Hose Bibb Vacuum Breaker:** A device that is permanently attached to a hose bibb and which acts as an atmospheric vacuum breaker.
 - vii. **Pressure Vacuum Breaker:** A device containing one or two independently operated spring-loaded check valves and an independently operated spring-loaded air inlet valve located on the discharge side of the check or checks. Device includes tightly closing shut-off valves on each side of the check valves and properly located test cocks for the testing of the check valve(s).
 - viii. **Reduced Pressure Principal Backflow Preventer:** An assembly consisting of two (2) independently operating approved check valves with an automatically operating differential relief valve located between the two (2) check valves, tightly closing shut-off valves on each side of the check valves, plus properly located test cocks for the testing of the check valves and the relief valve.
 - ix. **Residential Dual Check:** An assembly of two (2) spring loaded, independently operating check valves without tightly closing shut-off valves and test cocks. Generally employed immediately downstream of the water meter to act as a residential containment device.
- e. **Backpressure:** a condition in which the owner’s system pressure is greater than the supplier’s system pressure.
- f. **Backsiphonage:** The flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water supply system from any source other than its intended source caused by the sudden reduction of pressure in the potable water supply system.
- g. **Commission:** The State of New Hampshire, Water Supply and Pollution Control Commission.

- h. Containment: a method of backflow prevention that requires a backflow prevention device at the water service entrance.
- i. Contaminant: A substance that will impair the quality of the water to a degree that it creates a serious health hazard to the public.
- j. Cross-connection: Any actual or potential connection between the public water supply and a source of contamination or pollution.
- k. Department: Cogswell Spring Water Works, of the town of Henniker, New Hampshire.
- l. Fixture isolation: A method of backflow prevention in which a backflow preventer is located to correct a cross-connection at an in-plant location rather than at a water service entrance. The backflow preventer is usually installed at, or near, this free flowing outlet.
- m. Owner: any person who has legal title to, or license to operate or inhabit, a property upon which a cross-connection inspection is to be made or upon which a cross-connection is present.
- n. Person: Any individual, partnership, company, public or private corporation, political subdivision or agency of the State Department, agency or instrumentality of the United States or any other legal entity.
- o. Permit: A document issued by the Department which allows the use of a backflow preventer.
- p. Pollutant: A foreign substance, that if permitted to get into the public water system, will degrade its quality so as to constitute a moderate hazard, or impair the usefulness or quality of the water to a degree which does not create an actual hazard to the public health but which does adversely and unreasonably effect such water for domestic use.
- q. Water Service Entrance: That point in the owner's water system beyond the sanitary control of the District, generally considered to be the outlet end of the water meter and always before any unprotected branch.
- r. Water Superintendent: The Superintendent, or his delegated representative in charge of the Cogswell Spring Water Works, is invested with the authority and responsibility for the implementation of a cross-connection program and for the enforcement of the provisions of the Ordinance.
- s. Certified Backflow Device Tester: An individual who holds a current backflow device tester certification certificate, and/or proof of successful completion of a backflow device tester certification course acceptable to the Department.

5. Administration

- a. The Department will operate a cross-connection control program, to include the keeping of necessary records, which fulfills the requirements of the Commission's Cross-Connection Regulation and is approved by the Commission.
- b. The Owner shall allow his property to be inspected for possible cross-connections and shall follow the provisions of the Department's program and the cross-connection regulations of the New Hampshire Water Supply and Pollution Control Commission.
- c. If the Department requires that the public supply be protected by containment, the Owner shall be responsible for water quality beyond the outlet end of the containment device and should utilize public health officials, or personnel from the Department, or their delegated representatives, to assist him in the survey of his facilities and to assist him in the selection of proper fixture outlet devices, and the proper installation of these devices.

6. Requirements

a. Department:

- i. On new installation, the Department will provide on-site evaluation and/or inspection of plans in order to determine the type of backflow preventer, if any, that will be required. The Department will also issue a permit, and perform inspections and testing.
- ii. For premises existing prior to the start of this program, the Department will perform evaluation and inspections of plans and/or premises and inform the owner by letter of any corrective action deemed necessary, the method of achieving the correction, and the time allowed for the correction to be made. Ordinarily, ninety (90) days will be allowed; however, this time period may be shortened depending upon the degree of hazard involved and the history of the device(s) in question.
- iii. The Department will not allow any cross-connection to remain unless it is protected by an approved backflow preventer for which a permit has been issued and which will be regularly tested to insure satisfactory operation.
- iv. The Department shall inform the Owner by letter, of any failure to comply, by the time of the first re-inspection. The Department will allow an additional fifteen days for the correction in the event that the Owner fails to comply with the necessary correction by the time of the second re-inspection. In the event of non-compliance, the Department will inform the Owner by letter, that the water service to the Owner's premises will be terminated within a period not to exceed five (5) days. In the event that the Owner informs the Department of extenuating circumstances as to why the correction has not been made, a time extension may be granted by the Department but in no case will it exceed an additional thirty (30) days.
- v. If the Department determines at any time that a serious threat to the public health exists, the water service shall be terminated immediately.
- vi. The Department shall have on its staff, or shall have a delegated representative, who is a certified backflow device tester in the State Of New Hampshire.
- vii. The Department will initiate premise inspections to determine the nature of existing or potential hazards, following the approval of this program by the commission, during the calendar year 1991. Initial focus will be on high hazard industries and commercial premises.

b. Owner

- i. The Owner shall be responsible for the elimination or protection of all cross-connection on his premises.
- ii. The Owner, after having been informed by a letter from the Department, shall at his expense, install, maintain, and test, or have tested, any and all backflow preventers on his premises.
- iii. The Owner shall correct any malfunction of the backflow preventer which is revealed by periodic testing.
- iv. The owner shall maintain a repair kit and any special tool required for service of his backflow preventer.
- v. The Owner shall inform the Department of any proposed or modified cross-connections and also any existing cross-connections of which the Owner is aware but has not been found by the Department.
- vi. The Owner shall not install a by-pass around any backflow device unless there is a backflow device of the same type on the by-pass. Owners who cannot shut down operation for testing of the device(s) must supply additional devices necessary to allow testing to take place. (Ref. Fig. 1)
- vii. The Owner shall install backflow preventers in a manner approved by the Department. (Ref. Figures 2 through 7)
- viii. The Owner shall install only backflow preventers approved by the Department or the Commission.
- ix. Any Owner, having a private well or other private water source, must have a permit if the well or source is cross-connected to the Department's system. Permission to cross-connect may be denied by the Department. The Owner may be required to install a backflow preventer at the service entrance if a private water source is maintained, even if it is not cross-connected to the Department's system.
- x. In the event the Owner installs plumbing to provide potable water for domestic purposes, which is on the Department's side of the backflow preventer, such plumbing must have its own backflow preventer installed.
- xi. The Owner shall be responsible for the payment of all fees for permits, annual or semi-annual device testing, re-testing in the case that the device fails to operate correctly, and second inspection for non-compliance with Department requirements.
- xii. Failure to comply with items 1 through 11 above may result in punitive damage to the Owner.

7. Degree of Hazard

The Department recognizes the threat to the public water system arising from cross-connections. All threats will be classified as to hazard and will require the installation of approved backflow prevention devices.

8. Permits

The Departments shall not permit a cross-connection within the public water supply system unless it is considered necessary and that it cannot be eliminated. Cross-connection permits that are required for each backflow device are obtained from the Department. Water Commissioners shall establish fees for initial and renewal permits.

9. Existing In-use Backflow Prevention Devices

Any existing backflow preventer shall be allowed to continue in service unless the degree of hazard is such as to supersede the effectiveness of the present backflow preventer, or result in an unreasonable risk to the public health. Where the degree of hazard has increased, as in the case of a residential installation converting to a business establishment, any existing backflow preventer must be upgraded to an approved backflow prevention device consistent with the degree of hazard.

10. Periodic Testing

- a. Reduced pressure principal backflow devices shall be tested and inspected at least semi-annually by a certified backflow tester.
- b. Periodic testing shall be performed by a certified backflow tester, or the Department's certified backflow tester, or his delegated representative.
- c. Testing performed by the Department, shall be scheduled by the Department Superintendent.
- d. Any backflow preventer that fails during a periodic test will be repaired or replaced. When repairs are necessary, upon completion of the repair the device will be re-tested at the Owner's expense to insure correct operation. High hazard situations will not be allowed to continue unprotected if the backflow device fails the test and cannot be repaired immediately. In other situations, a compliance date of not more than thirty (30) days after the test date will be established. The Owner is responsible for spare parts, repair tools, or a replacement device. Parallel installation of two (2) devices is an effective means of the Owner insuring uninterrupted water service during testing or repair of devices and is strongly recommended when the owner desires such continuity. (Ref. Figure 1)
- e. Backflow prevention devices will be tested more frequently than specified in A. above, in cases where there is a history of test failures and the Department feels that it is warranted. Cost of the additional tests will be borne by the Owner.
- f. Each testable backflow preventer may be inspected by the Department at five-year intervals.

11. Records and Reports

- a. Records: The Department will initiate and maintain the following:

- i. Master files on customer cross-connection tests and or inspections.
 - ii. Master files on cross-connection permits.
 - iii. Copies of permits and permit applications.
 - iv. Copies of lists and summaries supplied to the Commission.
- b. Reports: The Department will submit the following to the Commission:
 - i. Copies of all tests performed on backflow devices.
 - ii. Annual summary of devices installed.

12. Fees and Charges

The Department will publish a list of fees or charges for the following services or permits:

- i. Testing fees
- ii. Re-testing fees
- iii. Fee for re-inspection
- iv. Charges for after-hours inspections or tests.
- v. Miscellaneous charges as deemed necessary by the Department.

Addendum

1. Residential Dual Check

Effective the date of acceptance of this Cross-Connection Control Program for the Cogswell Spring Water Works, Henniker, New Hampshire, all residential buildings will be required to install a residential dual check device immediately downstream of the water meter. (Ref. Figures 6 and 7)

This device will be provided by the Water Department at a scheduled cost to the homeowner. Installation of this residential dual check device on a retrofit basis on existing service lines will be instituted at a time and at a potential cost to the homeowner as deemed necessary by the Department.

The Owner must be aware that installation of a residential dual check valve results in a potential closed plumbing within his residence. As such, provisions may have to be made by the owner to provide for thermal expansion within his closed loop system, i.e. the installation of thermal expansion devices and/ or pressure relief valves.

2. Strainers

The Department strongly recommends that all new and retrofit installations of reduced principle devices and double check valves backflow preventers on potable water systems include the installation of strainers located immediately upstream of the backflow device. The installation of strainers will preclude the fouling of backflow devices due to both foreseen and unforeseen circumstances occurring to the water supply system, such as water main repairs, water main breaks, fires, periodic cleaning and flushing of mains, etc. These occurrences may “stir up” debris and foul devices installed without the benefit of strainers. Under no circumstances should strainers be installed upstream of backflow devices utilized on fire lines.

3. Certified Testers Responsibilities

All backflow device testers, either working for, or hired by the Cogswell Spring Water Works, will have proof of tester certification from the New England Water Works Association, or equivalent certification satisfactory to the Department. They will also submit test reports on forms approved by the Department and will report any and all “problems” to the Department.