QUONSET DEVELOPMENT CORPORATION

QUONSET & LADD WATER SYSTEMS

CROSS CONNECTION CONTROL & BACKFLOW PREVENTION POLICY

I Purpose

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

II Authority

This policy derives its authority from the Rhode Island Department of Health (RIDOH), Rules and Regulations Pertaining to Public Drinking Water Section 9.4; RIGL entitled Public Drinking Water Supply, Chapter 46-13-22 Cross Connection Control; and the United States Environmental Protection Agency publication titled *"Cross Connection Control Manual"*

III. Definitions

A. Backflow shall mean:
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.

B. Backflow Preventer shall mean:
A device to prevent backflow into the distribution system of a public water supply such as;

1. Air Gap
   A physical separation sufficient to prevent backflow between the free-flowing discharge end of the potable water system and any other system.

2. Atmospheric Vacuum Breaker
   A device which prevents back-siphonage by creating an atmospheric vent where there is either a negative pressure or sub-atmospheric pressure in a water system.

3. Reduced Pressure Principle Backflow Preventer (RPZ)
   An assembly of check valves and a reduced pressure zone which spills water to the atmosphere in event of the failure of the check valves. It has valves and fittings which allow the device to be tested.

4. Double Check Valve Assembly (DCVA)
   A device having two, weight or spring loaded, bronze faced with soft rubber disc check valves, with shutoff valves and test cocks for periodic testing.

5. Hose Bibb Vacuum Breaker
   A device which is permanently attached to a hose bibb and which acts as a atmospheric vacuum breaker.

6. Pressure Vacuum Breaker
   A device containing a spring loaded check valve and a spring loaded atmospheric vent which opens when pressure approaches atmospheric. It contains valves and fittings which allow the device to be tested.

C. Back-siphonage shall mean:
Backflow resulting from negative or less than atmospheric pressure in the water system.

D. Back-pressure shall mean:
A condition in which the building system pressure is greater than the supplier's system pressure.

E. Containment shall mean:
A method of backflow prevention which requires a backflow preventer at the water service entrance.

F. Cross-Connection shall mean:
Any physical connection or arrangement between two otherwise separate piping systems, one of which contains potable water and any other water or other substances of unknown or questionable safety, whereby water or other substances may flow from one system to the other, the direction of flow depending on the pressure differential between the two systems.

G. Customer / Owner shall mean:
Any person who has legal title to, or license to, or license to operate or habitate in, a property with a public water service connection.

H. Department / Corporation shall mean:
Quonset Water Department or Quonset Development Corporation

I. Fixture Isolation shall mean:
A method of backflow prevention in which a backflow preventer is located to correct a possible cross-connection at an in-plant unit after a water service entrance.

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

K. Supplier shall mean:
Any person who controls, owns, or generally manages a system of pipes, structures and facilities through which potable water is delivered for human consumption.

L. Water Service Entrance shall mean:
That point in the owner's water system beyond the sanitary control of the supplier. This will ordinarily be the outlet end of the meter and will always be before any unprotected tee or branch.

IV. Administration / Responsibilities

A. The Supplier requires that the public supply be protected from possible containment. The Supplier will not allow any potential cross-connection to exist unless it is protected by an approved backflow preventer, which is regularly tested and certified to have passed the leakage test.

B. The Owner shall attempt to eliminate all cross-connections.

C. The Owner shall allow his property to be inspected by the Supplier, or the Suppliers Representative, for possible cross connections and shall follow the provisions of the suppliers programs or the Department's cross-connection policy when a cross-connection is identified.

D. 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 premises.

E. The Supplier will, after the initial review of plans or survey of premises, inform the owner by letter of any correction deemed necessary, the method of making the correction, and the time allowed before correction is required.

F. The Owner shall inform the Supplier of any new proposed or modified cross-connection and also any existing cross-connection which the Owner is aware of but has not been found by the Supplier.

G. If the Supplier determines at any time that a serious treat to the public health exists, service shall be terminated immediately.

H. The Supplier will inform the Owner by letter of any failure to comply by the time of the first re-inspection. The Supplier may allow up to 30 calendar days for submittal of a corrective action plan to the Supplier.

I. If there is failure to comply by the time of the second re-inspection, the Supplier shall inform the Owner by letter that the water service to the Owner's premises will be terminated.

J. Re-establishment of service before the installation of a backflow preventer may be allowed by the Supplier after a reasonable agreement has been made between the Department and the Owner indicating the intention of the Owner to comply with the provisions of the agreement.

K. The Owner shall be responsible for water quality beyond the water service entrance and the outlet end of the containment device.

L. The Owner will make sure that the new water services, and all new construction, complies with the Cross-Connection Program.

M. The Supplier will encourage Owners to install backflow preventers on hose bibs and shall warn them of possible hazards of devices such as siphon type pesticide or fertilizer sprayers, water operated sump pumps. Etc.

N. The Owner shall correct any malfunction of the backflow preventer which is revealed by an annual testing program. This shall include the replacement of parts or the replacement of the backflow preventer if deemed necessary by the licensed tester.

O. There shall not be any cross connect between any Owners private well, alternate source of water supply, and the suppliers water supply system unless there is an air gap between the two systems.

P. The Owner shall not install a by-pass around any backflow preventer unless there is a backflow preventer on the by-pass. Owners who cannot shut down operation for testing must supply the additional services necessary to allow testing to take place.

Q. The Owner shall only install backflow preventers approved by the Supplier and the Department.

R. The Owner shall install the backflow preventer in a manner approved by the Supplier. Pit installations are strongly discouraged and must have Department approval before a permit will be issued.

S. If the Owner shall not install tees or plumbing fixtures for any purpose the water meter and backflow preventer.

V. Degree of Hazard Classification

The Supplier recognizes the difference in the threat to the public water system arising from different types of connection. These 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 not significant health effect.

B. Class II – Moderate Degree of Hazard
If backflow were to occur, the resulting effect on water supply would be significant changes in esthetic qualities. The foreign substance must be non-toxic to humans and non bacterial in nature.

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, bacteriologically or radiologically. Toxicity may result form either short or long term exposure.

1. Class III hazards can be protected against by containment or fixture isolation.

Examples of service connections which shall be controlled by containment are:

a. Wastewater installations

i treatment plants
ii pump stations including storm water pump stations
iii industrial waste treatment plants

b. Industries where a health hazards exits.
c. Hospitals, nursing homes, clinics, etc.
d. Vessel water points or fixtures.
e. Tank trucks, street sweepers, and other similar units which receive water at the Supplier's shop or any of its hydrants.
f. Commercial and Industrial buildings

Example of establishments which the Supplier will require to be controlled by containment and fixture isolation are:

a. Laboratories
b. Mortuaries of Funeral Homes
c. High pressure boilers
d. Chemically treated low pressure boilers
e. Lawn irrigation systems
f. Swimming Pools
g. Car Wash facilities
h. Farms where water is used for other than domestic purposes.
i. Commercial installations with very small industrial functions.

VI. 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 be expired at any time the backflow preventer must be replaced and the replacement backflow preventer must be that required by the degree of hazard involved.

VII. Acceptable Backflow Devices at all Water Service Entrance

A. Reduced Pressure Zone Valve (RPZ) watts 909 or equal after the domestic water meter entering a building.

B. Double Check Valve Assembly (DCVA) with test ports, after a wet type sprinkler system entry point into the building.

C. Double RPZ or Air Break System in all areas that are classified high hazard service areas.

VIII. Backflow Device Testing

It is recognized that any backflow preventer can fail and any method of protection can be subverted; thus, periodic testing and inspection is necessary.

A. Periodic testing of all backflow prevention devices shall be performed by a State of Rhode Island certified backflow tester at the Owners expense.

B. The time interval for testing a backflow preventer shall be annually and copies of the test reports shall be provided to the Supplier by the Owner no later then the 1st of October of each year.

C. Copies of acceptable test report forms can be obtained from the Supplier upon request.

D. Any backflow preventer which fails during a test will be immediately repaired by the fastest means possible. The Supplier shall be notified by the Owner within 24 hours of the failed test. The Owner shall have repair parts ordered within 24 hours and have replacement parts or a replacement backflow preventor installed immediately. Any extended delay (more than seven days) shall require discontinuance of service or other means to insure protection of the public water system.

E. Certain Class III degree of hazard situations will not be allowed to continue unprotected if the backflow preventer fails the test and cannot be immediately repaired. The Owner will be the person responsible for the provision of spare parts and should have a supply on hand.