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PART Env-Ws 364 BACKFLOW PREVENTION

Env-Ws 364.01 Purpose.

(a) The purpose of this part is to regulate, control, and prevent the contamination of public drinking water by the backflow of water or other liquids, gases, mixtures, or other substances into the water distribution system of a public water system from a source or sources other than the approved source(s) of water.

(b) This part is not intended to interfere with the progress of existing effective cross-connection control programs, but rather to strengthen them and encourage uniformity across the state.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97; ss by #8360, INTERIM, eff 6-4-05, EXPIRES: 12-1-05; ss by #8476, eff 11-30-05

Env-Ws 364.02 Applicability.

(a) A public water system shall have a cross-connection control program approved in accordance with Env-Ws 364.11 if:

(1) The water system serves 1,000 or more persons; or

(2) The water system serves an entity which poses a cross-connection hazard.

(b) Public water systems serving less than 1,000 people shall take appropriate action to prevent backflow occurrences and to eliminate cross-connections, however, an approved cross-connection control program shall not be necessary.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97; ss by #8360, INTERIM, eff 6-4-05, EXPIRES: 12-1-05; ss by #8476, eff 11-30-05

Env-Ws 364.03 Definitions. As used in this part, unless the content clearly indicates otherwise, the following words shall have the following meanings:

(a) "Air gap" means an unobstructed vertical distance equal to twice the diameter of the supply pipe or supply faucet or one inch, whichever is greater, through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, or other device and the flood level rim of the receptacle.

(b) "Approved backflow prevention device" means a backflow prevention device that has been:

(1) Manufactured to allow for accurate testing and inspection so as to allow verification of performance; and

(2) Tested and certified by the University of Southern California, Foundation for Cross-Connection Control and Hydraulic Research.

(c) "Approved source" means a source of water used by a public water system for distribution to the public for consumptive purposes which has been approved by the department for said use.

(d) "Backflow" means the flow of unwanted substances into the water distribution pipes of a potable supply of water.

(e) "Backflow prevention device" means a device that is designed to, and which in practice does, prohibit unwanted substances from flowing into the water distribution pipes of a potable supply of water.

(f) "Backflow prevention device with intermediate atmospheric vent" means a backflow prevention

device having 2 independently-operating check valves separated by an intermediate chamber, with a means for automatically venting the intermediate chamber to the atmosphere.

(g) "Back pressure" means pressure created by mechanical means or other means causing water or other liquids or substances to flow or move in a direction opposite to what is intended.

(h) "Back-siphonage" means a backflow resulting from negative or reduced pressure in the water distribution pipes of a potable water supply.

(i) "Barometric loop" means a loop of pipe rising at least 35 feet at its topmost point above the highest fixture it supplies and which provides protection from back-siphonage only.

(j) "Certified backflow prevention device inspector" means an individual who has proven his or her competency to inspect and test backflow prevention devices, by the possession of a valid backflow prevention device certification issued by the New England Water Works Association.

(k) "Check valve" means a self-closing device which is designed to permit the flow of fluids in one direction and to close if there is a reversal of flow.

(l) "Contaminant" means "contaminant" as defined in RSA 485:1-a, II, namely "any physical, chemical, biological or radiological substance or matter in the water".

(m) "Containment" means that method and philosophy of backflow prevention which requires a backflow prevention device to be installed at the water service entrance.

(n) "Cross-connection" means any actual or potential physical connection or arrangement between 2 otherwise separate systems, one of which contains potable water and the other which contains water of unknown or questionable safety or steam, chemicals, gases, or other contaminants, whereby there may be a flow of unwanted substances into the potable water supply system.

(o) "Customer or property owner" means any person who has legal title to or license to operate or inhabit a property at which a cross-connection inspection is to be made or at which a cross-connection is present.

(p) "Department" means the department of environmental services.

(q) "Double check valve" means a device incorporating 2 spring-loaded check valves within a single unit, having 2 shut-off valves and the necessary appurtenances for testing.

(r) "High degree of hazard" means that if a backflow were to occur, the resulting effect on the potable water supply could cause illness or death if the water thus contaminated were consumed by humans. The unwanted substance may be toxic to humans either from a chemical, bacteriological, or radiological standpoint. The effects of the contaminants can result from short or long-term exposure.

(s) "Low degree of hazard" means that if backflow were to occur, the resulting effect on the potable water supply would be a change in its aesthetic qualities only and the unwanted substance is non-toxic to humans.

(t) "Person" means "person" as defined in RSA 485:1-a, XIII, namely "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."

(u) "Potable water" means water from a source which has been approved by the department for human consumption.

(v) "Pressure vacuum breaker" means a device with an internally spring-loaded check valve and a spring-loaded air inlet valve, having 2 shut-off valves and the necessary appurtenances for testing, designed to operate under constant pressure but not back pressure.

(w) "Public water system" means public water system as defined in RSA 485:1-a, XV.

(x) "Reduced pressure backflow device" means a device incorporating 2 or more spring-loaded check valves and an automatically-operating relief valve located between the 2 check valves, with 2 shut-off valves and the necessary appurtenances for testing.

(y) "Residential dual check valve" means a device, designed for backpressure and back-siphonage protection for residential dwellings, which incorporates 2 spring-loaded check valves in a single unit without shut-off valves or testing appurtenances in accordance with American Society of Sanitary Engineers (ASSE) Standard 1024.

(z) "Supplier" means any person who controls, owns, or generally manages a public water supply system.

(aa) "Unwanted substances" means water or other liquids, gases, mixtures, or other substances from any source(s) other than the approved source(s) of water.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97; ss by #8360, INTERIM, eff 6-4-05, EXPIRES: 12-1-05; ss by #8476, eff 11-30-05

Env-Ws 364.04 Responsibilities of Department, Suppliers, Owners, and Inspectors.

(a) Relative to cross-connections, the department shall:

(1) Establish and enforce rules to regulate cross-connections;

(2) Review inspection reports prepared pursuant to Env-Ws 364.05;

(3) Review and approve the cross-connection control program of each public water system, in accordance with Env-Ws 364.11; and

(4) Provide for the certification of backflow prevention device inspectors.

(b) Each supplier shall be responsible for the safety of the public water system under its jurisdiction.

(c) Relative to cross-connections, the supplier shall:

(1) Not allow any cross-connection at any point within the water system unless approved pursuant to a permit specifically issued by the supplier for the cross-connection;

(2) Require any backflow prevention device installed in the system to be an approved backflow prevention device;

(3) When an application for a cross-connection permit is received, review the degree of hazard classification of the cross-connection, determine the proper backflow prevention device for the cross-connection, and designate that backflow prevention device on the cross-connection permit if it is issued;

(4) Require backflow prevention devices to:

a. Be installed where required;

b. Be tested for proper functioning upon completion of installation;

c. Be inspected and tested at least semi-annually in high degree of hazard situations and annually in low degree of hazard situations, or more frequently as required by the supplier; and

d. Meet applicable performance standards;

(5) Require a certified backflow prevention device inspector to perform all testing and inspection duties;

(6) Require the customer or property owner to repair, overhaul, or replace the backflow prevention device whenever it is found to be defective;

(7) Evaluate records of inspections, tests, repairs, and overhauling and retain the records for a period of at least 5 years;

(8) Establish a time for completion of necessary corrections or removal of actual or potential cross-connections, taking into consideration the degree of hazard involved and the time required to obtain and install the needed equipment;

(9) Ensure that necessary corrections are made by:

a. Requesting the owner of the cross-connection to voluntarily correct the deficiencies; and

b. Physically separating the public water supply from the on-site piping system in such a manner that the 2 systems cannot again be connected by an unauthorized person if proper protection has not been provided after a reasonable period of time following legal notification; and

(10) Deny water service to any premises where cross-connections exist until corrective action is taken, in accordance with the following:

a. Water service shall be discontinued for failure to test or maintain backflow prevention devices in a manner acceptable to the supplier; and

b. Water service shall be discontinued until corrections are made, if it is found that the backflow prevention device has been removed or by-passed or otherwise rendered ineffective.

(d) Relative to cross-connections, the supplier and the customer or property owner shall have joint responsibility to ensure that the backflow prevention devices installed at all cross-connections are tested and inspected as specified by these rules or more frequently if required by the supplier.

(e) Relative to cross-connections, the customer or property owner shall:

(1) Eliminate and disconnect any cross-connections that are maintained between the private system and the supplier's system, unless deemed necessary by the supplier and protected by an approved backflow prevention device suitable for the degree of hazard associated with the cross-connection;

(2) Properly install, operate, and maintain any backflow prevention device;

(3) Comply with all provisions of any cross-connection permit and the supplier's cross-connection program;

(4) Apply for renewal of the cross-connection permit when required by the supplier;

(5) Protect the owner's water distribution or plumbing system by the installation of approved backflow prevention devices where appropriate and necessary;

(6) Have inspections and tests performed during regular business hours; and

(7) Maintain a spare parts kit and any special tools required for the removal of and re-assembly of the backflow prevention device.

(f) Relative to cross-connections, the certified backflow prevention device inspector shall:

(1) Make competent inspections and reports of the inspection and testing of backflow prevention devices on forms approved by the supplier having jurisdiction;

(2) Competently use all of the equipment necessary to properly test and inspect backflow prevention devices; and

(3) Perform the work and be responsible for the competency and the accuracy of all tests and reports.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97; ss by #8360, INTERIM, eff 6-4-05, EXPIRES: 12-1-05; ss by #8476, eff 11-30-05

Env-Ws 364.05 Required Reports.

(a) All suppliers identified in Env-Ws 364.02(a) shall submit an annual inspection and testing report to the department in accordance with this section.

(b) The annual inspection and testing report shall be submitted to the department no later than April 1st of the year following the inspection year in the format outlined in Env-Ws 364.10.

(c) The annual inspection and testing report shall provide the following information for each backflow prevention device:

(1) The permit number of the backflow prevention device;

(2) The name of the owner of the backflow prevention device;

(3) The location of the backflow prevention device;

(4) The date of each inspection and test performed during the year of reporting;

(5) The name, certifying organization, and certification number of the certified backflow prevention device inspector who performed the inspection and test on the device;

(6) The result of each inspection and test; and

(7) If the inspection or test result is unsatisfactory, the date at which the backflow prevention device was found to be satisfactory following a subsequent inspection and test in that calendar year period.

Source. (See Revision Note at chapter heading Env-Ws 300) #6521, eff 6-4-97; ss by #8360, INTERIM, eff 6-4-05, EXPIRES: 12-1-05; ss by #8476, eff 11-30-05

Env-Ws 364.06 Cross-Connection Permits.

(a) The supplier shall not allow cross-connections within the public water system unless deemed necessary due to:

(1) Inadequate fire protection capability of the public system; or

(2) High process water needs.

(b) The owner of any premises where a cross-connection exists shall apply for a cross-connection permit on the forms provided by the supplier.

(c) All permits shall be:

(1) Issued by the supplier for a term not to exceed 5 years; and -

(2) Subject to revocation by the supplier.

(d) Each permit shall identify:

(1) The owner's name, mailing address, and daytime telephone number;

(2) The location of the backflow prevention device;

(3) The name of the manufacturer of the backflow prevention device;

(4) The size and model number of the backflow prevention device;

(5) A description of contaminants that could be introduced through the cross-connection;

(6) The frequency of inspections and testing of the backflow prevention device; and

(7) The permit number.

(e) The holder of a cross-connection permit shall apply for the permit to be renewed every 5 years or:

(1) Whenever a change has occurred in the existing degree of hazard classification; or

(2) A change has been made in the type of backflow prevention device installed.

(f) Cross-connection permits shall be non-transferable.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97; ss by #8360, INTERIM, eff 6-4-05, EXPIRES: 12-1-05; ss by #8476, eff 11-30-05

Env-Ws 364.07 Replacement of Backflow Prevention Devices.

(a) Any existing backflow prevention device shall be allowed to continue in service unless:

(1) The supplier considers the condition of any portion of the backflow prevention device to be such that replacement should be made; or

(2) The degree of hazard classification has changed so as to supersede the effectiveness of the present backflow prevention device currently in use.

(b) Water systems may grant one or more exemptions from this rule for the replacement of existing backflow prevention devices to the customer, if:

(1) The exemption shall not result in an unreasonable risk to the public health; and

(2) The public water system or owner is unable to comply with the rule due to compelling factors, not including economic factors.

(c) An exemption shall not alter the degree of hazard classification of the cross-connection.

(d) Each exemption shall be conditioned on monitoring, testing, analyzing or other requirements to ensure the protection of the public health, and may include a deadline by which compliance shall be achieved.

Source. (See Revision Note at chapter heading for Env-Ws 300) #6521, eff 6-4-97; ss by #8360, INTERIM, eff 6-4-05, EXPIRES: 12-1-05 ; ss by #8476, eff 11-30-05

Env-Ws 364.08 Approved Backflow Prevention Devices.

(a) Only approved backflow prevention devices shall be used.-

(b) Only the types of backflow prevention devices listed in Table 364-1 below shall be used for the containment of on-premise hazards for low and high degree of hazard situations respectively:

Table 364-1
Acceptable Backflow Prevention Devices for Degrees of Hazards

Low Degree of Hazard	**High Degree of Hazard**
Air gap	Air gap
Pressure vacuum breaker	Reduced pressure backflow device
Double check valve assembly	A combination of the above
Reduced pressure backflow device	
A combination of the above	

(d) A backflow prevention device shall not be installed in a location where it will:

(1) Be subject to corrosive fumes, grit, or sticky or abrasive liquids;

(2) Be subject to flooding or mechanical abuse;

(3) Not be easily accessible for testing and repair;

(4) Be in a pit or built into or close to walls or other obstructions; or

(5) Be in a vertical position unless the backflow prevention device was certified for that orientation.

Source. #6521, eff 6-4-97 (See Revision Note at chapter heading for Env-Ws 300) ; ss by #8360, INTERIM, eff 6-4-05, EXPIRES: 12-1-05; ss by #8476, eff 11-30-05

Env-Ws 364.09 Program Documentation.

(a) Each public water system shall file with the department a copy of its legally-adopted cross-connection control program.

(b) Any subsequent revisions to a cross-connection control program approved in accordance with Env-Ws 364.11 shall be filed with the department as specified in Env-Ws 364.11.

Source. #8476, eff 11-30-05

Env-Ws 364.10 Required Records.

(a) Each public water system shall maintain records pertaining to its cross-connection control program as specified in this section.

(b) A list of high degree of hazard cross-connection locations shall include:

(1) The name of the owner or business;

(2) The location of the backflow prevention device;

(3) The type of backflow prevention device installed;

(4) The size of the backflow prevention device;

(5) The manufacturer's name and model number;

(6) The cross-connection permit number;

(7) A description of the contaminant(s); and

(8) The testing and inspection frequency.

(c) A list of low degree of hazard cross-connection locations shall include the information identified in (b), above.

(d) Records of the frequency of inspection and testing of each backflow prevention device and the results of inspections and tests shall include the following and be on forms provided by the supplier:

(1) The name of the owner or business;

(2) The location of the backflow prevention device;

(3) The type of backflow prevention device;

(4) The size of the backflow prevention device;

(5) The manufacturer's name and model number;

(6) The date of the first inspection and test of the year for high hazard backflow prevention devices or the date of the annual inspection and test for low hazard backflow prevention devices;

(7) The name of the certified backflow prevention device inspector;

(8) Inspection and testing results from the first or annual test, as applicable;

(9) If the inspection or testing results from the first or annual test, as applicable, were unsatisfactory:

a. The measures taken to correct the deficiencies; and

b. The date the device was determined to be satisfactory;

(10) The date of the second inspection and test of the year for each high hazard backflow prevention device;

(11) Inspection and testing results from the second test for each high hazard backflow prevention device;

(12) If the inspection or testing results from the second test for a high hazard backflow prevention device were unsatisfactory:

a. The measures taken to correct the deficiencies; and

b. The date the device was determined to be satisfactory.

Source. #8476, eff 11-30-05

Env-Ws 364.11 Approval of Cross-Connection Programs; Revisions.

(a) To obtain department approval of a cross-connection program, the supplier shall submit a written description of the program that includes:

(1) A description of all components of the program; and

(2) A certification signed by the supplier that the supplier has the authority to enforce the requirements of the program.

(b) The department shall approve the program if, after reviewing the submittal, the department determines that the program complies with the requirements of this part.

(c) If the supplier revises any part of an approved cross-connection control program, the supplier shall submit the revisions in writing to the department.

(d) The department shall approve the revisions if the department determines that the program as revised complies with the requirements of this part.

(e) The department shall notify the supplier of its decision on a submittal under (a) or (c), above, in writing within 30 days of receipt of the submittal. If the program or revision is not approved, the written notice shall specify the reason(s) for the decision.

Source. #8476, eff 11-30-05

APPENDIX

Rule Section(s)	State Statute(s) Implemented
Env-Ws 364.01 - 364.11	RSA 485:11; 485:41